

**MANAGERIAL ECONOMICS AND FINANCIAL
ANALYSIS
LECTURE NOTES B.TECH
(II YEAR – I SEM)
(2020-21)**

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**MALLA REDDY COLLEGE OF ENGINEERING & TECHNOLOGY
(Autonomous Institution – UGC, Govt. of India)**

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MALLA REDDY COLLEGE OF ENGINEERING AND TECHNOLOGY

II Year B.Tech. ECE-II Sem

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(R18A0061) MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS**Course Objectives:**

- To enable the student to understand and appreciate, with a practical insight, the importance of certain basic issues governing the business operations that are needed for sound economic decision making.
- The main purpose is to provide inputs on an overall analysis of an individual firm namely: demand and supply, production function, cost analysis, markets etc.
- To understand and analyse the financial formats of the organisation for smooth running of the business.

Course Outcomes:

Students should be able,

- To understand the basic economic principles, forecast demand and supply.
- To estimate cost and understand market structure, pricing practices.
- To interpret the financial results of the organisation.

Unit-I

Introduction to Managerial Economics: Definition, Nature and Scope of Managerial Economics, Micro and Macroeconomic Concepts.

Demand Analysis: Demand Determinants, Law of Demand and exceptions.

Elasticity of Demand: Definition, Types, Measurement and Significance of elasticity of Demand.

Demand Forecasting: Factors governing Demand Forecasting, Methods of Demand Forecasting (Survey Methods, Expert Opinion, Test Marketing, Controlled Experience, Judgemental Approach, and Time Series Analysis).

Unit-II

Production & Cost Analysis: Production Function- Isocost and Isoquants, MRTS, Least Cost Combination of Inputs, Cobb-Douglas Production Function, Laws of Returns, Internal and External Economies of Scale.

Cost Analysis: Cost Concepts. Break-Even Analysis (BEA) - Determination of Break-Even Point (Simple Problems)

Unit-III

Markets: Types of Competition and Markets, Features of Perfect Competition, Monopoly and Monopolistic Competition;

Pricing: Objectives, Methods of Pricing;

Business: Features of different forms of Business Organisation (Sole Trader, Partnership, Joint Stock Company, Cooperative Society, and Public Enterprises).

Unit-IV

Introduction to Capital and Financial Accounting: Need for Capital, Types of Capital, Working Capital Analysis, Methods and Sources of raising Finance.

Accounting: Definition, Concepts and Conventions (GAAP); Accounting Cycle; Formats for preparation of Trial Balance and Final Accounts (Trading Account, Profit and Loss Account and Balance Sheet).

Unit-V

Investment Decision: Capital Budgeting - Features, Objectives, and Methods (Payback Method, Accounting Rate of Return and Net Present Value) - advantages & disadvantages. (Simple Problems)

Financial Analysis: Analysis and Interpretation of Liquidity Ratios, Activity Ratios, Capital Structure Ratios and Profitability Ratios. (Simple Problems)

References:

- Managerial Economics & Financial Analysis, Special Edition-MRCET. McGraw Hill Publications, 2017
- D.N. Dwivedi, Managerial Economics, Vikas Publications.
- Justin Paul, Leena, Sebastian, Managerial Economics, Cengage
- P. L. Mehta, Managerial Economics: Analysis, Problems and Cases, Sultan Chand & Sons.
- S. N. Maheswari & S. K. Maheswari, Financial Accounting, Vikas Publications.
- M. Y. Khan and P. K. Jain, Financial Management, McGraw Hill

UNIT-I

INTRODUCTION TO MANAGERIAL ECONOMICS

Imagine for a while that you have finished your studies and have joined as an engineer in a manufacturing organization. What do you do there? You plan to produce maximum quantity of goods of a given quality at a reasonable cost. On the other hand, if you are a sale manager, you have to sell a maximum amount of goods with minimum advertisement costs. In other words, you want to minimize your costs and maximize your returns and by doing so, you are practicing the principles of managerial economics.

Managers, in their day-to-day activities, are always confronted with several issues such as how much quantity is to be supplied; at what price; should the product be made internally; or whether it should be bought from outside; how much quantity is to be produced to make a given amount of profit and so on. Managerial economics provides us a basic insight into seeking solutions for managerial problems.

Managerial economics, as the name itself implies, is an offshoot of two distinct disciplines: Economics and Management. In other words, it is necessary to understand what these disciplines are, at least in brief, to understand the nature and scope of managerial economics.

Introduction to Economics

Economics is a study of human activity both at individual and national level. The economists of early age treated economics merely as the science of wealth. The reason for this is clear. Every one of us is involved in efforts aimed at earning money and spending this money to satisfy our wants such as food, Clothing, shelter, and others. Such activities of earning and spending money are called "Economic activities". It was only during the eighteenth century that Adam Smith, the Father of Economics, defined economics as the study of nature and uses of national wealth'.

Dr. Alfred Marshall, one of the greatest economists of the nineteenth century, writes "Economics is a study of man's actions in the ordinary business of life: it enquires how he gets his income and how he uses it". Thus, it is one side, a study of wealth; and on the other, and more important side; it is the study of man.

Microeconomics

The study of an individual consumer or a firm is called microeconomics (also called the *Theory of Firm*). Micro means 'one millionth'. Microeconomics deals with behavior and problems of single individual and of micro organization. Managerial economics has its roots in microeconomics and it deals with the micro or individual enterprises. It is concerned with the application of the concepts such as price theory, Law of Demand and theories of market structure and so on.

Macroeconomics

The study of 'aggregate' or total level of economics activity in a country is called *macroeconomics*. It studies the flow of economics resources or factors of production (such as land, labour, capital, organisation and technology) from the resource owner to the business firms and then from the business firms to the households. It deals with total aggregates, for instance, total national income total employment, output and total investment. It studies the interrelations among various aggregates and examines their nature and

behaviour, their determination and causes of fluctuations in the. It deals with the price level in general, instead of studying the prices of individual commodities. It is concerned with the level of employment in the economy. It discusses aggregate consumption, aggregate investment, price level, and payment, theories of employment, and so on.

Though macroeconomics provides the necessary framework in term of government policies etc., for the firm to act upon dealing with analysis of business conditions, it has less direct relevance in the study of theory of firm.

Management

Management is the science and art of getting things done through people in formally organized groups. It is necessary that every organisation be well managed to enable it to achieve its desired goals. Management includes a number of functions: *Planning, organizing, staffing, directing, and controlling*. The manager while directing the efforts of his staff *communicates* to them the goals, objectives, policies, and procedures; *coordinates* their efforts; *motivates* them to sustain their enthusiasm; and *leads* them to achieve the corporate goals.

Managerial Economics

Introduction

Managerial Economics as a subject gained popularity in USA after the publication of the book “Managerial Economics” by Joel Dean in 1951.

Managerial Economics refers to the firm’s decision making process. It could be also interpreted as “Economics of Management” or “Economics of Management”. Managerial Economics is also called as “Industrial Economics” or “Business Economics”.

As Joel Dean observes managerial economics shows how economic analysis can be used in formulating polices.

Meaning & Definition:

In the words of E. F. Brigham and J. L. Pappas Managerial Economics is “the applications of economics theory and methodology to business administration practice”.

Managerial Economics bridges the gap between traditional economics theory and real business practices in two ways. First it provides a number of tools and techniques to enable the manager to become more competent to take decisions in real and practical situations. Secondly it serves as an integrating course to show the interaction between various areas in which the firm operates.

C. I. Savage & T. R. Small therefore believes that managerial economics “is concerned with business efficiency”.

M. H. Spencer and Louis Siegelman explain the “Managerial Economics is the integration of economic theory with business practice for the purpose of facilitating decision making and forward planning by management”.

Nature of Managerial Economics

Managerial economics is, perhaps, the youngest of all the social sciences. Since it originates from Economics, it has the basic features of economics, such as assuming that other things remaining the same (or the Latin equivalent *ceteris paribus*). This assumption is made to simplify the complexity of the managerial phenomenon under study in a dynamic business environment so many things are changing simultaneously. This set a limitation that we cannot really hold other things remaining the same. In such a case, the observations made out of such a study will have a limited purpose or value. Managerial economics also has inherited this problem from economics.

Further, it is assumed that the firm or the buyer acts in a rational manner (which normally does not happen). The buyer is carried away by the advertisements, brand loyalties, incentives and so on, and, therefore, the innate behaviour of the consumer will be rational is not a realistic assumption. Unfortunately, there are no other alternatives to understand the subject other than by making such assumptions. This is because the behaviour of a firm or a consumer is a complex phenomenon.

The other features of managerial economics are explained as below:

- (a) **Close to microeconomics:** Managerial economics is concerned with finding the solutions for different managerial problems of a particular firm. Thus, it is more close to microeconomics.
- (b) **Operates against the backdrop of macroeconomics:** The macroeconomics conditions of the economy are also seen as limiting factors for the firm to operate. In other words, the managerial economist has to be aware of the limits set by the macroeconomics conditions such as government industrial policy, inflation and so on.
- (c) **Normative statements:** A normative statement usually includes or implies the words 'ought' or 'should'. They reflect people's moral attitudes and are expressions of what a team of people ought to do. For instance, it deals with statements such as 'Government of India should open up the economy. Such statement are based on value judgments and express views of what is 'good' or 'bad', 'right' or 'wrong'. One problem with normative statements is that they cannot to verify by looking at the facts, because they mostly deal with the future. Disagreements about such statements are usually settled by voting on them.
- (d) **Prescriptive actions:** Prescriptive action is goal oriented. Given a problem and the objectives of the firm, it suggests the course of action from the available alternatives for optimal solution. If does not merely mention the concept, it also explains whether the concept can be applied in a given context on not. For instance, the fact that variable costs are marginal costs can be used to judge the feasibility of an export order.
- (e) **Applied in nature:** 'Models' are built to reflect the real life complex business situations and these models are of immense help to managers for decision-making. The different areas where models are extensively used include inventory control, optimization, project management etc. In managerial economics, we also employ case study methods to conceptualize the problem, identify that alternative and determine the best course of action.
- (f) **Offers scope to evaluate each alternative:** Managerial economics provides an opportunity to evaluate each alternative in terms of its costs and revenue. The managerial economist can decide which is the better alternative to maximize the profits for the firm.

- (g) **Interdisciplinary:** The contents, tools and techniques of managerial economics are drawn from different subjects such as economics, management, mathematics, statistics, accountancy, psychology, organizational behavior, sociology and etc.
- (h) **Assumptions and limitations:** Every concept and theory of managerial economics is based on certain assumption and as such their validity is not universal. Where there is change in assumptions, the theory may not hold good at all.

Scope of Managerial Economics:

The scope of managerial economics refers to its area of study. Managerial economics refers to its area of study. Managerial economics, Provides management with a strategic planning tool that can be used to get a clear perspective of the way the business world works and what can be done to maintain profitability in an ever-changing environment. Managerial economics is primarily concerned with the application of economic principles and theories to five types of resource decisions made by all types of business organizations.

- a. The selection of product or service to be produced.
- b. The choice of production methods and resource combinations.
- c. The determination of the best price and quantity combination
- d. Promotional strategy and activities.
- e. The selection of the location from which to produce and sell goods or service to consumer.

The production department, marketing and sales department and the finance department usually handle these five types of decisions.

The scope of managerial economics covers two areas of decision making

- a. Operational or Internal issues
- b. Environmental or External issues

a. Operational issues:

Operational issues refer to those, which arise within the business organization and they are under the control of the management. Those are:

1. Theory of demand and Demand Forecasting
2. Pricing and Competitive strategy
3. Production cost analysis
4. Resource allocation
5. Profit analysis
6. Capital or Investment analysis
7. Strategic planning

1. Demand Analyses and Forecasting:

A firm can survive only if it is able to the demand for its product at the right time, within the right quantity. Understanding the basic concepts of demand is essential for demand forecasting. Demand analysis should be a basic activity of the firm because many of the other activities of the firms depend upon the outcome of the demand fore cost. Demand analysis provides:

1. The basis for analyzing market influences on the firms; products and thus helps in the adaptation to those influences.

2. Demand analysis also highlights for factors, which influence the demand for a product. This helps to manipulate demand. Thus demand analysis studies not only the price elasticity but also income elasticity, cross elasticity as well as the influence of advertising expenditure with the advent of computers, demand forecasting has become an increasingly important function of managerial economics.

2. Pricing and competitive strategy:

Pricing decisions have been always within the preview of managerial economics. Pricing policies are merely a subset of broader class of managerial economic problems. Price theory helps to explain how prices are determined under different types of market conditions. Competitions analysis includes the anticipation of the response of competitions the firm's pricing, advertising and marketing strategies. Product line pricing and price forecasting occupy an important place here.

3. Production and cost analysis:

Production analysis is in physical terms. While the cost analysis is in monetary terms cost concepts and classifications, cost-out-put relationships, economies and diseconomies of scale and production functions are some of the points constituting cost and production analysis.

4. Resource Allocation:

Managerial Economics is the traditional economic theory that is concerned with the problem of optimum allocation of scarce resources. Marginal analysis is applied to the problem of determining the level of output, which maximizes profit. In this respect linear programming techniques has been used to solve optimization problems. In fact lines programming is one of the most practical and powerful managerial decision making tools currently available.

5. Profit analysis:

Profit making is the major goal of firms. There are several constraints here an account of competition from other products, changing input prices and changing business environment hence in spite of careful planning, there is always certain risk involved. Managerial economics deals with techniques of averting of minimizing risks. Profit theory guides in the measurement and management of profit, in calculating the pure return on capital, besides future profit planning.

6. Capital or investment analyses:

Capital is the foundation of business. Lack of capital may result in small size of operations. Availability of capital from various sources like equity capital, institutional finance etc. may help to undertake large-scale operations. Hence efficient allocation and management of capital is one of the most important tasks of the managers. The major issues related to capital analysis are:

1. The choice of investment project
2. Evaluation of the efficiency of capital
3. Most efficient allocation of capital

Knowledge of capital theory can help very much in taking investment decisions. This involves, capital budgeting, feasibility studies, analysis of cost of capital etc.

7. Strategic planning:

Strategic planning provides management with a framework on which long-term decisions can be made which has an impact on the behavior of the firm. The firm sets certain long-term goals and objectives and selects the strategies to achieve the same. Strategic planning is now a new addition to the scope of managerial economics with the emergence of multinational corporations. The perspective of strategic planning is global.

B. Environmental or External Issues:

An environmental issue in managerial economics refers to the general business environment in which the firm operates. They refer to general economic, social and political atmosphere within which the firm operates.

The social environment refers to social structure as well as social organization like trade unions, consumer's co-operative etc. The Political environment refers to the nature of state activity, chiefly states' attitude towards private business, political stability etc.

The environmental or external issues relate managerial economics to macro economic theory while operational issues relate the scope to micro economic theory. The scope of managerial economics is ever widening with the dynamic role of big firms in a society.

Managerial economics relationship with other disciplines:

Many new subjects have evolved in recent years due to the interaction among basic disciplines. While there are many such new subjects in natural and social sciences, managerial economics can be taken as the best example of such a phenomenon among social sciences. Hence it is necessary to trace its roots and relationship with other disciplines.

1. Relationship with economics:

The relationship between managerial economics and economics theory may be viewed from the point of view of the two approaches to the subject Viz. Micro Economics and Macro Economics. Microeconomics is the study of the economic behavior of individuals, firms and other such micro organizations. Managerial economics is rooted in Micro Economic theory. Managerial Economics makes use to several Micro Economic concepts such as marginal cost, marginal revenue, elasticity of demand as well as price theory and theories of market structure to name only a few. The relationship between managerial economics and economics theory is like that of engineering science to physics or of medicine to biology. Managerial economics has an applied bias and its wider scope lies in applying economic theory to solve real life problems of enterprises. Both managerial economics and economics deal with problems of scarcity and resource allocation.

2. Management theory and accounting:

Managerial economics has been influenced by the developments in management theory and accounting techniques. Accounting refers to the recording of pecuniary transactions of the firm in certain books. A proper knowledge of accounting techniques is very essential for the success of the firm because profit maximization is the major objective of the firm.

Managerial Economics requires a proper knowledge of cost and revenue information and their classification. A student of managerial economics should be familiar with the generation, interpretation and use of

accounting data. The focus of accounting within the firm is fast changing from the concepts of store keeping to that of managerial decision making, this has resulted in a new specialized area of study called “Managerial Accounting”.

3. Managerial Economics and mathematics:

The use of mathematics is significant for managerial economics in view of its profit maximization goal long with optimal use of resources. The major problem of the firm is how to minimize cost, how to maximize profit or how to optimize sales. Mathematical concepts and techniques are widely used in economic logic to solve these problems. Also mathematical methods help to estimate and predict the economic factors for decision making and forward planning.

Mathematical symbols are more convenient to handle and understand various concepts like incremental cost, elasticity of demand etc., Geometry, Algebra and calculus are the major branches of mathematics which are of use in managerial economics. The main concepts of mathematics like logarithms, and exponentials, vectors and determinants, input-output models etc., are widely used. Besides these usual tools, more advanced techniques designed in the recent years viz. linear programming, inventory models and game theory find wide application in managerial economics.

4. Managerial Economics and Statistics:

Managerial Economics needs the tools of statistics in more than one way. A successful businessman must correctly estimate the demand for his product. He should be able to analyse the impact of variations in tastes. Fashion and changes in income on demand only then he can adjust his output. Statistical methods provide a sure base for decision-making. Thus statistical tools are used in collecting data and analyzing them to help in the decision making process.

Statistical tools like the theory of probability and forecasting techniques help the firm to predict the future course of events. Managerial Economics also make use of correlation and multiple regressions in related variables like price and demand to estimate the extent of dependence of one variable on the other. The theory of probability is very useful in problems involving uncertainty.

5. Managerial Economics and Operations Research:

Taking effective decisions is the major concern of both managerial economics and operations research. The development of techniques and concepts such as linear programming, inventory models and game theory is due to the development of this new subject of operations research in the postwar years. Operations research is concerned with the complex problems arising out of the management of men, machines, materials and money.

Operations research provides a scientific model of the system and it helps managerial economists in the field of product development, material management, and inventory control, quality control, marketing and demand analysis. The varied tools of operations Research are helpful to managerial economists in decision-making.

6. Managerial Economics and the theory of Decision- making:

The Theory of decision-making is a new field of knowledge grown in the second half of this century. Most of the economic theories explain a single goal for the consumer i.e., Profit maximization for the firm. But the theory of decision-making is developed to explain multiplicity of goals and lot of uncertainty.

As such this new branch of knowledge is useful to business firms, which have to take quick decision in the case of multiple goals. Viewed this way the theory of decision making is more practical and application oriented than the economic theories.

7. Managerial Economics and Computer Science:

Computers have changes the way of the world functions and economic or business activity is no exception. Computers are used in data and accounts maintenance, inventory and stock controls and supply and demand predictions. What used to take days and months is done in a few minutes or hours by the computers. In fact computerization of business activities on a large scale has reduced the workload of managerial personnel. In most countries a basic knowledge of computer science, is a compulsory programme for managerial trainees. To conclude, managerial economics, which is an offshoot traditional economics, has gained strength to be a separate branch of knowledge. Its strength lies in its ability to integrate ideas from various specialized subjects to gain a proper perspective for decision-making.

A successful managerial economist must be a mathematician, a statistician and an economist. He must be also able to combine philosophic methods with historical methods to get the right perspective only then; he will be good at predictions. In short managerial practices with the help of other allied sciences.

DEMAND ANALYSIS

Introduction & Meaning:

Demand in common parlance means the desire for an object. But in economics demand is something more than this. According to Stonier and Hague, "Demand in economics means demand backed up by enough money to pay for the goods demanded". This means that the demand becomes effective only if it is backed by the purchasing power in addition to this there must be willingness to buy a commodity.

Thus demand in economics means the desire backed by the willingness to buy a commodity and the purchasing power to pay. In the words of "Benham" "The demand for anything at a given price is the amount of it which will be bought per unit of time at that Price". (Thus demand is always at a price for a definite quantity at a specified time.) Thus demand has three essentials – price, quantity demanded and time. Without these, demand has no significance in economics.

LAW of Demand:

Law of demand shows the relation between price and quantity demanded of a commodity in the market. In the words of Marshall, "the amount demand increases with a fall in price and diminishes with a rise in price".

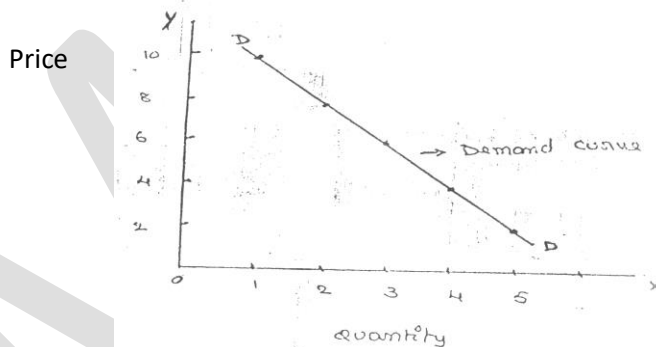
A rise in the price of a commodity is followed by a reduction in demand and a fall in price is followed by an increase in demand, if a condition of demand remains constant.

The law of demand may be explained with the help of the following demand schedule.

Demand Schedule.

Price of Appel (In. Rs.)	Quantity Demanded
10	1
8	2
6	3
4	4
2	5

When the price falls from Rs. 10 to 8 quantity demand increases from 1 to 2. In the same way as price falls, quantity demand increases on the basis of the demand schedule we can draw the demand curve.



The demand curve DD shows the inverse relation between price and quantity demand of apple. It is downward sloping.

Assumptions:

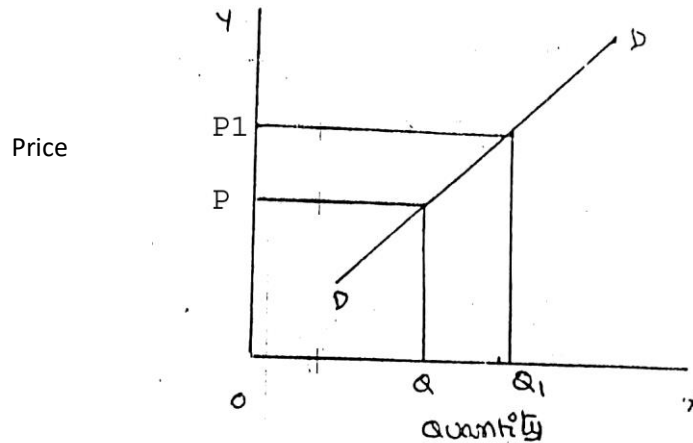
Law of demand is based on certain assumptions:

1. This is no change in consumers taste and preferences.
2. Income should remain constant.
3. Prices of other goods should not change.
4. There should be no substitute for the commodity
5. The commodity should not confer at any distinction

6. The demand for the commodity should be continuous
7. People should not expect any change in the price of the commodity

Exceptional demand curve:

Some times the demand curve slopes upwards from left to right. In this case the demand curve has a positive slope.



When price increases from OP to OP_1 quantity demanded also increases from OQ to OQ_1 and vice versa. The reasons for exceptional demand curve are as follows.

1. Giffen paradox:

The Giffen good or inferior good is an exception to the law of demand. When the price of an inferior good falls, the poor will buy less and vice versa. For example, when the price of maize falls, the poor are willing to spend more on superior goods than on maize if the price of maize increases, he has to increase the quantity of money spent on it. Otherwise he will have to face starvation. Thus a fall in price is followed by reduction in quantity demanded and vice versa. "Giffen" first explained this and therefore it is called as Giffen's paradox.

2. Veblen or Demonstration effect:

'Veblen' has explained the exceptional demand curve through his doctrine of conspicuous consumption. Rich people buy certain good because it gives social distinction or prestige for example diamonds are bought by the richer class for the prestige it possess. If the price of diamonds falls poor also will buy it hence they will not give prestige. Therefore, rich people may stop buying this commodity.

3. Ignorance:

Sometimes, the quality of the commodity is judged by its price. Consumers think that the product is superior if the price is high. As such they buy more at a higher price.

4. Speculative effect:

If the price of the commodity is increasing the consumers will buy more of it because of the fear that it increase still further, Thus, an increase in price may not be accompanied by a decrease in demand.

5. Fear of shortage:

During the times of emergency of war People may expect shortage of a commodity. At that time, they may buy more at a higher price to keep stocks for the future.

5. Necessaries:

In the case of necessities like rice, vegetables etc. people buy more even at a higher price.

Factors Affecting Demand:

There are factors on which the demand for a commodity depends. These factors are economic, social as well as political factors. The effect of all the factors on the amount demanded for the commodity is called Demand Function.

These factors are as follows:

1. Price of the Commodity:

The most important factor-affecting amount demanded is the price of the commodity. The amount of a commodity demanded at a particular price is more properly called price demand. The relation between price and demand is called the Law of Demand. It is not only the existing price but also the expected changes in price, which affect demand.

2. Income of the Consumer:

The second most important factor influencing demand is consumer income. In fact, we can establish a relation between the consumer income and the demand at different levels of income, price and other things remaining the same. The demand for a normal commodity goes up when income rises and falls down when income falls. But in case of Giffen goods the relationship is the opposite.

3. Prices of related goods:

The demand for a commodity is also affected by the changes in prices of the related goods also. Related goods can be of two types:

- (i). Substitutes which can replace each other in use; for example, tea and coffee are substitutes. The change in price of a substitute has effect on a commodity's demand in the same direction in which price changes. The rise in price of coffee shall raise the demand for tea;
- (ii). Complementary goods are those which are jointly demanded, such as pen and ink. In such cases complementary goods have opposite relationship between price of one commodity and the amount demanded for the other. If the price of pens goes up, their demand is less as a result of which the demand for ink is also less. The price and demand go in opposite direction. The effect of changes in price of a commodity on amounts demanded of related commodities is called Cross Demand.

4. Tastes of the Consumers:

The amount demanded also depends on consumer's taste. Tastes include fashion, habit, customs, etc. A consumer's taste is also affected by advertisement. If the taste for a commodity goes up, its amount demanded is more even at the same price. This is called increase in demand. The opposite is called decrease in demand.

5. Wealth:

The amount demanded of commodity is also affected by the amount of wealth as well as its distribution. The wealthier are the people; higher is the demand for normal commodities. If wealth is more equally distributed, the demand for necessities and comforts is more. On the other hand, if some people are rich, while the majorities are poor, the demand for luxuries is generally higher.

6. Population:

Increase in population increases demand for necessities of life. The composition of population also affects demand. Composition of population means the proportion of young and old and children as well as the ratio of men to women. A change in composition of population has an effect on the nature of demand for different commodities.

7. Government Policy:

Government policy affects the demands for commodities through taxation. Taxing a commodity increases its price and the demand goes down. Similarly, financial help from the government increases the demand for a commodity while lowering its price.

8. Expectations regarding the future:

If consumers expect changes in price of commodity in future, they will change the demand at present even when the present price remains the same. Similarly, if consumers expect their incomes to rise in the near future they may increase the demand for a commodity just now.

9. Climate and weather:

The climate of an area and the weather prevailing there has a decisive effect on consumer's demand. In cold areas woolen cloth is demanded. During hot summer days, ice is very much in demand. On a rainy day, ice cream is not so much demanded.

10. State of business:

The level of demand for different commodities also depends upon the business conditions in the country. If the country is passing through boom conditions, there will be a marked increase in demand. On the other hand, the level of demand goes down during depression.

ELASTICITY OF DEMAND

Elasticity of demand explains the relationship between a change in price and consequent change in amount demanded. "Marshall" introduced the concept of elasticity of demand. Elasticity of demand shows the extent of change in quantity demanded to a change in price.

In the words of "Marshall", "The elasticity of demand in a market is great or small according as the amount demanded increases much or little for a given fall in the price and diminishes much or little for a given rise in Price"

Elastic demand: A small change in price may lead to a great change in quantity demanded. In this case, demand is elastic.

In-elastic demand: If a big change in price is followed by a small change in demanded then the demand in "inelastic".

Types of Elasticity of Demand:

There are three types of elasticity of demand:

1. Price elasticity of demand
2. Income elasticity of demand
3. Cross elasticity of demand

1. Price elasticity of demand:

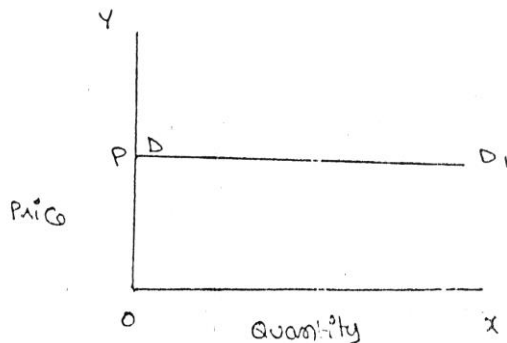
Marshall was the first economist to define price elasticity of demand. Price elasticity of demand measures changes in quantity demanded to a change in Price. It is the ratio of percentage change in quantity demanded to a percentage change in price.

$$\text{Price elasticity} = \frac{\text{Proportionate change in the quantity demanded of commodity}}{\text{Proportionate change in the price of commodity}}$$

There are five cases of price elasticity of demand

A. Perfectly elastic demand:

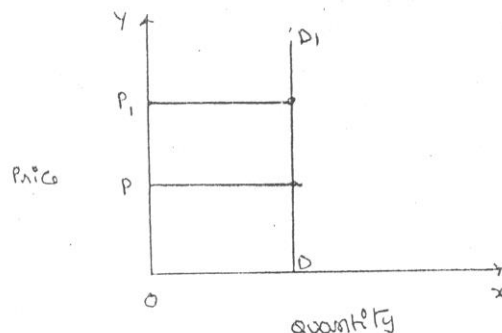
When small change in price leads to an infinitely large change in quantity demanded, it is called perfectly or infinitely elastic demand. In this case $E = \infty$



The demand curve DD1 is horizontal straight line. It shows that at "OP" price any amount is demanded and if price increases, the consumer will not purchase the commodity.

B. Perfectly Inelastic Demand

In this case, even a large change in price fails to bring about a change in quantity demanded.

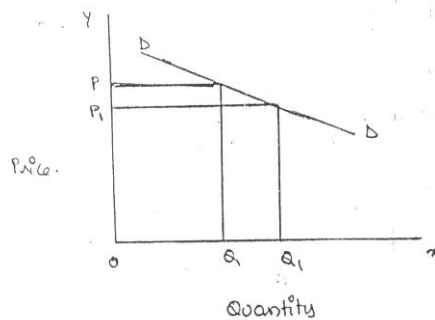


When price increases from 'OP' to 'OP', the quantity demanded remains the same. In other words the response of demand to a change in Price is nil. In this case 'E'=0.

C. Relatively elastic demand:

Demand changes more than proportionately to a change in price. i.e. a small change in price loads to a very big change in the quantity demanded. In this case

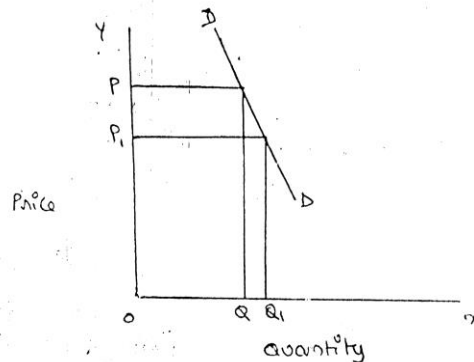
$E > 1$. This demand curve will be flatter.



When price falls from 'OP' to 'OP', amount demanded in crease from "OQ' to "OQ1' which is larger than the change in price.

D. Relatively in-elastic demand.

Quantity demanded changes less than proportional to a change in price. A large change in price leads to small change in amount demanded. Here $E < 1$. Demanded curve will be steeper.

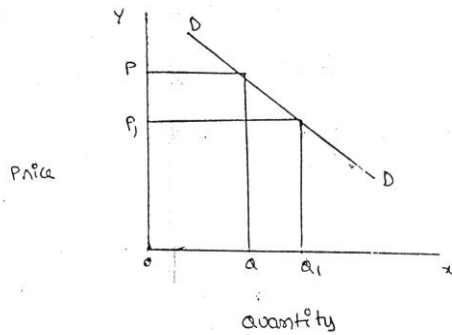


When price falls increases from OQ to OQ1, which is smaller than the change in price.

from "OP' to 'OP1 amount demanded to OQ1, which is smaller than the

E. Unit elasticity of demand:

The change in demand is exactly equal to the change in price. When both are equal $E=1$ and elasticity is said to be unitary.



When price falls from 'OP' to 'OP1' quantity demanded increases from 'OP' to 'OP1', quantity demanded increases from 'OQ' to 'OQ1'. Thus a change in price has resulted in an equal change in quantity demanded so price elasticity of demand is equal to unity.

2. Income elasticity of demand:

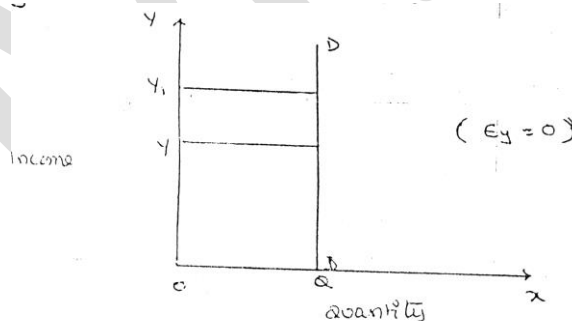
Income elasticity of demand shows the change in quantity demanded as a result of a change in income. Income elasticity of demand may be stated in the form of a formula.

$$\text{Income Elasticity} = \frac{\text{Proportionate change in the quantity demand of commodity}}{\text{Proportionate change in the income of the people}}$$

Income elasticity of demand can be classified in to five types.

A. Zero income elasticity:

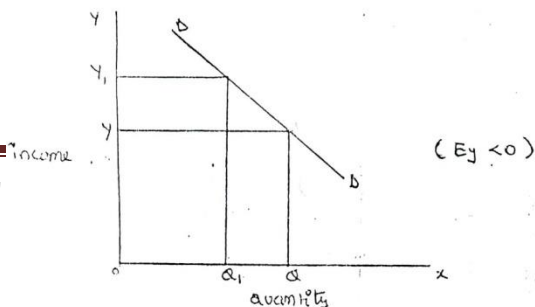
Quantity demanded remains the same, even though money income increases. Symbolically, it can be expressed as $E_y = 0$. It can be depicted in the following way:



As income increases from OY to OY1, quantity demanded never changes.

B. Negative Income elasticity:

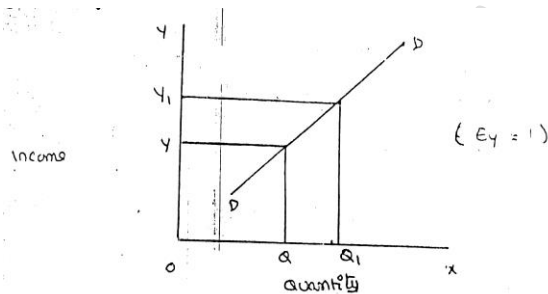
When income increases, quantity demanded falls. In this case, income elasticity of demand is negative. i.e., $E_y < 0$.



When income increases from OY to OY₁, demand falls from OQ to OQ₁.

c. Unit income elasticity:

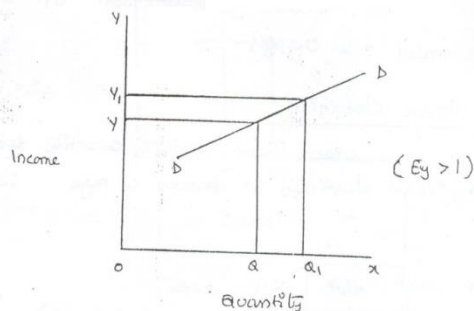
When an increase in income brings about a proportionate increase in quantity demanded, and then income elasticity of demand is equal to one. $E_y = 1$



When income increases from OY to OY₁, Quantity demanded also increases from OQ to OQ₁.

d. Income elasticity greater than unity:

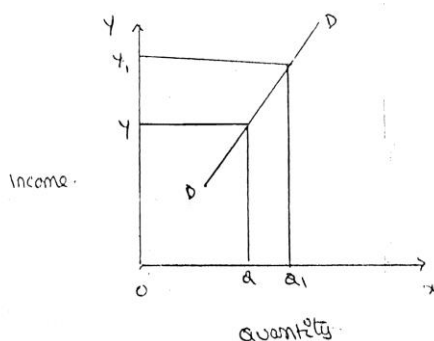
In this case, an increase in come brings about a more than proportionate increase in quantity demanded. Symbolically it can be written as $E_y > 1$.



It shows high-income elasticity of demand. When income increases from OY to OY₁, Quantity demanded increases from OQ to OQ₁.

E. Income

When income less than



elasticity less than unity:

increases quantity demanded also increases but proportionately. In this case $E < 1$.

An increase in income from OY to OY', brings what an increase in quantity demanded from OQ to OQ1, But the increase in quantity demanded is smaller than the increase in income. Hence, income elasticity of demand is less than one.

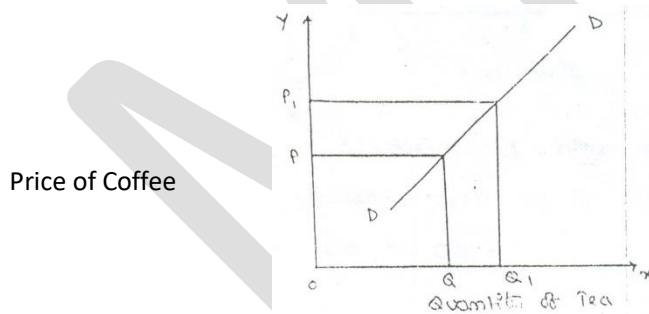
3. Cross elasticity of Demand:

A change in the price of one commodity leads to a change in the quantity demanded of another commodity. This is called a cross elasticity of demand. The formula for cross elasticity of demand is:

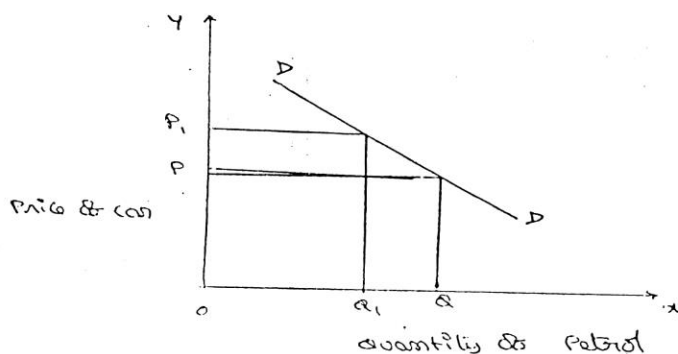
$$\text{Cross elasticity} = \frac{\text{Proportionate change in the quantity demand of commodity "X"}}{\text{Proportionate change in the price of commodity "Y"}}$$

a. In case of substitutes, cross elasticity of demand is positive. Eg: Coffee and Tea

When the price of coffee increases, Quantity demanded of tea increases. Both are substitutes.



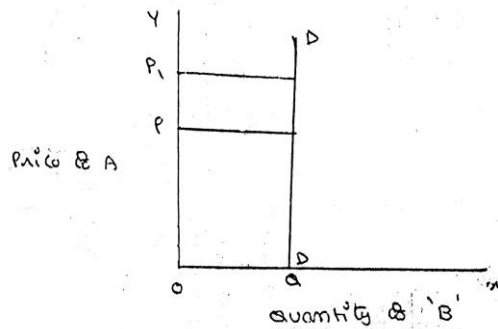
b. In case of compliments, cross elasticity is negative. If increase in the price of one commodity leads to a decrease in the quantity demanded of another and vice versa.



$$E_c = \frac{\% \Delta Q_2}{\% \Delta P_1} \text{ (Negative)}$$

When price of car goes up from OP to OP!, the quantity demanded of petrol decreases from OQ to OQ!. The cross-demanded curve has negative slope.

c. **In case of unrelated commodities**, cross elasticity of demanded is zero. A change in the price of one commodity will not affect the quantity demanded of another.



Quantity demanded of commodity "b" remains unchanged due to a change in the price of 'A', as both are unrelated goods.

Factors influencing the elasticity of demand

Elasticity of demand depends on many factors.

1. Nature of commodity:

Elasticity or in-elasticity of demand depends on the nature of the commodity i.e. whether a commodity is a necessity, comfort or luxury, normally; the demand for Necessaries like salt, rice etc is inelastic. On the other hand, the demand for comforts and luxuries is elastic.

2. Availability of substitutes:

Elasticity of demand depends on availability or non-availability of substitutes. In case of commodities, which have substitutes, demand is elastic, but in case of commodities, which have no substitutes, demand is inelastic.

3. Variety of uses: If a commodity can be used for several purposes, then it will have elastic demand. i.e. electricity. On the other hand, demand is inelastic for commodities, which can be put to only one use.

4. Postponement of demand:

If the consumption of a commodity can be postponed, then it will have elastic demand. On the contrary, if the demand for a commodity cannot be postponed, then demand is inelastic. The demand for rice or medicine cannot be postponed, while the demand for Cycle or umbrella can be postponed.

5. Amount of money spent:

Elasticity of demand depends on the amount of money spent on the commodity. If the consumer spends a smaller amount for example a consumer spends a little amount on salt and matchboxes. Even when price of salt or matchbox goes up, demand will not fall. Therefore, demand is inelastic in case of clothing a consumer spends a large proportion of his income and an increase in price will reduce his demand for clothing. So the demand is elastic.

6. Time:

Elasticity of demand varies with time. Generally, demand is inelastic during short period and elastic during the long period. Demand is inelastic during short period because the consumers do not have enough time to know about the change in price. Even if they are aware of the price change, they may not immediately switch over to a new commodity, as they are accustomed to the old commodity.

7. Range of Prices:

Range of prices exerts an important influence on elasticity of demand. At a very high price, demand is inelastic because a slight fall in price will not induce the people to buy more. Similarly at a low price also demand is inelastic. This is because at a low price all those who want to buy the commodity would have bought it and a further fall in price will not increase the demand. Therefore, elasticity is low at very high and very low prices.

Importance of Elasticity of Demand:

The concept of elasticity of demand is of much practical importance.

1. Price fixation:

Each seller under monopoly and imperfect competition has to take into account elasticity of demand while fixing the price for his product. If the demand for the product is inelastic, he can fix a higher price.

2. Production:

Producers generally decide their production level on the basis of demand for the product. Hence elasticity of demand helps the producers to take correct decision regarding the level of output to be produced.

3. Distribution:

Elasticity of demand also helps in the determination of rewards for factors of production. For example, if the demand for labour is inelastic, trade unions will be successful in raising wages. It is applicable to other factors of production.

4. International Trade:

Elasticity of demand helps in finding out the terms of trade between two countries. Terms of trade refers to the rate at which domestic commodity is exchanged for foreign commodities. Terms of trade depends upon the elasticity of demand of the two countries for each other's goods.

5. Public Finance:

Elasticity of demand helps the government in formulating tax policies. For example, for imposing tax on a commodity, the Finance Minister has to take into account the elasticity of demand.

6. Nationalization:

The concept of elasticity of demand enables the government to decide about nationalization of industries.

Demand Forecasting

Introduction:

The information about the future is essential for both new firms and those planning to expand the scale of their production. Demand forecasting refers to an estimate of future demand for the product.

It is an 'objective assessment of the future course of demand". In recent times, forecasting plays an important role in business decision-making. Demand forecasting has an important influence on production planning. It is essential for a firm to produce the required quantities at the right time.

It is essential to distinguish between forecasts of demand and forecasts of sales. Sales forecast is important for estimating revenue cash requirements and expenses. Demand forecasts relate to production, inventory control, timing, reliability of forecast etc. However, there is not much difference between these two terms.

Types of demand Forecasting:

Based on the time span and planning requirements of business firms, demand forecasting can be classified in to 1. Short-term demand forecasting and

2. Long – term demand forecasting.

1. Short-term demand forecasting:

Short-term demand forecasting is limited to short periods, usually for one year. It relates to policies regarding sales, purchase, price and finances. It refers to existing production capacity of the firm. Short-term forecasting is essential for formulating a suitable price policy. If the business people expect of rise in the prices of raw materials or shortages, they may buy early. This price forecasting helps in sale policy formulation. Production may be undertaken based on expected sales and not on actual sales. Further, demand forecasting assists in financial forecasting also. Prior information about production and sales is essential to provide additional funds on reasonable terms.

2. Long – term forecasting:

In long-term forecasting, the businessmen should know about the long-term demand for the product. Planning of a new plant or expansion of an existing unit depends on long-term demand. Similarly a multi product firm must take into account the demand for different items. When forecast are made covering long periods, the probability of error is high. It is very difficult to forecast the production, the trend of prices and the nature of competition. Hence quality and competent forecasts are essential.

Prof. C. I. Savage and T.R. Small classify demand forecasting into time types. They are 1. Economic forecasting, 2. Industry forecasting, 3. Firm level forecasting. Economic forecasting is concerned with the economics, while industrial level forecasting is used for inter-industry comparisons and is being supplied by trade association or chamber of commerce. Firm level forecasting relates to individual firm.

Methods of forecasting:

Several methods are employed for forecasting demand. All these methods can be grouped under survey method and statistical method. Survey methods and statistical methods are further subdivided in to different categories.

1. Survey Method:

Under this method, information about the desires of the consumer and opinion of experts are collected by interviewing them. Survey method can be divided into four types viz., Opinion survey method; expert opinion; Delphi method and consumers interview methods.

a. Opinion survey method:

This method is also known as sales-force composite method (or) collective opinion method. Under this method, the company asks its salesman to submit estimate of future sales in their respective territories. Since the forecasts of the salesmen are biased due to their optimistic or pessimistic attitude ignorance about economic developments etc. these estimates are consolidated, reviewed and adjusted by the top executives. In case of wide differences, an average is struck to make the forecasts realistic.

This method is more useful and appropriate because the salesmen are more knowledgeable. They can be an important source of information. They are cooperative. The implementation within unbiased or their bias can be corrected.

B. Expert opinion method:

Apart from salesmen and consumers, distributors or outside experts may also be used for forecasting. In the United States of America, the automobile companies get sales estimates directly from their dealers. Firms in advanced countries make use of outside experts for estimating future demand. Various public and private agencies all periodic forecasts of short or long term business conditions.

C. Delphi Method:

A variant of the survey method is Delphi method. It is a sophisticated method to arrive at a consensus. Under this method, a panel is selected to give suggestions to solve the problems in hand. Both internal and external experts can be the members of the panel. Panel members are kept apart from each other and express their views in an anonymous manner. There is also a coordinator who acts as an intermediary among the panelists. He prepares the questionnaire and sends it to the panelist. At the end of each round, he prepares a summary report. On the basis of the summary report the panel members have to give suggestions. This method has been used in the area of technological forecasting. It has proved more popular in forecasting. It has proved more popular in forecasting non-economic rather than economic variables.

D. Consumers interview method:

In this method the consumers are contacted personally to know about their plans and preference regarding the consumption of the product. A list of all potential buyers would be drawn and each buyer will be approached and asked how much he plans to buy the listed product in future. He would be asked the proportion in which he intends to buy. This method seems to be the most ideal method for forecasting demand.

2. Statistical Methods:

Statistical method is used for long run forecasting. In this method, statistical and mathematical techniques are used to forecast demand. This method relies on past data.

a. Time series analysis or trend projection methods:

A well-established firm would have accumulated data. These data are analyzed to determine the nature of existing trend. Then, this trend is projected in to the future and the results are used as the basis for forecast. This is called as time series analysis. This data can be presented either in a tabular form or a graph. In the time series past data of sales are used to forecast future.

b. Barometric Technique:

Simple trend projections are not capable of forecasting turning points. Under Barometric method, present events are used to predict the directions of change in future. This is done with the help of economics and

statistical indicators. Those are (1) Construction Contracts awarded for building materials (2) Personal income (3) Agricultural Income. (4) Employment (5) Gross national income (6) Industrial Production (7) Bank Deposits etc.

c. Regression and correlation method:

Regression and correlation are used for forecasting demand. Based on past data the future data trend is forecasted. If the functional relationship is analyzed with the independent variable it is simple correlation. When there are several independent variables it is multiple correlation. In correlation we analyze the nature of relation between the variables while in regression; the extent of relation between the variables is analyzed. The results are expressed in mathematical form. Therefore, it is called as econometric model building. The main advantage of this method is that it provides the values of the independent variables from within the model itself.

MALLA REDDY

UNIT - II

PRODUCTION FUNCTION

Introduction: The production function expresses a functional relationship between physical inputs and physical outputs of a firm at any particular time period. The output is thus a function of inputs. Mathematically production function can be written as

$$Q = f(A, B, C, D)$$

Where “Q” stands for the quantity of output and A, B, C, D are various input factors such as land, labour, capital and organization. Here output is the function of inputs. Hence output becomes the dependent variable and inputs are the independent variables.

The above function does not state by how much the output of “Q” changes as a consequence of change of variable inputs. In order to express the quantitative relationship between inputs and output, Production function has been expressed in a precise mathematical equation i.e.

$$Y = a + b(x)$$

Which shows that there is a constant relationship between applications of input (the only factor input ‘X’ in this case) and the amount of output (y) produced.

Importance:

1. When inputs are specified in physical units, production function helps to estimate the level of production.
2. It becomes is equates when different combinations of inputs yield the same level of output.
3. It indicates the manner in which the firm can substitute on input for another without altering the total output.
4. When price is taken into consideration, the production function helps to select the least combination of inputs for the desired output.
5. It considers two types’ input-output relationships namely ‘law of variable proportions’ and ‘law of returns to scale’. Law of variable propositions explains the pattern of output in the short-run as the units of variable inputs are increased to increase the output. On the other hand law of returns to scale explains the pattern of output in the long run as all the units of inputs are increased.
6. The production function explains the maximum quantity of output, which can be produced, from any chosen quantities of various inputs or the minimum quantities of various inputs that are required to produce a given quantity of output.

Production function can be fitted the particular firm or industry or for the economy as whole. Production function will change with an improvement in technology.

Assumptions:

Production function has the following assumptions.

1. The production function is related to a particular period of time.
2. There is no change in technology.
3. The producer is using the best techniques available.
4. The factors of production are divisible.
5. Production function can be fitted to a short run or to long run.

Cobb-Douglas production function:

Production function of the linear homogenous type is invented by Junt wicksell and first tested by C. W. Cobb and P. H. Douglas in 1928. This famous statistical production function is known as Cobb-Douglas production function. Originally the function is applied on the empirical study of the American manufacturing industry. Cobb – Douglas production function takes the following mathematical form.

$$Y = (AK^x L^{1-x})$$

Where Y=output

K=Capital

L=Labour

A, ∞ =positive constant

Assumptions:

It has the following assumptions

1. The function assumes that output is the function of two factors viz. capital and labour.
2. It is a linear homogenous production function of the first degree
3. The function assumes that the logarithm of the total output of the economy is a linear function of the logarithms of the labour force and capital stock.
4. There are constant returns to scale
5. All inputs are homogenous
6. There is perfect competition
7. There is no change in technology

ISOQUANTS:

The term Isoquants is derived from the words 'iso' and 'quant' – 'Iso' means equal and 'quant' implies quantity. Isoquant therefore, means equal quantity. A family of iso-product curves or isoquants or production difference curves can represent a production function with two variable inputs, which are substitutable for one another within limits.

Isoquants are the curves, which represent the different combinations of inputs producing a particular quantity of output. Any combination on the isoquant represents the same level of output.

For a given output level firm's production become,

$$Q = f(L, K)$$

Where 'Q', the units of output is a function of the quantity of two inputs 'L' and 'K'.

Thus an isoquant shows all possible combinations of two inputs, which are capable of producing equal or a given level of output. Since each combination yields same output, the producer becomes indifferent towards these combinations.

Assumptions:

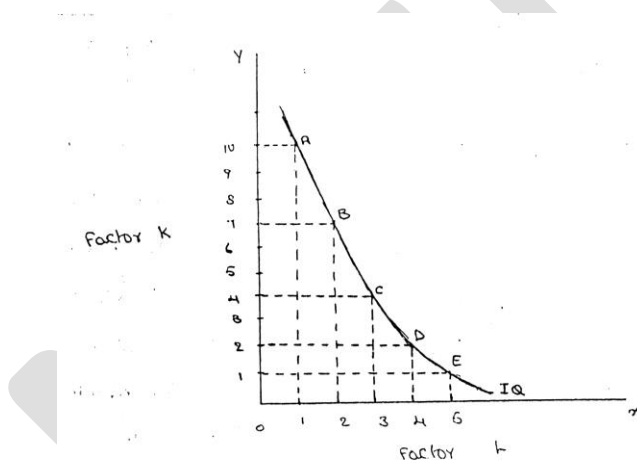
1. There are only two factors of production, viz. labour and capital.
2. The two factors can substitute each other up to certain limit

3. The shape of the isoquant depends upon the extent of substitutability of the two inputs.
4. The technology is given over a period.

An isoquant may be explained with the help of an arithmetical example.

Combinations	Labour (units)	Capital (Units)	Output (quintals)
A	1	10	50
B	2	7	50
C	3	4	50
D	4	4	50
E	5	1	50

Combination 'A' represent 1 unit of labour and 10 units of capital and produces '50' quintals of a product all other combinations in the table are assumed to yield the same given output of a product say '50' quintals by employing any one of the alternative combinations of the two factors labour and capital. If we plot all these combinations on a paper and join them, we will get continues and smooth curve called Iso-product curve as shown below.



Labour is on the X-axis and capital is on the Y-axis. IQ is the ISO-Product curve which shows all the alternative combinations A, B, C, D, E which can produce 50 quintals of a product.

Producer's Equilibrium:

The term producer's equilibrium is the counter part of consumer's equilibrium. Just as the consumer is in equilibrium when he secures maximum satisfaction, in the same manner, the producer is in equilibrium when he secures maximum output, with the least cost combination of factors of production.

The optimum position of the producer can be found with the help of iso-product curve. The Iso-product curve or equal product curve or production indifference curve shows different combinations of two factors of production, which yield the same output. This is illustrated as follows.

Let us suppose. The producer can produce the given output of paddy say 100 quintals by employing any one of the following alternative combinations of the two factors labour and capital computation of least cost combination of two inputs.

L Units	K Units	Q Output	L&LP (3Rs.) Cost of labour	KXKP(4Rs.) cost of capital	Total cost
10	45	100	30	180	210
20	28	100	60	112	172
30	16	100	90	64	154
40	12	100	120	48	168
50	8	100	150	32	182

It is clear from the above that 10 units of 'L' combined with 45 units of 'K' would cost the producer Rs. 210/-. But if 10 units reduce 'K' and 10 units increase 'L', the resulting cost would be Rs. 172/-. Substituting 10 more units of 'L' for 12 units of 'K' further reduces cost to Rs. 154/-/ However, it will not be profitable to continue this substitution process further at the existing prices since the rate of substitution is diminishing rapidly. In the above table the least cost combination is 30 units of 'L' used with 16 units of 'K' when the cost would be minimum at Rs. 154/-. So this is the stage "the producer is in equilibrium".

LAW OF PRODUCTION:

Production analysis in economics theory considers two types of input-output relationships.

1. When quantities of certain inputs, are fixed and others are variable and
2. When all inputs are variable.

These two types of relationships have been explained in the form of laws.

- i) Law of variable proportions
- ii) Law of returns to scale

I. Law of variable proportions:

The law of variable proportions which is a new name given to old classical concept of "Law of diminishing returns" has played a vital role in the modern economics theory. Assume that a firm's production function consists of fixed quantities of all inputs (land, equipment, etc.) except labour which is a variable input when the firm expands output by employing more and more labour it alters the proportion between fixed and the variable inputs. The law can be stated as follows:

"When total output or production of a commodity is increased by adding units of a variable input while the quantities of other inputs are held constant, the increase in total production becomes after some point, smaller and smaller".

“If equal increments of one input are added, the inputs of other production services being held constant, beyond a certain point the resulting increments of product will decrease i.e. the marginal product will diminish”. (G. Stigler)

“As the proportion of one factor in a combination of factors is increased, after a point, first the marginal and then the average product of that factor will diminish”. (F. Benham)

The law of variable proportions refers to the behaviour of output as the quantity of one Factor is increased Keeping the quantity of other factors fixed and further it states that the marginal product and average product will eventually do cline. This law states three types of productivity an input factor – Total, average and marginal physical productivity.

Assumptions of the Law: The law is based upon the following assumptions:

- i) The state of technology remains constant. If there is any improvement in technology, the average and marginal out put will not decrease but increase.
- ii) Only one factor of input is made variable and other factors are kept constant. This law does not apply to those cases where the factors must be used in rigidly fixed proportions.
- iii) All units of the variable factors are homogenous.

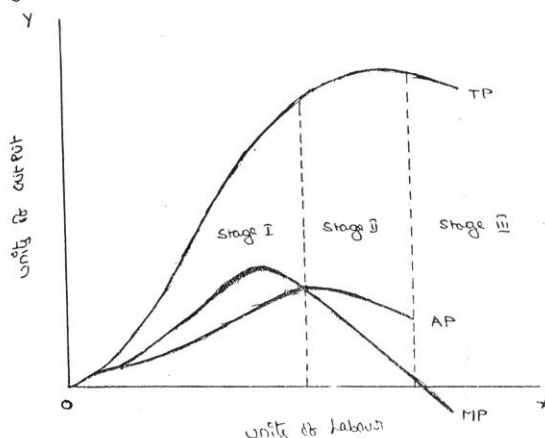
Three stages of law:

The behaviors of the Output when the varying quantity of one factor is combines with a fixed quantity of the other can be divided in to three district stages. The three stages can be better understood by following the table.

Fixed factor	Variable factor (Labour)	Total product	Average Product	Marginal Product	
1	1	100	100	-	Stage I
1	2	220	120	120	
1	3	270	90	50	
1	4	300	75	30	Stage II
1	5	320	64	20	
1	6	330	55	10	
1	7	330	47	0	Stage III
1	8	320	40	-10	

Above table reveals that both average product and marginal product increase in the beginning and then decline of the two marginal products drops of faster than average product. Total product is maximum when the farmer employs 6th worker, nothing is produced by the 7th worker and its marginal productivity is zero, whereas marginal product of 8th worker is '-10', by just creating credits 8th worker not only fails to make a positive total output.

Production the remaining



function with one variable input and fixed inputs is illustrated as below

From the above graph the law of variable proportions operates in three stages. In the first stage, total product increases at an increasing rate. The marginal product in this stage increases at an increasing rate resulting in a greater increase in total product. The average product also increases. This stage continues up to the point where average product is equal to marginal product. The law of increasing returns is in operation at this stage. The law of diminishing returns starts operating from the second stage onwards. At the second stage total product increases only at a diminishing rate. The average product also declines. The second stage comes to an end where total product becomes maximum and marginal product becomes zero. The marginal product becomes negative in the third stage. So the total product also declines. The average product continues to decline.

We can sum up the above relationship thus when 'A.P.' is rising, "M. P.' rises more than " A. P; When 'A. P.'" is maximum and constant, 'M. P.' becomes equal to 'A. P.' when 'A. P.' starts falling, 'M. P.' falls faster than 'A. P.'.

Thus, the total product, marginal product and average product pass through three phases, viz., increasing diminishing and negative returns stage. The law of variable proportion is nothing but the combination of the law of increasing and demising returns.

II. Law of Returns of Scale:

The law of returns to scale explains the behavior of the total output in response to change in the scale of the firm, i.e., in response to a simultaneous to changes in the scale of the firm, i.e., in response to a simultaneous and proportional increase in all the inputs. More precisely, the Law of returns to scale explains how a simultaneous and proportionate increase in all the inputs affects the total output at its various levels.

The concept of variable proportions is a short-run phenomenon as in these period fixed factors can not be changed and all factors cannot be changed. On the other hand in the long-term all factors can be changed as made variable. When we study the changes in output when all factors or inputs are changed, we study returns to scale. An increase in the scale means that all inputs or factors are increased in the same proportion. In variable proportions, the cooperating factors may be increased or decreased and one faster (Ex. Land in agriculture (or) machinery in industry) remains constant so that the changes in proportion among the factors result in certain changes in output. In returns to scale all the necessary factors or production are increased or decreased to the same extent so that whatever the scale of production, the proportion among the factors remains the same.

When a firm expands, its scale increases all its inputs proportionally, then technically there are three possibilities. (i) The total output may increase proportionately (ii) The total output may increase more than

proportionately and (iii) The total output may increase less than proportionately. If increase in the total output is proportional to the increase in input, it means constant returns to scale. If increase in the output is greater than the proportional increase in the inputs, it means increasing return to scale. If increase in the output is less than proportional increase in the inputs, it means diminishing returns to scale.

Let us now explain the laws of returns to scale with the help of isoquants for a two-input and single output production system.

ECONOMIES OF SCALE

Production may be carried on a small scale or on a large scale by a firm. When a firm expands its size of production by increasing all the factors, it secures certain advantages known as economies of production. Marshall has classified these economies of large-scale production into internal economies and external economies.

Internal economies are those, which are opened to a single factory or a single firm independently of the action of other firms. They result from an increase in the scale of output of a firm and cannot be achieved unless output increases. Hence internal economies depend solely upon the size of the firm and are different for different firms.

External economies are those benefits, which are shared in by a number of firms or industries when the scale of production in an industry or groups of industries increases. Hence external economies benefit all firms within the industry as the size of the industry expands.

Causes of internal economies:

Internal economies are generally caused by two factors

1. Indivisibilities
2. Specialization.

1. Indivisibilities

Many fixed factors of production are indivisible in the sense that they must be used in a fixed minimum size. For instance, if a worker works half the time, he may be paid half the salary. But he cannot be chopped into half and asked to produce half the current output. Thus as output increases the indivisible factors which were being used below capacity can be utilized to their full capacity thereby reducing costs. Such indivisibilities arise in the case of labour, machines, marketing, finance and research.

2. Specialization.

Division of labour, which leads to specialization, is another cause of internal economies. Specialization refers to the limitation of activities within a particular field of production. Specialization may be in labour, capital, machinery and place. For example, the production process may be split into four departments relation to manufacturing, assembling, packing and marketing under the charge of separate managers who may work under the overall charge of the general manager and coordinate the activities of the four departments. Thus specialization will lead to greater productive efficiency and to reduction in costs.

Internal Economies:

Internal economies may be of the following types.

A). Technical Economies.

Technical economies arise to a firm from the use of better machines and superior techniques of production. As a result, production increases and per unit cost of production falls. A large firm, which employs costly and superior plant and equipment, enjoys a technical superiority over a small firm. Another technical economy lies in the mechanical advantage of using large machines. The cost of operating large machines is less than that of operating small machine. More over a larger firm is able to reduce its per unit cost of production by linking the various processes of production. Technical economies may also be associated when the large firm is able to utilize all its waste materials for the development of by-products industry. Scope for specialization is also available in a large firm. This increases the productive capacity of the firm and reduces the unit cost of production.

B). Managerial Economies:

These economies arise due to better and more elaborate management, which only the large size firms can afford. There may be a separate head for manufacturing, assembling, packing, marketing, general administration etc. Each department is under the charge of an expert. Hence the appointment of experts, division of administration into several departments, functional specialization and scientific co-ordination of various works make the management of the firm most efficient.

C). Marketing Economies:

The large firm reaps marketing or commercial economies in buying its requirements and in selling its final products. The large firm generally has a separate marketing department. It can buy and sell on behalf of the firm, when the market trends are more favorable. In the matter of buying they could enjoy advantages like preferential treatment, transport concessions, cheap credit, prompt delivery and fine relation with dealers. Similarly it sells its products more effectively for a higher margin of profit.

D). Financial Economies:

The large firm is able to secure the necessary finances either for block capital purposes or for working capital needs more easily and cheaply. It can borrow from the public, banks and other financial institutions at relatively cheaper rates. It is in this way that a large firm reaps financial economies.

E). Risk bearing Economies:

The large firm produces many commodities and serves wider areas. It is, therefore, able to absorb any shock for its existence. For example, during business depression, the prices fall for every firm. There is also a possibility for market fluctuations in a particular product of the firm. Under such circumstances the risk-bearing economies or survival economies help the bigger firm to survive business crisis.

F). Economies of Research:

A large firm possesses larger resources and can establish its own research laboratory and employ trained research workers. The firm may even invent new production techniques for increasing its output and reducing cost.

G). Economies of welfare:

A large firm can provide better working conditions in-and out-side the factory. Facilities like subsidized canteens, crèches for the infants, recreation room, cheap houses, educational and medical facilities tend to increase the productive efficiency of the workers, which helps in raising production and reducing costs.

External Economies.

Business firm enjoys a number of external economies, which are discussed below:

A). Economies of Concentration:

When an industry is concentrated in a particular area, all the member firms reap some common economies like skilled labour, improved means of transport and communications, banking and financial services, supply of power and benefits from subsidiaries. All these facilities tend to lower the unit cost of production of all the firms in the industry.

B). Economies of Information

The industry can set up an information centre which may publish a journal and pass on information regarding the availability of raw materials, modern machines, export potentialities and provide other information needed by the firms. It will benefit all firms and reduction in their costs.

C). Economies of Welfare:

An industry is in a better position to provide welfare facilities to the workers. It may get land at concessional rates and procure special facilities from the local bodies for setting up housing colonies for the workers. It may also establish public health care units, educational institutions both general and technical so that a continuous supply of skilled labour is available to the industry. This will help the efficiency of the workers.

D). Economies of Disintegration:

The firms in an industry may also reap the economies of specialization. When an industry expands, it becomes possible to split up some of the processes which are taken over by specialist firms. For example, in the cotton textile industry, some firms may specialize in manufacturing thread, others in printing, still others in dyeing, some in long cloth, some in dhotis, some in shirting etc. As a result the efficiency of the firms specializing in different fields increases and the unit cost of production falls.

Thus internal economies depend upon the size of the firm and external economies depend upon the size of the industry.

DISECONOMIES OF LARGE SCALE PRODUCTION

Internal and external diseconomies are the limits to large-scale production. It is possible that expansion of a firm's output may lead to rise in costs and thus result diseconomies instead of economies. When a firm expands beyond proper limits, it is beyond the capacity of the manager to manage it efficiently. This is an example of an internal diseconomy. In the same manner, the expansion of an industry may result in diseconomies, which may be called external diseconomies. Employment of additional factors of production becomes less efficient and they are obtained at a higher cost. It is in this way that external diseconomies result as an industry expands.

The major diseconomies of large-scale production are discussed below:

Internal Diseconomies:

A). Financial Diseconomies:

For expanding business, the entrepreneur needs finance. But finance may not be easily available in the required amount at the appropriate time. Lack of finance retards the production plans thereby increasing costs of the firm.

B). Managerial diseconomies:

There are difficulties of large-scale management. Supervision becomes a difficult job. Workers do not work efficiently, wastages arise, decision-making becomes difficult, coordination between workers and management disappears and production costs increase.

C). Marketing Diseconomies:

As business is expanded, prices of the factors of production will rise. The cost will therefore rise. Raw materials may not be available in sufficient quantities due to their scarcities. Additional output may depress the price in the market. The demand for the products may fall as a result of changes in tastes and preferences of the people. Hence cost will exceed the revenue.

D). Technical Diseconomies:

There is a limit to the division of labour and splitting down of production processes. The firm may fail to operate its plant to its maximum capacity. As a result cost per unit increases. Internal diseconomies follow.

E). Diseconomies of Risk-taking:

As the scale of production of a firm expands risks also increase with it. Wrong decision by the management may adversely affect production. In large firms are affected by any disaster, natural or human, the economy will be put to strains.

External Diseconomies:

When many firm get located at a particular place, the costs of transportation increases due to congestion. The firms have to face considerable delays in getting raw materials and sending finished products to the marketing centers. The localization of industries may lead to scarcity of raw material, shortage of various factors of production like labour and capital, shortage of power, finance and equipments. All such external diseconomies tend to raise cost per unit.

COST ANALYSIS

Profit is the ultimate aim of any business and the long-run prosperity of a firm depends upon its ability to earn sustained profits. Profits are the difference between selling price and cost of production. In general the selling price is not within the control of a firm but many costs are under its control. The firm should therefore aim at controlling and minimizing cost. Since every business decision involves cost consideration, it is necessary to understand the meaning of various concepts for clear business thinking and application of right kind of costs.

COST CONCEPTS:

A managerial economist must have a clear understanding of the different cost concepts for clear business thinking and proper application. The several alternative bases of classifying cost and the relevance of each for different kinds of problems are to be studied. The various relevant concepts of cost are:

1. Opportunity costs and outlay costs:

Out lay cost also known as actual costs obsolete costs are those expends which are actually incurred by the firm these are the payments made for labour, material, plant, building, machinery traveling, transporting etc., These are all those expense item appearing in the books of account, hence based on accounting cost concept.

On the other hand opportunity cost implies the earnings foregone on the next best alternative, has the present option is undertaken. This cost is often measured by assessing the alternative, which has to be scarified if the particular line is followed.

The opportunity cost concept is made use for long-run decisions. This concept is very important in capital expenditure budgeting. This concept is very important in capital expenditure budgeting. The concept is also useful for taking short-run decisions opportunity cost is the cost concept to use when the supply of inputs is strictly limited and when there is an alternative. If there is no alternative, Opportunity cost is zero. The opportunity cost of any action is therefore measured by the value of the most favorable alternative course, which had to be foregoing if that action is taken.

2. Explicit and implicit costs:

Explicit costs are those expenses that involve cash payments. These are the actual or business costs that appear in the books of accounts. These costs include payment of wages and salaries, payment for raw-materials, interest on borrowed capital funds, rent on hired land, Taxes paid etc.

Implicit costs are the costs of the factor units that are owned by the employer himself. These costs are not actually incurred but would have been incurred in the absence of employment of self – owned factors. The two normal implicit costs are depreciation, interest on capital etc. A decision maker must consider implicit costs too to find out appropriate profitability of alternatives.

3. Historical and Replacement costs:

Historical cost is the original cost of an asset. Historical cost valuation shows the cost of an asset as the original price paid for the asset acquired in the past. Historical valuation is the basis for financial accounts.

A replacement cost is the price that would have to be paid currently to replace the same asset. During periods of substantial change in the price level, historical valuation gives a poor projection of the future cost intended for managerial decision. A replacement cost is a relevant cost concept when financial statements have to be adjusted for inflation.

4. Short – run and long – run costs:

Short-run is a period during which the physical capacity of the firm remains fixed. Any increase in output during this period is possible only by using the existing physical capacity more extensively. So short run cost is that which varies with output when the plant and capital equipment in constant.

Long run costs are those, which vary with output when all inputs are variable including plant and capital equipment. Long-run cost analysis helps to take investment decisions.

5. Out-of pocket and books costs:

Out-of pocket costs also known as explicit costs are those costs that involve current cash payment. Book costs also called implicit costs do not require current cash payments. Depreciation, unpaid interest, salary of the owner is examples of back costs.

But the book costs are taken into account in determining the level dividend payable during a period. Both book costs and out-of-pocket costs are considered for all decisions. Book cost is the cost of self-owned factors of production.

6. Fixed and variable costs:

Fixed cost is that cost which remains constant for a certain level to output. It is not affected by the changes in the volume of production. But fixed cost per unit decrease, when the production is increased. Fixed cost includes salaries, Rent, Administrative expenses depreciations etc.

Variable is that which varies directly with the variation in output. An increase in total output results in an increase in total variable costs and decrease in total output results in a proportionate decline in the total variable costs. The variable cost per unit will be constant. Ex: Raw materials, labour, direct expenses, etc.

7. Post and Future costs:

Post costs also called historical costs are the actual cost incurred and recorded in the book of account these costs are useful only for valuation and not for decision making.

Future costs are costs that are expected to be incurred in the future. They are not actual costs. They are the costs forecasted or estimated with rational methods. Future cost estimate is useful for decision making because decision are meant for future.

8. Traceable and common costs:

Traceable costs otherwise called direct cost, is one, which can be identified with a product's process or product. Raw material, labour involved in production is examples of traceable cost.

Common costs are the ones that are common and are attributed to a particular process or product. They are incurred collectively for different processes or different types of products. It cannot be directly identified with any particular process or type of product.

9. Avoidable and unavoidable costs:

Avoidable costs are the costs, which can be reduced if the business activities of a concern are curtailed. For example, if some workers can be retrenched with a drop in a product – line, or volume or production the wages of the retrenched workers are escapable costs.

The unavoidable costs are otherwise called sunk costs. There will not be any reduction in this cost even if reduction in business activity is made. For example cost of the ideal machine capacity is unavoidable cost.

10. Controllable and uncontrollable costs:

Controllable costs are ones, which can be regulated by the executive who is in charge of it. The concept of controllability of cost varies with levels of management. Direct expenses like material, labour etc. are controllable costs.

Some costs are not directly identifiable with a process of product. They are apportioned to various processes or products in some proportion. This cost varies with the variation in the basis of allocation and is independent of the actions of the executive of that department. These apportioned costs are called uncontrollable costs.

11. Incremental and sunk costs:

Incremental cost also known as differential cost is the additional cost due to a change in the level or nature of business activity. The change may be caused by adding a new product, adding new machinery, replacing a machine by a better one etc.

Sunk costs are those which are not altered by any change – They are the costs incurred in the past. This cost is the result of past decision, and cannot be changed by future decisions. Investments in fixed assets are examples of sunk costs.

12. Total, average and marginal costs:

Total cost is the total cash payment made for the input needed for production. It may be explicit or implicit. It is the sum total of the fixed and variable costs. Average cost is the cost per unit of output. It is obtained by dividing the total cost (TC) by the total quantity produced (Q)

$$\text{Average cost} = \frac{\text{TC}}{\text{Q}}$$

Marginal cost is the additional cost incurred to produce an additional unit of output or it is the cost of the marginal unit produced.

13. Accounting and Economics costs:

Accounting costs are the costs recorded for the purpose of preparing the balance sheet and profit and loss statements to meet the legal, financial and tax purpose of the company. The accounting concept is a historical concept and records what has happened in the past.

Economics concept considers future costs and future revenues, which help future planning, and choice, while the accountant describes what has happened, the economics aims at projecting what will happen.

COST-OUTPUT RELATIONSHIP

A proper understanding of the nature and behavior of costs is a must for regulation and control of cost of production. The cost of production depends on money forces and an understanding of the functional relationship of cost to various forces will help us to take various decisions. Output is an important factor, which influences the cost.

The cost-output relationship plays an important role in determining the optimum level of production. Knowledge of the cost-output relation helps the manager in cost control, profit prediction, pricing, promotion etc. The relation between cost and its determinants is technically described as the cost function.

$$C = f(S, O, P, T \dots)$$

Where;

C= Cost (Unit or total cost)

S= Size of plant/scale of production

O= Output level

P= Prices of inputs

T= Technology

Considering the period the cost function can be classified as (a) short-run cost function and (b) long-run cost function. In economics theory, the short-run is defined as that period during which the physical capacity of the firm is fixed and the output can be increased only by using the existing capacity allows to bring changes in output by physical capacity of the firm.

(a) Cost-Output Relation in the short-run:

The cost concepts made use of in the cost behavior are total cost, Average cost, and marginal cost.

Total cost is the actual money spent to produce a particular quantity of output. Total cost is the summation of fixed and variable costs.

$$TC = TFC + TVC$$

Up to a certain level of production total fixed cost i.e., the cost of plant, building, equipment etc, remains fixed. But the total variable cost i.e., the cost of labour, raw materials etc., Vary with the variation in output.

Average cost is the total cost per unit. It can be found out as follows.

$$AC = \frac{TC}{Q}$$

The total of average fixed cost (TFC/Q) keep coming down as the production is increased and average variable cost (TVC/Q) will remain constant at any level of output.

Marginal cost is the addition to the total cost due to the production of an additional unit of product. It can be arrived at by dividing the change in total cost by the change in total output.

In the short-run there will not be any change in total fixed cost. Hence change in total cost implies change in total variable cost only.

Cost – output relations

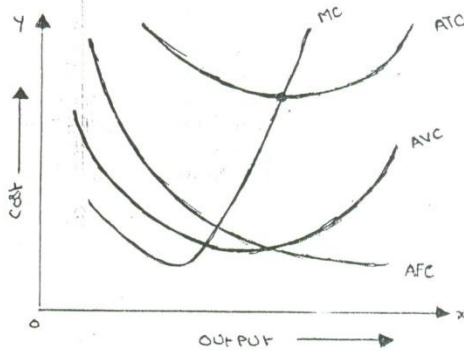
Units of Output Q	Total fixed cost TFC	Total variable cost TVC	Total cost (TFC + TVC) TC	Average variable cost (TVC / Q) AVC	Average fixed cost (TFC / Q) AFC	Average cost (TC/Q) AC	Marginal cost MC
0	-	-	60	-	-	-	-
1	60	20	80	20	60	80	20
2	60	36	96	18	30	48	16
3	60	48	108	16	20	36	12
4	60	64	124	16	15	31	16
5	60	90	150	18	12	30	26
6	60	132	192	22	10	32	42

The above table represents the cost-output relation. The table is prepared on the basis of the law of diminishing marginal returns. The fixed cost Rs. 60 May include rent of factory building, interest on capital, salaries of permanently employed staff, insurance etc. The table shows that fixed cost is same at all levels of output but the average fixed cost, i.e., the fixed cost per unit, falls continuously as the output increases. The expenditure on the variable factors (TVC) is at different rate. If more and more units are produced with a given physical capacity the AVC will fall initially, as per the table declining up to 3rd unit, and being constant up to 4th unit and then rising. It implies that variable factors produce more efficiently near a firm's optimum capacity than at any other levels of output.

And later rises. But the rise in AC is felt only after the start rising. In the table 'AVC' starts rising from the 5th unit onwards whereas the 'AC' starts rising from the 6th unit only so long as 'AVC' declines 'AC' also will decline. 'AFC' continues to fall with an increase in Output. When the rise in 'AVC' is more than the decline in 'AFC', the total cost again begin to rise. Thus there will be a stage where the 'AVC', the total cost again begin to rise thus there will be a stage where the 'AVC' may have started rising, yet the 'AC' is still declining because the rise in 'AVC' is less than the droop in 'AFC'.

Thus the table shows an increasing returns or diminishing cost in the first stage and diminishing returns or diminishing cost in the second stage and followed by diminishing returns or increasing cost in the third stage.

The short-run cost-output relationship can be shown graphically as follows.



In the above graph the "AFC" curve continues to fall as output rises an account of its spread over more and more units Output. But AVC curve (i.e. variable cost per unit) first falls and than rises due to the operation of the law of variable proportions. The behavior of "ATC" curve depends upon the behavior of 'AVC' curve and 'AFC' curve. In the initial stage of production both 'AVC' and 'AFC' decline and hence 'ATC' also decline. But after a certain point 'AVC' starts rising. If the rise in variable cost is less than the decline in fixed cost, ATC will still continue to decline otherwise AC begins to rise. Thus the lower end of 'ATC' curve thus turns up and gives it a U-shape. That is why 'ATC' curve are U-shaped. The lowest point in 'ATC' curve indicates the least-cost combination of inputs. Where the total average cost is the minimum and where the "MC" curve intersects 'AC' curve, It is not be the maximum output level rather it is the point where per unit cost of production will be at its lowest.

The relationship between 'AVC', 'AFC' and 'ATC' can be summarized up as follows:

1. If both AFC and 'AVC' fall, 'ATC' will also fall.
2. When 'AFC' falls and 'AVC' rises
 - a. 'ATC' will fall where the drop in 'AFC' is more than the raise in 'AVC'.
 - b. 'ATC' remains constant is the drop in 'AFC' = rise in 'AVC'
 - c. 'ATC' will rise where the drop in 'AFC' is less than the rise in 'AVC'

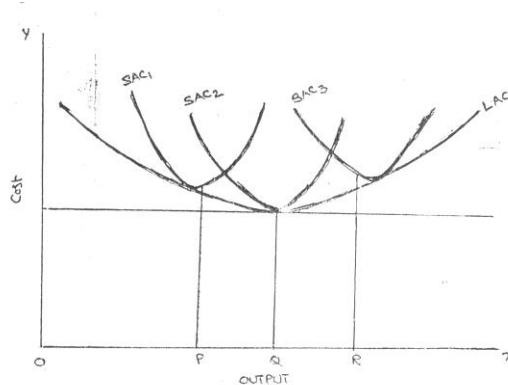
b. Cost-output Relationship in the long-run:

Long run is a period, during which all inputs are variable including the one, which are fixes in the short-run. In the long run a firm can change its output according to its demand. Over a long period, the size of the plant can be changed, unwanted buildings can be sold staff can be increased or reduced. The long run enables the firms to expand and scale of their operation by bringing or purchasing larger quantities of all the inputs. Thus in the long run all factors become variable.

The long-run cost-output relations therefore imply the relationship between the total cost and the total output. In the long-run cost-output relationship is influenced by the law of returns to scale.

In the long run a firm has a number of alternatives in regards to the scale of operations. For each scale of production or plant size, the firm has an appropriate short-run average cost curves. The short-run average cost (SAC) curve applies to only one plant whereas the long-run average cost (LAC) curve takes in to consideration many plants.

The long-run cost-output relationship is shown graphically with the help of 'LCA' curve.



To draw on 'LAC' curve we have to start with a number of 'SAC' curves. In the above figure it is assumed that technologically there are only three sizes of plants – small, medium and large, 'SAC', for the small size, 'SAC1' for the medium size plant and 'SAC3' for the large size plant. If the firm wants to produce 'OP' units of output, it will choose the smallest plant. For an output beyond 'OQ' the firm will choose optimum for medium size plant. It does not mean that the OQ production is not possible with small plant. Rather it implies that cost of production will be more with small plant compared to the medium plant.

For an output 'OR' the firm will choose the largest plant as the cost of production will be more with medium plant. Thus the firm has a series of 'SAC' curves. The 'LAC' curve drawn will be tangential to the entire family of 'SAC' curves i.e. the 'LAC' curve touches each 'SAC' curve at one point, and thus it is known as envelope curve. It is also known as planning curve as it serves as guide to the entrepreneur in his planning to expand the production in future. With the help of 'LAC' the firm determines the size of plant which yields the lowest average cost of producing a given volume of output it anticipates.

BREAKEVEN ANALYSIS

The study of cost-volume-profit relationship is often referred as BEA. The term BEA is interpreted in two senses. In its narrow sense, it is concerned with finding out BEP; BEP is the point at which total revenue is equal to total cost. It is the point of no profit, no loss. In its broad sense, it determines the probable profit at any level of production.

Assumptions:

1. All costs are classified into two – fixed and variable.
2. Fixed costs remain constant at all levels of output.
3. Variable costs vary proportionally with the volume of output.
4. Selling price per unit remains constant in spite of competition or change in the volume of production.
5. There will be no change in operating efficiency.
6. There will be no change in the general price level.
7. Volume of production is the only factor affecting the cost.
8. Volume of sales and volume of production are equal. Hence there is no unsold stock.
9. There is only one product or in the case of multiple products. Sales mix remains constant.

Merits:

1. Information provided by the Break Even Chart can be understood more easily than those contained in the profit and Loss Account and the cost statement.
2. Break Even Chart discloses the relationship between cost, volume and profit. It reveals how changes in profit. So, it helps management in decision-making.
3. It is very useful for forecasting costs and profits long term planning and growth
4. The chart discloses profits at various levels of production.
5. It serves as a useful tool for cost control.
6. It can also be used to study the comparative plant efficiencies of the industry.
7. Analytical Break-even chart present the different elements, in the costs – direct material, direct labour, fixed and variable overheads.

Demerits:

1. Break-even chart presents only cost volume profits. It ignores other considerations such as capital amount, marketing aspects and effect of government policy etc., which are necessary in decision making.
2. It is assumed that sales, total cost and fixed cost can be represented as straight lines. In actual practice, this may not be so.
3. It assumes that profit is a function of output. This is not always true. The firm may increase the profit without increasing its output.
4. A major draw back of BEC is its inability to handle production and sale of multiple products.
5. It is difficult to handle selling costs such as advertisement and sale promotion in BEC.
6. It ignores economics of scale in production.
7. Fixed costs do not remain constant in the long run.
8. Semi-variable costs are completely ignored.
9. It assumes production is equal to sale. It is not always true because generally there may be opening stock.
10. When production increases variable cost per unit may not remain constant but may reduce on account of bulk buying etc.
11. The assumption of static nature of business and economic activities is a well-known defect of BEC.

IMPORTANT CONCEPTS FOR BREAK EVEN ANALYSIS

1. Fixed cost
2. Variable cost
3. Contribution
4. Margin of safety
5. Angle of incidence
6. Profit volume ratio
7. Break-Even-Point

1. **Fixed cost:** Expenses that do not vary with the volume of production are known as fixed expenses. Eg. Manager's salary, rent and taxes, insurance etc. It should be noted that fixed changes are fixed only within a certain range of plant capacity. The concept of fixed overhead is most useful in formulating a price fixing policy. Fixed cost per unit is not fixed.
2. **Variable Cost:** Expenses that vary almost in direct proportion to the volume of production of sales are called variable expenses. Eg. Electric power and fuel, packing materials consumable stores. It should be noted that variable cost per unit is fixed.
3. **Contribution:** Contribution is the difference between sales and variable costs and it contributed towards fixed costs and profit. It helps in sales and pricing policies and measuring the profitability of different proposals. Contribution is a sure test to decide whether a product is worthwhile to be continued among different products.

$$\text{Contribution} = \text{Sales} - \text{Variable cost}$$

$$\text{Contribution} = \text{Fixed Cost} + \text{Profit.}$$

4. **Margin of safety:** Margin of safety is the excess of sales over the break even sales. It can be expressed in absolute sales amount or in percentage. It indicates the extent to which the sales can be reduced without resulting in loss. A large margin of safety indicates the soundness of the business. The formula for the margin of safety is:

$$\text{Present sales} - \text{Break even sales} \quad \text{or} \quad \frac{\text{Profit}}{\text{P. V. ratio}}$$

Margin of safety can be improved by taking the following steps.

1. Increasing production
 2. Increasing selling price
 3. Reducing the fixed or the variable costs or both
 4. Substituting unprofitable product with profitable one.
5. **Angle of incidence:** This is the angle between sales line and total cost line at the Break-even point. It indicates the profit earning capacity of the concern. Large angle of incidence indicates a high rate of profit; a small angle indicates a low rate of earnings. To improve this angle, contribution should be increased either by raising the selling price and/or by reducing variable cost. It also indicates as to what extent the output and sales price can be changed to attain a desired amount of profit.
 6. **Profit Volume Ratio** is usually called P. V. ratio. It is one of the most useful ratios for studying the profitability of business. The ratio of contribution to sales is the P/V ratio. It may be expressed in percentage. Therefore, every organization tries to improve the P. V. ratio of each product by reducing the variable cost per unit or by increasing the selling price per unit. The concept of P. V. ratio helps in determining break even-point, a desired amount of profit etc.

The formula is, $\frac{\text{Contribution}}{\text{Sales}} \times 100$

7. **Break – Even- Point:** If we divide the term into three words, then it does not require further explanation.
Break-divide
Even-equal

Point-place or position

Break Even Point refers to the point where total cost is equal to total revenue. It is a point of no profit, no loss. This is also a minimum point of no profit, no loss. This is also a minimum point of production where total costs are recovered. If sales go up beyond the Break Even Point, organization makes a profit. If they come down, a loss is incurred.

1. Break Even point (Units) = $\frac{\text{Fixed Expenses}}{\text{Contribution per unit}}$
2. Break Even point (In Rupees) = $\frac{\text{Fixed expenses}}{\text{Contribution}} \times \text{sales}$

FORMULAS IN B-E-P ANALYSIS

Profit = Total sales or Revenue – Total cost (or)
 Sales – (Fixed cost + Variable cost) (or)
 Sales – Fixed cost – variable cost

Contribution = Sales – Variable cost (or) Fixed Cost + Profit

$$\text{Contribution} = \text{Sales} - \text{V.C} = \text{F.C} + \text{Profit}$$

Variable cost or Marginal cost = Direct Material + Direct Labor + Direct Expenses

$$\text{B.E.P (Units)} = \frac{\text{Fixed cost (FC)}}{\text{Contribution(C)}} \quad \text{(Or) } \frac{\text{Fixed Cost}}{\text{Sales} - \text{variable cost}} \quad \text{(or) } \frac{\text{Fixed Cost}}{\text{F.C} + \text{profit}}$$

$$\text{B.E.P (Value or Rupees)} = \frac{\text{Fixed cost} \times \text{Sales}}{\text{Sales} - \text{variable cost}} \quad \text{(or) } \frac{\text{FC} \times \text{S}}{\text{Contribution}}$$

$$\text{B.E.P(value)} = \text{BEP in Units} \times \text{Selling price per unit}$$

$$\text{P/V Ratio or Profit/volume ratio} = \frac{\text{Contribution} \times 100}{\text{Sales}}$$

$$\text{P/v Ratio (when two years data given)} = \frac{\text{Change in profit} \times 100}{\text{Change in sales}}$$

$$\text{BEP is calculated with the help of P/V Ratio} = \frac{\text{Fixed cost}}{\text{P/v Ratio}}$$

F.C and V.C is calculated with help of following formulas:

$$\text{Fixed cost} = \text{Sales} \times \text{P/v Ratio} - \text{Profit}$$

$$\text{Variable cost} = \text{Sales} \times (1 - \text{P/v Ratio})$$

$$\text{Number of units required to earn Desired profit} = \frac{\text{Fixed Cost} + \text{Desired profit}}{\text{Contribution}}$$

$$\text{Sales required for Desired profit} = \frac{\text{Fixed cost} + \text{Desired profit} \times \text{Sales}}{\text{Sales} - \text{Variable Cost}}$$

$$\text{(or) with the help of p/v Ratio} = \frac{\text{Fixed cost} + \text{Desired profit}}{\text{P/V Ratio}}$$

$$\begin{aligned} \text{Margin of Safety (MOS)} &= \text{Actual sales} - \text{BEP sales (or)} \\ &= \frac{\text{Profit}}{\text{P/V Ratio}} \end{aligned}$$

$$\text{MOS Ratio} = \frac{\text{MOS}}{\text{Sales}} \times 100$$

Note: MOS is the safety margin how much output or sales level can fall before a business reaches its BEP.

PROBLEM ON BREAK-EVEN POINT ANALYSIS

1) From the following data calculate BEP .

Selling price per unit = 50 Rs.

Variable cost per unit = 30 Rs.

Fixed Cost = 200000 Rs.

Answer: 10000 Units

2) From the following information find out the amount of profit earned during the year

Fixed cost = 500000 Rs.

Selling price per unit = 15 Rs.

Variable cost per unit = 10 Rs.

Output level = 150000 units

Answer: 250000 Rs

3) From the following data, calculate Break-even point.

Sales = 800000 Rs.

Fixed Expenses 200000 RS

Variable expenses:

Direct material = 180000

Direct Labor = 120000

Other variable

Expenses = 100000

Total VC = 400000 Rs.

Answer: 400000 Rs

4) Calculate BEP with the help of following details:

Sales = 500000 Rs.

Fixed cost = 100000 Rs.

Profit = 150000 Rs.

Answer: 200000 Rs.

5) Calculate Margin of safety (MOS) and P/v ratio with the help of following data:

Sales = 300000 Rs.

Fixed Expenses = 75000 Rs.

Variable Expenses

Direct Material = 100000 Rs.

Direct Labor = 60000 Rs.

Direct expenses = 40000 Rs.

Answer: BEP = 225000 Rs.

MOS = 75000 Rs.

6) Determine the amount of fixed cost or expenses and also calculate BEP sales from the following particulars.

Sales = 500000 Rs.

Direct Material = 150000 Rs.

Direct labor = 120000 Rs.

Direct Expenses = 60000 Rs.

Profit = 70000 Rs.

Answer: Fixed Cost = 100000 Rs.

BEP sales = 294118 Rs.

UNIT-III

MARKETS AND NEW ECONOMIC ENVIRONMENT

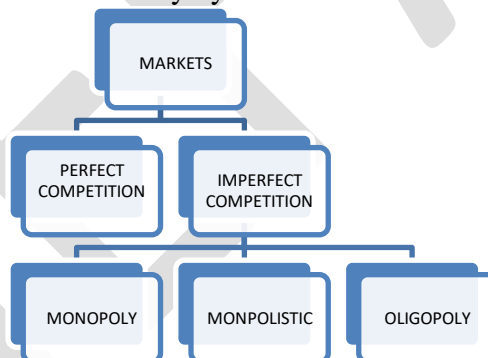
MARKET

Market is a place where buyer and seller meet, goods and services are offered for the sale and transfer of ownership occurs. A market may be also defined as the demand made by a certain group of potential buyers for a good or service. The former one is a narrow concept and later one, a broader concept. Economists describe a market as a collection of buyers and sellers who transact over a particular product. Broadly, market represents the structure and nature of buyers and sellers for a commodity/service and the process by which the price of the commodity or service is established.

Different Market Structures

Market structure describes the competitive environment in the market for any good or service. A market consists of all firms and individuals who are willing and able to buy or sell a particular product. This includes firms and individuals currently engaged in buying and selling a particular product, as well as potential entrants.

The determination of price is affected by the competitive structure of the market. This is because the firm operates in a market and not in isolation. In making decisions concerning economic variables it is affected, as are all institutions in society by its environment.



Perfect Competition

Perfect competition refers to a market structure where competition among the sellers and buyers prevails in its most perfect form. In a perfectly competitive market, a single market price prevails for the commodity, which is determined by the forces of total demand and total supply in the market.

Characteristics of Perfect Competition

The following features characterize a perfectly competitive market:

1. **A large number of buyers and sellers:** The number of buyers and sellers is large and the share of each one of them in the market is so small that none has any influence on the market price.
2. **Homogeneous product:** The product of each seller is totally undifferentiated from those of the others.
3. **Free entry and exit:** Any buyer and seller is free to enter or leave the market of the commodity.
4. **Perfect knowledge:** All buyers and sellers have perfect knowledge about the market for the commodity.

5. **Indifference:** No buyer has a preference to buy from a particular seller and no seller to sell to a particular buyer.
6. **Non-existence of transport costs:** Perfectly competitive market also assumes the non-existence of transport costs.
7. **Perfect mobility of factors of production:** Factors of production must be in a position to move freely into or out of industry and from one firm to the other.

Under such a market no single buyer or seller plays a significant role in price determination. On the other hand all of them jointly determine the price. The price is determined in the industry, which is composed of all the buyers and seller for the commodity. The demand curve facing the industry is the sum of all consumers' demands at various prices. The industry supply curve is the sum of all sellers' supplies at various prices.

Monopoly

The word monopoly is made up of two syllables, Mono and poly. Mono means single while poly implies selling. Thus monopoly is a form of market organization in which there is only one seller of the commodity. There are no close substitutes for the commodity sold by the seller. Pure monopoly is a market situation in which a single firm sells a product for which there is no good substitute.

Features of monopoly

The following are the features of monopoly.

1. **Single person or a firm:** A single person or a firm controls the total supply of the commodity. There will be no competition for monopoly firm. The monopolist firm is the only firm in the whole industry.
2. **No close substitute:** The goods sold by the monopolist shall not have closely competition substitutes. Even if price of monopoly product increase people will not go in far substitute. For example: If the price of electric bulb increase slightly, consumer will not go in for kerosene lamp.
3. **Large number of Buyers:** Under monopoly, there may be a large number of buyers in the market who compete among themselves.
4. **Price Maker:** Since the monopolist controls the whole supply of a commodity, he is a price-maker, and then he can alter the price.
5. **Supply and Price:** The monopolist can fix either the supply or the price. He cannot fix both. If he charges a very high price, he can sell a small amount. If he wants to sell more, he has to charge a low price. He cannot sell as much as he wishes for any price he pleases.
6. **Downward Sloping Demand Curve:** The demand curve (average revenue curve) of monopolist slopes downward from left to right. It means that he can sell more only by lowering price.

Types of Monopoly

Monopoly may be classified into various types. The different types of monopolies are explained below:

1. **Legal Monopoly:** If monopoly arises on account of legal support or as a matter of legal privilege, it is called Legal Monopoly. Ex. Patent rights, special brands, trade means, copyright etc.
2. **Voluntary Monopoly:** To get the advantages of monopoly some private firms come together voluntarily to control the supply of a commodity. These are called voluntary monopolies. Generally, these monopolies arise with industrial combinations. These voluntary monopolies are of three kinds (a) cartel (b) trust (c) holding company. It may be called artificial monopoly.
3. **Government Monopoly:** Sometimes the government will take the responsibility of supplying a commodity and avoid private interference. Ex. Water, electricity. These monopolies, created to satisfy social wants, are formed on social considerations. These are also called Social Monopolies.
4. **Private Monopoly:** If the total supply of a good is produced by a single private person or firm, it is called private monopoly. Hindustan Lever Ltd. Is having the monopoly power to produce Lux Soap.
5. **Limited Monopoly:** if the monopolist is having limited power in fixing the price of his product, it is called as 'Limited Monopoly'. It may be due to the fear of distant substitutes or government intervention or the entry of rivals firms.
6. **Unlimited Monopoly:** If the monopolist is having unlimited power in fixing the price of his good or service, it is called unlimited monopoly. Ex. A doctor in a village.
7. **Single Price Monopoly:** When the monopolist charges same price for all units of his product, it is called single price monopoly. Ex. Tata Company charges the same price to all the Tata Indica Cars of the same model.
8. **Discriminating Monopoly:** When a Monopolist charges different prices to different consumers for the same product, it is called discriminating monopoly. A doctor may take Rs.20 from a rich man and only Rs.2 from a poor man for the same treatment.
9. **Natural Monopoly:** Sometimes monopoly may arise due to scarcity of natural resources. Nature provides raw materials only in some places. The owner of the place will become monopolist. For Ex. Diamond mine in South Africa.

Monopolistic competition

Perfect competition and pure monopoly are rare phenomena in the real world. Instead, almost every market seems to exhibit characteristics of both perfect competition and monopoly. Hence in the real world it is the state of imperfect competition lying between these two extreme limits that work. Edward. H. Chamberlain developed the theory of monopolistic competition, which presents a more realistic picture of the actual market structure and the nature of competition.

Characteristics of Monopolistic Competition

The important characteristics of monopolistic competition are:

1. **Existence of Many firms:** Industry consists of a large number of sellers, each one of whom does not feel dependent upon others. Every firm acts independently without bothering about the reactions of its rivals. The size is so large that an individual firm has only a relatively small part in the total market, so that each firm has very limited control over the price of the product. As the number is relatively large it is difficult for these firms to determine its price- output policies without considering the possible reactions of the rival forms. A monopolistically competitive firm follows an independent price policy.

- 2. Product Differentiation:** Product differentiation means that products are different in some ways, but not altogether so. The products are not identical but the same time they will not be entirely different from each other. IT really means that there are various monopolist firms competing with each other. An example of monopolistic competition and product differentiation is the toothpaste produced by various firms. The product of each firm is different from that of its rivals in one or more respects. Different toothpastes like Colgate, Close-up, Forehans, Cibaca, etc., provide an example of monopolistic competition. These products are relatively close substitute for each other but not perfect substitutes. Consumers have definite preferences for the particular varieties or brands of products offered for sale by various sellers. Advertisement, packing, trademarks, brand names etc. help differentiation of products even if they are physically identical.
- 3. Large Number of Buyers:** There are large number buyers in the market. But the buyers have their own brand preferences. So the sellers are able to exercise a certain degree of monopoly over them. Each seller has to plan various incentive schemes to retain the customers who patronize his products.
- 4. Free Entry and Exist of Firms:** As in the perfect competition, in the monopolistic competition too, there is freedom of entry and exit. That is, there is no barrier as found under monopoly.
- 5. Selling costs:** Since the products are close substitute much effort is needed to retain the existing consumers and to create new demand. So each firm has to spend a lot on selling cost, which includes cost on advertising and other sale promotion activities.
- 6. Imperfect Knowledge:** Imperfect knowledge about the product leads to monopolistic competition. If the buyers are fully aware of the quality of the product they cannot be influenced much by advertisement or other sales promotion techniques. But in the business world we can see that though the quality of certain products is the same, effective advertisement and sales promotion techniques make certain brands monopolistic. For examples, effective dealer service backed by advertisement-helped popularization of some brands through the quality of almost all the cement available in the market remains the same.
- 7. The Group:** Under perfect competition the term industry refers to all collection of firms producing a homogenous product. But under monopolistic competition the products of various firms are not identical though they are close substitutes. Prof. Chamberlin called the collection of firms producing close substitute products as a group.

Oligopoly

The term oligopoly is derived from two Greek words, oligos meaning a few, and pollen meaning to sell. Oligopoly is the form of imperfect competition where there are a few firms in the market, producing either a homogeneous product or producing products, which are close but not perfect substitute of each other.

Characteristics of Oligopoly

The main features of oligopoly are:

- 1. Few Firms:** There are only a few firms in the industry. Each firm contributes a sizeable share of the total market. Any decision taken by one firm influence the actions of other firms in the industry. The various firms in the industry compete with each other.

2. **Interdependence:** As there are only very few firms, any steps taken by one firm to increase sales, by reducing price or by changing product design or by increasing advertisement expenditure will naturally affect the sales of other firms in the industry. An immediate retaliatory action can be anticipated from the other firms in the industry every time when one firm takes such a decision. He has to take this into account when he takes decisions. So the decisions of all the firms in the industry are interdependent.
3. **Indeterminate Demand Curve:** The interdependence of the firms makes their demand curve indeterminate. When one firm reduces price other firms also will make a cut in their prices. So he firm cannot be certain about the demand for its product. Thus the demand curve facing an oligopolistic firm loses its definiteness and thus is indeterminate as it constantly changes due to the reactions of the rival firms.
4. **Advertising and selling costs:** Advertising plays a greater role in the oligopoly market when compared to other market systems. According to Prof. William J. Banumol “it is only oligopoly that advertising comes fully into its own”. A huge expenditure on advertising and sales promotion techniques is needed both to retain the present market share and to increase it. So Banumol concludes “under oligopoly, advertising can become a life-and-death matter where a firm which fails to keep up with the advertising budget of its competitors may find its customers drifting off to rival products.”
5. **Price Rigidity:** In the oligopoly market price remain rigid. If one firm reduced price it is with the intention of attracting the customers of other firms in the industry. In order to retain their consumers they will also reduce price. Thus the pricing decision of one firm results in a loss to all the firms in the industry. If one firm increases price. Other firms will remain silent there by allowing that firm to lost its customers. Hence, no firm will be ready to change the prevailing price. It causes price rigidity in the oligopoly market.

OTHER MARKET STRUCTURES

Duopoly

Duopoly refers to a market situation in which there are only two sellers. As there are only two sellers any decision taken by one seller will have reaction from the other Eg. Coca-Cola and Pepsi. Usually these two sellers may agree to co-operate each other and share the market equally between them, So that they can avoid harmful competition.

The duopoly price, in the long run, may be a monopoly price or competitive price, or it may settle at any level between the monopoly price and competitive price. In the short period, duopoly price may even fall below the level competitive price with the both the firms earning less than even the normal price.

Monopsony

Mrs. Joan Robinson was the first writer to use the term monopsony to refer to market, which there is a single buyer. Monoposony is a single buyer or a purchasing agency, which buys the show, or nearly whole of a commodity or service produced. It may be created when all consumers of a commodity are organized together and/or when only one consumer requires that commodity which no one else requires.

Bilateral Monopoly

A bilateral monopoly is a market situation in which a single seller (Monopoly) faces a single buyer (Monoposony). It is a market of monopoly-monoposony.

Oligopsony

Oligopsony is a market situation in which there will be a few buyers and many sellers. As the sellers are more and buyers are few, the price of product will be comparatively low but not as low as under monopoly.

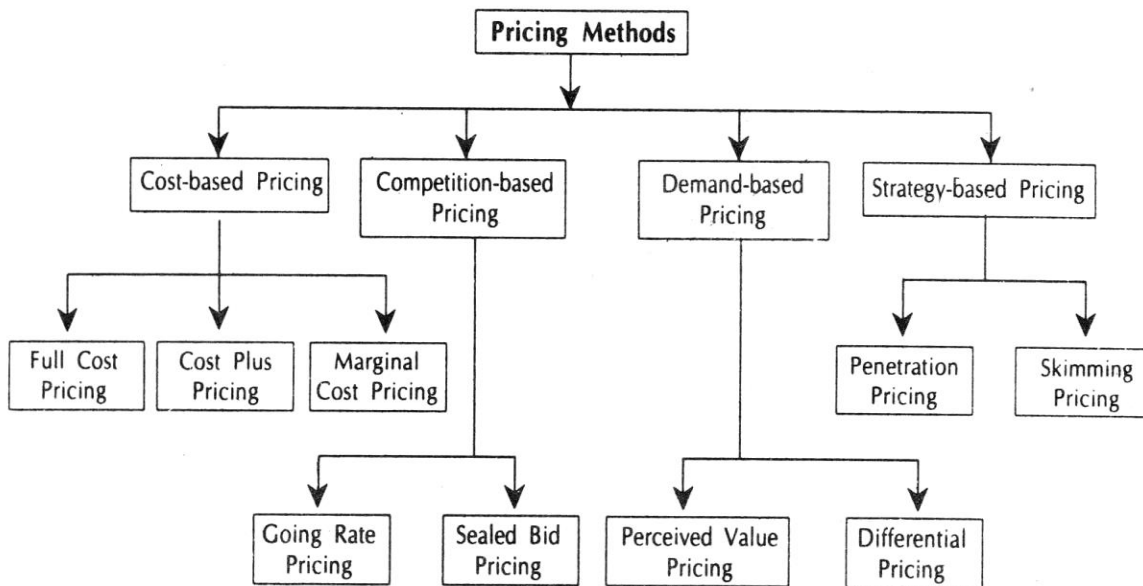
PRICING METHODS

Price

Price denotes the exchange value of a unit of good expressed in terms of money. Thus the current price of a maruti car around Rs. 2,00,000, the price of a hair cut is Rs. 25 the price of a economics book is Rs. 150 and so on. Nevertheless, if one gives a little thought to this subject, one would realize that there is nothing like a unique price for any good. Instead, there are multiple prices.

Price concepts

Price of a well-defined product varies over the types of the buyers, place it is received, credit sale or cash sale, time taken between final production and sale, etc.



Cost Based Pricing

There are three versions of the cost – based pricing. Full – cost or break even pricing, cost plus pricing and the marginal cost pricing. Under the first version, price just equals the average (total) cost. In the second version, some mark-up is added to the average cost in arriving at the price. In the last version, price is set equal to the marginal cost. While all these methods appear to be easy

and straight forward, they are in fact associated with a number of difficulties. Even through difficulties are there, the cost-oriented pricing is quite popular today.

The cost – based pricing has several strengths as well as limitations. The advantages are its simplicity, acceptability and consistency with the target rate of return on investment and the price stability in general. The limitations are difficulties in getting accurate estimates of cost (particularly of the future cost rather than the historic cost) Volatile nature of the variable cost and its ignoring of the demand side of the market etc.

Competition based pricing

Some commodities are priced according to the competition in their markets. Thus we have the going rate method of price and the sealed bid pricing technique. Under the former a firm prices its new product according to the prevailing prices of comparable products in the market. If the product is new in the country, then its import cost – inclusive of the costs of certificates, insurance, and freight and customs duty, is used as the basis for pricing. Incidentally, the price is not necessarily equal to the import cost, but to the firm is either new in the country, or is a close substitute or complimentary to some other products, the prices of hitherto existing bands or / and of the related goods are taken in to a account while deciding its price. Thus, when television was first manufactures in India, its import cost must have been a guiding force in its price determination. Similarly, when maruti car was first manufactured in India, it must have taken into account the prices of existing cars, price of petrol, price of car accessories, etc. Needless to say, the going rate price could be below or above the average cost and it could even be an economic price.

The sealed bid pricing method is quite popular in the case of construction activities and in the disposition of used produces. In this method the prospective seller (buyers) are asked to quote their prices through a sealed cover, all the offers are opened at a preannounce time in the presence of all the competitors, and the one who quoted the least is awarded the contract (purchase / sale deed). As it sound, this method is totally competition based and if the competitors unit by any change, the buyers (seller) may have to pay (receive) an exorbitantly high (too low) price, thus there is a great degree of risk attached to this method of pricing.

Demand Based Pricing

The demand – based pricing and strategy – based pricing are quite related. The seller knows rather well that the demand for its product is a decreasing function of the price its sets for product. Thus if seller wishes to sell more he must reduce the price of his product, and if he wants a good price for his product, he could sell only a limited quantity of his good. Demand oriented pricing rules imply establishment of prices in accordance with consumer preference and perceptions and the intensity of demand.

Two general types demand oriented pricing rules can be identified.

- i. Perceived value pricing and
- ii. Differential pricing

Perceived value pricing considers the buyer's perception of the value of the product ad the basis of pricing. Here the pricing rule is that the firm must develop procedures for measuring the relative value of the product as perceived by consumers. Differential pricing is nothing but price

discrimination. It involves selling a product or service for different prices in different market segments. Price differentiation depends on geographical location of the consumers, type of consumer, purchasing quantity, season, time of the service etc. E.g. Telephone charges, APSRTC charges.

Strategy based pricing (new product pricing)

A firm which produces a new product, if it is also new to industry, can earn very good profits if it handles marketing carefully, because of the uniqueness of the product. The price fixed for the new product must keep the competitors away. Earn good profits for the firm over the life of the product and must help to get the product accepted. The company can select either skimming pricing or penetration pricing.

While there are some firms, which follow the strategy of price penetration, there are some others who opt for price – skimming. Under the former, firms sell their new product at a low price in the beginning in order to catch the attention of consumers, once the product image and credibility is established, the seller slowly starts jacking up the price to reap good profits in future. Under this strategy, a firm might well sell its product below the cost of production and thus runs into losses to start with but eventually it recovers all its losses and even makes good overall profits. The Rin washing soap perhaps falls into this category. This soap was sold at a rather low price in the beginning and the firm even distributed free samples. Today, it is quite an expensive brand and yet it is selling very well. Under the price – skimming strategy, the new product is priced high in the beginning, and its price is reduced gradually as it faces a dearth of buyers such a strategy may be beneficial for products, which are fancy, but of poor quality and / or of insignificant use over a period of time.

A prudent producer follows a good mix of the various pricing methods rather than adapting any one of them. This is because no method is perfect and every method has certain good features further a firm might adopt one method at one time and another method at some other accession.

Factors affecting the choice of form of business organization

Before we choose a particular form of business organization, let us study what factors affect such a choice? The following are the factors affecting the choice of a business organization:

1. **Easy to start and easy to close:** The form of business organization should be such that it should be easy to close. There should not be hassles or long procedures in the process of setting up business or closing the same.
2. **Division of labour:** There should be possibility to divide the work among the available owners.
3. **Large amount of resources:** Large volume of business requires large volume of resources. Some forms of business organization do not permit to raise larger resources. Select the one which permits to mobilize the large resources.
4. **Liability:** The liability of the owners should be limited to the extent of money invested in business. It is better if their personal properties are not brought into business to make up the losses of the business.
5. **Secrecy:** The form of business organization you select should be such that it should permit to take care of the business secrets. We know that century old business units are still surviving only because they could successfully guard their business secrets.

6. **Transfer of ownership:** There should be simple procedures to transfer the ownership to the next legal heir.
7. **Ownership, Management and control:** If ownership, management and control are in the hands of one or a small group of persons, communication will be effective and coordination will be easier. Where ownership, management and control are widely distributed, it calls for a high degree of professional's skills to monitor the performance of the business.
8. **Continuity:** The business should continue forever and ever irrespective of the uncertainties in future.
9. **Quick decision-making:** Select such a form of business organization, which permits you to take decisions quickly and promptly. Delay in decisions may invalidate the relevance of the decisions.
10. **Personal contact with customer:** Most of the times, customers give us clues to improve business. So choose such a form, which keeps you close to the customers.
11. **Flexibility:** In times of rough weather, there should be enough flexibility to shift from one business to the other. The lesser the funds committed in a particular business, the better it is.
12. **Taxation:** More profit means more tax. Choose such a form, which permits to pay low tax.

These are the parameters against which we can evaluate each of the available forms of business organizations.

SOLE TRADER

The sole trader is the simplest, oldest and natural form of business organization. It is also called sole proprietorship. 'Sole' means one. 'Sole trader' implies that there is only one trader who is the owner of the business.

It is a one-man form of organization wherein the trader assumes all the risk of ownership carrying out the business with his own capital, skill and intelligence. He is the boss for himself. He has total operational freedom. He is the owner, Manager and controller. He has total freedom and flexibility. Full control lies with him. He can take his own decisions. He can choose or drop a particular product or business based on its merits. He need not discuss this with anybody. He is responsible for himself. This form of organization is popular all over the world. Restaurants, Supermarkets, pan shops, medical shops, hosiery shops etc.

Features

- It is easy to start a business under this form and also easy to close.
- He introduces his own capital. Sometimes, he may borrow, if necessary
- He enjoys all the profits and in case of loss, he lone suffers.
- He has unlimited liability which implies that his liability extends to his personal properties in case of loss.
- He has a high degree of flexibility to shift from one business to the other.
- Business secretes can be guarded well
- There is no continuity. The business comes to a close with the death, illness or insanity of the sole trader. Unless, the legal heirs show interest to continue the business, the business cannot be restored.
- He has total operational freedom. He is the owner, manager and controller.

- He can be directly in touch with the customers.
- He can take decisions very fast and implement them promptly.
- Rates of tax, for example, income tax and so on are comparatively very low.

Advantages

The following are the advantages of the sole trader form of business organization:

1. **Easy to start and easy to close:** Formation of a sole trader form of organization is relatively easy even closing the business is easy.
2. **Personal contact with customers directly:** Based on the tastes and preferences of the customers the stocks can be maintained.
3. **Prompt decision-making:** To improve the quality of services to the customers, he can take any decision and implement the same promptly. He is the boss and he is responsible for his business Decisions relating to growth or expansion can be made promptly.
4. **High degree of flexibility:** Based on the profitability, the trader can decide to continue or change the business, if need be.
5. **Secrecy:** Business secrets can well be maintained because there is only one trader.
6. **Low rate of taxation:** The rate of income tax for sole traders is relatively very low.
7. **Direct motivation:** If there are profits, all the profits belong to the trader himself. In other words. If he works more hard, he will get more profits. This is the direct motivating factor. At the same time, if he does not take active interest, he may stand to lose badly also.
8. **Total Control:** The ownership, management and control are in the hands of the sole trader and hence it is easy to maintain the hold on business.
9. **Minimum interference from government:** Except in matters relating to public interest, government does not interfere in the business matters of the sole trader. The sole trader is free to fix price for his products/services if he enjoys monopoly market.
10. **Transferability:** The legal heirs of the sole trader may take the possession of the business.

Disadvantages

The following are the disadvantages of sole trader form:

1. **Unlimited liability:** The liability of the sole trader is unlimited. It means that the sole trader has to bring his personal property to clear off the loans of his business. From the legal point of view, he is not different from his business.
2. **Limited amounts of capital:** The resources a sole trader can mobilize cannot be very large and hence this naturally sets a limit for the scale of operations.
3. **No division of labour:** All the work related to different functions such as marketing, production, finance, labour and so on has to be taken care of by the sole trader himself. There is nobody else to take his burden. Family members and relatives cannot show as much interest as the trader takes.
4. **Uncertainty:** There is no continuity in the duration of the business. On the death, insanity of insolvency the business may be come to an end.

5. **Inadequate for growth and expansion:** This form is suitable for only small size, one-man-show type of organizations. This may not really work out for growing and expanding organizations.
6. **Lack of specialization:** The services of specialists such as accountants, market researchers, consultants and so on, are not within the reach of most of the sole traders.
7. **More competition:** Because it is easy to set up a small business, there is a high degree of competition among the small businessmen and a few who are good in taking care of customer requirements along can service.
8. **Low bargaining power:** The sole trader is the in the receiving end in terms of loans or supply of raw materials. He may have to compromise many times regarding the terms and conditions of purchase of materials or borrowing loans from the finance houses or banks.

PARTNERSHIP

Partnership is an improved form of sole trader in certain respects. Where there are like-minded persons with resources, they can come together to do the business and share the profits/losses of the business in an agreed ratio. Persons who have entered into such an agreement are individually called 'partners' and collectively called 'firm'. The relationship among partners is called a partnership.

Indian Partnership Act, 1932 defines partnership as the relationship between two or more persons who agree to share the profits of the business carried on by all or any one of them acting for all.

Features

1. **Relationship:** Partnership is a relationship among persons. It is relationship resulting out of an agreement.
2. **Two or more persons:** There should be two or more number of persons.
3. **There should be a business:** Business should be conducted.
4. **Agreement:** Persons should agree to share the profits/losses of the business
5. **Carried on by all or any one of them acting for all:** The business can be carried on by all or any one of the persons acting for all. This means that the business can be carried on by one person who is the agent for all other persons. Every partner is both an agent and a principal. Agent for other partners and principal for himself. All the partners are agents and the 'partnership' is their principal.

The following are the other features:

- (a) **Unlimited liability:** The liability of the partners is unlimited. The partnership and partners, in the eye of law, are not different but one and the same. Hence, the partners have to bring their personal assets to clear the losses of the firm, if any.
- (b) **Number of partners:** According to the Indian Partnership Act, the minimum number of partners should be two and the maximum number if restricted, as given below:
 - 10 partners in case of banking business
 - 20 in case of non-banking business
- (c) **Division of labour:** Because there are more than two persons, the work can be divided among the partners based on their aptitude.

- (d) **Personal contact with customers:** The partners can continuously be in touch with the customers to monitor their requirements.
- (e) **Flexibility:** All the partners are likeminded persons and hence they can take any decision relating to business.

Partnership Deed

The written agreement among the partners is called 'the partnership deed'. It contains the terms and conditions governing the working of partnership. The following are contents of the partnership deed.

1. Names and addresses of the firm and partners
2. Nature of the business proposed
3. Duration
4. Amount of capital of the partnership and the ratio for contribution by each of the partners.
5. Their profit sharing ration (this is used for sharing losses also)
6. Rate of interest charged on capital contributed, loans taken from the partnership and the amounts drawn, if any, by the partners from their respective capital balances.
7. The amount of salary or commission payable to any partner
8. Procedure to value good will of the firm at the time of admission of a new partner, retirement or death of a partner
9. Allocation of responsibilities of the partners in the firm
10. Procedure for dissolution of the firm
11. Name of the arbitrator to whom the disputes, if any, can be referred to for settlement.
12. Special rights, obligations and liabilities of partners(s), if any.

KIND OF PARTNERS

The following are the different kinds of partners:

1. **Active Partner:** Active partner takes active part in the affairs of the partnership. He is also called working partner.
2. **Sleeping Partner:** Sleeping partner contributes to capital but does not take part in the affairs of the partnership.
3. **Nominal Partner:** Nominal partner is partner just for namesake. He neither contributes to capital nor takes part in the affairs of business. Normally, the nominal partners are those who have good business connections, and are well placed in the society.
4. **Partner by Estoppels:** Estoppels means behavior or conduct. Partner by estoppels gives an impression to outsiders that he is the partner in the firm. In fact he neither contributes to capital, nor takes any role in the affairs of the partnership.
5. **Partner by holding out:** If partners declare a particular person (having social status) as partner and this person does not contradict even after he comes to know such declaration, he is called a partner by holding out and he is liable for the claims of third parties. However, the third parties should prove they entered into contract with the firm in the belief that he is the partner of the firm. Such a person is called partner by holding out.
6. **Minor Partner:** Minor has a special status in the partnership. A minor can be admitted for the benefits of the firm. A minor is entitled to his share of profits of the firm. The

liability of a minor partner is limited to the extent of his contribution of the capital of the firm.

Right of partners

Every partner has right

- (a) To take part in the management of business
- (b) To express his opinion
- (c) Of access to and inspect and copy and book of accounts of the firm
- (d) To share equally the profits of the firm in the absence of any specific agreement to the contrary
- (e) To receive interest on capital at an agreed rate of interest from the profits of the firm
- (f) To receive interest on loans, if any, extended to the firm.
- (g) To be indemnified for any loss incurred by him in the conduct of the business
- (h) To receive any money spent by him in the ordinary and proper conduct of the business of the firm.

Advantages

The following are the advantages of the partnership from:

1. **Easy to form:** Once there is a group of like-minded persons and good business proposal, it is easy to start and register a partnership.
2. **Availability of larger amount of capital:** More amount of capital can be raised from more number of partners.
3. **Division of labour:** The different partners come with varied backgrounds and skills. This facilitates division of labour.
4. **Flexibility:** The partners are free to change their decisions, add or drop a particular product or start a new business or close the present one and so on.
5. **Personal contact with customers:** There is scope to keep close monitoring with customers requirements by keeping one of the partners in charge of sales and marketing. Necessary changes can be initiated based on the merits of the proposals from the customers.
6. **Quick decisions and prompt action:** If there is consensus among partners, it is enough to implement any decision and initiate prompt action. Sometimes, it may more time for the partners on strategic issues to reach consensus.
7. **The positive impact of unlimited liability:** Every partner is always alert about his impending danger of unlimited liability. Hence he tries to do his best to bring profits for the partnership firm by making good use of all his contacts.

Disadvantages:

The following are the disadvantages of partnership:

1. **Formation of partnership is difficult:** Only like-minded persons can start a partnership. It is sarcastically said, 'it is easy to find a life partner, but not a business partner'.
2. **Liability:** The partners have joint and several liabilities beside unlimited liability. Joint and several liability puts additional burden on the partners, which means that even the

personal properties of the partner or partners can be attached. Even when all but one partner become insolvent, the solvent partner has to bear the entire burden of business loss.

3. **Lack of harmony or cohesiveness:** It is likely that partners may not, most often work as a group with cohesiveness. This result in mutual conflicts, an attitude of suspicion and crisis of confidence. Lack of harmony results in delay in decisions and paralyses the entire operations.
4. **Limited growth:** The resources when compared to sole trader, a partnership may raise little more. But when compare to the other forms such as a company, resources raised in this form of organization are limited. Added to this, there is a restriction on the maximum number of partners.
5. **Instability:** The partnership form is known for its instability. The firm may be dissolved on death, insolvency or insanity of any of the partners.
6. **Lack of Public confidence:** Public and even the financial institutions look at the unregistered firm with a suspicious eye. Though registration of the firm under the Indian Partnership Act is a solution of such problem, this cannot revive public confidence into this form of organization overnight. The partnership can create confidence in other only with their performance.

JOINT STOCK COMPANY

The joint stock company emerges from the limitations of partnership such as joint and several liability, unlimited liability, limited resources and uncertain duration and so on. Normally, to take part in a business, it may need large money and we cannot foretell the fate of business. It is not literally possible to get into business with little money. Against this background, it is interesting to study the functioning of a joint stock company. The main principle of the joint stock company from is to provide opportunity to take part in business with a low investment as possible say Rs.1000. Joint Stock Company has been a boon for investors with moderate funds to invest.

The word ‘ company’ has a Latin origin, com means ‘ come together’, pany means ‘ bread’, joint stock company means, people come together to earn their livelihood by investing in the stock of company jointly.

Company Defined

Lord justice Lindley explained the concept of the joint stock company from of organization as ‘an association of many persons who contribute money or money’s worth to a common stock and employ it for a common purpose.

Features

This definition brings out the following features of the company:

1. **Artificial person:** The Company has no form or shape. It is an artificial person created by law. It is intangible, invisible and existing only, in the eyes of law.
2. **Separate legal existence:** it has an independence existence, it separate from its members. It can acquire the assets. It can borrow for the company. It can sue other if they are in default in payment of dues, breach of contract with it, if any. Similarly, outsiders for any claim can sue it. A shareholder is not liable for the acts of the company. Similarly, the shareholders cannot bind the company by their acts.

3. **Voluntary association of persons**: The Company is an association of voluntary association of persons who want to carry on business for profit. To carry on business, they need capital. So they invest in the share capital of the company.
4. **Limited Liability**: The shareholders have limited liability i.e., liability limited to the face value of the shares held by him. In other words, the liability of a shareholder is restricted to the extent of his contribution to the share capital of the company. The shareholder need not pay anything, even in times of loss for the company, other than his contribution to the share capital.
5. **Capital is divided into shares**: The total capital is divided into a certain number of units. Each unit is called a share. The price of each share is priced so low that every investor would like to invest in the company. The companies promoted by promoters of good standing (i.e., known for their reputation in terms of reliability character and dynamism) are likely to attract huge resources.
6. **Transferability of shares**: In the company form of organization, the shares can be transferred from one person to the other. A shareholder of a public company can sell his holding of shares at his will. However, the shares of a private company cannot be transferred. A private company restricts the transferability of the shares.
7. **Common Seal**: As the company is an artificial person created by law has no physical form, it cannot sign its name on a paper; so, it has a common seal on which its name is engraved. The common seal should affix every document or contract; otherwise the company is not bound by such a document or contract.
8. **Perpetual succession**: 'Members may come and members may go, but the company continues for ever and ever' A. company has uninterrupted existence because of the right given to the shareholders to transfer the shares.
9. **Ownership and Management separated**: The shareholders are spread over the length and breadth of the country, and sometimes, they are from different parts of the world. To facilitate administration, the shareholders elect some among themselves or the promoters of the company as directors to a Board, which looks after the management of the business. The Board recruits the managers and employees at different levels in the management. Thus the management is separated from the owners.
10. **Winding up**: Winding up refers to the putting an end to the company. Because law creates it, only law can put an end to it in special circumstances such as representation from creditors of financial institutions, or shareholders against the company that their interests are not safeguarded. The company is not affected by the death or insolvency of any of its members.
11. **The name of the company ends with 'limited'**: it is necessary that the name of the company ends with limited (Ltd.) to give an indication to the outsiders that they are dealing with the company with limited liability and they should be careful about the liability aspect of their transactions with the company.

Formation of Joint Stock company

There are two stages in the formation of a joint stock company. They are:

- (a) To obtain Certificates of Incorporation
- (b) To obtain certificate of commencement of Business

Certificate of Incorporation: The certificate of Incorporation is just like a 'date of birth' certificate. It certifies that a company with such and such a name is born on a particular day.

Certificate of commencement of Business: A private company need not obtain the certificate of commencement of business. It can start its commercial operations immediately after obtaining the certificate of Incorporation.

The persons who conceive the idea of starting a company and who organize the necessary initial resources are called promoters. The vision of the promoters forms the backbone for the company in the future to reckon with.

The promoters have to file the following documents, along with necessary fee, with a registrar of joint stock companies to obtain certificate of incorporation:

- (a) **Memorandum of Association:** The Memorandum of Association is also called the charter of the company. It outlines the relations of the company with the outsiders. It furnishes all its details in six clause such as (i) Name clause (ii) situation clause (iii) objects clause (iv) Capital clause and (v) subscription clause duly executed by its subscribers.
- (b) **Articles of association:** Articles of Association furnishes the byelaws or internal rules government the internal conduct of the company.
- (c) The list of names and address of the proposed directors and their willingness, in writing to act as such, in case of registration of a public company.
- (d) A statutory declaration that all the legal requirements have been fulfilled. The declaration has to be duly signed by any one of the following: Company secretary in whole practice, the proposed director, legal solicitor, chartered accountant in whole time practice or advocate of High court.

The registrar of joint stock companies peruses and verifies whether all these documents are in order or not. If he is satisfied with the information furnished, he will register the documents and then issue a certificate of incorporation, if it is private company, it can start its business operation immediately after obtaining certificate of incorporation.

Advantages

The following are the advantages of a joint Stock Company

1. **Mobilization of larger resources:** A joint stock company provides opportunity for the investors to invest, even small sums, in the capital of large companies. The facilities rising of larger resources.
2. **Separate legal entity:** The Company has separate legal entity. It is registered under Indian Companies Act, 1956.
3. **Limited liability:** The shareholder has limited liability in respect of the shares held by him. In no case, does his liability exceed more than the face value of the shares allotted to him.
4. **Transferability of shares:** The shares can be transferred to others. However, the private company shares cannot be transferred.
5. **Liquidity of investments:** By providing the transferability of shares, shares can be converted into cash.
6. **Inculcates the habit of savings and investments:** Because the share face value is very low, this promotes the habit of saving among the common man and mobilizes the same towards investments in the company.

7. **Democracy in management**: the shareholders elect the directors in a democratic way in the general body meetings. The shareholders are free to make any proposals, question the practice of the management, suggest the possible remedial measures, as they perceive, The directors respond to the issue raised by the shareholders and have to justify their actions.
8. **Economics of large scale production**: Since the production is in the scale with large funds at
9. **Continued existence**: The Company has perpetual succession. It has no natural end. It continues forever and ever unless law put an end to it.
10. **Institutional confidence**: Financial Institutions prefer to deal with companies in view of their professionalism and financial strengths.
11. **Professional management**: With the larger funds at its disposal, the Board of Directors recruits competent and professional managers to handle the affairs of the company in a professional manner.
12. **Growth and Expansion**: With large resources and professional management, the company can earn good returns on its operations, build good amount of reserves and further consider the proposals for growth and expansion.

All that shines is not gold. The company from of organization is not without any disadvantages. The following are the disadvantages of joint stock companies.

Disadvantages

1. **Formation of company is a long drawn procedure**: Promoting a joint stock company involves a long drawn procedure. It is expensive and involves large number of legal formalities.
2. **High degree of government interference**: The government brings out a number of rules and regulations governing the internal conduct of the operations of a company such as meetings, voting, audit and so on, and any violation of these rules results into statutory lapses, punishable under the companies act.
3. **Inordinate delays in decision-making**: As the size of the organization grows, the number of levels in organization also increases in the name of specialization. The more the number of levels, the more is the delay in decision-making. Sometimes, so-called professionals do not respond to the urgencies as required. It promotes delay in administration, which is referred to 'red tape and bureaucracy'.
4. **Lack or initiative**: In most of the cases, the employees of the company at different levels show slack in their personal initiative with the result, the opportunities once missed do not recur and the company loses the revenue.
5. **Lack of responsibility and commitment**: In some cases, the managers at different levels are afraid to take risk and more worried about their jobs rather than the huge funds invested in the capital of the company lose the revenue.
6. **Lack of responsibility and commitment**: In some cases, the managers at different levels are afraid to take risk and more worried about their jobs rather than the huge funds invested in the capital of the company. Where managers do not show up willingness to take responsibility, they cannot be considered as committed. They will not be able to handle the business risks.

PUBLIC ENTERPRISES

Public enterprises occupy an important position in the Indian economy. Today, public enterprises provide the substance and heart of the economy. Its investment of over Rs.10,000 crore is in heavy and basic industry, and infrastructure like power, transport and communications. The concept of public enterprise in Indian dates back to the era of pre-independence.

Government Company

Section 617 of the Indian Companies Act defines a government company as “any company in which not less than 51 percent of the paid up share capital” is held by the Central Government or by any State Government or Governments or partly by Central Government and partly by one or more of the state Governments and includes and company which is subsidiary of government company as thus defined”.

For Changing business environment in post liberalization scenario refer class work.

UNIT IV

INTRODUCTION TO CAPITAL AND FINANCIAL ACCOUNTING

Introduction

Finance is the prerequisite to commence and vary on business. It is rightly said to be the lifeblood of the business. No growth and expansion of business can take place without sufficient finance. It shows that no business activity is possible without finance. This is why; every business has to make plans regarding acquisition and utilization of funds.

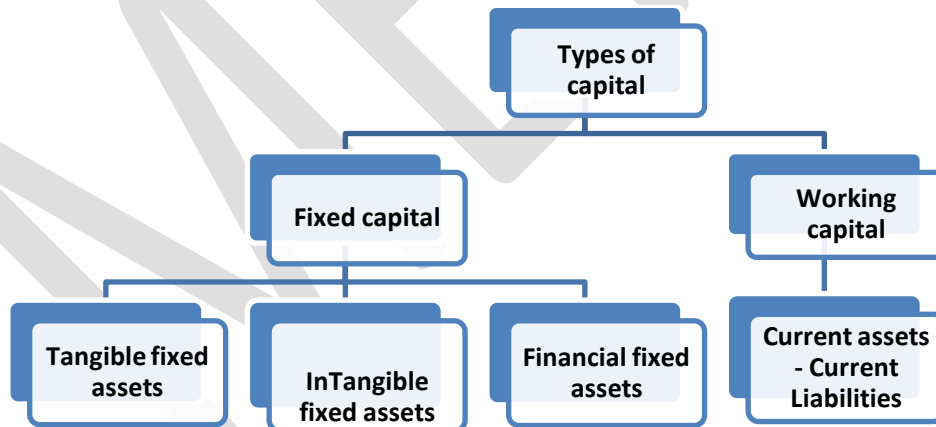
CAPITAL & ITS SIGNIFICANCE:

Capital is defined as wealth, which is created over a period of time through abstinence to spend. There are different forms of capital: property, cash or titles to wealth. It is aggregate of funds used in short run & long run.

Capital plays a very significant role in modern production system, very difficult to imagine the process of production without capital.

NEED FOR CAPITAL

- To promote business
- To conduct business operations smoothly
- To expand and diversify
- To meet contingencies
- To pay taxes
- To pay dividends and interests
- To replace assets
- To support welfare programs
- To wind up



Importance of working capital

Working capital is referred to be the lifeblood and nerve center of a business. Working capital is as essential to maintain the smooth functioning of a business as blood circulation in a human body. No business can run successfully with out an adequate amount of working capital. The main advantages of maintaining adequate amount of working capital are as follows:

1. **Solvency of the business:** Adequate working capital helps in maintaining solvency of the business by providing uninterrupted flow of production.
2. **Good will:** Sufficient working capital enables a business concern to make prompt payment and hence helps in creating and maintaining good will.

3. **Easy loans:** A concern having adequate working capital, high solvency and good credit standing can arrange loans from banks and others on easy and favorable terms.
4. **Cash Discounts:** Adequate working capital also enables a concern to avail cash discounts on the purchases and hence it reduces costs.
5. **Regular supply of raw materials:** Sufficient working capital ensures regular supply of raw materials and continuous production.
6. **Regular payments of salaries wages and other day to day commitments:** A company which has ample working capital can make regular payment of salaries, wages and other day to day commitments which raises the morale of its employees, increases their efficiency, reduces wastage and cost and enhances production and profits.
7. **Exploitation of favorable market conditions:** The concerns with adequate working capital only can exploit favorable market conditions such as purchasing its requirements in bulk when the prices are lower.
8. **Ability to face crisis:** Adequate working capital enables a concern to face business crisis in emergencies.
9. **Quick and regular return on Investments:** Every investor wants a quick and regular return on his investment. Sufficiency of working capital enables a concern to pay quick and regular dividends to its investors, as there may not be much pressure to plough back profits. This gains the confidence of its investors and creates a favorable market to raise additional funds in the future.
10. **High morale:** Adequacy of working capital creates an environment of security, confidence, and high morale and creates overall efficiency in a business. Every business concern should have adequate working capital to run its business operations. It should have neither redundant excess working capital nor inadequate shortage of working capital. Both, excess as well as short working capital positions are bad for any business. However, out of the two, it is the inadequacy of working capital which is more dangerous from the point of view of the firm.

The need or objectives of working capital

The need for working capital arises mainly due to the time gap between production and realization of cash. The process of production and sale cannot be done instantaneously and hence the firm needs to hold the current assets to fill-up the time gaps. There are time gaps in purchase of raw materials and production; production and sales; and sales and realization of cash. The working capital is needed mainly for the following purposes:

1. For the purchase of raw materials.
2. To pay wages, salaries and other day-to-day expenses and overhead cost such as fuel, power and office expenses, etc.
3. To meet the selling expenses such as packing, advertising, etc.
4. To provide credit facilities to the customers and
5. To maintain the inventories of raw materials, work-in-progress, stores and spares and finishes stock etc.

Factors determining the working capital requirements

There are a large number of factors such as the nature and size of business, the character of their operations, the length of production cycle, the rate of stock turnover and the state of economic situation etc. that decode requirement of working capital. These factors have different importance and influence on firm differently. In general following factors generally influence the working capital requirements.

1. **Nature or character of business**: The working capital requirements of a firm basically depend upon the nature of its business. Public utility undertakings like electricity, water supply and railways need very limited working capital as their sales are on cash and are engaged in provision of services only. On the other hand, trading firms require more investment in inventories, receivables and cash and such they need large amount of working capital. The manufacturing undertakings also require sizable working capital.
2. **Size of business or scale of operations**: The working capital requirements of a concern are directly influenced by the size of its business, which may be measured in terms of scale of operations. Greater the size of a business unit, generally, larger will be the requirements of working capital. However, in some cases, even a smaller concern may need more working capital due to high overhead charges, inefficient use of available resources and other economic disadvantages of small size.
3. **Production policy**: If the demand for a given product is subject to wide fluctuations due to seasonal variations, the requirements of working capital, in such cases, depend upon the production policy. The production could be kept either steady by accumulating inventories during slack periods with a view to meet high demand during the peak season or the production could be curtailed during the slack season and increased during the peak season. If the policy is to keep the production steady by accumulating inventories it will require higher working capital.
4. **Manufacturing process/Length of production cycle**: In manufacturing business, the requirements of working capital will be in direct proportion to the length of manufacturing process. Longer the process period of manufacture, larger is the amount of working capital required, as the raw materials and other supplies have to be carried for a longer period.
5. **Seasonal variations**: If the raw material availability is seasonal, they have to be bought in bulk during the season to ensure an uninterrupted material for the production. A huge amount is, thus, blocked in the form of material, inventories during such season, which give rise to more working capital requirements. Generally, during the busy season, a firm requires larger working capital than in the slack season.
6. **Working capital cycle**: In a manufacturing concern, the working capital cycle starts with the purchase of raw material and ends with the realization of cash from the sale of finished products. This cycle involves purchase of raw materials and stores, its conversion into stocks of finished goods through work-in progress with progressive increment of labour and service costs, conversion of finished stock into sales, debtors and receivables and ultimately realization of cash. This cycle continues again from cash to purchase of raw materials and so on. In general the longer the operating cycle, the larger the requirement of working capital.
7. **Credit policy**: The credit policy of a concern in its dealings with debtors and creditors influences considerably the requirements of working capital. A concern that purchases its

requirements on credit requires lesser amount of working capital compared to the firm, which buys on cash. On the other hand, a concern allowing credit to its customers shall need larger amount of working capital compared to a firm selling only on cash.

8. **Business cycles:** Business cycle refers to alternate expansion and contraction in general business activity. In a period of boom, i.e., when the business is prosperous, there is a need for larger amount of working capital due to increase in sales. On the contrary, in the times of depression, i.e., when there is a down swing of the cycle, the business contracts, sales decline, difficulties are faced in collection from debtors and firms may have to hold large amount of working capital.
9. **Rate of growth of business:** The working capital requirements of a concern increase with the growth and expansion of its business activities. The retained profits may provide for a part of working capital but the fast growing concerns need larger amount of working capital than the amount of undistributed profits.

SOURCE OF FINANCE

Thus for any business enterprise, there are two sources of finance, viz, funds contributed by owners and funds available from loans and credits. In other words the financial resources of a business may be own funds and borrowed funds.

Owner funds or ownership capital:

The ownership capital is also known as 'risk capital' because every business runs the risk of loss or low profits, and it is the owner who bears this risk. In the event of low profits they do not have adequate return on their investment. If losses continue the owners may be unable to recover even their original investment. However, in times of prosperity and in the case of a flourishing business the high level of profits earned accrues entirely to the owners of the business. Thus, after paying interest on loans at a fixed rate, the owners may enjoy a much higher rate of return on their investment. Owners contribute risk capital also in the hope that the value of the firm will appreciate as a result of higher earnings and growth in the size of the firm.

Sources of Long Term Finance

1. **Issue of Shares:** The amount of capital decided to be raised from members of the public is divided into units of equal value. These units are known as share and the aggregate values of shares are known as share capital of the company. Those who subscribe to the share capital become members of the company and are called shareholders. They are the owners of the company. Hence shares are also described as ownership securities.
2. **Issue of Preference Shares:** Preference share have three distinct characteristics. Preference shareholders have the right to claim dividend at a fixed rate, which is decided according to the terms of issue of shares. Moreover, the preference dividend is to be paid first out of the net profit. The balance, if any, can be distributed among other shareholders that is, equity shareholders. However, payment of dividend is not legally compulsory. Only when dividend is declared, preference shareholders have a prior claim over equity shareholders.
Preference shareholders also have the preferential right of claiming repayment of capital in the event of winding up of the company.

Depending upon the terms of conditions of issue, different types of preference shares may be issued by a company to raises funds. Preference shares may be issued as:

1. Cumulative or Non-cumulative
2. Participating or Non-participating
3. Redeemable or Non-redeemable, or as
4. Convertible or non-convertible preference shares.

1. Issue of Equity Shares: The most important source of raising long-term capital for a company is the issue of equity shares. In the case of equity shares there is no promise to shareholders a fixed dividend. But if the company is successful and the level profits are high, equity shareholders enjoy very high returns on their investment. This feature is very attractive to many investors even though they run the risk of having no return if the profits are inadequate or there is loss. They have the right of control over the management of the company and their liability is limited to the value of shares held by them.

2. Issue of Debentures:

When a company decides to raise loans from the public, the amount of loan is dividend into units of equal. These units are known as debentures. A debenture is the instrument or certificate issued by a company to acknowledge its debt. Those who invest money in debentures are known as 'debenture holders'

Debentures carry a fixed rate of interest, and generally are repayable after a certain period, which is specified at the time of issue. Depending upon the terms and conditions of issue there are different types of debentures. There are:

- a. Secured or unsecured Debentures and
- b. Convertible of Non convertible Debentures.

3. Loans from financial Institutions:

Government with the main object of promoting industrial development has set up a number of financial institutions. These institutions play an important role as sources of company finance. Besides they also assist companies to raise funds from other sources.

These institutions provide medium and long-term finance to industrial enterprises at a reason able rate of interest. Thus companies may obtain direct loan from the financial institutions for expansion or modernization of existing manufacturing units or for starting a new unit.

4. Retained Profits:

Successful companies do not distribute the whole of their profits as dividend to shareholders but reinvest a part of the profits. The amount of profit reinvested in the business of a company is known as retained profit. It is shown as reserve in the accounts. The surplus profits retained and reinvested may be regarded as an internal source of finance. Hence, this method of financing is known as self-financing. It is also called sloughing back of profits.

5. Public Deposits:

An important source of medium – term finance which companies make use of is public deposits. This requires advertisement to be issued inviting the general public of deposits. This requires advertisement to be issued inviting the general public to deposit their savings with the company. The period of deposit may extend up to three years. The rate of interest offered is generally higher than the interest on bank deposits.

Sources of Short Term Finance

The major sources of short-term finance are discussed below:

1. **Trade credit:** Trade credit is a common source of short-term finance available to all companies. It refers to the amount payable to the suppliers of raw materials, goods etc. after an agreed period, which is generally less than a year. It is customary for all business firms to allow credit facility to their customers in trade business. Thus, it is an automatic source of finance. With the increase in production and corresponding purchases, the amount due to the creditors also increases. Thereby part of the funds required for increased production is financed by the creditors. The more important advantages of trade credit as a source of short-term finance are the following:
2. **Bank loans and advances:** Money advanced or granted as loan by commercial banks is known as bank credit. Companies generally secure bank credit to meet their current operating expenses. The most common forms are cash credit and overdraft facilities. The advantage of bank credit as a source of short-term finance is that the amount can be adjusted according to the changing needs of finance. Commercial banks also advance money by discounting bills of exchange. A company having sold goods on credit may draw bills of exchange on the customers for their acceptance.
3. **Short term loans from finance companies:** Short-term funds may be available from finance companies on the security of assets. Some finance companies also provide funds according to the value of bills receivable or amount due from the customers of the borrowing company, which they take over.

For trading forecast and cash budget refer class work

Accounting Definition, GAAP (Concepts and conventions):

Smith and Ashburne: “Accounting is a means of measuring and reporting the results of economic activities.”

R.N. Anthony: “Accounting system is a means of collecting summarizing, analyzing and reporting in monetary terms, the information about the business.”

American Institute of Certified Public Accountants (AICPA): “The art of recording, classifying and summarizing in a significant manner and in terms of money transactions and events, which are in part at least, of a financial character and interpreting the results thereof.”

Thus, accounting is an art of identifying, recording, summarizing and interpreting business transactions of financial nature. Hence accounting is the **Language of Business**.

FUNCTIONS OF AN ACCOUNTANT

The job of an accountant involves the following types of accounting works :

1. **Recording Work :** The financial transactions are identified, classified and recorded in appropriate books of accounts according to principles. This is “Book Keeping”. The recording of transactions tends to be mechanical and repetitive.
2. **Summarizing Work :** The recorded transactions are summarized into significant form according to generally accepted accounting principles. The work includes the preparation of profit and loss account, balance sheet. This phase is called ‘preparation of final accounts’
3. **Analysis and Interpretation Work:** The financial statements are analysed by using ratio analysis, break-even analysis, funds flow and cash flow analysis.

4. **Reporting Work:** The summarized statements along with analysis and interpretation are communicated to the interested parties or whoever has the right to receive them. For Ex. Share holders. In addition, the accounting departments has to prepare and send regular reports so as to assist the management in decision making. This is 'Reporting'.
5. **Preparation of Budget :** The management must be able to reasonably estimate the future requirements and opportunities. As an aid to this process, the accountant has to prepare budgets, like cash budget, capital budget, purchase budget, sales budget etc. this is 'Budgeting'.
6. **Taxation Work :** The accountant has to prepare various statements and returns pertaining to income-tax, sales-tax, excise or customs duties etc., and file the returns with the authorities concerned.
7. **Auditing :** It involves a critical review and verification of the books of accounts statements and reports with a view to verifying their accuracy. This is 'Auditing'

USERS OF ACCOUNTING INFORMATION

Different categories of users need different kinds of information for making decisions. The users of accounting can be divided in two board groups (1). Internal users and (2). External users.

4.1 Internal Users:

Managers : These are the persons who manage the business, i.e. management at he top, middle and lower levels. Their requirements of information are different because they make different types of decisions.

Accounting reports are important to managers for evaluating the results of their decisions. In additions to external financial statements, managers need detailed internal reports either branch division or department or product-wise. Accounting reports for managers are prepared much more frequently than external reports.

Accounting information also helps the managers in appraising the performance of subordinates. As such Accounting is termed as " the eyes and ears of management."

4.2 External Users :

1. **Investors :** Those who are interested in buying the shares of company are naturally interested in the financial statements to know how safe the investment already made is and how safe the proposed investments will be.

2. **Creditors :** Lenders are interested to know whether their load, principal and interest, will be paid when due. Suppliers and other creditors are also interested to know the ability of the firm to pay their dues in time.

3. **Workers :** In our country, workers are entitled to payment of bonus which depends on the size of profit earned. Hence, they would like to be satisfied that he bonus being paid to them is correct. This knowledge also helps them in conducting negotiations for wages.

4. Customers : They are also concerned with the stability and profitability of the enterprise. They may be interested in knowing the financial strength of the company to rent it for further decisions relating to purchase of goods.

5. Government: Governments all over the world are using financial statements for compiling statistics concerning business which, in turn, helps in compiling national accounts. The financial statements are useful for tax authorities for calculating taxes.

6. Public : The public at large interested in the functioning of the enterprises because it may make a substantial contribution to the local economy in many ways including the number of people employed and their patronage to local suppliers.

7. Researchers: The financial statements, being a mirror of business conditions, is of great interest to scholars undertaking research in accounting theory as well as business affairs and practices.

BASIC ACCOUNTING CONCEPTS

Accounting is a system evolved to achieve a set of objectives. In order to achieve the goals, we need a set of rules or guidelines. These guidelines are termed here as “BASIC ACCOUNTING ONCEPTS”. The term concept means an idea or thought. Basic accounting concepts are the fundamental ideas or basic assumptions underlying the theory and profit of FINANCIAL ACCOUNTING. These concepts help in bringing about uniformity in the practice of accounting. In accountancy following concepts are quite popular.

1. **BUSINESS ENTITY CONEPT:** In this concept “Business is treated as separate from the proprietor”. All the Transactions recorded in the book of Business and not in the books of proprietor. The proprietor is also treated as a creditor for the Business.

2. **GOING CONCERN CONCEPT:** This concept relates with the long life of Business. The assumption is that business will continue to exist for unlimited period unless it is dissolved due to some reasons or the other.

3. **MONEY MEASUREMENT CONCEPT:** In this concept “Only those transactions are recorded in accounting which can be expressed in terms of money, those transactions which can not be expressed in terms of money are not recorded in the books of accounting”.

4. **COST CONCEPT:** Accounting to this concept, can asset is recorded at its cost in the books of account. i.e., the price, which is paid at the time of acquiring it. In balance sheet, these assets appear not at cost price every year, but depreciation is deducted and they appear at the amount, which is cost, less classification.

5. **ACCOUNTING PERIOD CONCEPT:** every Businessman wants to know the result of his investment and efforts after a certain period. Usually one-year period is regarded as an ideal for this purpose. This period is called Accounting Period. It depends on the nature of the business and object of the proprietor of business.

6. **DUAL ASPECT CONCEPT**: According to this concept “Every business transactions has two aspects”, one is the receiving benefit aspect another one is giving benefit aspect. The receiving benefit aspect is termed as “DEBIT”, where as the giving benefit aspect is termed as “CREDIT”. Therefore, for every debit, there will be corresponding credit.

7. **MATCHING COST CONCEPT**: According to this concept “The expenses incurred during an accounting period, e.g., if revenue is recognized on all goods sold during a period, cost of those good sole should also Be charged to that period.

8. **REALISATION CONCEPT**: According to this concept revenue is recognized when a sale is made. Sale is Considered to be made at the point when the property in goods posses to the buyer and he becomes legally liable to pay.

ACCOUNTING CONVENTIONS

Accounting is based on some customs or usages. Naturally accountants here to adopt that usage or custom.

They are termed as convert conventions in accounting. The following are some of the important accounting conventions.

1. **FULL DISCLOSURE**: According to this convention accounting reports should disclose fully and fairly the information. They purport to represent. They should be prepared honestly and sufficiently disclose information which is if material interest to proprietors, present and potential creditors and investors. The companies ACT, 1956 makes it compulsory to provide all the information in the prescribed form.

2. **MATERIALITY**: Under this convention the trader records important factor about the commercial activities. In the form of financial statements if any unimportant information is to be given for the sake of clarity it will be given as footnotes.

3. **CONSISTENCY**: It means that accounting method adopted should not be changed from year to year. It means that there should be consistent in the methods or principles followed. Or else the results of a year Cannot be conveniently compared with that of another.

4. **CONSERVATISM**: This convention warns the trader not to take unrealized income in to account. That is why the practice of valuing stock at cost or market price, which ever is lower is in vague. This is the policy of “playing safe”; it takes in to consideration all prospective losses but leaves all prospective profits.

CLASSIFICATION OF BUSINESS TRANSACTIONS

All business transactions are classified into three categories:

1. Those relating to persons
2. Those relating to property(Assets)

3. Those relating to income & expenses

Thus, three classes of accounts are maintained for recording all business transactions.

They are:

1. Personal accounts
2. Real accounts
3. Nominal accounts

1. Personal Accounts :Accounts which are transactions with persons are called “Personal Accounts” .

A separate account is kept on the name of each person for recording the benefits received from ,or given to the person in the course of dealings with him.

E.g.: Krishna’s A/C, Gopal’s A/C, SBI A/C, Nagarjuna Finance Ltd.A/C, ObulReddy & Sons A/C , HMT Ltd. A/C, Capital A/C, Drawings A/C etc.

2. Real Accounts: The accounts relating to properties or assets are known as “Real Accounts” .Every business needs assets such as machinery, furniture etc, for running its activities .A separate account is maintained for each asset owned by the business.

E.g.: cash A/C, furniture A/C, building A/C, machinery A/C etc.

3. NominalAccounts: Accounts relating to expenses, losses, incomes and gains are known as “Nominal Accounts”. A separate account is maintained for each item of expenses, losses, income or gain.

E.g.: Salaries A/C, stationery A/C, wages A/C, postage A/C, commission A/C, interest A/C, purchases A/C, rent A/C, discount A/C, commission received A/C, interest received A/C, rent received A/C, discount received A/C.

Before recording a transaction, it is necessary to find out which of the accounts is to be debited and which is to be credited. The following three different rules have been laid down for the three classes of accounts for journalizing the transactions.

1. Personal Accounts: The account of the person receiving benefit (receiver) is to be debited and the account of the person giving the benefit (given) is to be credited.

<p><u>Rule:</u> “Debit----The Receiver Credit---The Giver”</p>

2. Real Accounts: When an asset is coming into the business, account of that asset is to be debited .When an asset is going out of the business, the account of that asset is to be credited.

<p><u>Rule:</u> “Debit----What comes in Credit---What goes out”</p>
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3. Nominal Accounts: When an expense is incurred or loss encountered, the account representing the expense or loss is to be debited. When any income is earned or gain made, the account representing the income of gain is to be credited.

Rule: “Debit----All expenses and losses
Credit---All incomes and gains”

After Journal classification of accounts will be done, which is called as ledger accounts. The balances of ledger accounts will be transferred to the next stage Trial balance.

TRAIL BALANCE:

The first step in the preparation of final accounts is the preparation of trail balance. In the double entry system of book keeping, there will be credit for every debit and there will not be any debit without credit. When this principle is followed in writing journal entries, the total amount of all debits is equal to the total amount all credits.

A trail balance is a statement of debit and credit balances. It is prepared on a particular date with the object of checking the accuracy of the books of accounts. It indicates that all the transactions for a particular period have been duly entered in the book, properly posted and balanced. The trail balance doesn't include stock in hand at the end of the period. All adjustments required to be done at the end of the period including closing stock are generally given under the trail balance. Thus a trail balance is a list of balances of the ledger accounts' and cash book of a business concern at any given date.

PROFORMA FOR TRAIL BALANCE:

Trail balance for MR..... as on

NO	NAME OF ACCOUNT (PARTICULARS)	DEBIT AMOUNT (RS.)	CREDIT AMOUNT (RS.)
1	Capital		Credit
2	Opening stock	Debit	
3	Purchases	Debit	
4	Sales		Credit
5	Wages	Debit	
6	Freight	Debit	
7	Transport expenses	Debit	
8	Gas, fuel	Debit	
9	Discount received		Credit
10	Discount allowed	Debit	
11	Bas debts	Debit	
12	Commission received		Credit
13	Rent	Debit	
14	Salaries	Debit	
15	Interest received		Credit
16	Interest paid	Debit	

17	Insurance	Debit	
18	Carriage outwards	Debit	
19	Advertisements	Debit	
20	Office expenses	Debit	
21	Debtors	Debit	
22	Creditors		Credit
23	Goodwill	Debit	
24	Plant, machinery	Debit	
25	Land, buildings	Debit	
26	Furniture, fittings	Debit	
27	Investments	Debit	
28	Cash in hand	Debit	
29	Cash at bank	Debit	
30	Bills receivable	Debit	
31	Bills payable		Credit
32	Outstanding rent		Credit

**FINAL
ACCOUNTS**

In every business, the business man is interested in knowing whether the business has resulted in profit or loss and what the financial position of the business is at a given time. In brief, he wants to know (i)The profitability of the business and (ii) The soundness of the business.

The trader can ascertain this by preparing the final accounts. The final accounts are prepared from the trial balance. Hence the trial balance is said to be the link between the ledger accounts and the final accounts. The final accounts of a firm can be divided into two stages. The first stage is preparing the trading and profit and loss account and the second stage is preparing the balance sheet.

TRADING ACCOUNT

The first step in the preparation of final account is the preparation of trading account. The main purpose of preparing the trading account is to ascertain gross profit or gross loss as a result of buying and selling the goods.

Trading account of MR..... for the year ended

Dr		Cr	
Particulars	Amount	Particulars	Amount
To opening stock	Xxxx	By sales xxxx	
To purchases xxxx		Less: returns xxx	Xxxx
Less: returns xx	Xxxx	By closing stock	Xxxx
To carriage inwards	Xxxx		
To wages	Xxxx		
To freight	Xxxx		
To customs duty, octroi	Xxxx		
To gas, fuel, coal, Water	Xxxx		
To factory expenses	Xxxx		
To other man. Expenses	Xxxx		
To productive expenses	Xxxx		
To gross profit c/d	Xxxx		
	Xxxx		Xxxx

Finally, a ledger may be defined as a summary statement of all the transactions relating to a person, asset, expense or income which have taken place during a given period of time. The up-to-date state of any account can be easily known by referring to the ledger.

PROFIT AND LOSS ACCOUNT

The business man is always interested in knowing his net income or net profit. Net profit represents the excess of gross profit plus the other revenue incomes over administrative, sales, financial and other expenses. The debit side of profit and loss account shows the expenses and the credit side the incomes. If the total of the credit side is more, it will be the net profit. And if the debit side is more, it will be net loss.

PROFIT AND LOSS A/C OF MR.....FOR THE YEAR ENDED.....

Dr		Cr	
PARTICULARS	AMOUNT	PARTICULARS	AMOUNT
TO office salaries	XXXXXX	By gross profit b/d	XXXXXX
TO rent,rates,taxes	XXXXX	Interest received	XXXXX
TO Printing and stationery	XXXXX	Discount received	XXXXX
TO Legal charges		Commission received	XXXXXX
Audit fee	XXXX	Income from	
TO Insurance	XXXX	investments	
TO General expenses	XXXX	Dividend on shares	XXXX
TO Advertisements	XXXXX	Miscellaneous	XXXX
TO Bad debts	XXXX	investments	
TO Carriage outwards	XXXX	Rent received	XXXX
TO Repairs	XXXX		
TO Depreciation	XXXXX		
TO interest paid	XXXXX		
TO Interest on capital	XXXXX		
TO Interest on loans	XXXX		
TO Discount allowed	XXXXX		
TO Commission	XXXXX		
TO Net profit-----→ (transferred to capital a/c)	XXXXX		
	XXXXXX		XXXXXX

BALANCE SHEET

The second point of final accounts is the preparation of balance sheet. It is prepared often in the trading and profit, loss accounts have been compiled and closed. A balance sheet may be considered as a statement of the financial position of the concern at a given date.

DEFINITION: A balance sheet is an item wise list of assets, liabilities and proprietorship of a business at a certain state.

J.R.botliboi: A balance sheet is a statement with a view to measure exact financial position of a business at a particular date.

Thus, Balance sheet is defined as a statement which sets out the assets and liabilities of a business firm and which serves to as certain the financial position of the same on any particular date. On the left-hand side of this statement, the liabilities and the capital are shown. On the right-hand side all the assets are shown. Therefore, the two sides of the balance sheet should be equal. Otherwise, there is an error somewhere.

BALANCE SHEET OF AS ON

Liabilities and capital	Amount	Assets	Amount
Creditors	Xxxx	Cash in hand	Xxxx
Bills payable	Xxxx	Cash at bank	Xxxx
Bank overdraft	Xxxx	Bills receivable	Xxxx
Loans	Xxxx	Debtors	Xxxx
Mortgage	Xxxx	Closing stock	Xxxx
Reserve fund	Xxxx	Investments	Xxxx
Capital xxxxxx		Furniture and fittings	Xxxx
<u>Add:</u>		Plats machinery	
Net Profit xxxx		Land & buildings	Xxxx
<u>Less:</u>		Patents, tm ,copyrights	Xxxx
Drawings xxxx		Goodwill	Xxxx
-----		Prepaid expenses	Xxxx
		Outstanding incomes	Xxxx
	Xxxx		Xxxx
	<u>XXXX</u>		<u>XXXX</u>

UNIT V
INVESTMENT DECISION AND FINANCIAL ANALYSIS

CAPITAL BUDGETING

Capital Budgeting: Capital budgeting is the process of making investment decision in long-term assets or courses of action. Capital expenditure incurred today is expected to bring its benefits over a period of time. These expenditures are related to the acquisition & improvement of fixed assets.

Capital budgeting is the planning of expenditure and the benefit, which spread over a number of years. It is the process of deciding whether or not to invest in a particular project, as the investment possibilities may not be rewarding. The manager has to choose a project, which gives a rate of return, which is more than the cost of financing the project. For this the manager has to evaluate the worth of the projects in-terms of cost and benefits. The benefits are the expected cash inflows from the project, which are discounted against a standard, generally the cost of capital.

Capital Budgeting Process:

The capital budgeting process involves generation of investment, proposal estimation of cash-flows for the proposals, evaluation of cash-flows, selection of projects based on acceptance criterion and finally the continues revaluation of investment after their acceptance the steps involved in capital budgeting process are as follows.

1. Project generation
2. Project evaluation
3. Project selection
4. Project execution

Capital budgeting Techniques:

The capital budgeting appraisal methods are techniques of evaluation of investment proposal will help the company to decide upon the desirability of an investment proposal depending upon their; relative income generating capacity and rank them in order of their desirability. These methods provide the company a set of norms on the basis of which either it has to accept or reject the investment proposal. The most widely accepted techniques used in estimating the cost-returns of investment projects can be grouped under two categories.

1. Traditional methods
2. Discounted Cash flow methods

1. Traditional methods

These methods are based on the principles to determine the desirability of an investment project on the basis of its useful life and expected returns. These methods depend upon the accounting information available from the books of accounts of the company. These will not take into account the concept of 'time value of money', which is a significant factor to determine the desirability of a project in terms of present value.

A. Pay-back period method: It is the most popular and widely recognized traditional method of evaluating the investment proposals. It can be defined, as 'the number of years required to recover the original cash out lay invested in a project'.

According to Weston & Brigham, “The payback period is the number of years it takes the firm to recover its original investment by net returns before depreciation, but after taxes”.

According to James. C. Vanhorne, “The payback period is the number of years required to recover initial cash investment.

The payback period is also called payout or payoff period. This period is calculated by dividing the cost of the project by the annual earnings after tax but before depreciation under this method the projects are ranked on the basis of the length of the payback period. A project with the shortest payback period will be given the highest rank and taken as the best investment. The shorter the payback period, the less risky the investment is the formula for payback period is

$$\text{Pay-back period} = \frac{\text{Cash outlay (or) original cost of project}}{\text{Annual cash inflow}}$$

Merits:

1. It is one of the earliest methods of evaluating the investment projects.
2. It is simple to understand and to compute.
3. It does not involve any cost for computation of the payback period
4. It is one of the widely used methods in small scale industry sector
5. It can be computed on the basis of accounting information available from the books.

Demerits:

1. This method fails to take into account the cash flows received by the Company after the payback period.
2. It doesn't take into account the interest factor involved in an investment outlay.
3. It doesn't take into account the interest factor involved in an investment outlay.
4. It is not consistent with the objective of maximizing the market value of the company's share.
5. It fails to consider the pattern of cash inflows i. e., the magnitude and timing of cash inflows.

B. Accounting (or) Average rate of return method (ARR):

It is an accounting method, which uses the accounting information repeated by the financial statements to measure the probability of an investment proposal. It can be determine by dividing the average income after taxes by the average investment i.e., the average book value after depreciation.

According to ‘Soloman’, accounting rate of return on an investment can be calculated as the ratio of accounting net income to the initial investment, i.e.,

$$\text{ARR} = \frac{\text{Average net income after taxes}}{\text{Average Investment}} \times 100$$

$$\text{Average net income after taxes} = \frac{\text{Total Income after Taxes}}{\text{No. Of Years}}$$

$$\text{Average investment} = \frac{\text{Total Investment}}{2}$$

On the basis of this method, the company can select all those projects whose ARR is higher than the minimum rate established by the company. It can reject the projects with an ARR lower than the expected rate of return. This method can also help the management to rank the proposal on the basis of ARR. A highest rank will be given to a project with highest ARR, whereas a lowest rank to a project with lowest ARR.

II: Discounted cash flow methods:

The traditional method does not take into consideration the time value of money. They give equal weightage to the present and future flow of incomes. The DCF methods are based on the concept that a rupee earned today is more worth than a rupee earned tomorrow. These methods take into consideration the profitability and also time value of money.

A. Net present value method (NPV)

The NPV takes into consideration the time value of money. The cash flows of different years are valued differently and made comparable in terms of present values for this the net cash inflows of various periods are discounted using required rate of return which is predetermined.

According to Ezra Solomon, "It is a present value of future returns, discounted at the required rate of return minus the present value of the cost of the investment."

NPV is the difference between the present value of cash inflows of a project and the initial cost of the project.

According to the NPV technique, only one project will be selected whose NPV is positive or above zero. If a project's NPV is less than 'Zero'. It gives negative NPV hence. It must be rejected. If there are more than one project with positive NPV's the project is selected whose NPV is the highest.

The formula for NPV is

NPV = Present value of cash inflows – investment.

$$NPV = \frac{C_1}{(1+K)} + \frac{C_2}{(1+K)^2} + \frac{C_3}{(1+K)^3} + \dots + \frac{C_n}{(1+K)^n}$$

Co- investment

C1, C2, C3... Cn= cash inflows in different years.

K= Cost of the Capital (or) Discounting rate

D= Years.

For Problems refer class Work

Ratio Analysis stands for the process of determining and presenting the relationship of items and groups of items in the financial statements. It is an important technique of financial analysis. It is a way by which financial stability and health of a concern can be judged.

Accounting ratios can be expressed in various ways such as:

1. a pure ratio says ratio of current assets to current liabilities is 2:1 or
2. a rate say current assets are two times of current liabilities or
3. a percentage say current assets are 200% of current liabilities.

Limitations of Ratio Analysis: These limitations should be kept in mind while making use of ratio analyses for interpreting the financial statements. The following are the main limitations of ratio analysis.

1. False results if based on incorrect accounting data: Accounting ratios can be correct only if the data (on which they are based) is correct. Sometimes, the information given in the financial statements is affected by window dressing, i. e. showing position better than what actually is.
2. No idea of probable happenings in future: Ratios are an attempt to make an analysis of the past financial statements; so they are historical documents. Now-a-days keeping in view the complexities of the business, it is important to have an idea of the probable happenings in future.
3. Variation in accounting methods: The two firms' results are comparable with the help of accounting ratios only if they follow the some accounting methods or bases. Comparison will become difficult if the two concerns follow the different methods of providing depreciation or valuing stock.
4. Price level change: Change in price levels make comparison for various years difficult.
5. Only one method of analysis: Ratio analysis is only a beginning and gives just a fraction of information needed for decision-making so, to have a comprehensive analysis of financial statements, ratios should be used along with other methods of analysis.
6. No common standards: It is very difficult to by down a common standard for comparison because circumstances differ from concern to concern and the nature of each industry is different.
7. Different meanings assigned to the some term: Different firms, in order to calculate ratio may assign different meanings. This may affect the calculation of ratio in different firms and such ratio when used for comparison may lead to wrong conclusions.
8. Ignores qualitative factors: Accounting ratios are tools of quantitative analysis only. But sometimes qualitative factors may surmount the quantitative aspects. The calculations derived from the ratio analysis under such circumstances may get distorted.
9. No use if ratios are worked out for insignificant and unrelated figure: Accounting ratios should be calculated on the basis of cause and effect relationship. One should be clear as to what cause is and what effect is before calculating a ratio between two figures.

Classification of ratios: All the ratios broadly classified into four types due to the interest of different parties for different purposes. They are:

1. Profitability ratios
2. Liquidity ratios
3. Activity ratios
4. Capital Structure ratios

1. Profitability ratios: These ratios are calculated to understand the profit positions of the business. These ratios measure the profit earning capacity of an enterprise. These ratios can be related its save or capital to a certain margin on sales or profitability of capital employ. These ratios are of interest to management. Who are responsible for success and growth of enterprise? Owners as well as financiers are interested in profitability ratios as these reflect ability of enterprises to generate return on capital employ important profitability ratios are:

Profitability ratios in relation to sales: Profitability ratios are almost importance of concern. These ratios are calculated is focus the end results of the business activities which are the sole eritesiour of overall efficiency of organization.

1. Gross profit ratio: $x \frac{\text{gross profit}}{\text{Net sales}} 100$

Note: Higher the ratio Nest sales the better it is

2. Net profit ratio: $X \frac{\text{Net profit after interest \& Tax}}{\text{Net sales}} 100$

Note: Higher the ratio the better it is

3. Operating ratio (Operating expenses ratio)

$$\frac{\text{Cost of goods sold + operating expenses}}{\text{Net sales}} \times 100$$

Lower the ratio the better it is

4. Operating profit ratio: $\frac{\text{Operating profit}}{\text{Net sales}} \times 100$

Note: Higher the ratio the better it is

II. Turn over ratios or activity ratios:

These ratios measure how efficiency the enterprise employees the resources of assets at its command. They indicate the performance of the business. The performance if an enterprise is judged with its save. It means ratios are also laced efficiency ratios.

These ratios are used to know the turn over position of various things in the _____. The turnover ratios are measured to help the management in taking the decisions regarding the levels maintained in the assets, and raw materials and in the funds. These ratio s are measured in ratio method.

1. Stock turnover ratio = $\frac{\text{cost of goods sold}}{\text{average stock}}$

Here,
Average stock = $\frac{\text{opening stock} + \text{closing stock}}{2}$

Note: Higher the ratio, the better it is

2. Working capital turnover ratio = $\frac{\text{sales}}{\text{working capital}}$

Note: Higher the ratio the better it is working capital = current assets – essential liabilities.

3. Fixed assets turnover ratio = $\frac{\text{sales}}{\text{fixed assets}}$

Note: Higher the ratio the better it is.

3 (i) Total assets turnover ratio is : $\frac{\text{sales}}{\text{total assets}}$

Note: Higher the ratio the better it is.

4. Capital turnover ratio = $\frac{\text{Sales}}{\text{Capital employed}}$

Note: Higher the ratio the better it is

5. Debtors turnover ratio = $\frac{\text{credits sales or sales}}{\text{average debtors}}$

5(i) = Debtors collection period = $\frac{365 \text{ (or) } 12}{\text{Turnove ratio}}$

Here,

Average debtors = $\frac{\text{opening debtors} + \text{closing bebtors}}{2}$
 Debtors = debtors + bills receivable

Note: Higher the ratio the better it is.

6. Creditors turnover ratio = $\frac{\text{credit purchasers or purchases}}{\text{average credetors}}$

6 (i) creditors collection period = $\frac{365 \text{ (or) } 12}{\text{Creditor turnover ratio}}$

Here,

Average creditor = $\frac{\text{opening} + \text{closing credetors}}{2}$

Creditors = creditors + bills payable.

Note: lower the ratio the better it is.

3. Financial ratios or liquidity ratios:

Liquidity refers to ability of organization to meet its current obligation. These ratios are used to measure the financial status of an organization. These ratios help to the management to make the decisions about the maintained level of current assets & current libraries of the business. The main purpose to calculate these ratios is to know the short terms solvency of the concern. These ratios are useful to various parties having interest in the enterprise over a short period – such parties include banks. Lenders, suppliers, employees and other.

The liquidity ratios assess the capacity of the company to repay its short term liabilities. These ratios are calculated in ratio method.

Current ratio = $\frac{\text{current assets}}{\text{current liabilities}}$

Note: The ideal ratio is 2:1

i. e., current assets should be twice. The current liabilities.

Quick ratio or liquid ratio or acid test ratio: $\frac{\text{quick assets}}{\text{current liabilities}}$

Quick assets = cash in hand + cash at bank + short term investments + debtors + bills receivables
 short term investments are also known as marketable securities.

Here the ideal ratio is 1:1 is, quick assets should be equal to the current liabilities.

Absolute liquid ratio = $\frac{\text{absolute liquid assets}}{\text{current liabilities}}$

Here,

Absolute liquid assets = cash in hand + cash at bank + short term investments + marketable securities.

Here, the ideal ratio is 1:1 it, absolute liquid assets must be half of current liabilities.

Leverage ratio of solvency ratios: Solvency refers to the ability of a business to honour long term obligations like interest and installments associated with long term debts. Solvency ratios indicate long term stability of an enterprise. These ratios are used to understand the yield rate of the organization.

Lenders like financial institutions, debenture holders, and banks are interested in ascertaining solvency of the enterprise. The important solvency ratios are:

1. Debt – equity ratio =

$$\frac{\text{outsiders funds}}{\text{share holders funds}} \quad \frac{\text{Debt}}{\text{Equity}}$$

Here,

Outsiders funds = Debentures, public deposits, securities, long term bank loans + other long term liabilities.

Share holders' funds = equity share capital + preference share capital + reserves & surpluses + undistributed projects.

The ideal ratio is 2:1

2. Preprimary ratio or equity ratio = $\frac{\text{share holder funds}}{\text{total assets}}$
 The ideal ratio is 1:3 or 0.33:1

3. Capital – greasing ratio:

$$= \frac{(\text{equity share capital} + \text{reserves \& surpluses} + \text{undistributed projects})}{(\text{Outsiders funds} + \text{preference share capital})}$$

Here,

higher gearing ratio is not good for a new company or the company in which future earnings are uncertain.

11. Debt to total fund ratio =

$$\frac{\text{outsiders funds}}{\text{capital employed}}$$

Capital employed = outsiders funds + share holders funds = debt + equity.

The ideal ratio is 0.67:1 or 2:3