MBA - I YEAR

DKR12 : MANAGERIAL ECONOMICS

SYLLABUS

UNIT – I

Managerial Economics – Meaning, Nature and scope – Role in decision making – Concepts of Managerial Economics.

UNIT – II

Supply meaning and determinants – Production decisions – Production function – Cost concepts – Cost output relationship. Economy of scale – Cost functions.

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Market Structure – Characteristics – Pricing and output decisions – Methods of pricing – Differential pricing Government intervention in pricing.

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UNIT – V

Macro Economics, aggregates and concepts – GNP, GDP, GDS, National Income – Business Cycle – Inflation and deflation – Balance of payments – Monetary and fiscal policies.

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UNIT – I

Managerial Economics – Meaning, Nature and scope – Role in decision making – Concepts of Managerial Economics.

LESSON - 1

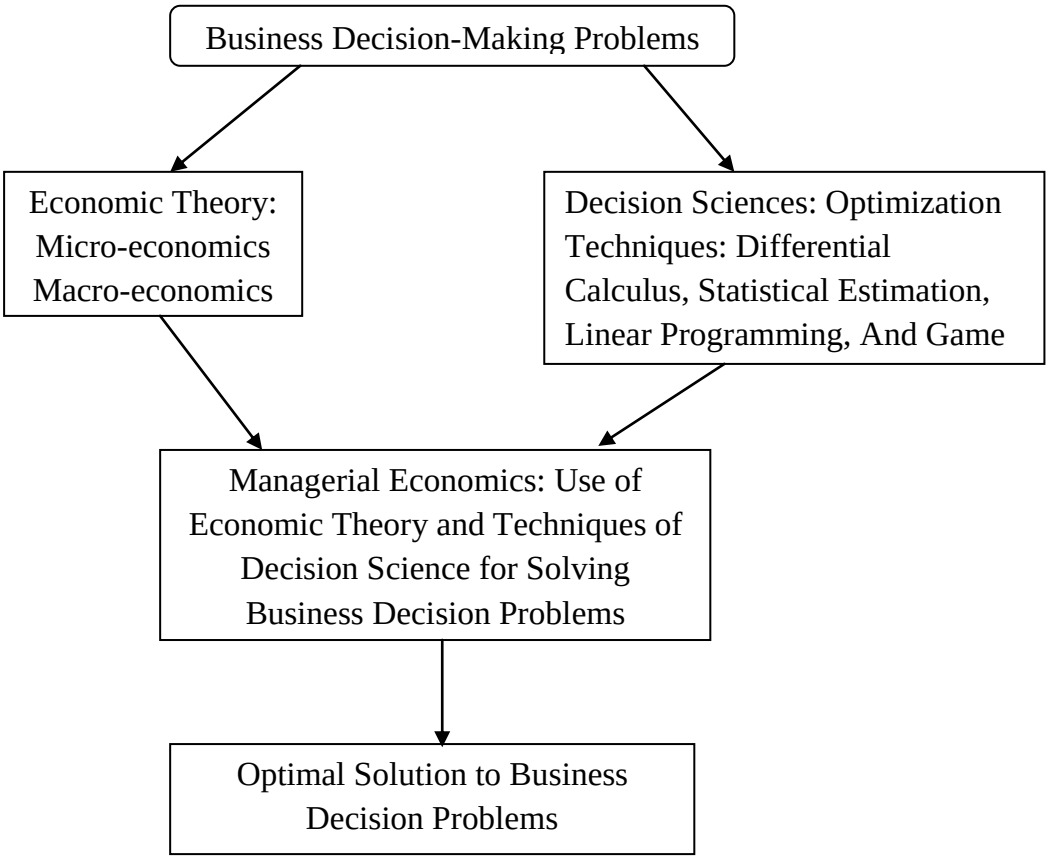
MANAGERIAL ECONOMICS

Introduction:

Managerial economics is concerned with the application of economic theory and methods of decision sciences to analyze decision-making problems faced by business firms. The first and most important problem faced by a business firm is the choice of a product to be produced or service to be provided. The second important problem dealt with in managerial economics is to decide by a firm about price and output of the product so as to maximize profits or to attain some other desired goal. The decisions regarding these require careful analysis of the demand for its production. The other important decision-making problems facing business firms relate to what methods or techniques of production are to be used in the production of commodities, and how much advertisement expenditure is to be incurred for promoting the sales of their products.

It is important to note that managerial economics has both descriptive and prescriptive roles. Managerial economics not only explains how various economic forces affect the working of a firm but also predicts the consequences of the decisions made by it. This is its positive or descriptive role. In addition to this, managerial economics prescribes the rules for the improvement of decision making by firms or their managers so that they can achieve their objectives efficiently. This is its prescriptive role.

The Nature of Managerial Economics



It may be noted that managerial economics deals with not only private firms but also public enterprises. Further, the technique, approach or way of thinking of managerial economics can also be profitably used in non-profit making organizations such as colleges, universities. This is because managers of all types of organizations face similar problems. In the last about three decades managerial economics has grown rapidly because it has been increasingly realized that economic theory and its methods and concepts can be used by managers to efficiently achieve the desired objectives of the firm.

Definitions:

Practical use of Economics is known as Managerial Economics. There is uncertainty, competition and instability in Economics field in Modern Times. In such circumstances Managerial Economics helps in making business decisions. Actually Managerial Economics is coordination between Economics and business methods which

facilitate in decision making. Different authorities have defined Managerial Economics in different ways. Some of the definitions are as giver under-

Me Nair and Marian have defined it as, “Managerial Economics consists of use of those economic methods which are applied to analysis the business situation”.

According to Speneer and Siegeleman, “Managerial Economics may be defined as the integration of economic theory with business practices for the purpose of facilitating decision making and forward planning by management”.

According to W.W.Haynse, “Managerial Economics is Economics applied in decision making. It is a special branch of economics bridging the gap between abstract theory and managerial practice. Its stress is on the use of the tools of economic analysis is clarifying problems in organizing and evaluating information and in comparing alternative course of action”.

James Bates and J.R.Parkinson has defined, “Managerial Economics is a study of the behaviour of firms in theory and practice”.

Thus, from the above definitions is clear that Managerial Economics is a special branch of knowledge relating to Economics in which the techniques, tools laws and techniques of economic analysis are used in business world for solving different problems and to take important decision.

SCOPE OF MANAGERIAL ECONOMICS

The scope of managerial economics includes all those economic concepts, theories and analytical tools which can be used to analyze business environment and to find solutions for practical business problems.

The following are some of the important areas covering the scope of managerial economics:

1. Demand analysis
2. Production analysis
3. Cost analysis
4. Pricing analysis

5. Profit analysis
6. Investment analysis
7. Managerial techniques

Let us explain these areas as follows:

1. Demand Analysis

The important aspects dealt with under demand analysis are: individual and market demand; demand estimation; demand function; demand distinctions; demand forecasting and elasticity of demand and its relevance in decision-making in business.

Demand forecasting attempts to estimate the likely demand for a product in future periods. If future demands are identified, production can be better planned. The basic techniques dealt with under business and economic forecasting are: sources of data (expert opinion, surveys and market experiments); time series analysis (trend projections); barometric forecasting; and econometric in model building.

Thus, demand analysis helps business executives to carry out business process; to strengthen market position; to maximize profits; and to maximize social welfare.

2. Production Analysis

Production analysis plays a pivotal role in managerial economics. It is concerned with the supply side of the market. It deals with physical terms of the product produced in a business firm. Decision like location of the production unit; the amount of products to be produced; the scale of production and the extent of product-mix can be taken through production analysis.

Production analysis relates physical output to physical inputs (factors of production). In other words, it highlights production functions and their managerial uses. Production theory includes the analysis of production function with ONE variable input; production function with ALL variable inputs; and production function with TWO variable inputs.

The production function with ONE variable input is otherwise known as *The law of variable proportions.* The production function with ALL variable inputs is otherwise

known as *The laws of returns to scale.* The production function with TWO variable inputs is otherwise known as *production function through isoquants.* The main aspects dealt with under production analysis are: production functions, returns to scale, isoquants, economies and diseconomies of scale.

3. Cost Analysis

Cost analysis plays an important role in decision-making of a business firm. It is also concerned with the supply side of the market. It is discussed is monetary terms of the product produced in the business firm. The main aspects dealt with under cost analysis are: cost concepts, cost behaviour in the short run and long run, cost functions, cost determinants, cost control and cost reduction.

Cost analysis especially deals with the various cost concepts and their practical usefulness in managerial decision-making.

4. Pricing Analysis

Pricing analysis forms the core of managerial economics. It plays an important role in profit planning. The success of a firm largely depends upon the correct price decisions taken by it. If the price is set too high, the firm may not find enough consumers to buy its product. If the price is set too low, the firm may not be able to cover its costs. Thus, setting an appropriate price is important for every business firm.

At what price and in what quantity are the productive factors obtained from the factor market and at what price and in what quantity are the products sold in the product market? These questions can be answered through the analysis of different market structures such as perfect competition, monopoly, monopolistic competition, oligopoly, duopoly, bilateral monopoly, and discriminating monopoly.

Theoretically, the buyers and sellers alone determine the price of a product in the market. Practically, competitions and the governments are also involved in the pricing process. The competitors are potential rivals who produce and sell related products. The government influences the price of a product through taxes, subsidies and direct price controls.

The main aspects dealt with under pricing analysis are: The concept of market mechanism, price determination under different market structures, pricing policies, pricing methods and approaches.

5. Profit Analysis

Profit is the best index of good performance of a business firm. Generally, firms aim at making profits. But the survival of very business firm depends upon its ability to earn profit. Traditionally, profit maximization is assumed to be the objective of a business firm. In reality, firms may not aim at maximizing profit but they do have a profit policy. Hence, decisions concerning level of profit, rate of profit, reinvestment of profit, etc., are relevant in every business firm nowadays.

The main aspects dealt with under profit analysis are: nature and measurement of profit, profit theories, profit policies, profit planning control (break-even analysis) and profit forecasting.

6. Investment Analysis

Investment analysis is concerned with planning and control of capital expenditure. The essence of this analysis is to compare the benefits that accrue over a period of time with the amount of capital invested.

The decisions on amount of investment, rate of investment, the proportion of new investment, and replacement investment are some of the investment issues which can be evaluated through cost-benefit analysis in general and capital budgeting in particular.

The main aspects dealt with under investment analysis are: nature of capital budgeting cost of capital, capital investment appraisal and so on.

7. Managerial Techniques

The Managerial techniques like linear programming technique, input-output technique and game theory are clearly analyzed under managerial analysis. The above-mentioned techniques are the basic to managerial economics in business decision-making.

The Nature of Managerial Decision Making

To solve the business decisions problems is the task of a managerial economist. Resources at the disposal of an organization are scarce. Therefore optimum solution to the business decision making problem requires that resources should be so used as to achieve the objective efficiently. The limited amount of resources is one type of constraint faced by the manager of a firm. The other type of constraint faced by the manager of a firm is imposed by the economic environment from the rival firms, government's fiscal and monetary policies, export and import policies etc. Given these constraints the manager has to make business decisions. Therefore, the decision making problem faced by a manager is one of constrained decision-making.

Decision-making problem requires a choice among alternative courses of action so as to achieve the objective. These alternative courses of action among which choice has to make are often called business strategies. The nature of decision-making problem faced by business firms is therefore of the following type.

To identify the alternative courses of action of achieving given objectives, and then to select the course of action that achieves the objective in the economically most efficient way.

An example will make clear the nature of decision-making problem requiring solution by the managers of business firms. Consider Maruti Udyog Limited which manufactures cars. Suppose it has identified two possible courses of action (generally called strategies) to meet the growing market demand for its products. First course of action or strategy is to take over the premier Auto Limited and use its capacity to increase output to meet growing demand of its product.

The objective if Maruti Udiyog Limited is to maximize profits (that is, the present value of expected returns) to be earned from expansion of output. Let S 1 stand for strategy 1 or the first course of action (that is, expanding its internal capacity), S 2 fir strategy 2 or the second course of action, that is, to take over the other firm.

The objective function for the above decision-making problem can be stated as Maximize profits (S 1, S 2)

To choose from the two alternative strategies, the following decision rule can be made:

Choose strategy S 1 if profits from S 1 > Profits from S 2.

Choose strategy S 2 if profits from S 2 > Profits from S 1.

The above simply example only brings out the essential feature of the decision-making problem faced by the managers of business firms and the rule for their rational solution. It is important to note that the knowledge of economic theory for decision-making by managers is important to formulate the objective function and to arrive at the decision rule for choosing a strategy or a course of action.

Questions for discussions:-

1. Define Managerial Economics
2. Explain the nature and scope of Managerial Economics

LESSON - 2

BUSINESS DECISIONS

The Types of Business Decisions

Let us now explain at same length the various types of business decisions which managers of a firm are to make in the short run and long run. In the short run, the following decisions are to be made:

1. Price and Output Decision

It is important to note that a price and output decision made by a firm depends on the type of market structure, that is, the degree of competition prevailing in the market. As we will see later, a firm working in perfectly competitive market structure exercises no control over the price of the homogeneous product and is merely a price taker. Firms working in monopoly and monopolistic competition can take to a greater or lesser extent independent price - output decisions keeping in view the degree of competition they are facing in the market. The areas of microeconomics which deals with demand theory, cost theory, and product pricing are particularly useful for making decisions about what price to be charged and what quantity of output to be produced.

2. Demand Estimation

Making estimates about demand for a product is crucial for achieving the objective of profit maximization. To arrive at correct estimates of demand, the firm has not only to study consumer's behaviour and their preferences but also the trends in macro economy regarding growth of GDP, price situation, changes in the level of employment and balance of payments which determine the demand for a product. Managers of business firms have not only to estimate current demand for their products but also the growth of demand for their products in future. Besides, firms have to estimate their own demand for the resources they need for manufacturing their products. And for this also they require to estimate the demand for their products. Theories of demand and forecasting are of great significance for estimating demand for the products.

3. Choice of a Technique of Production

The other important decision to be taken by business firms relates to the choice of a technique of production. A technique of production involved the use of particular combination of factors, especially labour and capital to produce a commodity. Usually various alternative techniques of producing a commodity are available among which a firm has to choose. Some production techniques involve the use of relatively more labour as compared to capital and are therefore called labour-intensive techniques. Some others use more capital relative to labour and are therefore called capital-intensive techniques. The choice between techniques would depend on the available supplies of different factors of production and their relative prices.

4. Advertising Decision

Advertising expenditure plays an important role in the market structure of monopolistic competition and differentiated oligopoly where firms have to complete to sell their products. Advertisement is required to promote sales of a product, and to create wants for the new product which is planned to be introduced in the market. Through advertisement management of a firm tries to influence the consumers about good quality of its product. Thus, how much expenditure has to be incurred on advertisement and through what media (Newspapers, Television, Radio, and Cable TV Network etc.) is an important decision to be made by a business firm. Theory of monopolistic competition and oligopoly is of great help in deciding about optimal advertisement expenditure to be made by business firms.

5. Long-run Production Decisions

Long-run decisions pertaining to production have also to be taken by firm's management. For example, where to locate the plant for manufacturing, what size of plant, that is, magnitude of productive capacity to be built up and which technology or production technique involving a particular factor-combination or factor proportion is to be used for producing a product. Besides, what product-mix should be produced to maximize profits? Developing and introducing a new product also falls in this category of long-run production decisions.

6. Investment Decision

The related type of long-run decision relates to investment or capital expenditure. Investment expenditure is required to expand the productive capacity, developing and introducing new products. Since they are of long-run nature, investment decision precedes other decisions. Investment decisions relate to how much investment or capital expenditure is to be undertaken in a period, what should be the rate of investment over the years, and on what projects capital expenditure is to be made. It is important to note that investment or capital expenditure on establishing or expanding production capacity yields returns in future periods.

Managerial Decision Making Process

1. Establishing the Objective

The first step in the decision making process is to establish the objective of the business enterprise. The important objective of a private business enterprise is to maximize profits. However business firm may have some other objectives such as maximization of sales or growth of the firm.

But the objective of a public enterprise is normally not of maximization of profits but to follow benefit-cost criterion. According to this criterion, a public enterprise should evaluate all social costs and benefits when making a decision whether to build an airport, a power plant, a steel plant, etc.

2. Defining the Problem

The second step in decision making process is one of defining or identifying the problem. Defining the nature of the problem is important because decision making is after all meant for solution of the problem. For instance, a cotton textile firm may find that its profits are declining. It needs to be investigated what are the causes of the problem of decreasing profits. Whether it is the wrong pricing policy, bad labour-management relations or the use of outdated technology which is causing the problem of declining profits. Once the source or reason for falling profits has been found, the problem has been identified and defined.

3. Identifying Possible Alternative Solutions (i.e. Alternative Courses of Action)

Once the problem has been identified, the next step is to find out alternative solutions to the problem. This will require considering the variables that have an impact on the problem. In this way, relationship among the variables and with the problem has to be estimated. In regard to this, various hypotheses can be developed which will become alternative courses for the solution of the problem. The two possible solutions of the problem are: (1) Updating and replacing only the old machinery. (2) Building entirely a new plant equipped with latest machinery. The choice between these alternative courses of action depends on which will bring about larger increase in profits.

4. Evaluating Alternative Courses of Action

The next step in business decision making is to evaluate the alternative courses of action. This requires the collection and analysis of the relevant data. Some data will be available within the various departments of the firm itself, the other may be obtained from the industry and government. The data and information so obtained can be used to evaluate the outcome or results expected from each possible course of action. Methods such as regression analysis, differential calculus, linear programming, and cost-benefit analysis are used to arrive at the optimal course. The optimum solution will be one that helps to achieve the established objective of the firm. The course of action which is optimum will be actually chosen.

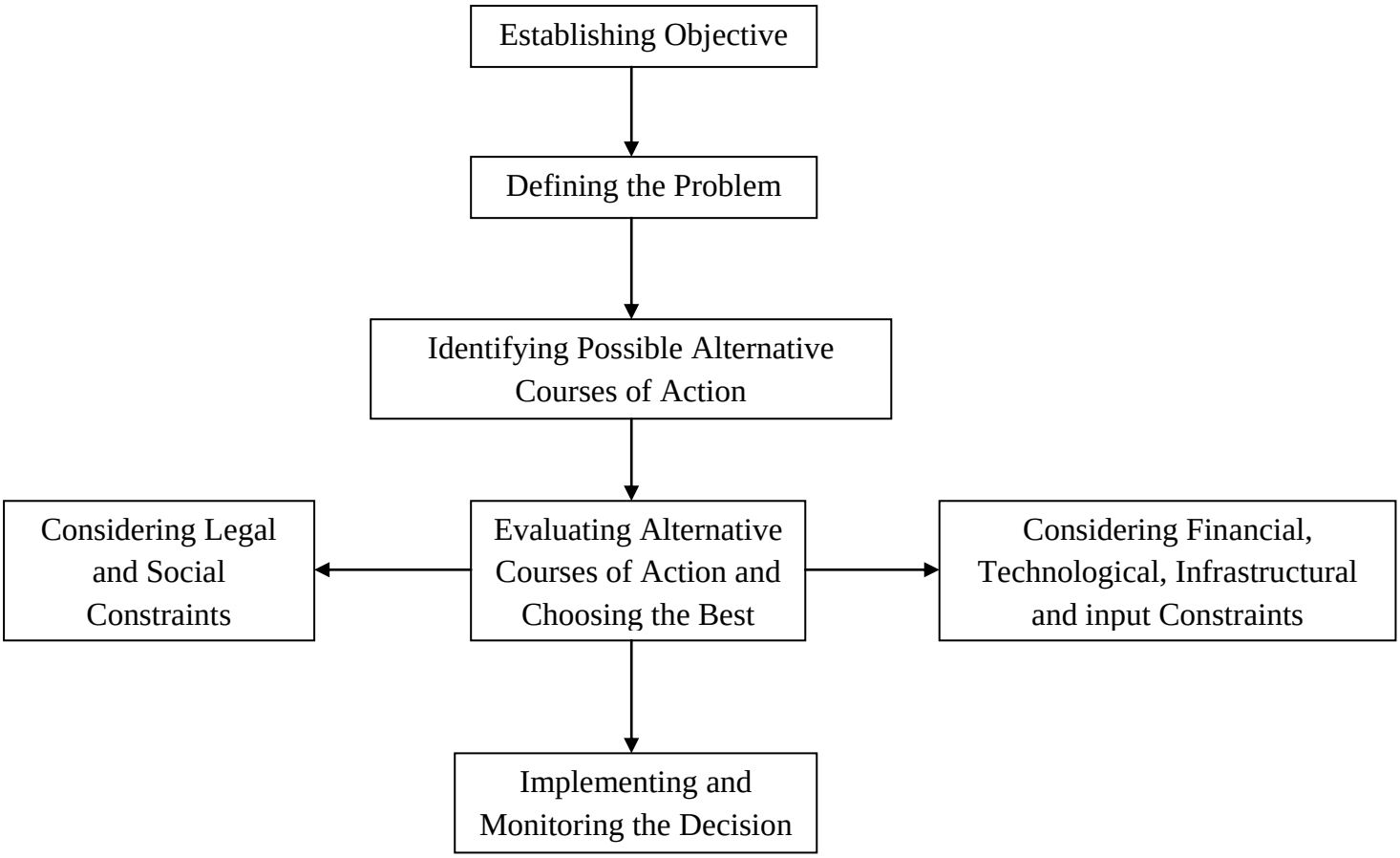
5. Implementing the Decision

After the alternative courses of action have been evaluated and optimal course of action selected, the final step is to implement the decision. The implementation of the decision requires constant monitoring so that expected results from the optimal course of action are obtained. Thus, if it is found that expected results are not forthcoming due to the wrong implementation of the decision, then corrective measures should be taken.

However, it should be noted that once a course of action is implemented to achieve the established objective, changes in it may become necessary from time to time in response in changes in conditions or firm’s operating environment on the basis of which decisions were taken. The five steps in the decision making process are shown in Figure 1.1.

MANAGERIAL DECISION MAKING PROCESS

Figure 1.1



NATURE OF MANAGERIAL ECONOMICS

The nature of the subject-matter of managerial economics is clearly understood by everyone with the following of its chief characteristic features:

1. Managerial economics is pragmatic and realistic in nature as it concentrates on making economic theory more application-oriented. That is, managerial economics is concerned with the use of analytical tools of economic theory in solving practical managerial problems and improving decision-making in business.
2. Managerial economics is microeconomics in character as it primarily and largely deals with the problems of individual business firms. It makes use of microeconomic concepts, such as elasticity of demand, marginal revenue,

marginal cost, market structures, pricing policies, etc., for decision-making in business firms.

3. Managerial economics is macroeconomics in character as it marginally makes use of macroeconomic concepts, such as business cycles, taxation policies, national income accounting, wage policies, etc., in forecasting the general business conditions prevailing in the economy. In short, macroeconomics helps the business firms in the area of forecasting only. Post-Keynesian aggregative theory (theory of income and employment) has direct implications on business forecasting.
4. Managerial economics is normative rather than positive in character as it is concerned with what decisions ought to be taken under alternative conditions. That is, in managerial economics, we are interested in what should happen rather than what does happen. In other words, managerial economics is prescriptive rather than descriptive in nature.
5. Managerial economics is not a part of economic theory but a separate branch by itself. That is, Managerial economics is a fundamental discipline with its own principles and it can be separated from other disciplines by a clear-cut definition.
6. Managerial economics is both conceptual and metrical in nature as it involves both theory and measurement. It is rightly remarked that 'measurement without theory' leads to false precision and 'theory without measurement' can never be practically useful.
7. Managerial economics is goal-oriented in nature as it mainly aims at achieving maximum objectives of a business firm.
8. Managerial economics is an application-oriented science in the sense that it is concerned with economics applied in practical decision-making in business.
9. Managerial economics makes use of the basic economic concepts and principles concerning a firm which is known as the theory of the firm or the economics of the firm.
10. Managerial economics serves as a tool in the study of business administration especially in the functional areas such as finance, accounting, marketing, personnel management and production management.

Questions for discussion:-

1. Explain the process of managerial decision making.
2. Explain the types of business decisions

LESSON - 3

CONCEPTS OF MANAGERIAL ECONOMICS

Fundamental Concepts of Managerial Economics

There are five fundamental concepts that help the management of a business firm to make correct decisions:

1. Incremental concept
2. Time perspective concept
3. Discounting concept
4. Opportunity cost concept
5. Equi-marginal concept

These fundamental concepts are the basic economic tools or principles for the entire gamut of managerial economics. Let us now discuss each concept in detail.

1. Incremental Concept

The incremental concept or reasoning involves the estimation of the effects of decision alternatives on revenues and costs. It forces the managers to examine the change in total revenues and total costs that results from changes in investment, output, sales, price and other related decisions.

The decision criterion of this concept is that accept a particular decision if the incremental benefits of the decision should exceed its incremental costs.

There are two basic concepts in this analysis. They are: *incremental revenue* and *incremental cost*. Incremental revenue is defined as the change in total revenue resulting from a decision. Incremental cost is defined as the change in total cost resulting from a decision.

2. Time Perspective Concept

Business firms normally make decisions both in the short run as well as in the long run. Short run is a period with immediate future whereas long run is a period with remote future. The distinction between short run and long run is not based on time period but on the competence of business firms to make use of different inputs.

Short run is a period with which a few inputs, but not all, can be used by business firms. During this period, fixed cost (plant and equipment) is not taken into account in the determination of the level of output to be produced, but only variable costs (raw materials and labour) are taken for consideration.

Long run is a period with which all inputs can be used by business firms. During this period, all costs (fixed cost and variable cost) are taken into account in the determination of the level of output to be produced.

Managerial economics are concerned with the short run and long run effects of decisions on revenues as well as costs. A decision may be made by a business firm on the basis of short run considerations but may have long run repercussions that make it more or less profitable.

For example, a business firm can earn more profits in the short run by charging a higher price during the period of scarcity but it will lose its customer's goodwill and impair its long run survival. Similarly, the management of a business concern may increase short run profits by paying lower wages to its workers, but this may result in dissatisfaction among workers with an adverse effect on productivity.

3. Discounting Concept

One of the fundamental ideas in economics is that a rupee today is worth more than a rupee tomorrow. This idea is based on a well-known proverb that *a bird in the hand is worth two is the bush*. It is also said that the present value of one rupee available at the end of two years is less than the present value of one rupee available today. The mathematical technique for adjusting the tie value of money and computing present values is called *discounting*.

4. Opportunity Cost Concept

Opportunity cost of a decision means the sacrifice of alternative required by that decision. For example, when an individual devotes his entire time to his own business, he hopes that he will earn at least as much as he can by working for someone else. In this case, decision-making takes into account the costs of opportunities foregone. If a decision involves no sacrifices, it is cost-free.

5. Equi-marginal Concept

One of the well-known principles of economics is the proposition that an input should be used in such a way that its marginal productivity (value added by the last unit) is the same in all uses. This generalization is popularly called the equi-marginal principle.

The basic idea of equi-marginal concept is that resources should be allocated among various economic activities in such a way that the marginal benefit from each activity is the same. To a consumer, this concept implies that money may be allocated over various products in such a way that the marginal utility derived from the use of each product is the same. Similarly, to a producer, this concept implies that resources may be allocated in such a way that the marginal product of the inputs is the same in uses.

Questions for discussion:-

1. What is Incremental concept?
2. What is Opportunity Cost concept?
3. What is Equi-marginal concept?

UNIT - II

Supply meaning and determinants - Production decisions - Production function - Cost concepts - Cost output relationship. Economy of scale - Cost functions.

LESSON - 4

SUPPLY ANALYSIS

MEANING OF SUPPLY

Supply means the amount of a product that would be offered for sale at all possible prices during a given period of time.

Supply can be studied individually and collectively. The individual supply is the supply of a product in some amount by an individual producer or firm at a particular price during a given period of time. Market supply, on the other hand, is the total supply of a product in a market at a particular price during a given period of time.

SUPPLY FUNCTION

In economics, we say that the supply of a product is a function of the price of the product, price of related products, price of inputs, technology, time periods, government policy, nature, etc.

Mathematically, the general supply function of a product can be expressed as:

$$S_X = f (P_X, P_Y, P_i, T, M_t, G, N, etc.,)$$

Where

S_X = Total supply of product X

P_X = Price of product X

P_Y = Price of related products

P_i = Prices of inputs

T = Change in technology

M_t = Time periods

G = Government policy

N = the nature

DETERMINANTS OF SUPPLY

The various determinants of supply are as follows:

1. Price of the Product (Own Price)

Price is the most important determinant of supply of a product. Normally, a large quantity of a product is supplied at a higher price and a smaller quantity of a product is supplied at a lower price. The relationship between the price and the quantity supplied of a product, keeping other factors constant, has been conventionally expressed by the law of supply.

2. Prices of Related Products

Supply of a product is also determined by the prices of related products. The related products include both substitutes and complementary products. The supply of one product may change as a result of a change in the price of some other product.

3. Prices of Inputs

There is an inverse relationship between prices of factor inputs and the supply of a product. It means that as the price of factor inputs increases, the cost of production must go up which results in decrease in the supply of the product produced. Hence, prices of factor inputs are the important determinant of supply.

4. Change in Technology

Technology is the most important determinant of the supply of products. Changes in technological advances result in the production of new products, new efficiency levels of production, etc. As a result these technological advancements will bring in more supply of products to the market.

5. Time Periods

Supply of a product is also related to time period. Marshall classified markets on the basis of time. The time periods include very short (market) period, short period, long period and very long (secular) period market. The pricing process can be studied under these time period markets depending upon whether supply conditions have time to make

no adjustment, some adjustment of labour and other variable factor and full adjustment of all factors and all costs.

6. Government Policy

Government policy regulation is also another important determinant of supply of a product. Government regulatory measures include imposition of heavy taxes, price regulation, etc. Based on these regulations, the producers or sellers can either increase or decrease the sales of their products.

7. The Nature

Supply of a product is also governed by natural factors like flood, drought, etc. Normally, poor monsoons may lead to poor power generation. This will, in turn, affect the production in the agricultural sector and also in other sectors.

LAW OF SUPPLY

The law of supply simply expresses the relation between the quantity of a product supplied and its price. Mathematically,

$$S_X = f(P_X)$$

Where

S_X = Supply of product X
P_X = Price of product X

1. Statement of the Law

The law of supply states that 'Other things remaining constant, the supply of a product rises as its price rises and falls as its price falls'.

In other words, 'Other things remaining constant, as the price of a product rises its supply is extended, and as the price falls its supply is contracted'. In brief, the law of supply indicated that there is a direct (positive) relationship between price and quantity supplied.

2. Supply Schedule

The law of supply can be explained with the help of a supply schedule. Supply schedule is showing how much of a product is supplied in a particular market at different prices. Table 2.1 shows the supply schedule to explain the law of supply.

TABLE 2.1

SUPPLY SCHEDULE

Price of product X [Rs.] (P_X)	*Supply of product X [Units]* (S_X)
1	180
2	270
3	260
4	450
5	530
6	605
7	700

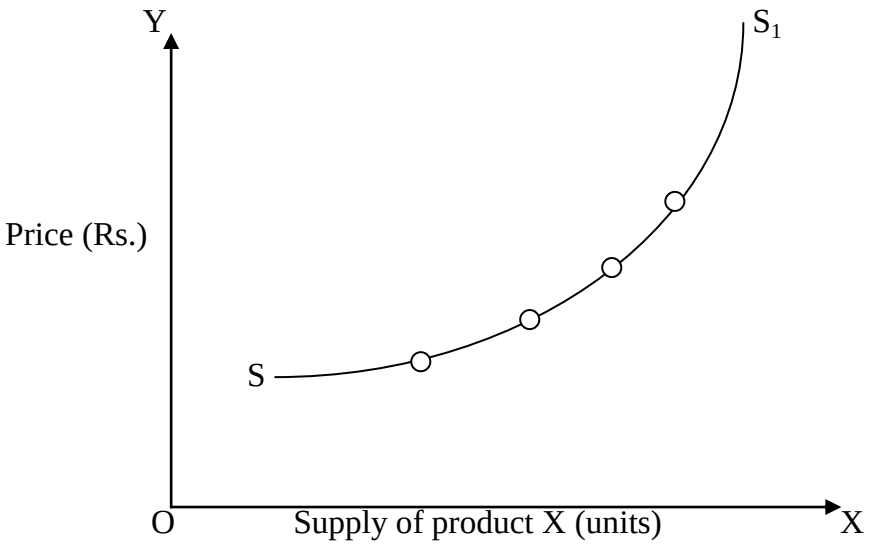
It is evident from Table 2.1 that with a rise in price at each stage, supply tends to rise. There is a direct (positive) relationship between price and quantity supplied.

3. Supply Curve

The law of supply can also be explained with the help of a supply curve. The supply curve is a curve sloping upwards from left to right. It indicates a direct relationship between price and supply. In short, supply curve is only a graphical representation of supply schedule. Figure 3.1 shows the supply curve to explain the law of supply.

Figure 3.1

SUPPLY CURVE



In Figure 3.1, S S_1 is supply curve. This curve slopes upwards from left to right. The reason is that when a price of the product falls, demand for it extends but the supply is contracted; and as the price of the product rises, its demand contracts but the supply is extended.

Assumptions of the law

The law of supply is based on the following assumptions:

1. There should not be any change in the cost of production.
2. There is no change in the level of technology used in the production process.
3. There should not be any kind of government intervention.
4. There is no change in competitors' actions on product differentiation.

Exceptions to the law

The law of supply does not hold well in the following cases:

1. Future expectations in the fall or rise in the price level. If prices are expected to fall, the sellers sell more at present; and if prices are expected to rise, they will sell only less and store it.
2. Changes in the level of technology will create changes in tastes and preferences of the consumers that, in turn, affect the existing firms.

3. Changes in weather, national and international disturbances will also influence the supply of products. This will alter the shape of the supply curve, i.e., slops downwards from left to right.
4. Backward sloping supply curve: When wages of labourers in an industry or a firm rise to a level where the labourers get maximum satisfaction level, then they will work less than before in order to have more leisure time. The supply curve in such a situation is backward sloping.

ELASTICITY OF SUPPLY

The concept of elasticity of supply is referred to as the extent to which the supply of the product increases or decreases as a result of the change in product price. In short, it is defined as the responsiveness of the sellers to a change in the price of the product.

Elasticity of supply can be measured with the help of the following formula:

$$e_s = \frac{Percentage\ change\ in\ quality\ supplied}{\text{Percentage change in price}}$$

$$e_s = \frac{\Delta Q_s}{\Delta \text{P}} \times \frac{P}{Q_s}$$

Where

ℓ_s = Elasticity of supply
ΔQ_s = The change in quantity supplied
ΔP = The change in price
Q_s = The original quantity supplied
P = The original price

The concept of elasticity of supply can also be illustrated in Figure 1.1.

Figure 1.1.

ELASTICITY OF SUPPLY

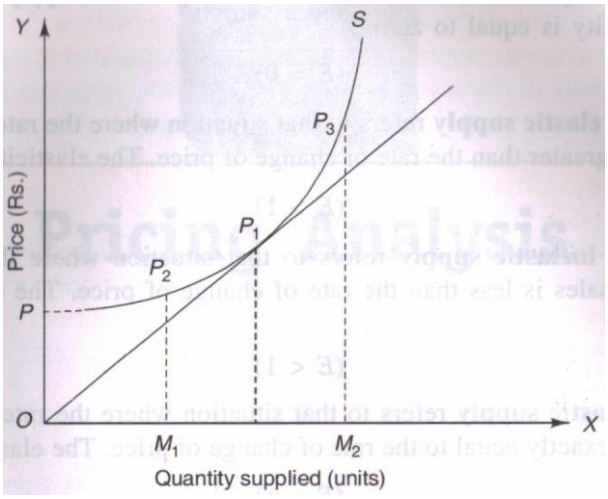


Figure 1.1 shows the following:

P and P_2 = Perfectly elastic supply
P_3 and *S* = Perfectly inelastic supply
P_2 and P_1 = Elastic supply
P_1 and P_3 = Inelastic supply

The element of time has the greatest influences on elasticity of supply. The longer the period of time, the more elastic is the supply. The supply curve, in a very short period of time, is usually perfectly inelastic. For example, rare paintings.

Types of elasticity of supply

Elasticity of supply is of five types which are given below:

1. Perfectly elastic supply
2. Perfectly inelastic supply
3. Relatively elastic supply
4. Relatively inelastic supply
5. Unitary elastic supply

1. Perfectly elastic supply refers to that situation where though there is no change in the price level, there will be change in the supply or sales of a product. The elasticity is infinite.

$$(E = \infty)$$

2. Perfectly inelastic supply refers to that situation where though there is heavy change in the price level, there will be no change in the supply or sales of a product. The elasticity is equal to zero.

$$(E = 0)$$

3. Relatively elastic supply refers to that situation where the rate of change of supply or sales is greater than the rate of change of price. The elasticity is greater than one.

$$(E > 1)$$

4. Relatively inelastic supply refers to that situation where the rate of change of supply or sales is less than the rate of change of price. The elasticity is less than one.

$$(E < 1)$$

5. Unitary elastic supply refers to that situation where the rate of change of supply or sales is exactly equal to the rate of change of price. The elasticity is equal to one.

$$(E = 1)$$

Questions for discussion

1. Explain the determinants of supply
2. Explain the law of elasticity of supply

LESSON – 5

PRODUCTION DECISIONS

1. Demand Analysis

The important aspects dealt with under demand analysis are: individual and market demand; demand estimation; demand function; demand distinctions; demand forecasting and elasticity of demand and its relevance in decision-making in business.

Demand forecasting attempts to estimate the likely demand for a product in future periods. If future demands are identified, production can be better planned. The basic techniques dealt with under business and economic forecasting are: sources of data (expert opinion, surveys and market experiments); time series analysis (trend projections); barometric forecasting; and econometric in model building.

Thus, demand analysis helps business executives to carry out business process; to strengthen market position; to maximize profits; and to maximize social welfare.

2. Production Analysis

Production analysis plays a pivotal role in managerial economics. It is concerned with the supply side of the market. It deals with physical terms of the product produced in a business firm. Decision like location of the production unit; the amount of products to be produced; the scale of production and the extent of product-mix can be taken through production analysis.

Production analysis relates physical output to physical inputs (factors of production). In other words, it highlights production functions and their managerial uses. Production theory includes the analysis of production function with ONE variable input; production function with ALL variable inputs; and production function with TWO variable inputs.

The production function with ONE variable input is otherwise known as *The law of variable proportions.* The production function with ALL variable inputs is otherwise known as *The laws of returns to scale.* The production function with TWO variable inputs is otherwise known as *production function through isoquants.* The main aspects dealt

with under production analysis are: production functions, returns to scale, isoquants, economies and diseconomies of scale.

3. Cost Analysis

Cost analysis plays an important role in decision-making of a business firm. It is also concerned with the supply side of the market. It is discussed is monetary terms of the product produced in the business firm. The main aspects dealt with under cost analysis are: cost concepts, cost behaviour in the short run and long run, cost functions, cost determinants, cost control and cost reduction.

Cost analysis especially deals with the various cost concepts and their practical usefulness in managerial decision-making.

4. Pricing Analysis

Pricing analysis forms the core of managerial economics. It plays an important role in profit planning. The success of a firm largely depends upon the correct price decisions taken by it. If the price is set too high, the firm may not find enough consumers to buy its product. If the price is set too low, the firm may not be able to cover its costs. Thus, setting an appropriate price is important for every business firm.

At what price and in what quantity are the productive factors obtained from the factor market and at what price and in what quantity are the products sold in the product market? These questions can be answered through the analysis of different market structures such as perfect competition, monopoly, monopolistic competition, oligopoly, duopoly, bilateral monopoly, and discriminating monopoly.

Theoretically, the buyers and sellers alone determine the price of a product in the market. Practically, competitions and the governments are also involved in the pricing process. The competitors are potential rivals who produce and sell related products. The government influences the price of a product through taxes, subsidies and direct price controls.

The main aspects dealt with under pricing analysis are: The concept of market mechanism, price determination under different market structures, pricing policies, pricing methods and approaches.

5. Profit Analysis

Profit is the best index of good performance of a business firm. Generally, firms aim at making profits. But the survival of very business firm depends upon its ability to earn profit. Traditionally, profit maximization is assumed to be the objective of a business firm. In reality, firms may not aim at maximizing profit but they do have a profit policy. Hence, decisions concerning level of profit, rate of profit, reinvestment of profit, etc., are relevant in every business firm nowadays.

The main aspects dealt with under profit analysis are: nature and measurement of profit, profit theories, profit policies, profit planning control (break-even analysis) and profit forecasting.

6. Investment Analysis

Investment analysis is concerned with planning and control of capital expenditure. The essence of this analysis is to compare the benefits that accrue over a period of time with the amount of capital invested.

The decisions on amount of investment, rate of investment, the proportion of new investment, and replacement investment are some of the investment issues which can be evaluated through cost-benefit analysis in general and capital budgeting in particular.

The main aspects dealt with under investment analysis are: nature of capital budgeting cost of capital, capital investment appraisal and so on.

7. Managerial Techniques

The Managerial techniques like linear programming technique, input-output technique and game theory are clearly analyzed under managerial analysis. The above-mentioned techniques are the basic to managerial economics in business decision-making.

Production Functions

The term "production function" refers to the relationship between the inputs and the outputs produced by them. The terms "factors of production" and "resources" are used interchangeably with the term "inputs". The relationships are purely physical or technological in character, that is, it ignores the prices of inputs. The study of the production function is with a given state of technology.

The production can be expressed in the form of a schedule. Table shows two inputs, labour (X) – that is, number of men, capital (Y), that is, the number of tones of iron ore produced with the various combinations of inputs.

Where Y, the units of output, is a function of the quantity of two or more inputs with X1 including units of labour, for example, and X2 units of machinery. Some factors of production may be assume as fixed (i.e., not varying with changes in output); such factors will not enter the equation. The production function can be estimated by the method of least squares.

In economic theory, we are concerned with three types of production functions, viz.,

(1) Production function with one variable input,
(2) Production function with two variable inputs, and
(3) Production function with all variable inputs,

1. Production Function with one variable input

Law of Variables Proportions

In economics, the production function with one variable input is illustrated with the well-known Law of Variable Proportions. The law of variable proportion is one of the fundamental laws of economics. It has also been called as the Law of Diminishing Marginal Returns.

1. Production function with one variable input

Law of Variables Proportions

In economics, the production function with one variable input is illustrated with the well-known Law of Variable Proportions. The law of variable proportion is one of the fundamental laws of economics. It has also been called as the Law of Diminishing Marginal Returns.

One Factor Fixed and others Variable

Law of variable Proportion shows the inputs-output relationship or production function with one factor variable while other factors of production are kept constant. Suppose a farmer has 20 acres of land to cultivate. The land has some fixed investment, i.e., capital on it: a tube well, farm house and farm machinery. They farmer can, however, vary the number of men to be employed on its cultivation. Labour is thus the variable factor. The change in the number of men will change the output.

Law of Eventually Diminishing Returns, i.e., Marginal Returns only Eventually Declining

The point worth noting is that the law does not state that each and every increase in the amount of the variable factor employed in the production process will yield diminishing marginal returns. It is possible that initial increases in the amount of variable factor employed in the production process may yield increasing marginal returns. However, in increasing the amount of the variable factor employed, a point will be reached where the marginal increases in total output will begin declining or marginal return will begin declining.

Three Stages of Production

The total, marginal and average product curves in demonstrate the law of variable proportions. The figure also shows three stages of production associated with Law of Variable Proportions.

Total product curve is divided into three segments popularly known as three stages of production as under:

Stage I

(1) Stage I is the segment from the origin to point, X2.

(2) At this point (, X2), the marginal product of X equals its average product.

(3) X2 is, of course, also the point at which the average product is maximized.

(4) In this stage, the production function is characterised first by increasing marginal returns to the variable factor from the origin to point X1 and then by diminishing marginal returns, from X1 and X2.

(5) In stage I, it is not correct to understand that only increasing marginal returns take place. For upto a point, increasing returns and thereafter diminishing returns take place. Stage I should not, therefore, be identified with increasing marginal returns only.

Stage II

The second stage lies in the range from X2 to X3. In other words, Stage II begins where the average product of the variable factor is maximized and continues to the point at which total product is maximized and marginal product is Zero. This stage is characterised by diminishing returns to the variable input over its entire range. That is, although total product is increasing in this range, it does so at a continuously decreasing rate.

Stage III

Finally, we have Stage III, the area beyond X3 where the total product curve starts decreasing. In this range, the marginal product of the variable factor is negative.

Stage II is Rational

Only stage II is rational which means relevant range for a rational firm to operate. For no firm will choose to operate either in Stage I or Stage III; in Stage I, it is profitable for the firm to keep on increasing the use for labour and in Stage III<MP in negative and hence it is inadvisable to use additional labour. The firm, therefore, has a strong incentive to expand through Stage I into Stage II.

Stages I and III are Irrational

Stages I and III are described as irrational in that management if it is to maximize profits will never knowingly apply the variable to the fixed factors in any combination which will yield a total product falling in either of these two stages.

Assumptions

1. Constant technology. If technology changes. Marginal and average product may rise instead of diminishing.
2. Short Run. The law operates in the short run because it is here that some factors are fixed and others are variable. In the long run, all factors are variable.
3. Homogeneous Input. The variable input as applied unit by unit is homogeneous or identical in amount and quality.
4. It is possible to use various amounts of a variable factor on the fixed factors of product.

2. Production Function with Two Variable Inputs

Isoquants

To understand a production function with two variable inputs, it is necessary to explain what and isoquant is. An isoquant is also known as Iso-product curve, Equal product curve or a Production indifference curve. These curves show the various combinations of two variable inputs resulting in the same level of output. Table 3 Show how different pairs of labour and capital result in the same output.

It will be seen that output is the same either employing 4L + 1C or by 5L + OC (and so on). This relationship, when shown graphically, results in an isoquant.

Thus, by graphing a production function with two variable inputs, one can derive the isoquant tracing all the combinations of the two factors of production that yield the same output. An isoquant is defined as the curve. Passing through the plotted points representing all the combinations of the two factors of production which will produce a given output. Fig.3.5. gives a typical Isoquant diagram where as one moves upward to the right, higher levels of outputs are obtained, using larger quantities of output. For each level of output there will be a different isoquant. When the whole array of isoquants are represented on a graph, it is called an Isoquant Map.

Substitutability of Inputs

An important assumption in the Isoquant Diagram is that the inputs can be substituted for each other. Let us take a particular combination of X and Y resulting in an output q 600, one finds other quantities of the inputs resulting in the same output. Let us suppose that X represents labour and Y, machinery. If the quantity of the labour (X) is reduced, the quantity of machinery (Y) must be increased in order to produce the same output.

MRTS

The slope of the isoquant has a technical name: marginal rate for technical substitution (MRTS), or sometimes, the marginal rate of substitution in production. Thus, in terms of inputs of capital services K and labour L.

$$MRTS = dk/dL$$

(MRTS is similar to MRS, i.e., Marginal Rate of Substitution, which is the slope of and indifference curve).

Types of Isoquants

Isoquants assume different shapes depending upon the degree of substitutability of inputs under consideration.

(1) **Linear isoquants.** Here, there is perfect substitutability of inputs. For example, a given output say 100 units can be produced by using only capital or only labour or by a number of combinations of labour and capital, say 1 unit of labour and 5 units of capital, or 2 units of labour and 3 units of capital, and so on. Likewise, given a power plant equipped to burn either oil or gas, various amounts of electric power can be produced by burning gas only, oil only or varying amounts of each. Gas and oil are perfect substitutes here. Hence, the isoquants are straight lines.

(2) **Right-angle Isoquants.** Here, there is complete con-substitutability between the inputs (or strict complimentarity). For example, exactly two wheels and one frame are required to produce abicycle and in no way can wheels be substituted for frames or vice-versa. Likewise, two wheels and one chassis are required for a scooter. This is also known Leontief Isoquant or Input-output isoquant.

(3) **Convex Isoquant.** This form assumes substitutability of inputs but the substitutability in not perfect. For example, a shirt can be made with relatively small amount of labour (L1) and a large amount of cloth (C1). The same shirt cab ne as well made with less cloth (C2), if more labour (L2) is used because the tailor will have to cut the cloth more carefully and reduce wastage. Finally, the shirt can be made with still less cloth (3) but the tailor must take extreme pains so that labour input requirement increases to L3. So while a relatively small addition of labour from L1 to L2 allows input of cloth to be reduced from C1 to C2, a very large increase in labour from L2 to L3 is needed to obtain a small reduction in cloth from C2 to C3. Thus the substitutability or labour for cloth diminishes from L1 to L2 to L3.

Main Properties of Isoquants

1. An isoquant is downward sloping to the right, i.e., negatively inclined. This implied that for the same level of output, the quantity of one variable will have to be reduced in order to increase the quantity of other variable.

2. A higher isoquant represents larger output. That is, with the same quantity of one input and larger quantity of the other input. Larger output will be produced.

3. No two isoquants interest or touch each other. If two isoquants intersect or touch each other, this would mean that there will be a common point on the two curves; and this would imply that the same amount of two inputs can produce two different levels of output (i.e., 400 and 500 units) which is absurd.

4. Isoquant is convex to the origin. This means that its slope declines from left to right along the curve. In other words, when we go on increasing the quantity of one input say labour by reducing the quantity of other input say capital, we see that less units of capital are sacrificed for the additional units of labour.

III Production Functions with all Variable Inputs

A closely related question in production economics is how a proportionate increase in all the input factors will affect total production. This is the question of returns to scale and one can think of three possible situations:

(1) If the proportional increase in all inputs is equal to the proportional increase in output, returns to scale are constant. For instance, if a simultaneous doubling of all inputs results in a doubling of production, then returns to scale are constant.

(2) If the proportional increase in output is larger than that of the inputs, then we have increasing returns to scale.

(3) In output increase less than proportionally with input increase, we have decreasing returns to scale.

The most typical situation is for a production function to have first increasing then decreasing returns to scale.

The increasing returns to scale are attributable so specialization. As output increases, specialized labour can be used and efficient, large-scale machinery can be employed in the production process. However, beyond some scale of operations not only are further gains from specialization limited, but also co-ordination problems may begin to increase costs substantially. When coordination costs more than offset additional benefits of specialization, decreasing returns to scale begin.

Returns to Scale and Elasticity Concept

There is an elasticity concept which is related to the returns to scale concept. This is known as All Input Elasticity of Output. The formula is:

$$\text{eQ. } 1 = \frac{\text{per cent change in output}}{\text{Percent change in all outputs}}$$

Returns to Scale and Returns to an Input

Two features of production functions that it is important to grasp are returns to scale and returns to an input.

Returns to scale describe what happens to the output rate when each input rate is increased by the same proportion. If output increases by a larger percentage than the increase in each input then there are increasing returns to scale; if it increases by a smaller percentage there are diminishing returns to scale; if it increases by the same proportion there are constant returns to scale.

Returns to an input describe what happens to output as only one input is varied, holding all others constant. Again, these returns may be increasing, diminishing or constant.

Importance of Returns to Scale Concept

The returns to scale concept is quite important in the theory of production. If an industry is characterized by increasing returns to scale, there will be a tendency for expanding the size of the firm, and thus the industry will be dominated by large firms. The opposite will be true in industries where decreasing returns to scale prevail. In case of industries characterized by constant returns to scale, firms of all sizes would survive equally well.

Optimal Input Combinations

So far, we have discussed the production function which has a purely physical or technological character. However, it does not tell which input combinations are optimal; for that purpose, one has to take into account the input prices.

Isocost curves

In this connection, one has to consider yet another but important diagram consisting of isocost curves. Here also, the exesrepresent quantities of the inputs X and Y. Let us suppose that the prices of the inputs are given, there being no quantity discounts or other reasons for the firm to get larger quantities at lower prices. We now plot the various quantities of X and Y which may be obtained from the given monetary outlays. Fig. 10 shows the resulting isocost curves (which are straight lines under the assumption made here), one isocost showing the quantities of X and Y that can be purchases for Rs.1000, another isocost curve showing the quantities of X and Y which can be purchased for an expenditure of Rs.2000, and so on.

Like wise, in order to minimize the costs for a given output, one way again refer to the isoquant and isocost curves in Fig.11. This time one moves along the isoquant representing the deisred output. It should be clear that the minimum cost for this input is represented by isocost line tangent to the isoquant.

Measurement of Production Function

Several types of mathematical functions are commonly employed in the measurement of production function but in applied research, four types have had the widest use. These are linear functions, power functions, quadratic functions and cubic functions,

(1) Linear Function

A Linear production function would take the form:

Total product: Y = a+bX

From this function equation for average product will be;

$$\frac{Y}{X} = \frac{a}{X} + b$$

The equation for the marginal product will be:

$$\frac{\Delta}{\Delta}\frac{Y}{X} = b$$

(2) Power Function

A power function expresses output, Y, as a function of input X in the form:

$$Y = ax^b$$

Some important special properties of such power function are:

(i) The exponents are the elasticities of production. Thus, in the above function, the exponent b represents the elasticity of production.

(ii) The equation in linear in the logarithms, that is, it can be written log Y = log a + b long X

When the power function is expressed in logarithmic form as above, the coefficient b represents the elasticity of production.

(iii) If one input is increased while all others are held constant, marginal product will decline.

(3) Quadratic Production Function

The production function may be quadratic, taking the following form:

$$Y = a + bx - cx^2$$

Where the dependent variable, Y, represents total output and the independent variable, X, denotes input. The small letters are parameters; their probable values, of course, are determined by a statistical analysis of the data.

The special properties of the quadratic production function are as under:

(i) The minus sign in the last term denotes diminishing marginal returns.

(ii) The equations allows for decreasing marginal product but not for both increasing and decreasing marginal products.

(iii) The elasticity of production is not constant at all points along the curve as in a power function, but declines with input magnitude.

(iv) The equation never allows for an increasing marginal product.

(4) Cubic Production Function

The cubic production function takes the following form:

$Y = a + bX + cX2 – cX3$

Some important special properties of a cubic production function are:

(i) It allows for both increasing and decreasing marginal productivity.

(ii) The elasticity of production varies at each point along the curve.

(iii) Marginal productivity decreases at an increasing rate in the later stages.

Questions for discussion

1. Explain the importance of returns to scale
2. Explain the law of variable proportion with suitable illustration.
3. Write a short note on linear homogeneous production function
4. Explain the concept of returns to scale

LESSON – 6

COST CONCEPTS

1. Opportunity Cost or Economic Cost

Opportunity cost or economic cost is the amount of subjective value foregone in choosing one activity over the next best alternative. It is an indirect cost or an imputed cost. Opportunity costs are incurred when budgetary resources are allocated to one department instead of the other. A firm cannot retain a hired input if it is paid a lower price for it than another firm.

Actual costs mean the actual expenditure incurred for producing a good or service. In this example the cost of factors hired, Rs.16,000 crores is known as the actual cost or outlay cost or absolute cost.

2. Explicit and Implicit Cost

Explicit costs or out of pocket costs involve an actual payment to hire labour or purchase inputs required in production. They include the wages to hire labour, the interest on capital, rent on buildings and equipment and cost of raw material and semi finished goods. Implicit costs refer to the value of inputs owned and used by the firm in its production process. The amount, which a firm could earn by selling or hiring these inputs, is the implicit cost or the book cost. In the above mentioned example, Rs.16,000 crores is the explicit cost and Rs.8,350 is the implicit cost.

3. Sunk and Incremental Costs

Sunk costs are expenditures made in the past or that may be made in future as part of contractual agreement. The costs for inventory and future rental payments on a warehouse and contractual commitment to labour unions that must be paid as a long term lease are sunk costs. They are not affected by decision making therefore, they are regarded as irrelevant for short run analysis.

Marginal or incremental costs play a major role in decision making. Marginal cost is the change in the total cost for a unit change in output. It helps in making short run decisions about profit maximizing rates of output. While incremental cost is a broader concept and refers to the change in total cost from implementing a particular management

decision such as introduction of new product line, undertaking a new advertising campaign, adding a new machine, changing the distribution channel and replacing the old machine.

Since incremental costs can be avoided by not bringing a change in the activity they are also called avoidable or escapable costs.

4. Historical Cost and Replacement Cost

The historical cost of an asset refers to the actual cost incurred at the time of the purchase of an asset. Replacement cost means the price to be paid to purchase an asset today. Suppose, the price of a PC 1980 was Rs.30,000 and the present cost is Rs.50,000. The original cost of Rs.30,000 is the historical cost and Rs.50,000 is the replacement cost. The balance sheets show assets at their historical costs. But due to variation in price over time replacement costs are relevant for managerial decisions.

5. Fixed and Variable Costs

Fixed costs remain constant irrespective of a change in the volume of output, upto a certain level of plant capacity. They are incurred even when output is nil. On the other hand variable costs vary in direct proportion to changes in output. The distinction between fixed cost and variable costs is important in forecasting the effect of short run changes in volume of output, cost and profits.

6. Short Run and Long Run Costs

Short run costs are the costs incurred on the variable inputs in the short run. They vary with the variation in output within a given plant capacity. Long run costs are the costs incurred on the fixed inputs. They are costs across all possible capacities. Knowledge of short run costs is useful for pricing and output decisions and long run costs provide information for planning the growth and investment policies of the firm.

7. Private and Social Costs

Private costs relate to cost incurred by the firm as a production unit. While social costs are borne by the society though generated by productive activity of the firm. The cost incurred by expansion of output is private cost but pollution, traffic congestion, and

accidental hazards are external to the firm, thus known as social costs. Development of dams, rose garden, amusement parks and the like are benefits to the society by the productive activity of the firm, taxes and subsidies are private costs to be borne solely by the firm.

8. Shutdown and Abandonment Costs

Shutdown costs are incurred when there is temporary cessation of business activity, which could be saved if production continues. They include sheltering of plant and equipment, lay off expenses etc. Abandonment costs are the cost of retiring a fixed asset from use. Permanent cessation of production raised the problem of disposal of assets.

9. Separable and Common Costs

Costs that can be attributed to a product, a department, or a process are the separable costs and the rest are common costs. For example, in a multi product firm, raw material can be separated product wise. But the managerial cost is a common cost. The distinction between the two is also called and indirect cost respectively.

10. Inventory Costs

Inventories are generally referred to as the stocks held by a firm. Costs incurred to hold inventories are called as inventory costs that comprise capital tied up in the inventory, the carrying costs and the ordering costs of inventories. Carrying costs are the costs of holding materials in the stores. They include the cost of storage space, bins, protection of assets, interest on blocked funds, insurance, and costs of spoilage/ obsolescence. Ordering costs comprise the costs of placing orders, inspection, checking and handling of goods, the cost of floating tenders, stationary, fax, etc. The inventory cost are minimized when the carrying costs and ordering costs are balanced and the resulting order quantity is called the economic order quantity / economic lot size.

11. Information Costs

Globalization of economic activity has led to internationalization of production and consumption. The manager must be aware of the latest developments in the industry

in which he operates so as to make better decisions. He may have to make inventory capacity decisions, modify product line, and customize products to local tastes, and so on. With the advent of information economy creation of value is increasingly based on knowledge and communications rather than on natural resources and physical labour as in the past. For instance, computer-aided design (CAD) and computer aided manufacturing (CAM) has increased producers' ability to produce several products for different markets. Spread of computer networks and IT speed up delivery of goods, decreased inventory, cuts wastes and generally increases productivity. Thus, in the present Age of Information, a manager has to incur costs.

To acquire an information source that can help in forecasting, or Acquire information that influences forecasts. The decision maker should acquire the additional source or information only if its expected value (in making better decision) exceeds its costs.

Cost – Output Relationship: Long-Run

In the long-run, firm has no fixed has no fixed commitments and so all long-run costs are variable. The firm faces a long-run production function and a cost equation, which in the two-input cases of the previous chapter are of the following type:

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

$$TC + LP_L + KP_K$$

Given factor prices and a specific production function, one can draw an expansion path which gives the least-costs associated with various levels of output, which in fact, yields the long-run total cost schedule / curve. Thus, the following figure gives the following LTC schedule.

Output	LTC
Q_1	C_1
Q_2	C_2
Q_3	C_3
Q_4	C_4

- It is obvious from figure $Q_4 > Q_3 > Q_2 > Q_1$ and $C_4 > C_3 > C_2 > C_1$, which proves that LTC is an increasing function of output. The rates of change in these two variables are not known unless; the qualitative relationship (directional) is

quantified. If one results the concepts of returns to scale, and assumes fixed factor prices, one could see three things:

- When returns to scale are increasing, LTC increasing as output increasing but at a less than proportionate rate.
- When returns to scale are constant, LTC and output move in the same direction and same proportion.
- When returns to scale are decreasing, LTC increasing at a faster rate than does output.

Thus, depending upon the nature of returns to scale, there will be a relationship between LTC and output, given factor prices. It is generally found that most industries and firms reap increasing returns to scale to start with, which are followed up by constant returns to scale, which give place to decreasing returns to scale eventually. This is primarily because of the indivisibility of the most efficient plants, equipments and personnel and the degree of specialization permitted by plant size. When the scale of operation is small, the firm is unable to take advantage of the most sophisticated technology, reflected in a large plant, highly competent management and a high degree of division of labour.

For example, a farmer with one acre of land may not be able to take advantage of a tractor and a tube well, but as he grows bigger he will be able to introduce such efficient tools of farming, and thereby reap increasing returns to scale. However, better technology remains to be introduced and management of large resources under one roof might pose problems, thereby giving rise to decreasing returns to scale. Similarly, a small industrial enterprise may not find it worthwhile (or feasible) to go in for sophisticated plant and management personnel but as it grows, it may go in for such things to get the advantage of increasing returns to scale, which after a stage would take off to the region of decreasing returns to scale. In such a situation, the relationship between LTC and output will be of a changing character. As output expands, in the beginning LTC would increase but less than proportionately; after a while, LTC would increase and at a proportionate rate, and eventually LTC would increase more than proportionately. A hypothetical example could be the following.

Table: 2.1 - Cost - Output Relationship: Long - Run			
Q	**LTC**	**LAC**	**LMC (arc)**
0	0	-	-
5	25	5.00	5
10	45	4.50	4
15	60	4.00	3
20	85	4.25	5
25	120	4.80	7
30	180	6.00	12

$$LMC\ (arc) = \Delta LTC / \Delta Q$$

The LTC curve gives the least total cost for various levels of output when all the factors of production are variable. Its shape is such that the curve is first concave and then convex as looked from the output axis. As seen above, its shape follows from the operations of the varying degrees of returns of scale, given the factor prices.

The relationship between total, average and marginal is mathematical in character and as with regard to TPPL, APPL and MPPL Curve. The shapes of LAC and LMC follow from that of LTC curve. Both LAC and LMC are U-shaped. Further, the following relationships hold good.

(a) At the point if inflexions on LTC curve (A), LMC takes the minimum value.

(b) At the point of kink on LTC curve (B) – where the slope of the straight line from

(c) LAC is the least when LMC = LAC

(d) LAC curve is falling when LMC < LAC

(e) LAC curve is rising when LMC > LAC

The foregoing cost-output relationship assumes constant factor prices. However, one can conceive of a large firm, expansion of which could exercise some influence on factor prices wage rate and capital rental. If so, what would be the cost-output relationship? As the firm expands it would hire more units of factors of production, which given the factor supply, would tend to increase factor prices. Recall that in the beginning, there are increasing returns to scale, then constant and finally decreasing returns to scale.

Super imposing both the changing factor prices and the nature of returns to scale together, the three stages appear as follows:

(a) In the beginning, because of increasing returns to scale, cost increases less than proportionately as output increases but because of rising factor prices, cost increases more than proportionately as output expands. Thus, the two forces work in opposite directions and so the net effect is ambiguous. However, there is overwhelming evidence in favour of LTC increasing at a decreasing rate when the scale of operation is small.

(b) In the intermediate stage, where returns to scale are constant and factor prices are rising, LTC increases more than proportionately as output expands.

(c) In the third and final stage, where returns to scale are decreasing and factor prices are increasing, both the forces reinforce each other in favour of increasing LTC at an increasing rate.

Thus, the relationship between LTC and output under changing factor prices is similar to the one under constant factor prices. The difference between the two is in terms of extent (magnitude) and nor in terms of kind. Under the changing factor prices, the decreasing rate of increasing in LTC (or rise in LAC) is faster than under constant factor prices. In consequence, LAC curve is U – shaped under both the situations.

The relationship between cost and output which one gets under general situation, that is when all factors of production are variable (long-run) and so are factor prices, is often described under economies and diseconomies of scale. In other words, economies and diseconomies of scale combine the effects of returns to scale and factor prices on the relationship between cost and output. In what follows, we shall elaborate this rather important subject from the view point of decision-makers.

Cost-Output Relationship: Short-Run:

In the short-run, at least one factor of production is fixed. Due to this constraint, the firm may not be able to achieve the best combination of inputs for its desired level of output. Consequently, the short-run cost could exceed the long-run cost for a given output level.

The short-run cost curves are derived from the short-run production curves, given the factor prices. In fact, the one set is inverse of the other. This can be explained as follows.

Recall that there are seven cost concepts in the short-run: total fixed cost (TFC), total variable cost (TVC), total cost (TC), average fixed cost (AFC), average variable cost (AVC), average total cost (ATC), and marginal cost (MC). Also, remember that given any one of the three: total, average and marginal, the other two are simply arithmetic. In case of two inputs, we have

$$TC = LP_L + KP_K$$

If labour is the variable input and capital the fixed input, then

$$TVC = LP_L \text{ and } TFC = KP_K = C \text{ (constant)}$$

Then

$$AVC = \text{--------} = LP_L/Q = (P_L\ 1/Q/L)$$

$$= P_L\ (1/APP_L) \qquad (5.3)$$

$$ATC = AVC + AFC$$

$$= P_L\ (1/APP_L) + AFC \qquad (5.4)$$

$$MC = \partial TC/\partial Q = \partial(TVC + TFC) / \partial Q = \partial(TVC) / \partial Q + 0$$

$$\partial(LP_L) / \partial Q = P_L\ \partial L/\partial Q = P_L\ (1/\partial Q/\partial L)$$

$$= P_L\ (1/MPP_L) \qquad (5.5)$$

Thus, if factor prices are constants, AVC is inversely proportional to APP_L, and MC to MPP_L, and ATC is inversely related to APP_L. These could be illustrated further through a hypothetical example. Consider the short-run production function in table given below.

Table: 2.1 - Short - run Factor Product ivies (K = 2)

L	$Q(TPP_L)$	APP_L	MPP_L(arc)
0	0	-	-
1	15	15.0	15
2	31	15.5	16
3	48	16.0	17
4	59	14.8	11
5	68	13.6	9
6	72	12.0	4
7	73	10.4	1
8	72	9.0	-1
9	70	7.8	-2
10	67	6.7	-3

Where capital input is fixed at K = 2. If factor prices are assumed as $P_K = 50$, $P_L = 30$, the various calculations for costs would be as given in Λ calculations for average and marginal factor productivities are included for the sake of comparison.

A careful examination of table 2.1 reveals the following

1. There is an inverse relationship between APP_L and AVC, and MPP_L and MC. The reasons for this have been explained above.
2. Average fixed cost falls monotonously as output expands. This is because total fixed cost is invariance to output.
3. Average variable cost first falls as output expands, but after a certain point the relationship is reversed. Since factor prices are held constant, this relationship is entirely due to the behaviour of APP_L, which as seen in the previous chapter, is drawn from the law of variable (diminishing) returns, thus, the shape of AVC schedule is due to this law.
4. Average (total) cost first falls as output increases but again after a certain point the trend is reversed. Since ATC = AFC + AVC, the shape of ATC follows from those of AFC and AVC.
5. Marginal cost follows the same pattern as do AVC and AC. Its trends derived from that of MPP_L which behaves the way it does entirely due to the operation of the law of variable returns.

Table: 2.1 - Correspondence between production function and Cost Output Relationship: Short - Run

Labour input (L) (1)	Output (Q) (2)	APP_L (Q/L) (3)	Arc MPP_L (Q/L) (4)	TFC (KP_K) (5)	TVC (LP_L) (6)	TC (7)	AFC (TFC) Q (8)	AVC (TVC) Q (9)	AC (10)	Arc MC ΔTC/ΔQ (11)
0	0	-	-	100	0	100	-	-	-	-
1	15	15.0	15	100	30	130	6.7	2.0	8.7	2.0
2	31	15.5	16	100	60	160	3.2	1.9	5.1	1.9
3	48	16.0	17	100	90	190	2.1	1.9	4.0	1.8
4	59	14.8	11	100	120	220	1.7	2.0	3.2	2.7
5	68	13.6	9	100	150	250	1.5	2.2	3.7	3.3
6	72	12.0	4	100	180	280	1.4	2.5	3.9	7.5
7	73	10.4	1	100	210	310	1.3	2.9	4.2	30.0

($K = 2$, $P_L + 30$, $P_K = 50$)

As seen in the table above, there is a definite correspondence between factor productivities curves and short-run total cost curves, given the factor prices. The AVC and MC curves are U–shaped just as APP_L and MPP_L are inverted U-shaped. Further, the output level at which APP_L is maximum is also the output level at which AVC is the minimum. The same thing holds with regard to MPP_L and MC. The AC curve is U-shaped partly because the AVC curve is U-shaped and partly because the AFC is a monotonically falling curve.

There are a few important things with regard to the shapes of these cost curves which must be emphasized.

(a) The TFC curve is horizontal.

(b) The TVC curve start from origin, is concave from below in the beginning, and is convex from below after a certain level of output.

(c) The TC curve starts from a point above the origin and then follows the shape of the TVC curve. The TC and TVC curves are parallel.

(d) The output at which MC is minimum (Q_1) is less than the output at which AVC is minimum (Q_2), which in turn, is less than the output at which AC is the least (Q_3). The $Q_1 < Q_2$ because of the mathematical property of the relationship between average and marginal. The $Q_2 < Q_3$, for the AFC curve is falling monotonously. That is, output at which AVC is minimum precedes the one at which ATC is minimum, for ATC = AFC and AFC is falling continuously, thereby when AVC falls, AC falls partly because AVC is falling and partly because AFC is falling, when AVC rises, AC could fall, stay constant or rise, depending upon whether the increase in AVC out weight, just cancels or is out weighted by decrease in AFC.

(e) The MC curves passes through the minimum points of both the AVC and ATC curves. This is again due to the mathematical property of the relationship between average and marginal.

Cost Output Relationship: Long Vs Short - Run

Recall that for any given output, short-run total cost is greater than or equal to the long-run total cost. In fact, there is generally only one output level at which the costs

fewer than two periods are equal, and at all other output levels the short-run cost exceeds the long-run cost. Also, remember that in the short-run, the fixed cost depends on the quantities of fixed factors employed, which, in turn, determine the capacities of output which a firm could produce.

In figure 5.4 there is one total/average cost curve for each magnitude of fixed resources, call it capacity. Thus, there is a family of short-run cost curves, one for each capacity which a firm might create in the short-run. In the long-run, capacity itself is a variable and the firm could choose its capacity, depending upon the output it wants to produce in the long-run. The long-run curve envelops on the short-run cost curves, for the long-run cost cannot exceed the short-run cost. The long-run cost curve would be smooth if there is a short-run cost curve for every size of the plant. In Figure 2.4 above, STC_1, STC_2, STC_3 and STC_4 are four short-run total cost curves, where they assume fixed factors employed at K_1, K_2, K_3 and K_4, respectively ($K_4 > K_3 > K_2 > K_1$). It will be seen that the long-run and short-run costs are equal only at output levels Q_1, Q_2, Q_3 and Q_4, points of tangency between LAC and SAC curves. The LAC curve is U-shaped as SAC curves are, but the former is flatter than the latter.

An interesting point to note here is the total cost for a given output and the size of fixed resources (plant). The relationship is not uni-directional. If the output is small, the total cost is less for a small plant than for a large plant, and quite the reverse holds good for large outputs. This is because if a large plant is installed, it will remain under-utilized when output is small while a small plant will be inadequate for large outputs. It is for this reason that short run total cost curves cut each other and they extend to the output axis up to different lengths. Thus, for example, for output Q_1, the smallest plant is the most appropriate, for the total cost under this plant size equals C_1, which is less than that under any other plant size (C_2, C_3 and C_4). However, since STC1 curve does not go even up to output Q_2, it is not even feasible to produce Q_2 or more output under such a small plant.

Economy of Scale

First, as the firm increases its scale of operations, it becomes possible to use more specialized and technically more efficient form of all factors, especially capital equipment and machinery. For producing higher levels of output, technically more efficient

machinery is generally available which when employed to produce a larger output yields a lower cost per unit of output.

1. Division of Labour

Secondly, when the scale of operations is increased and the amount of labour and other factors becomes larger, introduction of a greater degree of division of labour or specialization becomes possible and as a result the long-run cost per unit declines. Thus, whereas in the short run, decreases in cost (the downward sloping segment of the short-run average cost curve) occur due to the fact that the ratio of the variable input comes nearer to the optimum proportion, Generally, a worker who has to perform one task in the production process of a commodity can to it more efficiently than the one who has to perform several tasks in it. Time of the workers is also saved.

2. Indivisibility and Economies of Scale

Economies of scale as arise from the imperfect divisibility of factors. In other words, they think that the economies of scale occur and therefore the long-run average cost falls because of the 'indivisibility' of factors. They argue that most of the factors are 'lumpy'. That is, they are available in large indivisible units, which can therefore yield lower cost of production when they are used to produce a large output. If a small output is produced with these costly indivisible units of the factors, the average cost of production will naturally be high.

3. Financial Economies

There are financial reasons for reduction in unit cost of production as the size of the firm increases. Due to bulk purchases large firms generally get large quantity discounts in buying raw materials and intermediate products than the small sized firms. Similarly, large firms can borrow funds from the commercial banks at relatively lower interest rate than smaller firms. Further, large firms can sell bonds and stocks in the capital market at more favourable terms. This reduces the cost of raising funds required for business purposes. Finally, large firms are able to take advantage of economies that result from spreading out of advertisement and other promotional costs.

4. Economies of Scope

Economies of scope refer to the reduction in costs that occur when a firm produces two or more commodities together rather than single one. Many examples of economies of scope can be given. For example, a passenger air line can profitable extend its operations by using the same air plane for providing cargo services which lowers its cost of operation. In such an airplane seats have to be removed and packets and bags containing goods can be placed to carry to their places of destination.

Cost Function

Costs which a firm incurs in the production of good or service depends on two things:

1. Firm's production function
2. Market's input's supply functions

As seen in the previous chapter, production function specifies the technical relationship between combinations of inputs and the level of output. Given this relationship and input prices (if they are fixed for the firm), one can easily determine the costs associated with different levels of output. The costs would thus vary as output level varies, nature of production function varies, or factor prices change. The nature of a production function is tantamount to factor productivities (efficiencies).

Putting all this together, we have the following cost function:

$$C = f(Q, E1, P1)$$

$$f\ 1,\ f3 > 0 > f2$$

Where

C = Total (production) cost

Q = Total output

E1= Efficiencies of inputs

P1 = Prices of inputs

The total cost is obviously an increasing function of output, for "there is no free lunch". Increasing production, ceteris paribus, requires increasing units of inputs and all inputs carry price tags. Improvements in factor productivities, other things remaining the

same, have a depressing effect on input requirements per unit of output, and since inputs have price tags, it leads to a decrease in total cost. It must be noted that factor productivities depends on the level of technology (use of computer, modern plants and equipments, etc), the quality of the work force and management, which are influenced by education, training and health conditions, and sincerity and integrity of the labour and management, which are reflected in absenteeism, strikes, lock outs and fooling around during working hours. Thus, through factor efficiencies, many factors exercise influence on the cost of production.

Since no output is possible without an input, an increase in input price, other things remaining the same, would lead to an increase in the cost of production input prices, like any other price, depends on their demand and supply, and on government regulations, if any. Generally, in the theory of firm behaviour, input prices are taken as parameters. This is because, a firm is usually an insignificant part of an economy, its activities have no perceptible bearings on the total demand for and supply of inputs in the economy, and so, on factor prices, However, if the form in question happens to be large in this respect, factor prices would be variables like output and factor productivities.

Before the section is closes, it must be emphasized that both factor productivities and factor prices are plural, though they have been argued in singular manner in the foregoing paragraphs. Thus, by an increase in factor productivities we mean, an increase in total factor productivity, or an increase in some productivity with other productivities held constant, or an increase in some productivities and decrease in some other but the effect of the former outweigh that of the latter on total cost. The arguments with regard to factor prices should be treated in a similar fashion.

On the three sets of cost determinants, output assumes a special role. This is for two reasons. One, output is the only variable which is under the direct control of the firm. Two, the relationship between total cost and output, though is unique in direction, in varying in terms of magnitude. That is, total cost increases as output expands, but the rate of increase varies from one set of output levels to the other for the same firm and for the same set of output level from one firm to another firm. For example, for firm A, between output levels 100 to 200, total cost might increase by just 1000 percent but between output levels 2000 and 400, the total cost might increase by 150 percent. Similarly, for

firm B even between output levels 100 to 200, the total cost might increase by 125 percent. Further, firms A and B may or May not belong to the same industry.

Due to high significant of the cost – output relationship, the same is discussed in detail separately for long – run and short-run.

Methods of Estimating Cost Functions

Several methods exist for the measurement of the actual cost output relation for a particular firm or a group of firms, but the four broad approaches accounting, engineering and statistical are the most important and commonly used.

1. Accounting Method: This method is used by the cost accountants. Essentially, in this method, the data is classified into various cost categories (i.e., fixed, variable and semi variable) and then observations of cost are taken at the extreme and various intermediate output levels. Then by plotting the output levels and the corresponding costs on a graph and joining them by a line, the cost functions are estimated. The cost functions, thus found, may be linear or non-linear. It must be noted that in finding cost functions from basic data in this way, no attention is generally paid to build up a hypothesis or to find out the changes in conditions which influences cost.

2. Engineering Method: In the engineering approach, the cost functions are estimated with the help of physical relationship such as weight of supplied and materials used in a process, rated capacity of a equipment, etc. Emphasis is placed primarily on the physical relationship of production and these are then converted into money terms (i.e., rupees) to arrive at estimated costs. This method may be useful if good historical data is difficult to obtain. But his method requires a sound understanding of engineering and a detailed sampling of the different processes under controlled conditions, which may not always be possible.

3. Statistical or Econometric Method: This method uses statistical techniques on economic data to find the nature of cost output relationship. The economic data may relate to past records of the firm (called, the time series data) or to the different firms in the same business to a point if time (called, the cross section data). If we use the time

series data we generally get a short run cost function, while if we take recourse to the cross section data we derive a long run cost function.

4. Survivor Method: This technique is developed on empirical evidence. In this method, it is assumed that relatively more efficient firms those with lower average costs will survive through time. Hence, by examining the size make up of an industry over time, one can determine the nature of its costs and output relations.

This method suffers from the following limitations

a) This technique assumes that survival is directly related to minimization of long run average costs, which implicitly assumes that firms are operating in a very competitive market.
b) It does not indicate the relative inefficiency of greater than or less than optimally sized operations.
c) Because of the long-run nature of the analysis, the survivor technique is particularly vulnerable to the distortions that may result from changing technologies.

It must be understood that the four approaches discussed above are not competitive, but are rather complementary to each other. They supplement each other. The choice of a method therefore depends upon the purpose of study, time and expense considerations.

Problems in the estimation of Cost Functions

We confront certain problems while attempting to derive empirical cost function from economic data. Some of these problems are briefly discussed below.

Basically, cost function is a relationship between cost and output. Had the shape of cost curve depended only on the rate of output, determining a cost function would have been fairly simple. But we know that cost in factors, besides the rate of output. So, the impact of these other factors has to be eliminated while estimating cost functions. This elimination process involves the following considerations.

1. Time Period

We must choose an appropriate time period for the analysis of cost. The choice of such a time period involves the following important considerations:

(A) **Normality:** The time period of study should be normal i.e., a period during which the changes in technology, plant size efficiency, and other dynamic events are non-existent or at the minimum.

(B) **Variety:** The length of period should be such that it includes sufficiently wide variations in output, so that enough observations are available for getting a reliable cost function.

(C) **Recent period:** Since the results of the cost function are to be used as a guide for future planning, the period chosen should be recent enough to include data which will be relevant for the future.

(D) **Units of Observation:** The cause and effect relationship between cost and output would be more useful if the data pertains to a shorter length of time. For example, by taking weekly or monthly data, we average a smaller number of changes in cost and output than by taking yearly data.

2. Technical Homogeneity

To eliminate or minimise the impact of technical differences on cost, the plants chosen for the study of cost output relationship should be characterized by homogeneous input and output structures. Homogeneity of inputs will ensure that the variations in costs due to different machines and equipment used in productions at different output levels are eliminated. Homogeneity in output reduces the problem of additively of heterogeneous product measurement.

3. Cost Adjustments

The choice of a proper data for cost measurement is obviously necessary. Generally, the cost data is not available in the form which can be readily used. It needs certain adjustments and precautions, which are the following:

(A) **Selection of Cost Data:** In order to find cost output relationship, one must select only those elements of cost that vary with output. Overhead costs and allocated

expenses that do not bear any relation to changes in output must be excluded. Further, it is always better to use data on total cost rather than unit cost, because (1) the unit or average cost will not be very revealing and there may be basic problems in interpretation of the results: and (2) average and marginal cost functions can be derived from the total cost function, no additional purpose is therefore served in using unit cost data.

(B) **Cost Deflation:** Since prices changes over time, any money value cost would therefore relate partly to output changes and partly to price changes. In order to estimate the cost output relationship, the impact of price change on cost needs to be eliminated by deflating the cost data by price indices. Wages and equipment price indices are readily available and frequently used to deflate the money cost.

(C) **Cost Deflation:** Since prices changes over time, any money value cost would therefore relate partly to output changes and partly to price changes. In order to estimate the cost output relationship, the impact of price change on cost needs to be eliminated by deflating the cost data by price indices. Wages and equipment price indices are readily available and frequently used to deflate the money cost.

3. Choice of the Functional Form

Finally, there is a problem of choosing the type of equation of curve that would fill the data best. The usefulness of any cost function for practical application depends, to a large extension, on appropriateness of the functional form chosen. There are three functional forms of cost function which are popular viz., linear, quadratic and cubic. The choice of a particular function depends upon the correspondence of the economic properties of the data to the mathematical properties of the functions. Let us discuss the economic and mathematical properties of the alternative hypothesis of total cost functions.

Diseconomies as Limits to Large Scale Production

Beyond a particular limit, however, certain disadvantages of large scale production emerge. When there is an expansion of the firm beyond an optimum limit, the very internal and external economies turn out to be diseconomies. These diseconomies, by raising the average cost of production, act as a limiting factor on the further expansion of

the firm. Since economies of large scale are not available beyond a certain point, firm cannot expand its size indefinitely.

Generally, the following factors of diseconomies of scale limit the size of a firm:

1. Difficulties of Management

As a firm expands, complexities and problems of management increase. Thus, after a point, the manager finds it difficult to control the whole production organization. The entrepreneur and management will not be able to maintain contact with each other and check on all the departments of a very large concern. The problem of supervision becomes complex and intractable, thus leading to increasing possibilities of mistakes and mismanagement. All these prove to be uneconomical, for the defects in organization will lead to waste and result in rising average costs.

2. Difficulties of Coordination

The tasks of organization and coordination become progressively more and more difficult with the increasing size of the firm. The management of the firm will gradually face numerous problems of decision making and organization. It may, therefore, not find enough time to give careful thought to individual problem. Decisions so taken in a hurry result in inefficiently and increase in the cost of goods.

3. Difficulties in Decision Making

A large firm cannot take quick decisions and make quick changes as and when they are needed, for it has to consult various departments for making any decisions and so urgent matters requiring timely decisions are inevitably delayed. This may sometimes cause loss to the firm.

4. Increased Risks

As the scale of production increase, investment also increases, so too the risks of business. The larger the output, obviously the greater will be the loss. To bear greater risks is an important limitation to the expansion of the size of a firm from an error of judgments or misfortune in business. Therefore, unwillingness to bear greater risks is an important limitation to the expansion to the size of a firm.

5. Labour Diseconomies

Extreme division of labour with a growing scale of output results in lack of initiative and drive in the executive personnel. Thus a large firm becomes more impersonal and contact between management and workers become less. As such there are more chances of occurrence of grievances, and industrial disputes which prove to be costly to the large firm.

6. Scarcity of Factor Supplies

Due to the increase in the concentration of firms in a particular locality, each firm will find scarcity of available factors. Hence, competition among firms in purchasing labour, raw materials, etc. Will be result in increased factor prices. Thus, extreme concentration of external economies becomes a sort of diseconomy in the form of high factor prices.

7. Financial Difficulties

A big concern needs huge capital which cannot always be easily obtainable. Hence, the difficulty in obtaining sufficient capital frequently prevents the further expansion of such firms.

8. Marketing diseconomies

When the industry expands and the firm grows, competition in the market tends to becomes stiff. Thus, firms under monopolistic competition (which is the most realistic market situation in many lines of production) will have to undertake extensive advertising and scale promotion efforts and expenditure which ultimately lead to higher costs unite it continuous.

Questions for discussion

1. Distinguish between explicit cost and implicit cost
2. Distinguish between money cost and real cost
3. Explain the various techniques used for cost reduction
4. Distinguish between fixed cost and variable cost
5. Explain the cost output relationship
6. Elaborate in economy of scale applicable for production functions
7. Explain the methods used for cost estimation

UNIT – III

Market Structure – Characteristics – Pricing and output decisions – Methods of pricing – Differential pricing Government intervention in pricing.

LESSON - 7

MARKET STRUCTURE

Meaning of the Market

Prof. Jevons defines market a place where commodities are sold. But the world is used to mean any body of persons who are in intimate business relations and carry on extensive transactions in any commodity.

Thus the term market in Economics is used to mean not to any particular market place where goods are bought and sold, but the whole region where buyers and sellers are in free intercourse with one another and the price of the same goods tends to be in equilibrium easily and quickly. Market, therefore, is classified into local, regional, national and international, depending upon the nature of the commodity bought and sold.

Market Forms

Broadly speaking there are tow types of market forms namely, (1) perfect competition (2) imperfect competition. Perfect competition is also called pure competition, where the market is said to be perfect. It means the sellers are selling various quantities of a homogeneous commodity at a uniform price. In imperfect competition the selling various quantities of a homogeneous commodity at a commodity at different prices. The various types of imperfect competition are monopoly, monopolistic competition, oligopoly, duopoly, etc.

Perfect Competition

Perfect competition is defined as a market form where all sellers are selling homogeneous product at a uniform price. Perfect competition is said to prevail when the following conditions are found in any market:

1. There is large number of firms producing and selling the product.'
2. The product sold by all firms is homogeneous.

3. The buyers and sellers have complete information regarding the price of the product.
4. The firms enjoy perfect freedom whether to product the product or not. Or there is free entry or exit of firms into industry.
5. Factors of production are perfectly mobile.

Characteristics of Perfect Competition

Perfect competition is said to prevail when the above conditions exist in any market. The characteristics of perfect competition are as follows:

1. Large Number of Firms

In perfect competition there is large number of firms in the industry producing the identical product. The position of a single firm is insignificant. When there is large number of firms producing and selling the product, a single firm cannot influence over the price of the product in any way. It has to simply follow what other firms are charging the price for the product. The output of a single firm constitutes a negligible part of the total industrial output.

2. Homogeneous Product

The firms under perfect competition produce homogeneous products. The products produced by them are exactly identical. The products produced by firms are perfect substitutes. Since the product is homogeneous, the firms cannot sell it at differentiated prices.

3. Perfect Knowledge

Under perfect competition all buyers and sellers are fully aware of the ruling price in the market. Since the buyers are fully aware of the price, no one seller can sell at a higher price. If the seller tries to sell the product at a higher price than that of the ruling price, then the buyers will shift to other sellers.

4. Free Entry and Free Exit

The free entry and free exit of firms is an important feature of perfect competition. What it means, is that there should not be any restrictions, legal or governmental, for firms either to start production or to close down production. If all firms are making normal profit, there will not be any inducement for new firms to come into production. If some firms are making supernormal profits, this will act as an inducement for new firms to enter into this field of production. If firms fail to earn normal profit even in the long run, they stop production.

5. Firm and Industry

The term 'Industry' refers to group of firms engaged in the production of a specific commodity. An industry comprises of firms producing homogeneous good. They are perfect substitutes. When firms producing similar commodity are grouped together, it becomes an industry. In other words all firms producing identical commodity are together called and industry.

6. Price and Output Determination

All firms in an industry have an important objective of maximizing profit. Maximizing profit is regarded as a rational behaviour of an entrepreneur. It is an important matter to understand what constitutes maximum profit. The entrepreneurial income is classified into two parts. Firstly he gets wages for his managerial function. This is included in the average cost constituent of the firm. There is another item called the surplus. The surplus is the difference between total revenue and the total cost. This is his residual income. This residual income is the profits of entrepreneurship.

Price and Output Determination in Perfect Competition

Under perfect competition, the individual firms are unable to influences the price. They have to simply take the price as given and take up production. The price of a product in perfect competition is determined on the basis of market demand and market supply. Demand curve for a product is derived on the basis of both Marshallian utility analysis and the new indifference curve technique. Demand curve sloes left to right downwards indicating the inverse relationship between the price and the quantity of the

product. The supply for the product is determined by price and the availability of factor inputs. Assuming the inputs for productions of commodities are favourable and the supply of the product depends upon the price. The supply curve slopes left to right upward indicating direct relationship between the price and quantity supplied. Thus, it has now been established that the market equilibrium price is determined by the forces of demand and supply. It is not the demand of a single buyer and the supply of a single seller that go to determine the price of the product, but the demand of all buyers of a product taken together (i.e. industry's demand curve) and the supply of all firms selling the product taken together (i.e. supply curve of the industry) determine the price of the product. The industry's supply curve shows the various quantities of a good which will be supplied at different prices. Thus the price is determined at the intersection of industry's demand curve and industry's supply curve. At that price the quantity demanded is equal to quantity supplied and this price is then called the equilibrium price. The following table shows the process of price determination under perfect competition.

Table – Market Demand and Supply Schedule

Possible Prices of a Product in Rs.	Quantity Demanded in Lakh metres	Quantity Supplied in lakh metres	Pressure on prices
Rs. 10	24	10	Downward
Rs. 15	22	12	do
Rs. 20	20	14	do
Rs. 25	16	16	Neutral
Rs. 30	12	19	Upward
Rs. 35	10	22	do
Rs. 40	8	25	do

If the above table is examined, we note that at Rs. 10 the demand for the product is 24 lakh metres but supply is only 10 lakh metres. Thus 14 lakh metres of shortage arises. If the price rises demand falls and supply increases. When the price cones to Rs.25, the quantity demanded will be equal to quantity supplied. Therefore the price of Rs.25 is called the equilibrium price. If the price is greater than the equilibrium price, the demand falls and the supply rises. With increased supply and decreased demand the price falls to

equilibrium level. Thus from the above discussion, it can be stated that the intersection between demand and supply determines the price in the market. Thus equilibrium price is said to be established.

Monopoly Meaning

Monopoly is a market form in which a single firm is selling the product in the market. The monopolist controls the entire market supply of single commodity which has no close substitutes. In the case of monopoly a single producer is facing a large number of buyers for his product. Thereby he can charge any price and earn huge profits.

Features of Monopoly

There is only a single seller for the product or service. The single seller may be a company or any other form of large business. If there are many producers for a product, it becomes competition. When there are few producers for the product, it becomes oligopoly. If then, there is to be a monopoly, there must be only one firm in the field. The distinction between the firm and industry disappears under conditions of monopoly.

The next important feature of a monopoly is that there should not be any close substitute for the monopoly product. It means that there are not other firms producing similar product. If there are firms producing close substitutes, then they are called, competitive firms. In the presence of competition, there cannot be any monopoly. Since there are different varieties of toilet soaps produced by several manufacturers, no one can establish a monopoly. But there are no close substitutes for drinking water and electric power supplied by public utilities. Hence they are monopolies.

A monopolist is the price giver or price maker. Since he is the sole producer, he can determine any price for his product.

In the case of monopoly, there are strong barriers for the firms to enter into the industry. In other words, other firms are prohibited to enter the monopoly industry. Whenever a firm enjoys sole control over the production of a commodity no other firm can enter and produce the similar commodity. The barrier for other firms to enter into this production may be economic, institutional or artificial.

If monopoly is to exist, following three conditions are necessary:

- There is a single seller or producer for the product.
- There are no close substitutes for the product.
- Strong barriers to the entry into the industry exist.

Price and output Determination

In monopoly a single firm constitutes the industry. Therefore there is no need for studying equilibrium of firm and industry separately in monopoly.

The demand curve facing an individual firm under perfect competition is a horizontal straight line. In perfect competition the firm is price taker and therefore he can sell any quantity at the price given by the industry. A perfectly competition firm is a mere quantity adjuster.

In the case of monopoly one firm constitutes the industry as such as the price is determined by the firm itself. The entire demand of the consumers for a product is facing the price. The monopolist can charge my price for his product because he is not facing any competition in the market. But he cannot sell more at a high price. Therefore he has to lower the price, if he wants to sell more. The demand curve for a monopolist is downward sloping. Since his output affects the price at which he can sell, price is not a given factor for him as it is for the firm producing under perfect competition.

Average Revenue

The demand curve facing the monopolist is the Average Revenue. The average revenue curve slopes downward to the right. It shows that larger quantities of the commodity can be sold at lower prices only.

Marginal Revenue

Marginal revenue refers to sale value of the additional output of the incremental output. Under perfect competition average revenue and marginal revenue are one and the same. The average revenue curve merges with marginal revenue curve in Perfect competition. But in monopoly marginal revenue curve falls below the AR. Curve. It

means that to sell additional quantities he has to lower the price. This reduction in price will apply not only to the new buyers but also to old buyers. Let us take the following example. There is a garment manufacturer. He sells 1000 dresses at Rs.50 per dress. To sell 1100 dresses he reduces the price to Rs.45. The sale value of the incremental output is Rs.4500.

Total revenue for 1000 dresses at Rs.50 – Rs.50, 000

Total revenue for 1100 dresses at Rs.45 – Rs.49, 500

Additional revenue = - Rs.500

The marginal revenue will be Rs.500. Thus under the conditions of monopoly marginal revenue will be always less the sale value of the additional output. After a stage is reached, the marginal value may become negative.

Average Cost and Marginal Cost

The cost of production of a monopolist will not be different from that of a firm under perfect competition. That monopolist has to buy factor input in order to product the output. He incurs both fixed and variable costs. The average cost curve of the firm is 'U' shaped, the marginal cost curve cuts average cost curve at its minimum point.

Monopolist's main objective is to maximize the profits. The conditions of profit maximization for firms under perfect competition hold good to the monopoly firm as well. The motive of the monopolist is the same as that of the motive of the perfectly competitive firm.

The monopoly firm will be in equilibrium at the level of output at which marginal cost equals marginal revenue. The monopoly firm will continue to produce so long as marginal revenue exceeds marginal cost, his profits also will rise. At the point where marginal revenue equals marginal cost the profits will be maximized and he stops the production of the output at that point. If he continues to produce beyond this point, he will incur loss.

Price Discrimination under Monopoly

Price discrimination refers to the practice of selling a particular commodity at different prices to different consumers. Sellers discriminate prices to different consumers if it is possible and profitable.

Types of Discrimination

Economists have distinguished three types of price discrimination. They are: (1) personal, (2) local, (3) according to trade or use. It is personal, when the monopolist charges different prices to different persons. It is local when the monopolist charges different prices in different markets located in different places.

Discrimination according to use when different prices are charged according to the uses the commodity is put. For example, the Electricity Dept. discriminate prices for the use of electricity to different uses.

Degree of Price Discrimination

Price discrimination of first degree is also called perfect price discrimination. The price discrimination of the first degree arises when the monopolist is able to sell each separate unit of the output at a different price.

In the case of second degree, the monopolist divides the buyers into groups and from each group a different price is charged, which is the lowest demand price for that group.

In the case of third degree, the monopolist divides the buyers into two or more sub-groups or markets and charges a different price in each sub-market. The price charged in a sub-market depends upon the demand. The price discrimination depends upon demand for the product in that local market. This type of price discrimination is very common. The producer monopolist sells his product at a higher price in the local market ant at a lower price abroad.

Conditions of Price Discrimination

The price discrimination is an exclusive privilege of the monopolist. It is incompatible with perfect competition, because the sellers in perfect competition are selling homogeneous product, whereas under monopoly there is only a single producer and thereby he can discrimination prices.

Price discrimination is possible only when the monopolist can divide the market into sub-markets and charging different prices in each sub-market. Each sub-market must be kept separately. There should not be any sale between the sub-markets. In other words it should not be possible to transfer any unit of the commodity from one sub-market to another. If there is any possibility of sale of goods from cheaper market to dearer market, then the objective of price discrimination is defeated. Price discrimination by the monopolist will break down if his buyers in the cheapest market purchase product from him and resell it to the buyers of the dearer market. If there is no connection of any sort between the markets, it is possible for the monopolist to discriminate the prices.

Another important condition is that it should not be possible for the buyers in the dearer market to transfer themselves into the cheaper market to buy the product or service at a lower price. Thus price discrimination is possible under the following situations:

1. The nature of the commodity must be such that is should not be possible for transfer from one market to another market. This happens when the good in question is that of the service. In the case of service, it is not possible to transfer to others. The service is to be done by the person himself. For example, the services of a lawyer or doctor. The doctor can charge different prices to different patients for the same type of service. This is possible since the service is delivered personally by the doctor and he cannot transfer it to others. It is not possible for the rich man to assume to be a poor man in order to pay lower fees.

2. Discrimination is possible when the markets are separated by long distance or there are traffic barriers, so that it is very expensive to transfer goods from cheaper market to be resold in the dearer market.

3. Whenever there is government sanction for price discrimination, the monopolist can do so. For example, the Electricity Department being the monopolist is permitted to charge different prices to different consumers. Similarly Railway are permitted to charge high fare for First Class passengers and a lower fare for Second Class passengers. Public monopolies have the legal sanction for price discrimination.

4. Various brands of certain articles which in face are almost exactly alike may be sold as different qualities under names and labels which induce the rich people to divide themselves from poor buyers and in this way the market is split up and the monopolist can sell the same commodity at different prices.

5. Price discrimination is possible due to ignorance of buyers. If the buyers are lazy to compare prices in two different localities, then, monopolist takes the advantage of their laziness and charges higher prices.

6. Price discrimination may become possible when several groups of buyers acquire the same service for clearly differentiated commodities. For example, the Railway charges different rates to carry different commodities. They charge higher freight charges to transport finished commodities and lower charges to transport raw materials.

Oligopoly

Definition

Oligopoly is defined as a market form, where there are more than two or a few sellers enjoying monopolistic position. Oligopoly is often referred to as "competition among the few". In Oligopoly there may be sellers more than three and within ten. It may be between two and ten. When the products for few sellers are homogeneous, such a situation is called Pure Oligopoly or Oligopoly without product differentiation. When the products of the few sellers are differentiated and they are close substitutes to each other, such a situation is called oligopoly without product differentiation. It is also called Differentiated Oligopoly.

Characteristics of Oligopoly

There are some special characteristics found in Oligopoly. They are:

- There are a few sellers in the market supplying either homogeneous products or differentiated products.
- The firms have degree of interdependence in decision making regarding what output to be produce and what price to be determined.
- The firms have a high degree of cross elasticities of demand for their products, so there is always a fear of rivals in the industry.
- There is heavy advertising in Oligopoly. Prof. Baumol says that it is only under Oligopoly that advertising comes fully into its own. Under oligopoly, advertisement becomes 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 away to the products of the rivals.
- There is group behaviour in Oligopoly. What is means is, that firms behave in a manner of inter-dependence.

Another important feature of oligopoly is the determinateness of the demand curve. Under perfect competition in individual demand curve given and definite. The demand curve is perfectly elastic under perfect competition. The situation under oligopoly is quite different, because of interdependence of the firms in it. Under oligopoly, firms cannot assume that its rivals will keep their price unchanged, when it makes changes in its own price. As a result of this, the demand curve facing the oligopoly firms loses its definiteness and determinateness.

Introduction

Pricing is a crucial aspect of any business. In practice, however, it is the most difficult task to decide a right pricing policy. This is because, on the one hand, the market dictates price, and yet, the firm is acting as a price maker for its own differentiated product. Unlike other functional areas of management, it is also not easy to pin down the concrete goals and measure accurate results in pricing. There is possibility for a trade-off between the level of price and sales volume or the market share (see Figure 3.1). It is,

therefore, necessary to reconcile for an optimum pricing-that is, try to get closer to a better price which can produce a tremendous effect on the business profitability.

The pricing process in reality involves a co-ordination of several dimensions and participants: such as cost estimation by the accounting department, pricing strategy formed by the marketing department, utility orientation conveyed by the sales department, supply or output capacity determined by the production department, capital budgeting process of the finance department and so on.

Donald (1995) enlists the following major steps to better pricing:

1. Asses the 'Value of Product' from customer's angle.
2. Customize the products and discriminate prices for different segments of the markets/buyers.
3. Assess price elasticties of demand.
4. Create an optimal price structure.
5. Relate the Pricing Policy to the rivals' reaction /retaliation.
6. Assess the buyers' emotional reaction on long-term basis.
7. Undertake revenue vs. Cost analysis.
8. An effective rational pricing process is to be gradually evolved and cannot be just created or implemented overnight (Donald 1995:183)

Questions for discussion

1. Define perfect competition and bring out its characteristics
2. Define monopoly and bring out its characteristics
3. Define monopolistic competition and bring out its characteristics
4. Write a short note on oligopoly

LESSON - 8

METHODS OF PRICING

Pricing Methods

There are four important methods of pricing:

1. Cost plus or full cost pricing
2. Going rate policy
3. Pricing for a rate of return
4. Administered prices

1. Cost plus Pricing

Cost plus pricing is a most commonly adopted method. Under this method cost of a product is estimated and a margin of some kind of profit is added on the basis of which the pricing is determined. Empirical evidences have shown that a majority of the business firms usually set prices for their products on the basis of cost plus a fair profit percentage.

Briefly, thus:

Cost plus pricing = Cost + Fair Profit.

Cost: In cost plus pricing in practice, cost refers to full allocated cost. According to Joel Dean, there are, however, three difference concepts of the cost component used in the formula of cost pricing:

- Actual cost;
- Expected cost; and
- Standard cost.

Actual cost refers to historical cost for the latest available period. It covers wage bills, raw materials costs, and overhead charges at the then current output rate.

Expected cost means a forecast for the pricing period on the basis of expected prices, output rates and productivity.

Standard Cost refers to a normal cost determination at some normal rate of output at a given level of capacity utilization and productivity at a normal level.

In practice, usually, the cost base is determined from engineering estimates plus cost experience, historical data and projections.

Fair Profit: By fair profit is usually meant a fixed percentage of profit mark-up. It is arbitrarily determined. Typically, it is determined at 10 per cent in many cases. However, fair profit mark-up differs from industry and among different firms in the same line of production. These variations are due to many factors, such as:

- Differences in turnover rate,
- Differences in risks,
- Differences in competitive intensity; and
- Differences in traditions or customary fixation of profit margin in different businesses

Apparently, the 'fair profit' in cost plus principal in practical business is fundamentally different from the concept of 'normal profit' in economic analysis.

In practical however, cost-plus pricing method is regarded as are, more suitable when the producers are uncertain about the market demand for their products and would prefer stability when rivals' price strategies is unknown.

Shortcomings of the Cost plus Pricing Methods

The following are the major drawbacks of the Cost plus Pricing:

- It completely ignores consumer's preference and demand.
- It has thus one sided approach. It takes only costs and firm's profit margin into account
- It does not take account of the effect of competition.
- It ignores rival's reaction in prescribing a price for the firm's product.
- It over stresses the precision of allocated costs. In practice, however, cost allocation lacks precision.
- Its concept of full cost may not be relevant for the pricing decision.
- It ignores the significance of incremental costs in pricing decision.
- It thus solely considers conventional accounting system, and ignores economic tools altogether.

2. Rate of Return Pricing

Another method is that the firms determine the average profit mark-up on costs necessary to produce a desired rate of return on its investment. Say, for instance, a firm may set its price of the product in order to get on an average a 12 per cent return on net investment.

Under the rate of return pricing policy, price is determined along a planned rate of return on investment. The rate of return is to be translated into a per cent mark-up as profit margin on cost. The profit margin is determined on the basis of a normal rate of production. The total cost of a year's normal production is estimated and regarded as standard cost. Then, capital turnover is computed by taking the ratio of invested capital to the annual standard cost. The mark-up percentage of profit margin is obtained by multiplying capital turnover by the goal rate of return. Thus, if capital turnover (c) is 0.5 and the goal rate of return (R) is 12 per cent on invested capital, then:

Mark-up Profit Margin = C x R

= 0.5 x 12

= 16 per cent

This method is essentially cost plus pricing method but an improved one since it builds price on cost which is standardized and it develops a profits mark-up related to a rate or return.

3. Going Rate Pricing

The going rate pricing is opposite of full cost, or cost plus pricing.

The going rate pricing is not just the phenomenon of perfect competition. It is usually happening in oligopoly and monopolistic competition. The going rate pricing policy means that though the firm has the power to fix up its own price for the product, it will not do so, but instead it tries to adjust its own price policy in time with the general pricing structure prevailing in the industry or market.

The going rate pricing is adopted when

- Costs are difficult to measure; and
- The firm wants to avoid tension of price rivalry in the market; or
- When there is price leadership of a dominant firm in the market.

4. Administered Price

The term administered prices was introduced by Keynes for the prices charged by a monopolist and therefore, determined by considerations other than marginal cost. A monopolist being a price-maker consciously administers the price of his product. He plays a personal part by restricting the output to establish higher price for the product. Unlike competitive prices, thus, administered prices are not determined by the impersonal play of market forces.

Indian economists like L.K.Jha and Malcolm Adiseshiah gave a slightly different meaning of administered prices. According to the Indian economists, an administered price of a commodity is the one which is decided and arbitrarily fixed by the government. It is not allowed to be determined by the free play of market forces of demand and supply. Administered prices in a market economy are the results of government intervention. They are prescribed by the government rather than determined by the market mechanism.

In short, administered prices are the prices which are fixed and enforced by the government. The following are the major characteristics of administered prices.

- They are fixed by the government.
- They are statutory, i.e., they are legally enforced by the government.
- They are regulatory in nature.
- They are meant as corrective measures.
- They are the outcome of the price policy of the government.

Objectives of Pricing

Pricing is not an end in itself. Pricing is a means to an end. Therefore, the firm must explicitly lay down its pricing objectives. The firm's overall objectives serve as guiding principle to pricing. Thus, firm's business objectives are normally spelled out as the objectives of its price policy. Empirical evidences reflect that theoretical goal of profit maximization is rarely taken in practice by the business firms in their price policy. The following are the commonly adopted major pricing objectives of a business firm.

Survival: Basically, in these days of monopolistic competition or dynamic changes and business uncertainties, a firm is always interested in its continued survival

first. For the sake of assuring continued existence, generally, a firm is ready to tolerate all kinds of upheaval in product lines, organizational and even personnel changes.

Rate of Growth and Sales Maximizations. A firm may be interested in setting a price policy which will permit a rapid expansion of the firm's business and its sales maximization.

Market Shares. By adopting a price policy the firm may wish to capture a larger share in the market and acquire a dominating leadership position. In oligopoly market, this is quite common.

Target Return on Investment. The firms may have a predetermined target return of their investment, say 10 per cent, for instance.

Preventing Competition. In pricing its product, the firm may keep an eye on rival's entry. So, it may fix up the price such that would prevent competition.

Making Money. Some firms are interested in making fast buck taking their monopoly advantage into account and try to sell their foods at premium. Thus, pricing objective may be of making money.

Service Motive. A firm may set pricing policy such as to serve the community and improve its welfare.

Regular Income. Some firms are interested in maintaining regular flow of income, so would set their price policy accordingly.

Price Stabilisation. The firms may be generally interested in keeping their prices stable within certain range over a period of time, irrespective of marginal changes in demand and costs.

However, the survival of the firm is always the underlying objective in pricing. In practice, thus, the following interrelated pricing objectives are commonly held:

- To fulfill a goal rate of return on investment;
- To seek the anticipated rate of growth;
- To improve the market share;
- To stabilise prices and profit margins for the regular flow of income.

Factors Involved In Pricing Policy

The executive's problem of private pricing policy involves many considerations and right advice from the professional business economist. The following are the important factors deserving special attention in determination of a pricing policy of any firm.

- Costs
- Demand and Consumer psychology;
- Competition;
- Profit; and
- Government policy.

Costs

Costs are an important element in price determination. Cost data serve as the base. Price has to be along cost. If price is below the cost of production it would mean losses. Thus, cost analysis is important. Along the total costs, average and marginal costs are to determined.

For business decisions in the short run, direct or variable costs have greater relevance. The firms seek to cover full allocated costs. Economy in cost is also important for setting a lower price for the product. A high cost of production obviously calls for a higher price.

Demand

In pricing policy, demand can never be overlooked. Rather, demand is more important for the effective sales. Demand for a firm's product depends on consumer's preferences. So, the consumer psychology is very important. Through appropriate advertising and sales campaign consumers' psychology can be influenced and their preferences may be altered, thus, demand can be manipulated.

A low or high price policy is to be set in view of the elasticity of demand. If demand for the product is highly inelastic, then only rising price policy would be a paying proposition to be businessman.

Further, in all cases demand is not price elastic. In some cases, especially, consumer durables, e.g., TV set, car, etc. Demand is income elastic. Thus, when income of the buyers rises, the firm can expect to sell more such goods even at high prices.

In case of elastic demand for the goods, a price cut would be beneficial in boosting the sale. However, consumer's psychology – their anticipation about the price change is also significant. If consumers anticipate a further price cut, then the price cut policy will result in increasing the sale only marginally in the short run. But, if they feel that the price cut is final, it will definitely improve the sale to a greater extent.

Competition

The nature of pricing policy largely depends on the degree of competition prevailing in the market. Under perfect competition, there is a uniquely determined ruling price in the market; also the firm has no scope to design its own price policy. Under monopoly, oligopoly or monopolistic competition, the firm can determine its own price policy.

Profits

In determining price policy, profit consideration is also significant. In practice, however, rarely there is a goal of profit maximization. Usually, pricing policy is based on the goal of obtaining a reasonable profit.

Further, most of the businessmen would prefer to hold constant price for their products rather than going for a price rise on a price cut, as far as possible. Thus, price rigidity may be the norm of the price policy. But, rigidity does not mean inflexibility. Price fluctuations do conform to cost changes.

Government Policy

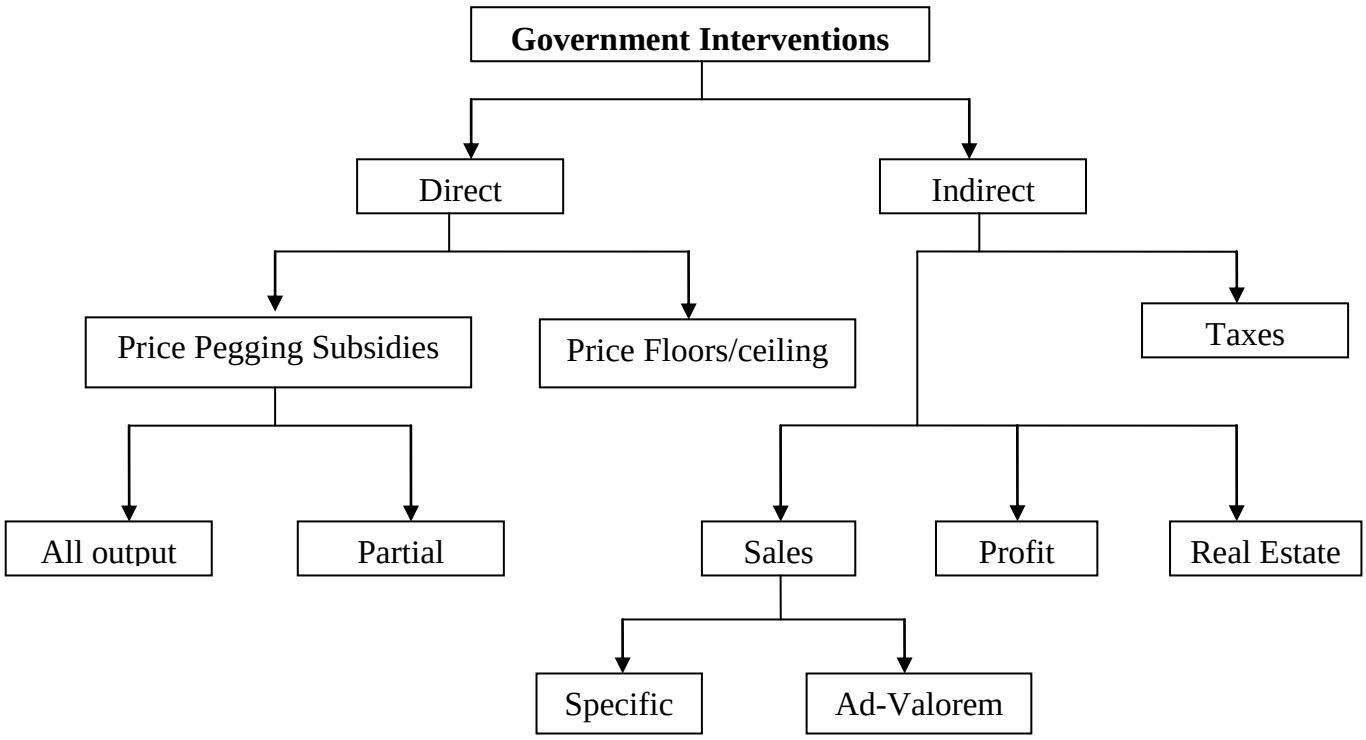
Pricing policy of a firm is also affected by the government policy. If the government rectors to price control, the firm have to adopt the price as per the formula and ceiling prescribed by the Government, then there is little scope to pursue its own pricing. For instance, in India we have drug price control, etc.

Government Intervention and Pricing

Government in most countries today plays an important role in product pricing. In this section, government interventions in pricing are discussed with special reference to India. At the outset, we shall elaborate the type of price controls prevalent in India, and then go on their rationale, consequences and formulations.

Type of Government Interventions

The several ways through which government influences product pricing are presented in the following chart under convenient heads.



In India, there are direct as well as indirect interventions by government in product pricing. The former includes price setting for the whole output of a good or service or for a certain part of the product under the dual pricing system, and the price floors and ceilings found in a number of goods and services in the country. The Indian government, like most other government, is itself an entrepreneur and thus is engaged in the production of many goods and services, whose prices for all outputs are obviously set by government agencies.

Price floors exist for many important agricultural goods in India and for the services of unskilled labour. Before the beginning of the sowing seasons each year, the Agricultural Prices Commission announces what they call the support, minimum or guaranteed prices for all important agricultural crops. Also, there is a minimum wage rate, below which no worker, however unqualified he or she may be, could be hired by any organization. Similarly, there are ceilings on a few prices. These include rent on residential or office accommodations, prices of life saving and other basic drugs etc.

The indirect means through which government controls prices are various kinds of commodity taxes (excise duties, sales tax and custom duties), tax on profit, tax on real estate and subsidies available for the production of the selected goods across the country and for most goods if they are manufactured in the notified backward areas.

Major Issues of the Policy of Price Control / Administered Prices

Administered prices are the result of the policy of price control resorted to by the government for and efficient management for the economy. Administered prices and / or price controls have to be formulated and implemented within the broad framework of the general economic policy of the government. Compared to other economic policy measures, price control is a direct measure of achieving certain macro-economic goals like welfare, equity, and stability.

1. Nature of Price Control

The price control may be informal or formal. Under informal price control, the industries / producers agree to voluntarily regulate the prices consistent within limits suggested by the government. Under formal price control, the prices are statutorily fixed by the all concerned. Price control may be total or partial.

Under total price control the price for the entire stock of output is prescribed, administered and enforced by the government through a public distribution system and several control orders / directives. Administered prices of goods supplied by the public monopolies involve total price control. Similarly, drug price control is total in respect of a particular drug produced by the private sector. A single price policy or ‘mono pricing’ is implied under total price control of a commodity.

Under partial price Control, the government directly fixes the price for a part of the production of a commodity and arranges for its distribution. Rest of the stock is allowed to be sold in the open market at any price which is determined by the free play of the market mechanism. Partial control, thus, implies a system of dual pricing.

2. Dual Pricing

Dual pricing refers to two types of prices for a commodity, viz., (i) controlled price and (ii) market price. Controlled price of the product is directly, fixed up by the government for a certain portion of the total output. Its market price is the freely determined market price for the remaining quantity of output. Dual pricing involves the following considerations:

- Determining a certain proportion of the output of a commodity which is to be procured by the government at a fixed rate called levy rate.
- Fixing the procurement or levy price.
- Arranging for the distribution of the procured quantity of output to specified categories of consumers / users called beneficiaries.
- Determining the issue price, i.e., the price payable by the beneficiaries.
- Permitting the rest of the stock to be sold by the producers in the open market. It is referred to as ‘free sale quantity’ which is sold at freely determined market price through market mechanism.

Thus, the major problems associated with dual price system are:

- Identification of the commodity to be brought under the system of dual pricing.
- Determination of a considerate levy rate or procurement price.
- Determination of a reasonable levy price or issue price for the beneficiaries.
- Organization of efficient distribution system.

The following are the main merits of dual pricing:

- It is easier and less expensive to administer.
- It legitimizes the existence of two prices for the product as well as price discrimination among two groups of buyers.

- It permits restricting the benefits of price control to the deserving sections of buyers only on priority consideration.
- It reduces the pressure on the government budget to provide for subsidies and incentives for the production of particular commodity.
- It also obviates the need for higher taxation.
- The major drawbacks of dual pricing are as follows:
- There is a problem of leakages in administering the system of 'dual pricing'. This problem occurs when there is a vast difference between the 'issue price' and 'open market price' of the product. The leakage means transfer of levy quantity for the sale in open market by the producers.
- It may lead to black-marketing.
- It may induce / intensity corruption.
- It may involve deterioration of quality of the output released for procurement.
- It increases the financial burden for the government in organizing distribution system.
- It may put the government into an embarrassing position when over a period there is a tremendous expansion of output causing a 'surplus' in the economy so that at a time free market price tends to be lower than the levy price.

3. The problem of Price Fixation: Cost Plus

The administered prices are fixed on the 'cost plus' basis. It thus involves the following considerations on the part of the price fixation authorities:

- Computation of the cost of production.
- Determination of reasonable return on capital.

Computation of costs is a difficult problem in a country like India where costs widely vary in different areas and there is paucity of data as well. Then, there is a problem of pricing whether it is to be based on marginal cost or average cost consideration. In 'cost plus' formula the profit allowance must be made by estimating a reasonable rate of return on capital. A consideration is also required for the interrelationship between input prices and output prices of farm and industrial sectors. While determining the administered prices of certain goods. Sometimes, a highly fixed

raw material prices may cause higher prices for the finished products which may generate inflationary pressures so that the socialist goal of the price policy is vitiated.

Export Pricing

Export pricing relates to pricing of products exported by the firm. Its decision is based in view of International Marketing. World market is complex, competitive and sensitive.

In determining the export pricing the firm should be fully aware of the varied market structures and changing business environment for the products in different countries from time to time.

Product cost is not the only cost for consideration in export pricing. Sales promotion cost is also a crucial factor. Other non-price factors also play significant role in export marketing. Delivery cost, and demonstration costs, display discount costs, rivals prices and business policies, qualities of the products and so on need to be considered. For exporters, export marketing strategies rather than price matters much. In a global trading, export prices are usually decided on the basis of what the traffic can bear. Pricing of goods for exports is often unrelated to basic output costs or domestic price level.

Economists have suggested marginal cost pricing as the basis of export pricing in a developing economy such as India. The marginal pricing criterion is advocated on the following counts:

- Marginal cost is a direct cost which the firm should recover from export revenue.
- It will give a lower price. Low pricing ensures better market acceptance.
- It helps in fixing the price at competitive rates.
- Profitability of exports need to be measured against direct costs rather than fixed costs incurred by the exporting firms.

Questions for discussion

1. Bring out the objectives of pricing policy
2. Discuss briefly the various pricing methods
3. Explain the role of government invention in pricing policy

UNIT – IV

Profit – Meaning and nature – Profit policies – Profit planning and fore costing – cost volume profit analysis – Investment analysis.

LESSON - 9
PROFIT POLICIES

Meaning

Profit is the income received by the organizer. It is the reward for the services of an entrepreneur. A firm makes profit when it receives a surplus after it has paid interest on capital, wages to labourers and rent for land. Profit, in other words, is the residual income which is equal to the different between the total revenue and the total cost of production. Definition of profit

The Concept of Profit is defined as follows:

1. Pro. F. A. Walker defines, "profit is the rent of ability".
2. Prof. H. Speight defines, "profit is commonly said to be a payment for risk bearing".
3. Prof. Schumpeter defines, "profit is the reward for the work of entrepreneur or it is a payment for risks, uncertainties and innovations".
4. Prof. Henry Grayson defines, "profit may be considered as a reward for making innovations, a reward for accepting risks and uncertainties, a result of imperfections in the market. Any one of these conditions or a combination of them can give rise to economic profit".
5. Prof. J. K. Mehta defines, "The element of uncertainty introduces a fourth category of sacrifice in the productive activities of man in a dynamic world. This category is risk-bearing or uncertainty bearing. It is remunerated by profit".

Factors in influencing Profit

i. Risk-taking and Uncertainty bearing.

ii. Monopolistic control or Imperfections in the market.

iii. Element of Luck or chance.

iv. Innovations, and\

v. Differences in Abilities of Entrepreneurs.

i. Risk-Taking and Uncertainty bearing: It is commonly held that the emergence of profit is attributable to risk taking on the part of the entrepreneurs. The expectation of profit is a necessary pre-requisite for starting any new venture by the entrepreneur because every business involves certain risk. In fact, risk taking is one of the important functions of an organizer. Greater the risk, higher should be the gain or profit to induce the entrepreneur to start the business.

ii. Monopolistic control or Imperfections in the market: Profits arise also on account of the monopolistic control which the organizer is able to acquire in the market due to peculiar conditions prevalent. The presence of monopoly element of imperfections in the market gives rise to profits. Monopolistic control gives the entrepreneur complete control over the supply of a commodity and the price fixation in the absence of any competition. This situation contributes to the emergence of profits.

iii. Element of Luck or Chance: Profits may also arise merely on account of good luck. Certain entrepreneurs flourish only due to their good luck. Apart from, luck, sometimes profits may arise just by chance that appears in the business. For instance, during the World War some countries could get the chance of selling their commodities at a better and higher price in the market. Such profits would not have been there in the absence of war which gave chance to the entrepreneurs. Thus the element of luck or chance may cause the emergence of profits. Such profits are called as the fortuitous gains.

iv. Innovations: Professor Schumpeter, a noted German economist, is of the opinion that profits arise on account of economic innovation. By economic innovation is meant the introduction of a new market, invention of new methods of production, development of a new source of raw-material and new methods of business organization. The firms which make use of such innovations first are able to make profits until competitors come forward to do the same. Therefore, economic innovation is the source of profit. In other words, profits arise also because of economic innovation.

v. Differences in Abilities of the Entrepreneurs: Professor Francis A.Walker contends that the profits arise mainly on account of differences in abilities of the entrepreneurs. He compares profits with that of rent which arises in case of land. Just as the superior grades of land earn a surplus over the above the marginal grade land, the entrepreneurs superior

in ability earn surplus over the above the earnings of the marginal entrepreneurs. Hence, he calls profits as the rent of ability. In other words, profits arise also because of the difference in the abilities of the entrepreneurs.

Factors Limiting Profits

Profit of the firm can be limited by a number of factors. In fact, modern firms themselves try to limit the profits on account of number of reasons. The factors limiting the profits are as follows:

- Creation of competition,
- Creation of substitutes,
- Heavy Taxation,
- Increased Wages,
- Increasing the cost of Input,
- Ceiling on profits.

1. Competition: Modern firms are afraid to the potential rivals or the competitors. When a firm is making enormous profits, they can be limited or reduced by creating a fair competition by permitting new firms to come into existence. Profits made in the absence of such competition will not get distributed among a large number of firms and thus profits of an individual entrepreneur can be limited and evils of excess profits such as inequalities of income and wealth and concentration of economic and political power can be easily avoided.

2. Substitutes: Another factor that can limit the profits is the availability of substitutes. When there are a few no substitutes for the product of an entrepreneur, he is able to make huge profits. Huge profits, if permitted, may perpetuated inequalities and cause a threat to the peace and progress of the country. In such a case, profits if the entrepreneur can be reduced or brought down or limited by creating a number of substitutes.

3. Heavy Taxation: Profits can also be limited by resourcing to heavy taxation. When firms are making huge profits, a part of their profits may be taken by means of heavy taxation. Either the existing tax rates may be enhanced or the new taxes may be introduced. Thus by imposing heavy dose of taxation profits can be limited.

4. Increased Wages: Another method of limiting profits is to increase the rate of wages. Labour is the factor of production which contributes the most in the production of commodity. When excess profits are made by firm, a part of its should be made to flow to the working class through increased wages. With increased wages, the total wages bill of the firm would increase and the profits limited or reduced.

5. Increasing the cost of the inputs: When firms are making lot of profits, we can limit them by increasing the cost of various inputs which they use in the production of commodity. When the cost of inputs increases, their total cost of production will increase and profits will be reduced. Generally, this method is not used for limiting the profits because any increase in the cost is likely to be shifted on to the consumer by raising price of the product. However, this is also one of the factors that can limit the profits provided price of the product is controlled.

6. Ceiling on Profits: Lastly, profits can be limited by imposing direct controls such as ceiling on profits by passing certain laws. This measure of limiting profits may work well in socialistic countries. In democratic countries, entrepreneurs my object to this methods of limiting the profits.

Thus, in the modern business world profits are limited by the above mentioned factors.

Characteristics of Profit:

1. It is the reward of bearing by the entrepreneur.
2. It arises only in the dynamic conditions of a market.
3. It is the reward of bearing uncertainties.
4. It arises only under the situations of imperfect competition. No profit can arise under prefect competition.
5. It is the reward of innovation.

Gross and Net Profit

Profit is the difference between total revenue and total cost of business and industrial enterprise. Total cost includes all the expense incurred in an enterprise during a certain period which includes the cost of raw materials, the cost of labour, factory

expenses, office and administration expenses, selling and distribution expenses, etc. They do not include remuneration for the labour put in by entrepreneur in his business, rent of the building owned by entrepreneur and the interest of capital employed by entrepreneur in his business. Thus the difference between total cost and total revenue is allied Gross Profit. When all the expenses are deducted from Gross Profit, the balance is called Net Profit.

Theories of Profit

1. Theory of Entrepreneurial Compensation: This theory is based upon the assumption that an entrepreneur is one of the essential factors of production and an essential part of an enterprise. He labours for the success and progress of his enterprise. Profit is the reward of such labour and sacrifice.

These days this theory does not hold true because management today is a separate part of an enterprise and all these functions are performed by management. It has nothing to do with the profit of the enterprise.

2. Theory of Risk and Uncertainty: In every business and industrial enterprise, there is an atmosphere of risk and uncertainty, which are borne by the entrepreneur alone. He should get a reward bearing these risks and uncertainties called profit. Profit is the drive which motivates an entrepreneur to bear the risks and uncertainties of his enterprise.

Prof. Knight has used the word uncertainty in place of the word 'risk'. According to him business risks can be of two types: insurable risks and uninsurable risks. Insurable risks are those which can be forecasted in advance and which can be insured. If a risk is insured, it is no more a risk because the business enterprise has nothing to do with such risk. Uninsurable risks are those that cannot be forecasted and therefore, cannot be insured. The uninsurable Profit is the reward of bearing these risks only.

Though this theory of profit determination is much better than the earlier theory, yet it is not a complete or satisfactory theory.

3. Theory of innovation: According to this theory propounded by Prof. Schumpeter, profit arises due to regular innovations of a business enterprise. The term 'Innovation' includes all the activities performed by an entrepreneur to reduce the cost of production,

to improved the quality of production, to present the product in a new form, to improve the product, to make the product more useful and to improve the selling and distribution efforts of the enterprise by using new and improved techniques. Through innovation an entrepreneur tries to attract more and more customers to his product so that he can increase the demand of his product in market and he may earn maximum profit through maximum sales. The process of innovation should continue forever because as soon as an entrepreneur introduces some innovation, his competitors copy it and its importance comes to an end.

This theory of profit determination rightly emphasizes upon innovation which is an important factor for the success of an enterprise. However, it does not consider risks and uncertainties borne by an entrepreneur. Hence this theory cannot be regarded as satisfactory.

4. Theory of Monopoly and Market Imperfections: According to this theory, an entrepreneur can get profit only under the situation of monopoly and market imperfections. He can earn profit by controlling the supply of his product, by getting the advantage of ignorance of consumers and by fixing relatively high earning profit under perfect competition.

To conclude, profit is the reward for enterprise which is an essential factor of production. Profit is paid to the entrepreneur. It is the reward of bearing risks and uncertainties by an entrepreneur. It is the reward of taking pains by an entrepreneur to run his business enterprise.

Criteria for Acceptable Profit Rate or Rate of Return on Investment

Various criteria may be applied to determine the rate of return on investment and decide the most acceptable rate of profit. These may be enlisted as follows:

- Competitive rates of profits
- Historical profit rate
- Sufficient earning to protect the equity
- Plough back of profit rate

1. Competitive Rates of Profits

The firm in its profit policy may consider the rates of profits earned by other firms in the same industry of the rates prevailing in other related industries in similar economic business conditions.

2. Historical Profit Rate

The firm may look into its past earnings in normal times and determine the planned rate of return for the future course of operation. The firm has to examine the impact of historical rate of profit on equity capital in the past, dividends to shareholders and the degree of competence in the market.

3. Sufficient Earning to Protect the Equity

The rate of return on investment should adequately protect the interest of the present shareholders, so that it has no problem in raising new equity capital for further expansion.

4. Plough Back of Profit Rate

The rate of return may be such that it can adequately finance growth through internal resources, i.e., by plough back of profit.

Function of Profit

As pointed out by Peter F. Drucker, profit serves three main purposes:

1. Measure of Performance: Profit measures the net effectiveness and soundness of business efforts. A higher profit is an indicator that the business is being run successfully and effectively. It is true that profit it far from being the perfect measure of business efficiency but it is the best indicator of the general efficiency of a firm.

2. Premium to Cover Costs of Staying in Business: Profit is the premium that covers the costs of staying in business, such as replacement, obsolescence market and technical risks and uncertainty.

3. Ensuring Supply of Future Capital: Profit ensures the supply of future capital for innovation and expansion, directly, by providing the means of self financing out of retained profits or indirectly, through providing sufficient, inducement for new external

capital which will optimize the company's capital structure and minimize its cost of capital.

Profit Policy: Profit Restraint

In practice, firms rarely seek to maximize profits. Most firms have many goals of primary importance other than profit. Instead of maximization of profit, thus the firms are interested in putting a limit on their profits. There are several reasons for limiting or controlling profits.

1. Maintaining Business Goodwill

A policy of limiting profit may be followed by firm in order to win appreciation of consumers and earn business reputation and maintain business goodwill in the market. By keeping a low profit margin, the firm may create a good impression on the consumers and enjoy their patronage. Thus, in an inflationary situation, by restricting the profit margin, the profit margin, the firm may be in a position to maintain a stable price for its product which will definitely fetch consumers' appreciation. Further, keeping a high profit margin and higher prices may also involve the danger of consumer resentment. To avoid this, it is considered a wise policy to keep a low profit margin and maintain business goodwill.

2. Wages Consideration

If the firm maintains high profits, trade union will demand high wages, which may inflate costs and further complicated the management problem. Thus, to avoid such happenings and to maintain good labour relations profit control is imperative.

3. Avoiding High Taxation and Government's Intervention

High profits may attract high taxation. Again high profits may be taken as an index of monopoly power which may attract government's attention and investigation and its eventual control. The government may, through price control, regulation of profit, intervene etc., so the firm may consider it to be a wise policy to aim at less than possible maximum profits.

4. Avoiding Risk

The risk element tends to be high under profit maximization. Thus, to minimize risk, it is imperative not to go in for maximization of profits but be satisfied with a reasonable profitability of the business venture.

5. Obstructing Potential Competition

High profitability of the business may attract new competitors to enter the field and share the market. Thus, only a fair profit may be earned by the concerned firm to discourage new entry in its production line. As Joel Deal puts it: "Competitors can invade the market as they discover its profitability, find ways to shift the patents, and make the necessary development outlays in production design, production plant, technique and market penetration. For this reason, a firm may not want to show profit earnings in the business but depict a gloomy picture so that newcomers are discouraged from entering the market".

6. Goal of Domination and Leadership in the Market

If the firm aims to dominate the market and acquire leadership, it may seek to maximize sales and capture the market rather than maximize its profits.

7. Enlightened self-interest of Survival

The firm in its own interest, for survival, world limit its profits and try to see that its existence becomes permanent in the market so that it can earn a regular flow of business income in the long term. It also implies considerations to prevent loss instead of maximum return.

8. Idealism and Service Motivation

A firm may adopt an idealistic approach and service motivation, so that it will not go in for profit maximization and instead would like to serve the nation in a reasonable manner. The firm's ideal may be to provide more employment with better wages. It may look into the welfare of its workers more than the self-interest of profit maximization. A businessman with philanthropic ideas and attitudes always tends to control the profits of his organization.

9. Liquidity Preference

For a comfortable position in the business liquidity, i.e., possession of cash is very important. Liquidity of the firm also depends upon the positive ratio of current assets to current liabilities.

Especially, in banking business greater emphasis is placed on liquidity rather than profitability. A bank arranges its assets in the ascending order of liquidity an descending order or profitability.

Alternative Profit Policies

Different economists have suggested a variety of profit policies which business firms may pursue as an alternative to profit maximization. There alternative profit policies are enumerated below:

(1) K. Rothschild has suggested that the primary motive of an enterprise is long-run survival. Decisions, therefore, aim at maximizing the security of the organization. The desire for a secure profit is a dominant motive in oligopolistic industries.

(2) N. Reder has argued that an entrepreneur may have two objectives:

i. To maximize profits, and

ii. To maintain financial control of the firm.

Under the circumstances, he may not maximize profits in order to achieve the second objective, say, by financing firm's expansion with own funds or retained earnings.

(3) Donaldson and Lorsch found that "career managers preferred policies that favoured the long-term stability and growth of their enterprises to those that maximized current profits….To assure survival, self-sufficiency and success, these top managers strive continuously to conserve and augment corporate wealth, the greater the assurance of the maximization of wealth; the more the wealth, the greater the assurance of the means of survival".

(4) W. Fellner has similarly argued that firms are interested in 'safety margins'.

(5) T. Scitovsky had introduced leisure as a variable. The entrepreneur depending on his character may choose to maximize his profit and forgo leisure or choose total leisure and forgo all profit or may decide on some combination of profit and leisure.

(6) W. W. Cooper was introduced another variable, viz., liquidity. Businesses attempt to maintain liquidity enough to ensure the firm's financial position and retention of control.

(7) H. A. Simon has put forward the view that the entrepreneur may not care to maximize profits but may simply want to earn a return that he regards as satisfactory. In other words, he will attempt only to 'satisfies' – make satisfactory profits – rather than maximize profits.

(8) W. J. Baumol, basing his view on his extensive management consulting experience, has suggested that firms attempt to maximize sales subject to profit constraint – that is, profits do not fall short of the minimum level which is just on the borderline of acceptability.

Aims of Profit Policy

While there may be other objectives and goals of business, it does aim at achieving a planned rate of profit and seeks to improve its profit performance over time. Low profit is seldom an aim of business. It is rather the result of poor management, failing to achieve the profit it would like to achieve. In fact, most business firms like to earn a target rate of return on their investment. The four criteria to determine a target rate of return are:

1. Rate adequate enough to attract equity capital. If there is need to issue fresh equity capital, there must be an adequate return so that the interests of the existing shareholders are not affected.
2. Rate earned by other companies in the same industry or of selected companies in other industries working under similar conditions.
3. Normal or historical profits rate of the company and/or of the industry. A comparison with the firm's own past earnings in normal times may be useful if such rates have been sufficient enough to attract equity capital in the past, have provided adequate return to shareholders, and have not encouraged excessive competition in the past.
4. Rate sufficient enough to finance growth from internal sources (net profit plus depreciation). Ploughing back of profits reduces dependence on external sources.

Problems in Profit Policy

Though a firm may seek to pursue many other objectives than profit; profit does becomes a part of the game. Usually, the firm does make budgeting for obtaining a planned rate of profit and would certainly try to improve its profit performance over time, though it may not aim at profit maximization. In practice, a firm seeks to earn a target rate of return on its investment. It, thus, encounters two major problems in determining its profits policy.

- What should be the reasonable rate of profit?
- How to determine it?

Thus, the basic problem of profit policy is to determine a profit standard through the target rate of return on investment.

Questions for discussions

1. Explain briefly the various theories of profit
2. Discuss briefly the problems involved in setting a profit policy

LESSON - 10
PROFIT PLANNING

Profit Planning

In modern business profit earning is not an easy task. Profitability and success of the business depends on the firm's accurate business planning and operation. Profit planning is essential in the wake of many constraint, limitations and uncertainties of modern business conditions. Profit planning is an art as well as science. It is the sign of a good business, which can make profit consistent with myriad of risk elements encountered and this is only possible with an appropriate profit planning.

- To earn profit one has to face risks and one who deals with risks successfully can make profit.
- To deal with the risks and to avoid losses one has to plan. It is the essence of profit planning.

Profit planning is an integral part of business policy and planning, profit policy is programmed through profit planning. Profit planning gives a concrete shape to the profit policy of the firm. Profit policy is an ideal. Profit planning is a time bound action to fulfil this ideal.

Profit is the difference between total sales revenue and total cost of production. Thus, in profit planning, to regulate the profit, sales volume and input quantity (or costs of production) are to be manipulated. In modern business, profits are, thus, controlled by adopting many sophisticated techniques such as break-even analysis, cost control, profit volume analysis and linear programming.

Profit Forecasting and the Role of Break-Even Analysis

1. What is Profit Forecasting? Profit forecasting is an essential function of any management. It involves a careful analysis of the cost and revenue date in terms of the inter-relationship between sales volume, prices, fixed costs and variable costs. The necessity of profit forecasting is directly related to the extent of competition faced by the firm. In a monopolistic situation, a firm need not undertake a serious study of profit forecasting because of the element of control over prices. But in a competitive situation, an exercise in profit forecasting becomes inevitable as the very existence of the firm in such a condition depends upon its efforts to achieve profits in the long run.

Profit forecasting relates to projection of future earnings and involves the analysis of actual and expected behavior of firms (including its components), the sales volume, prices, competitors' strategies vis-à-vis firm's own strategies, etc.

The real use of profit forecasting can be made by developing a profit-improvement plan related to the profit forecast for the period. A simplified version of the relation between profit forecast and profit forecast and profit-improvement plan can be given as below:

S. No.	Profit Forecast	Profit Improvement Plan
1	Sales forecast	Change in sales Change in sales-mix
2	Cost budget: (a) Production cost (b) Selling and distribution cost (c) Administration cost (d) R & D cost	Cost reduction policies
3	Capital expenditure budget	Developing a rational capital expenditure policy
4	Planned profit level	Enhancing return on investment

The firm has to analyze the competitive conditions and the elasticity of demand of the product to expand the sales volume and to get a better price of the product so that the sales of the firm increase. A multi-product firm can analyze these factors to plan for the most profitable sales mix. Further, by analyzing the cost of each activity like production, selling and distribution, administration as well as research and development, the firm can identify the areas where there is scope for cost reduction. Since a high and irrational capital expenditure involves higher rates of depreciation, high interest charges, higher maintenance cost and greater risk of obsolescence, a well-thought policy and programmed of capital investment is likely to be of great help in improving profits. The firm can constitute a body to look after the profit improvement so as to make the profit forecasting exercise more useful. Such a body should look after the following jobs:

1. To decide about the rate of return most profitable to the organization.
2. To analyze the alternative investment proposals with a view to improve profits.
3. To monitor the implementation of the selected alternative proposals.

2. Methods of Profit forecasting. According to Joel Dean, there alternative ways may be adopted for profit forecasting:

1. Spot Projection: Forecasts about sales volume, prices and cost of projected sales is made on the basis of a separate analysis for each element in the profit and loss statements. In this method, profits are considered as residuals, and therefore the errors in prediction of the various elements of revenue and costs get cumulated.

2. Environment-based forecasts. In this method, the forecasts are based on factors external to the firm, like predictions of general business activity, government policy, general level of prices, etc.

3. Forecasting with the help of break-even analysis. There are two alternative ways of forecasting in this case.

(a) Taking profit as a residual of revenue and cost. Identifying relation of revenue and cost to output. Thus, planning that output level which can maximize the gap between revenue and cost.

(b) Based on past data regarding the relation between output and profits, profits are projected for the budgeted level of output.

Role of Break-even Analysis in Profit-forecasting

Break-even analysis is one of the scientific techniques of forecasting profits. Break-even point indicates that volume or value of sales at which the firm's costs and revenue are equal, i.e., it makes neither profits nor losses. This technique is not only helpful in ascertaining the level of sales required to break-even, but also enables the firm to know (with the help of the concept of margin of safety) the margin in sales over the break-even level of sales which the firm is enjoying. It, thus, helps the firm to plan in advance the changes in cost or sales or both. Figure 4.1 gives a diagrammatic representation of break-even point and margin safety.

Figure: 4.1

Examples of some of the popular uses of BEP for planning sales volume, price and the various elements of costs are given below:

1. Forecasting sales volume, given costs and planned level of profits. Let,

   Variable cost = Rs. 10

   Selling price = Rs. 30

Fixed cost = Rs. 30,000

Then,

$$BEP = \frac{\text{F}}{\text{S}-\text{V}} \frac{30{,}000}{30-10} = 1{,}500\ units.$$

Thus for this firm to make profits, the sales have to be above 1,500 units. Now, given expected or planned profits, the firm can decide about that level of sales which can help in achieving its objective.

2. Effect of change in fixed cost on profits. Let the fixed cost of this firm increase from Rs. 30,000 to Rs. 40,000, other costs remaining constant. Then,

$$BEP = \frac{40{,}000}{30-10} = 2{,}000\ units.$$

Thus, the sales volume to break-even has increased by 500 units, i.e., the margin of safety has decline by 500 units. The firm now needs to increase its sale volume to get the same level of profits as it was getting earlier.

On the other hand, if fixed cost would have declined from Rs. 30,000 to Ts. 20,000, the BEP would have gone down to Rs. 20,000/(30-10) = 1,000 and consequently the margin of safety would have increased. This would mean less vigorous efforts by the firm to achieve its target or expected profit level.

3. Change in variable cost and profits. In case variable cost increase to, say, Rs.15, other data remaining the same, then

$$BEP = \frac{30{,}000}{30-10} = 2{,}000\ units.$$

4. Change in selling price. If selling price goes up from Rs.30 to Rs. 35, fixed and variable costs remaining constant, then

$$BEP = \frac{30{,}000}{30-10} \quad \frac{30{,}000}{25} = 1{,}200\ units.$$

While if selling price would have gone down to Rs. 25, then

$$BEP = \frac{30{,}000}{25-10} = 2{,}000\ units.$$

Thus, a decrease in selling price would result in increase in BEP and reduction in margin of safety. Opposite is the case if selling price increases.

In addition to the above discussed situation, BEP analysis is also useful in the following situation directly or indirectly related to profit forecasting:

- Determining sales volume for a pre-determined profit.
- Finding the impact of change in sales volume (due to capacity expansion or accepting new orders) on profit.
- Finding the impact of changes in product-mix on profits.
- Determining a product-line for a pre-determined profit.
- Inter-firm comparison of profit and intra-firm comparison of the contribution to profit by different divisions of the firm.

Break Even Analysis

In business profit should not be left to chances. It should be properly planned. The break-even analysis is a useful technique of profit planning and prediction. This analysis is principally concerned with cost-volume profit analysis. In fact, break-even analysis is cost volume-profit relationship analysis. It magnifies a sales mix to the profitability of the concern.

Meaning of Break Even Analysis

The term 'break even analysis may be interpreted in two senses are narrow sense and broad sense'. In its narrow sense, it refers to a system of determining that level of operation where total revenues equal total costs, i.e., it is basically concerned with finding out the break-even point. In its broad sense, it denotes a system of analysis that can be used to determine the probable profit at any level of operations.

The break-even analysis is based on certain assumptions which are as follows.

1. The principle of cost variability is valid.
2. All costs can be separated into fixed and variable components.
3. Behaviour of different costs is linear.
4. Fixed costs will remain constant at all volumes and variable costs will fluctuate in direct proportion to volume.

5. Selling prices will remain constant at all volumes of sales.
6. Prices paid for input factors will remain the same.
7. Technological methods and efficiency of men and machines will not be changed.
8. Cost control will be neither strengthened nor weakened.
9. Production and sales will be synchronized.
10. Either there is only one product or if several products are being produced and sold, the sales mix will remain constant.
11. Revenue and costs are being compared with a common activity base, e.g., sale value of production or units produced.
12. The efficiency of plant can be predicted with accuracy.

Break-Even Point

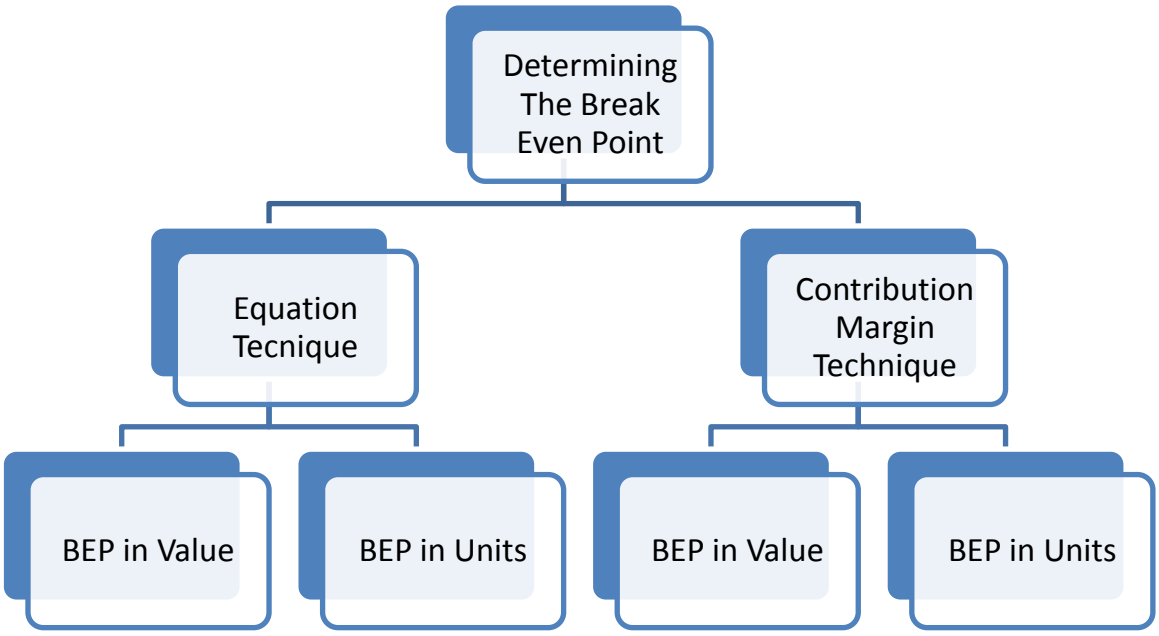
The calculation of break-even point is the foundation stone of break-even analysis. It may be described as that point of output and sales volume at which the company breaks even, i.e., the point at which sales revenue equals the cost to make and sell the product and no profit or loss is reported. This is why this point is also called as 'no-profit, no loss point'. In the words of M/s Keller and Ferrara, "the break-even point of a company or a unit of a company is the level of sales income which will equal-even point is that point of activity (sales volume) where total revenues and total expenses are equal, it is the point of zero profit and zero loss".

Here, it is to be noted that if volume of output and sales is less than the break-even level, the business will incur a loss. The business can be profitable only when this volume exceeds the break-even level and higher the volume, higher the profits.

Determining the Break-Even Point

The break-even point can be determined both mathematically us well as graphically. When it is determined on the graph paper, the graph drawn is named as 'break-even chart'. Mathematically there are two techniques and contribution margin technique.

Equation Technique – The following equations are used:



Uses or Applications of Break-Even Analysis

Break even analysis is a very useful technique of profit planning and decision making. It also helps the management in internal control and financial analysis. It can be applied for testing the profitability or proposed action, for considering alternatives or for other decision making purposes. Various areas of its applications are summarized as under:

1. Estimating Profits At Given Sales Volume – the break-even equation can be adapted to provide a means of estimating profits and losses at different volumes. The following are the alternative equations which may be applied for this purpose.

Profit = Sales Revenue – (Variable Costs + Fixed Costs)

Profit = Total Contribution – Fixed Costs

(iii) Profit = Sales Units (contribution per unit) – Fixed costs

Illustration 1

Given,

Fixed Cost	= Rs. 40,000
Variable Cost	= Rs. 2 per unit
Selling Price	= Rs. 10 per unit
Sales	= Rs. 1, 12,500

Calculate profit, if likely sales are Rs. 1, 50,000

Solution:

Pt = S (1-V/P) – F = 1, 50,000 (1-2/10) – 40,000

= 1, 20,000 – 40,000 = Rs. 80,000

Alternatively, pt = S(1-V/P) – F = 1,50,000 (1 - 22,500 / 1,12500) – 40,000

= 1, 20,000 – 40,000 = Rs.80, 000

Illustration 2

Given,

Fixed Costs	= Rs. 90,000
Break-even Units	= 3,000 Units
Sales	= 8,000 Units
Selling Price	= Rs. 90

You are required to work out:

Variable Cost per unit.

Hence, (1) Variable Cost per unit = Selling Price – Contribution per unit

= Rs. 90 – Rs. 60 per unit

(2) Profit = Total Contribution – Fixed Cost

= (8000 x Rs. 30) – Rs. 90,000 = Rs. 1, 50,000

Cost Volume Profit Analysis

The cost of production depends to a large extent on the volume of output and production mix which in their turn depend inter alia, upon the sale price and demand of the product in the market whereas the profit of the enterprise depends upon the cost of production, sale price and volume of sales. Thus, there is a direct relationship among these three factors – cost, volume, analysis is a device which attempts to determine the effect of changes in cost, volume, product mix and selling price on profits. In other word, it stresses the relationships among the factors affecting profits.

Importance of Cost – Volume – Profit Analysis

The study of cost – volume, profit relationship is very useful for the management. This technique provides management with cost and profit data required for profit planning, policy formulating and decision -making. It is only through the use of this technique that the prediction of the probable effect of any contemplated action is made possible. The following are some examples of its uses:

1. Calculation of profit for different sales volumes.
2. Evaluating the profitability of a product or a price on profits.
3. Computing the effect of contemplated change in selling price on profits.
4. Computing the sales volume required to offset a contemplated price-reduction.
5. Measurement of effect of changes in profit factors.
6. Helping in the preparation of flexible budgets.
7. Useful in making decisions like make or buy decisions, pricing decision, selection of an optimum product mix, selection of the best channel of distribution etc.
8. Assisting in cost control by evaluating the effect on cost of changes in volume, methods of production and product mix.

INVESTMENT ANALYSIS

Meaning

The term investment refers to 'real investment' which means creation of additional productive capacity. For example, the establishment of a factory or a workshop is a real investment.

Types of Investment

1. Real investment and financial investment

Real investment simply means the investment that leads to the creation of additional productive capacity. Investment in new factory buildings, new plants and machines are examples of real investment.

Financial investment simply means transfer of rights from one person to another. It does not add to the stock of real capital of an economy. The purchases of stock and shares, debentures, government bonds and other securities are examples of financial investment.

2. Gross investment and net investment

Gross investment refers to the total amount of expenditure made on new fixed capital assets (houses, factories, machinery) or on additions to stocks (raw materials, unsold consumption articles).

Net investment refers to that amount of expenditure made on capital asset after deducting the replacement investment (or depreciation). In the Keynesian theory of employment and income, investment means net investment and not gross investment.

3. Private investment and net investment

Private investment refers to that investment made by private individuals on projects in the public sector. Private investment is profit-motivated. It is influenced by marginal efficiency of capital and the rate of interest.

Public investment refers to that investment made by the government – state or local bodies – on projects running in the public sector. The criterion for public investment is social welfare.

4. Ex-ante investment and ex-post investment

Ex-ante investment is otherwise known as planned or intended investment. Ex-post investment is otherwise known as unplanned or unintended investment. The total volume of actual investment is the sum of planned and unplanned investment.

5. Induced investment and autonomous investment

Induced investment is that investment which is undertaken as a result of a change in the level of income. Normally, when income of an economy rises, investments also increase in its response. Such investments are called induced investment. It is profit-motivated.

Autonomous investment is that investment which is not affected by the changes in the level of income. It is totally insensitive to income change. It is not profit-motivated but welfare-motivated.

Factors Determining Investment Function

There are two factors determining investment function.

I) Marginal efficiency of capital (MEC)

The marginal efficiency of capital is a technique for relating the yield to the price of the capital. The MEC depends upon the prospective yield from the capital asset and the supply price of the capital asset.

II) Rate of interest

There is an inverse relationship between investment and the rate of interest. The higher the rate of interest, the higher will be the cost of borrowing and vice versa.

Questions for discussions

1. Bring out the managerial uses of break-even analysis
2. Bring out the assumptions of break-even analysis

UNIT – V

Macro Economics, aggregates and concepts – GNP, GDP, GDS, National Income – Business Cycle – Inflation and deflation – Balance of payments – Monetary and fiscal policies.

LESSON - 11
NATIONAL INCOME

Meaning of National Income

National income means the total money value of all final goods and services produced in a country during a year. According to the National Income Committee appointed by the Government of India in 1949, "A National Income estimate measures the volume of commodities and services turned out during a given period of time counted without duplication".

Concepts of National Income

There are a number of concepts pertaining to national income.

Gross National Product (GNP)

Gross national product is defined as the total market value of all final goods and services produced in a country during a year, including net income from abroad.

The gross national product (GNP) can be expressed both in terms of market prices and factor cost. 'Market price' is inclusive of indirect taxes whereas 'factor cost' does not include indirect taxes.

The gross domestic product (GDP) is different from gross national product (GNP). GDP refers to the total market value of all final goods and services produced in the country during a year, excluding the net income from abroad.

Net National Product (NNP)

NNP is defined as the market value of all final goods and services after providing for depreciation or replacement allowance of capital assets. In symbol,

$$NNP = GNP - Depreciation$$

National Income (NI)

National income is otherwise called net national product at factor cost. National income at factor cost means the sum of all incomes earned by all the factors of production which go into net production during the year.

Personal Income (PI)

Personal income is the total of incomes received by all individuals from all sources before direct taxes during a year.

W.C. Peterson defines personal income as "the current income received by persons from all sources, including transfer income from government and business.

Disposable personal income (DPI)

Disposable personal income means the actual income which can be spent on consumption by individuals and families after direct taxes.

Methods of Estimating National Income

The following are the three important methods used in the estimation of national income of a country:

Product Method

Under this method, the economy is divided into different sectors, namely, agriculture, manufacturing industry, trade and commerce, transport and communication, etc. Then the total value of goods and services produced in these sectors can be estimated at market prices during a year.

Income Method

Under this method, national income is estimated by adding up the incomes of all the owners of the factors of production in the country during a year. In other words, national income is estimated by summing up of the incomes earned by all the factors of production in the form of rent, wages interest and profits

Expenditure Method

Under this method, national income in estimated by adding up of all expenditure (both consumption and investment) made by all individuals as well as the government of a country during a given year.

Difficulties in the Estimation of National Income

The following are the difficulties in the estimation of national income of a country:

1. There is a large non-monetized sector in a developing economy like ours.
2. There is lack of occupational specialization which makes the estimation of national income very difficult.
3. People are not keeping regular accounts of the value of goods and services due to illiteracy. This makes the estimation of national income more difficult.
4. There is non-availability of appropriate and reliable statistical data which adds to the difficulties of estimating national income.
5. There is a possibility of double counting while estimating national income as it is difficult to separate intermediate goods from the final good.
6. It is very difficult to estimate correctly the unreported income from illegal activities like smuggling, black marketing, speculation, etc.
7. There is absence of proper maintenance of national income accounts on the part of the government.
8. There is also lack of uniform policy in the estimation of national income of different countries.

Uses of National Income Estimation

The following are the important uses of national income estimates:

1. National income estimate reveals the economic performance of the economy as a whole.
2. By comparing national income estimates over a period of time, we know whether the economy is growing, stagnant or declining.
3. They show the contribution made by various sectors of the economy to the national income.

4. They enable us to know about the distribution of national income among different categories of income such as rent, wages, interest and profits.
5. The national income estimates of different countries of the world help to compare the standard of living and the levels of economic welfare of the people living in those countries.
6. They serve as an indispensable guide to economic policy of the government.
7. They are of great use during the periods of development planning. In fact, no development planning is possible without national income estimates.
8. They are useful for a country's per capital income which reflects the economic welfare of the country.

Questions for discussions

1. Explain the concept of national income
2. Discuss the methods for measuring national income

LESSON – 12

BUSINESS CYCLE

Introduction

These alternating periods of expansion and contraction in economic activity has been called business cycles. They are also known as trade cycles. J. M. Keynes writes, "A trade cycle is composed of periods of good trade characterized by rising prices and low unemployment percentages with periods of bad trade characterized by falling prices and high unemployment percentages".

A noteworthy feature about these fluctuations in economic activity is that they are recurrent and have been occurring periodically in a more or less regular fashion. Therefore, these fluctuations have been called business cycles. It may be noted that calling these fluctuations as 'cycles' mean they are periodic and occur regularly, though perfect regularity has not been observed. The duration of a business cycle has not been of the same length; it has varied from a minimum of two years to a maximum of ten to twelve years, though in the past it was often assumed that fluctuations of output and other economic indicators around the trend showed repetitive and regular pattern of alternating periods of expansion and contraction. However, actually there has been no clear evidence of very regular cycle of the same definite duration. Some business cycles have been very short lasting for only two to three years, while others have lasted for several years. Further, in some cycles there have been large swings away from trend and in others these swings have been of moderate nature.

A significant point worth noting about business cycles is that they have been very costly in the economic sense of the word. During a period of recession or depression many workers lose their jobs and as a result large-scale unemployment, which causes loss of output that could have been produced with full-employment of resources, comes to prevail in the economy. Besides, during depression many businessmen go bankrupt and suffer huge losses. Depression causes a lot of human sufferings and lowers the levels of living of the people. Fluctuations in economic activity creates a lot of uncertainty in the economy which causes anxiety to the individuals about their future income and employment opportunities and involve a great havoc caused by the great depression of the early thirties of the present century? Even boom when it is accompanied by inflation has

its social costs. Inflation erodes the real incomes of the people and makes life miserable for the poor people. Inflation redistributes income in favour of the richer sections and also when inflation rate is high, it impedes economic growth. About the harmful effects of the business cycles Crowther writes, "On the one hand, there is the misery and shame of unemployment with all the individual poverty and social disturbances that it may create. "On the other hand, there is the loss of wealth represented by so much wasted and idle labour and capital".

Phases of Business Cycles

Business cycles have shown distinct phases the study of which is useful understand their underlying causes. These phases have been called by different name by different economists. Generally, the following phases of business cycles have been distinguished:

1. Expansion (Boom, Upswing or Prosperity)
2. Peak (Upper turning point)
3. Contraction (Downswing, Recession or Depression)
4. Trough (Lower turning point)

The four phases of business cycles have been shown in Fig. 5.1 where we start from trough or depression when the level of economic activity i.e., level of production and employment is at the lowest level. With the revival of economic activity the economy moves into the expansion phase, but due to the causes explained below, the expansion cannot continue indefinitely, and after reaching peak, contraction or downswing starts. When the contraction gathers momentum, we have a depression. The downswing continues till the lowest turning point which is also called trough is reached. In this way cycles is complete. However, after remaining at the trough for some time the economy revives and again the new cycle starts. Haberler in his important work on business cycles has named the four phases of business cycles as (1) Upswing, (2)Upper turning point, (3)Downswing, and (4)Lower turning point.

Expansion and Prosperity

In its expansion phase, both output and employment increase till we have full-employment of resources and production is at the highest possible level with given

productive resources. There is no involuntary unemployment and whatever unemployment prevails is only of frictional and structural types.

Contraction and Depression

As stated above, expansion or prosperity is followed by contraction or depression. During contraction, not only there is a fall in GNP but also level of employment is reduced. As a result, involuntary unemployment appears on a large scale. Investment also decreases causing further fall in consumption of goods and services. At times of contraction or depression prices also generally fall due to fall in aggregate demand. A significant feature of depression phase is the fall in rate of interest. With lower rate of interest people's demand for money holdings increases.

Though and Revival

There is a limit to which level of economic activity can fall. The lowest level of economic activity, generally called trough, lasts for some time. Capital stock is allowed to depreciate without replacement. The progress in technology makes the existing capital stock obsolete. If the banking system starts expanding credit as a result of non-replacement of depreciated capital and also because of new technology coming into existence requiring new types of machines and other capital goods.

Features of Business Cycles

Though different business cycles differ in duration and intensity they have some common features which we explain below:

1. Business cycles occur periodically. Though they do not show same regularity, they have some distinct phases such as expansion, peak, contraction or depression and trough. Further the duration of cycles varies a good deal from minimum of two years to a maximum of ten to twelve years.
2. Secondly, business cycles are Synchronic. That is, they do not cause changes in any single industry or sector but are of all embracing character. For example, depression or contractions occur simultaneously in all industries or sectors of the economy. Recession passes from one industry to another and chain reaction continues till the whole economy is in the grip of recession. Similar process is at

work in the expansion phase, prosperity spreads through various linkages of input-output relations or demand relation between various industries and sectors.

3. Thirdly, it has been observed that fluctuations occur not only in level of production but also simultaneously in other variables such as employment, investment, consumption, rate of interest and price level.
4. Another important feature of business cycles is that investment and consumption of durable consumer goods such as cars, houses, and refrigerators are affected most by the cyclical fluctuations. As stressed by J. M. Keynes, investment is greatly volatile and unstable as it depends on profit expectations of private entrepreneurs. These expectations of entrepreneurs change quite often making investment quite unstable. Since consumption of durable consumer goods can be deferred, it also fluctuates greatly during the course of business cycles.
5. An important feature of business cycles is that consumption of non-durable goods and services does not vary much during different phases of business cycles. Past data of business cycles reveal that households maintain a great stability in consumption of non-durable goods.
6. The immediate impact of depression and expansion is on the inventories of goods. When depression sets in, the inventories start accumulating beyond the desired level. This leads to cut in production of goods. On the contrary, when recovery starts, the inventories go below the desired level. This encourages businessmen to place more orders for goods whose production picks up and stimulates investment in capital goods.
7. Another important feature of business cycles is profits fluctuate more than any other type of income. The occurrence of business cycles causes lot of uncertainty for businessmen and makes it difficult to forecast the economic conditions. During the depression period profits may even become negative and many businesses go bankrupt. In a free market economy profits are justified on the ground that they are necessary payments if the entrepreneurs are to be induced to bear uncertainty.
8. Lastly, business cycles are international in character. That is, once started in one country they spread to other countries through trade relations between them. For example, if there is a recession in the USA, which is a large importer of goods from other countries, will cause a fall in demand for imports from other countries

whose exports would be adversely affected causing recession in them too. Depression of 1930s in USA and Great Britain engulfed the entire capital world.

Inflation

Definition

No words in Economics, as coulborn feels, are more trouble than inflation and deflation. Every one of us has a rough idea that inflation is to do with rising prices. But there is no general agreement as to how it can be defined. So we have mentioned below some of the definitions of inflation which are popular and associated with monetary problems.

1. The most popular definition is, “Too much money chasing too few goods”.
2. The definition given by “The Economist” London and quoted with approval by coulborn follows: “Excess of demand for everything over the supply of everything”.
3. Harry G. Johnson defines inflation, “as a sustained rise in prices”.
4. Gardner Ackley in his book ‘Macro – Economic Theory ‘defines inflation as “rising prices, not as high prices”.
5. The definition given by E.James in his article included in the book edited by Hague entitled inflation is as follows: “inflation is a self perpetuating and irreversible upward movement of prices, caused by an excess of demand over capacity to supply”.

Features

When there is inflation in the country one can note the presence of the following features in the economy:

1. There will be a steady in the price level.
2. There will be a steady fall in the value of money.
3. There will be an increase in money supply.
4. There will be an increase in the money incomes of people.
5. Demand for goods will be generally on the increase.
6. Demand for commodities will be greater than the supply or commodities.

7. Employment opportunities on the economy will tend to increase.

Causes

According to Kurihara, inflationary rise of prices may take place due to three types of factors viz., (1) demand factors (2) supply factors and (3) expectations, kurihara means by demand, the demand for money to buy tings and by supply he means the available output over which income can be spent. On the demand side, the factors that may bring about inflationary rise in price are (a) increase in money supply (b) increase in the disposable income of people (c) increase in consumer expenditures and business outlays and (d) increase in foreign demand. On the supply side, the factors that may bring about inflation are (a)full employment (b) shortage of labour, equipment and raw materials (c) export of commodities subject to strong domestics demand (d) wage-price spiral. Expectations play an important role in the spread of inflation. The expectation of higher prices stimulates general demand for inventories* and consumer goods, a rise in the come induces businessmen and consumers to spend faster. Mere expectation of wage increases often induces some businessmen to increase prices. Thus demand factors, supply factors and expectation may bring about inflation.

Types of inflation

According to A. J. Brown in his well-known book, 'The Great inflation, "inflation is a bewildering variety of phenomena". This means that inflation in a country at one time may be due to one reason, but at another time it may be due to some other reason. In short, there are different types of inflation as explained below:

1. Keyes distinguishes between pure inflation and semi-inflation or bottleneck inflation. Inflation that takes place after the stage of full employment is reached in the country is called pure inflation. Keynes refers to pure inflation as inflationary gap.
2. Inflation that takes place even before the stage of full employment is reached in the economy is called semi-inflation or bottleneck inflation occurs due to bottleneck in production and trade union activities.
3. On the basis of the period of its occurrence, inflation has been distinguished into (a) war-time inflation, (b) post war inflation and (c) peace-time inflation.

4. During periods of war, governments tend to spend more: supply of goods required by people for their consumption declines; there is an increase in money supply due to deficit spending by government. All these factor result in steady rise in prices. We call it war-time inflation.
5. In the immediate post-war years, money in circulation tend to be as high as was during the period of war. Shortages of goods continue. Government may have to spend huge sums on reparation operations. As a result, prices continue to rise even after the war is over. We call it post-war inflation.
6. Even when a country is not at war with another country there is a possibility of steady rise in prices. This may be due to an over issue of currency, huge spending by government. Demand for goods being in excess of supply or increase in cost of production. We call it peace time inflation.
7. On the basis of factors that cause inflationary rise in prices we distinguish among (A) excessive money supply inflation (B) deficit induced inflation (C) cost-push inflation and (D) demand-pull inflation.
8. If the total money supply increases factor than the total output of goods and services. It is sad to be excessive money supply inflation. In this case, too much money will be chasing too few goods in the economy.

The government spending may sometimes exceed its total revenue. The government is able to do this, resorting to deficit financing. As a result, prices in the economy may tend to rise. We call it deficit induced inflation. Price of economy is fixed on the basis of the cost of production of the commodity. So if cost rises, price also rises. This is called cost push inflation. Cost may rise due to (a) increase in money wages paid to the rise in prices of raw materials (b) increase in the profit of the producers. If the increase in cost leading to the rise in price is due to an increase in the profits of the producers it is called PROFIT INFLATION. If the increase in cost leading to rise in price is due to increase in the money in the wages of the labourer, it is called WAGE INFLATION. Wage inflation is referred to as wages price spiral.

If demand for goods exceeds the available supply of goods, there is said to be demand-pull inflation. Demand-pull inflation may occur (1) in an economy that has reached the stage of full employment and (2) in an under-developed economy wedded to

a policy of planned economic development. In a full employment economy, the supply of goods, it will bring about a rise in prices. In an underdeveloped economy, wedded to a policy of planned economic development, money incomes of people rise faster than the increase in the supply of goods. Hence, demand for goods tends to exceed their supply and this causes rise in prices.

On the basis of the speed with which prices rise, we distinguish among (a) creeping inflation (b) walking inflation (c) running inflation (d) galloping or hyper inflation.

If there is a moderate rise in price level in the economy over a period of time, there is said to be creeping inflation. A rise in the price of about one percent per annum is referred to as creeping inflation, J. L. Hanson in his book; 'Monetary Theory and Practice' calls this also by the name of 'persistent' inflation.

If the price rise per annum in the economy is 3%, there is said to be walking inflation. Thus in the case of walking inflation, the price rise is more pronounced than in the case of creeping inflation.

If the price rise per annum in the economy is about 10%, there is said to be running inflation.

Hyper – inflation or galloping or runway inflation is a condition in which the monetary authority loses control over the situation. Prices rise every moment and the sky is the limit to the price rise in an economy experiencing hyper-inflation. People try to dispose of the money, the moment they get it. Hence, the velocity of circulation of money rise at an ever – increasing rate. Germany experienced hyper-inflation in the inter-war period and Hungary experienced hyper-inflation during 1944-1964. When Germany was under the grip of hyper-inflation, the price of loaf bread was 50,000, marks. The cause of the inflation was the issue of a colossal amount of paper money. The notes in circulation increased by 7,000 million time in three years.

On the basis of the extent to which the economy is under the grip of inflation, inflation is divided into (a) economy wide or comprehensive inflation and (b) sporadic or sporadic inflation.

If prices rise throughout the economy, there is said to be economy-wide or comprehensive inflation.

If prices of only a few goods rise due to their shortage, there is said to be sporadic or sect oral inflation in the economy.

On the basis of government's reaction to inflation in the economy, we distinguish between (a) open inflation and (b) suppressed inflation.

If the government remains passive without adopting any preventive measure to check the spiraling prices, it is called 'open inflation'. Milton Friedman defines open inflation as an "inflationary process in which prices are permitted to rise without being suppressed by government price control or similar techniques". The hyper-inflation experienced by Germany in the inter-war period is an example of open inflation.

If the government chooses to adopt measures like price control and rationing to act as a check on rising prices, it is called suppressed or repressed inflation. In the event of the removal of the price controls and rationing, the prices will again tend to rise. For instance, during war periods there were a number of controls and hence, prices were prevented from rising. In the post war years with the removal of control, prices tend to rise. Thus, suppressed inflation bursts out with the removal of controls.

R. F. Harrod has talked of another kind of inflation. He calls it by the name of LATENT INFLATION. This situation arises when the funds in the hands of business firms are not being spent not because of controls or rationing but because these firms are not able to book fresh orders. As soon as the situation changes, these savings are let out. This may generate inflation which is referred to as latent inflation.

Effects of Inflation

Inflation produces mixed results. It is beneficial to a few and harmful to others. Keynes distinguishes between the effects of rising prices (a) on the distribution of wealth and income in the community and (b) on production and employment in the economy.

Be effects on distribution of wealth, he means effects of rising prices on different classes, viz., (1) rentier class (b) business class and (3) earning class.

By rentier class be means, those who get a fixed annual money income from property or money lent by them. Thus the rentier class consists of (a) property owners (b) land-lords (c) creditors and (d) holders of securities.

The property owners and landlords are losers during a period of inflation. For, the rents these people receive are fixed by contract for a certain period; they cannot be varied easily.

The creditors are losers whereas the debtors are gainers during a period of inflation. The debtors gain as the real value of the money which they pay back is much less than when they borrowed. Creditors stand to lose by inflation since they receive less in real terms.

Securities carry a fixed rate of interest for a specified period. So, during periods of rising prices holders of security lose.

Inflation is a great stimulant to business enterprise. The businessman, whether he is a manufacturer or merchant, stands to profits greatly by rising prices. Kurihara gives two reasons, viz., (1) The value of the stock of raw materials and finished goods held by them will increase and therefore they can sell them at better prices. (2) There is a time lag between rise in prices and rise in cost of production. This enables them to get windfall gains.

So far as wage earners are concerned, it is true that they are able to get a rise in their wages during a period of rising prices. But the order of increase in wage secured by them is seldom as high as the order of increase in general price level. So wage earner lose during a period of rising prices. However, it is to be noted that labourers as a whole stand to gain during periods of inflation. Periods of rising prices are generally periods of business prosperity. So investment and production tend to increase creating more employment opportunities in the economy.

Inflation affects farmers and consumers also. The farmers are affected favourably. For they are able to get higher prices for the farm products.

Inflation affects consumers adversely. They have to pay higher prices for the goods they buy. Sir. C. N. Vakil pass the following remark in his book entitled ‘Financial

Burden of War on India' "Inflation may be compared to a robber. Both deprive the victim of some possession with the difference that the robber is visible inflation is invisible; the robber's victim may be few at a time, the victim of inflation is the whole nation; the robber may be dragged to court of law; inflation is legal".

Generally speaking, the effects of inflation on production and employment are favourable. Induced by the rising prices, the business people expand their activities. Since prices are on the increase they are very optimistic about the future. So investment activity proceeds at a rapid speed. This results in increase in production and national income. Increase in investment activity also creates more employment opportunities. Thus, during a period of inflation, investments, production and employment tend to rise steadily.

Inflation also affects the course of international trade of a country. In view of rising prices in the domestic economy, exports tend to decline and imports tend to increase. As a result, there will be unfavourable balance of payments. If unfavourable balance of payments for quite some time, the external value of the currency will tend to decline.

Inflation and Economic Development

There is a controversy among economists whether inflation helps or hinders economic development.

Economists like Maurice Dobb, Kaldor, Robertson and Keynes favour a policy of mild dose of inflation to act as a stimulus to economic activity. In their view point, a moderate dose of inflation will have a tonic effect on economic activity. As a result, production of goods and services and employment opportunities in the country will tend to increase. In the words of Kaldor, "A slow and steady rate of inflation provides the most powerful aid to the attainment of a steady rate of economic progress".

However, economists like Milton Friedman are totally opposed to the use of inflation as a stimulus to economic development. Milton Friedman does not agree with the view that inflation will tend to stimulate development. These economists are of the view that inflation may become self cumulative and impair economic growth. So they are of the view that inflation may hinder rather than help economic development.

In conclusion, it may be noted that a mild dose of inflation may help capital formation and thereby assist economic development in the short period. But a policy of continuous inflation may do more harm than good over a period of time.

Anti-Inflationary Measures

As we saw above, inflation is not and unmixed blessing. According to Kurihara, it is "socially undesirable and economically unsound". If the inflationary pressure that develops in the economy is not nipped in the bud, it may lead to runaway inflation. Hence, measures should be taken to control inflation before it gets out of control. Anti-inflationary measures can be divided into three broad categories as noted below; 1] monetary measures 2]fiscal measures and 3] other measures.

Monetary measures (or monetary policy) aim at controlling the supply of money; cost of borrowing money, and availability of credit in the economy. They are being adopted by the central bank of the country. The monetary measures fall into two broad categories, viz., 1) general or quantitative methods, and 2) selective or qualitative methods. The general measures aim at controlling money supply, cost of borrowing money and availability of credit in the economy as a whole. Whereas, the selective measures aim to controlling the flow of credit to particular industries or particular sectors in the economy.

The general methods include 1) Bank Rate Policy 2) Open Market Operations 3) Variable Reserve Ratio 4) Net Liquidity Ratio (or Secondary Reserve Requirement). Bank Rate is the minimum lending rate of the central bank of the country; it is also the rate at which the central bank discounts bills of exchange or securities. During the period of inflation, the central bank raises its bank rates. This means and increase in the cost of borrowing money from the commercial banks. This discourages business people from borrowing money from the commercial banks. This means less spending by them. This acts as a check on inflation.

The purchase or sale of bills of exchange and securities by the central bank in the open market is called open market operations. When there is inflation in the country. The central bank resorts to open market sale of securities and bills. When the central bank

sells securities or bills, then, this means a decline in money at the disposal of people and banks and it will act as a check on inflation.

Every commercial bank has to keep with central bank cash reserves as a proportion of its deposit liability. This cash reserve ratio can be changed by the central bank to serve as a control measure. We call it Variable Reserve Ratio. During the period of inflation, the central bank raises this cash reserve ratio. This will restrict the powers of commercial bank to create credit. So the total spending in the economy tends to decline. This acts as a check on rising prices.

In some countries commercial banks are required by the central bank to keep with them a certain proportion of their deposit liability in the form of liquid assets. We call this Secondary Reserve Requirement or Net Liquidity Ratio. During the period of inflation, the central bank raises this ratio. This restricts the powers of commercial banks to create credit. As a result, total spending in the economy tends to decline. This acts as a check on rising prices.

Selective methods include (1) consumer credit regulation (2) margin requirements (3) moral suasion and (4) direct action. Consumer credit regulation aims at controlling hire purchase. In hire purchase system, the buyer is asked to pay a certain sum initially (called down payments) and the rest in a number of installments. To control inflation, the central bank directs the hire purchase companies and commercial banks to raise the limits of down payments and to lower the number of installments.

Margin requirements are used to prevent speculative hoarding of goods in supply. Suppose a merchant can borrow Rs.90000 from a commercial bank pledging a stock of Rs.10000. In this illustration, the margin requirement is Rs.1000 or 10%. As an anti-inflation measure, the central bank directs the commercial banks to raise the margin requirements.

The central bank advises the banks that follow unsound policies to pursue right type of policies. This is called moral suasion. If the commercial bank does not heed the advice of the central bank, the central bank takes punitive action against the erring bank. This is called direct action.

Fiscal measures (or fiscal policy) are enforced by the Finance Ministry. Government spending, taxing and borrowing with a view to regulate economic activities in the country are called Fiscal measures. To combat inflation, the government causes a decline in public spending; to discourage private spending the government raises the tax burden of the people with a view to mop up their excess purchasing power. The government raises loans from the public. All these will mean surplus budget during periods of inflation.

The other measures include (a) output adjustment (b) rationing (c) price control or price freeze and (d) wage freeze or wage policy. Since inflation means too much money chasing too few goods, measures aimed at increasing the production of goods will prove to be anti-inflationary. Increased production can be achieved by rationalization, modernization and technological improvements. The object of rationing is to distribute the goods in short in the equitable manner among all people irrespective of their wealth and social status. Price control consists in not permitting the producers of dealers raise prices over and above the current level. Wage freeze consists in not permitting any rise in the wage level for all categories of labourers. Wage freeze is part of what is called income policy.

It is noted that neither monetary measures alone nor fiscal measures alone nor the other measures alone can contain inflationary pressure in the economy. All these measures are to be jointly undertaken to bring inflation under control. For, inflation is a hydra-headed monster which can be overcome only if fought with many weapons from many directions.

Definition and Features of Deflation

Crowther defines deflation "As a state in which the value of money is rising i.e., prices are falling". When there is deflation in a country one can note the presence of the following features in the economy:

a) There will be a steady fall in the price level.
b) There will be a steady rise in the value of money.
c) There will be a decrease in money –supply
d) There will be a decrease in the money incomes of people.
e) Demand for goods will be generally on the decline.

f) In the initial stage the supply of commodities will be greater than the demand for commodities.
g) There will be widespread unemployment in the economy .
h) The producers will be pessimistic and as result investment activity will be at very low levels.

Cause

Deflation may take place in an economy due to several reasons. It may occur due to decline in total spending in the economy. Or it may be due to over production of goods. Or, it may be due to pessimistic attitude of investors who are afraid of a bleak future for investment in the economy.

Effect of Deflation

Deflation produces mixed effects. During a period of deflation the entire class of the people (viz., Property owners, Landlords, Investors in securities and creditors) gain. The consumers also gain. But the debtors, farmers and business people lose. Deflation producers adverse effects, on production and employment in the economy. When there is a steady fall in the prices, the business people tend to be pessimistic. So, they curtail their output. This leads to widespread unemployment in the economy. In view of its adverse effects on the general; level of economic activities in the country, deflation is considered to be worse than inflation.

Deflation, however, proves to be beneficial to a country so far as its foreign trade is concerned. Since prices are of the3 decline in the domestic economy, exports tend to rise and imports tend to decline. This may result in favorable balance of payments. If this persists for some time, the external value of the currency will tend to rise.

Anti – Deflation Measures

Since deflation produces adverse effects on production and employment in the country, measures designed to prevent its occurrence must be undertaken. The anti-deflation measures or of three types (1) fiscal measures (2) monetary measures and (3) other measures. Monetary measures include bank rate policy, open market operation, variable reserve ratio and the net liquidity ratio. The appropriate monetary measures are a fall in bank rate, open market purchase of securities and a decline in variable reserve ratio

and the net liquidity ratio. Fiscal measures consist in using taxation, public spending and public borrowing as tool to influence the levels of economic activity in the country. During periods of falling prices, the government can lower the tax burden of people; it may under take public works programme to provide employment opportunities to people. This means deficit budget during a period of deflation. Besides monetary measures and fiscal measures, other measures may also be adopted. Price support programme is one of such measure. Under this system the government fixes the prices below which the commodities at the minimum prices fixed by it. The policy of price support has been used extensively in the U.S.A. Of these three types of measures fiscal measure have proved to be very effective as a remedy to the economic malady of depression.

Questions for discussions

1. Explain about the business cycle
2. Explain the causes are inflation
3. Discuss the types of inflation
4. Explain the methods used for controlling inflation
5. What is deflation

LESSON – 13

BALANCE OF PAYMENTS

The balance of trade only the visible items in foreign trade. The material goods are exported and imported; only these are entered in the port registers maintained by the customs authorities. But there are a large number of other items which fall outside and are called 'invisible'. The balance of payments includes all 'invisible' items.

The visible items are:-

Services: India uses a good deal of foreign banking, shipping and insurance services. She does not have enough of her own ships, insurance companies and exchange banks. Hence foreign agencies, like Lloyds Bank provided these services. India has to pay for all such services. Now, however, India has filled up the gap almost.

Tourists' Expenses: when Indian students and tourists purchase goods and services in Europe, it is like importing these goods and services. The only different is that instead of goods coming to the consumers, the consumers have gone to them. They have to be paid for in goods exported from India. In the case of Indian students receiving education abroad, India is importing education as it were and has to pay for it.

Interest on Borrowed Capital: The services of capital have to be paid for by the borrowing country. An investment made abroad is an export is an export item and remains so till withdrawn. Ultimately, all loans borrowed in foreign money markets have to be paid back and adjusted through exports.

Besides the above, there are various minor items like gifts, donations and money remitted home by foreign settlers; these are also invisible items.

All these invisible items produce exactly the same effect on a country's account with the rest of the world as the export and import of commodities. When they are added to the balance of trade, we have a complete list of all the items which have to be paid for or received by trading countries. Their sum-total is called the balance of payments.

Definition

The balance of payments is a comprehensive record of economic transactions of the residents of a country with the rest of the world during a given period of time.

This record is so prepared as to provide meaning and measure to the various components of a country's external economic transactions. Thus, the aim to present of account of all receipts and payments on account of goods exported, services rendered and capital transferred by the residents of a country. The main purpose of keeping these accounts is to inform the government of the country of the international economic position is to inform the government of the country of the international economic position of the country and to help it in making decisions on monetary and fiscal policies to be pursued as well as on the trade and payments issues.

Current and Capital Accounts. The balance of payments has two parts: (a) balance on current account and (b) balance on capital account. The balance of payments on current account includes items like imports and exports, expenses on travel, transportation, insurance, investment income, etc. These relate to current transactions.

The Capital Account. The capital account, on the other hand, is made up of capital transactions, e.g. borrowing and lending of capital, repayment of capital, sale and purchase of securities and other assets to and from foreigners-individuals, governments and international organizations.

When both current and capital accounts are taken, it is called Overall Balance Payments. It is the over-all balance of payments which must balance.

Equilibrium, Disequilibrium and Adjustments in the Balance of Payments

Balance of Payments Equilibrium

Before we analyze the conditions of disequilibrium, we would like to explain what is meant by equilibrium balance of payments. "Equilibrium is that state of the balance of payments over the relevant time period which makes it possible to sustain an open economy without severe unemployment on a continuing basis". The essentials in this definition are: (a) relevant time period, (b) absence of unemployment, and (c) openness of economy (i.e., no undue restrictions on imports), (d) continuing basis of the equilibrium (i.e., it is capable of being sustained). The period is generally one year. Thus, seasonal inequality between exports and imports is not a sign of disequilibrium.

When the balance of payments of a country is in equilibrium, the demand for domestic currency is equal to its supply. The demand and supply situation is thus neither favourable nor unfavourable. If the balance of payments moves against a country, adjustments must be made by encouraging exports of goods, services or other forms of exports, or by discouraging imports of all kinds. No country can have a permanently unfavourable balance of payments, though it is possible-and is quite common for some countries-to have a permanently unfavourable balance of trade. Total liabilities and total assets of nations, as of individuals, must balance in the long run.

This does not mean that the balance of payment of a country should be in equilibrium individually with every other country with which she has trade relations. This is not necessary nor is it the case in the real word. Trade relations are multilateral. India, for instance, may have an active (i.e., surplus) balance of payments with the United States and passive balance with the United Kingdom and/or other countries. But each country, in the long run, cannot receive more value than she has exported to other countries taken together.

Equilibrium in the balance of payments, therefore, is a sign of the soundness of a country's economy. But disequilibrium may arise either for short or long periods. A continued disequilibrium indicates that the country is heading towards economic and financial bankruptcy. Every country, therefore, must try to maintain balance of payments in equilibrium.

Correcting Disequilibrium in the Balance of Payments

The balance of payments of India for 1982-83 gives above shows a heavily adverse balance of payments on current account. When the visible and invisible exports of a country are less than all her imports (or the imports exceed the exports) over a long period and the difference is big, steps have to be taken to bridge the gap. A number of methods are used. They are:

Improving the balance of trade through import restrictions and measures of export promotion. Since balance of payments becomes adverse chiefly on account of excess of imports over exports, the most urgent steps are to be taken in this direction. A country having an adverse balance of payments must try to check imports, or to stimulate exports

or do both. Imports can be checked either by total prohibition, or by levying import duties, or by a quota system. Another method is adopting of measures of import substitutions, i.e., trying to produce in the country what it currently imports from abroad. Exports can be stimulated by measures of export promotion i.e. granting bounties or other concessions industrialists and exporters.

Deflation. Another method is deflation. Under this method, total money income in the economy is sought to be reduced, so that the aggregate demand in the country falls. As a result, the people tend to import less and their demand for home-produced goods too becomes less, releasing more of them for exports. Owing to fall in aggregate demand, prices also fall, so that the country becomes a goods market to buy from and a bad market to sell in. In this way, imports get discouraged and exports are stimulated, thus correcting the adverse balance payments.

But deflation is not a healthy method, balance the reduction of money incomes hits business, trade and industry hard and brings about depression and unemployment.

Exchange control. Sometimes the adoption of any of the above methods is not considered desirably by other countries. Devaluation is supposed to damage the prestige of a country. Deflation brings in its wake disastrous consequences in the form of depression and widespread unemployment. It may, therefore, be considered necessary to avoid these methods and instead exchange control adopted. Under a system of exchange control all exporters are asked to surrender their claims on foreign currencies to the central bank which pays in return the home currency. Which the exports really want. This available foreign exchange is rationed out by the central bank among the licensed imports of the essential commodities. Thus, imports are restricted to the foreign exchange available. There is no danger of more goods being imported than exported.

Devaluation. A very common method of correcting an adverse balance of payments is the devaluation of the home currency. The devalued currency falls in value against foreign currencies so that the foreigners have to pay less in terms of their own currencies for our goods. The importers in the country, on the other hand, have now to pay more in terms of the devalued currency, for foreign goods. Hence, they (i.e., foreigners) are induced to import more from such a country. Thus her imports decrease

and exports increase, and the balance of payments is corrected. For example, India, following the U.K., devalued her currency in terms of the dollar in September 1949. Her trade balance had been very unfavourable. There used to be a big gap between her exports and imports. After the devaluation, however, her balance of payments was set right. In June 1966, again, India had to devalue the rupee. This resulted in some improvement in the balance of payments position.

The success of devaluation in improving the balance of trade, and through it the balance of payments depends upon the demand elasticities of imports and exports of the devaluing country. In other words, an improvement in the balance of trade will depend upon whether the demand for imports and exports is elastic or inelastic. Devaluation makes the imports of the devaluing country costlier than before and in case her demand for imports is inelastic, a higher amount will be spent for the same imports, thereby worsening her balance of trade. Similarly, if her export demand is inelastic, then, after devaluation, lesser amount will be spent by the foreigners thereby affecting adversely the balance of payments of the devaluing country. However, if her demand for exports is elastic then with a fall in the prices of the exports as a result of devaluation, more will be purchases by the foreigners, which, in turn, will help in restoring the equilibrium in her balance of payments. Likewise, if her demand for imports is elastic, then the imports of the country will be significantly reduced by devaluation, which in turn improve the balance of payments of the devaluing country.

The success of devaluation in improving the balance of trade also depends on the reactions of her trading partners. If the trading partners retaliate, then devaluation will not make any impact on the imports or exports of the devaluing country. Even though her demand of imports and exports may be elastic.

MONETARY POLICY

Meaning of Monetary Policy

Monetary policy means the policy adopted by the monetary authority (i.e., the central bank) with regard to money. It is defined as the efforts of monetary authority defined as the advantages of money to the maximum and reduces the disadvantages of money to the minimum.

Objectives of Monetary Policy

The following are the important of monetary policy:

1. To secure exchange rate stability (external stability).
2. To maintain stale price level (internal stability).
3. To keep the supply of money constant (neutrality of money).
4. To avoid business fluctuations.
5. To achieve and maintain full employment.
6. To promote economic development with stability.

The main objective of the monetary policy of many countries before 1914 was to secure exchange rate stability. This was secured by adopting the gold standard. Under the gold standard, the rate of exchange was determined on the basis of gold contained in the coins of both the countries. Now, this system of gold standard does not work.

To maintain internal price stability is another important objective of monetary policy. A gently falling price level enables labourers to secure their share to the benefits of increased productivity automatically. The gently using price level enables businessmen to make large profits that encourage them to expand their business activities. This leads to more employment. The wealth of the country increases at a faster rate.

To keep the effect of money (i.e., quantity of money X velocity of circulation of money) constant is another important objective of monetary policy. In other words, money should be neutral in its effect on forces. Neutral money policy does not guarantee stable prices. The reason is may rise or fall on account of non-monetary factors also.

To avoid business fluctuations (business fluctuations) is another objective of monetary policy. Some economists are of the view that trade cycles (or business fluctuations) occur on account of changes in the supply of money and credit. Here, the monetary authority should control the supply of money and credit in order to achieve this objective. But Keynes says that monetary policy is not effective in controlling the trade cycles.

To achieve and maintain full employment is another important objective of monetary policy. The term full employment does not mean that everyone is fully

employed. It means that full employment exists in the country when everyone is willing to work at the existing rates of wages gets job. This level of employment cannot be achieved at any given time. The monetary authority should adopt cheap money policy in order to achieve full employment.

To promote economic development with stability is also another objective of monetary policy. The monetary authority should encourage it to essential and priority industries and discourage non-essential and non-priority industries in order to achieve this objective. The monetary authority should also encourage credit to productive activities and discourage credit to unproductive or speculative activities.

Instruments of Monetary Policy

The central banking authority has the following monetary policy instruments for controlling credit:

1. Bank rate policy
2. Open market operations
3. Variation of reserve ratio
4. Prescribing margins against food grains/shares
5. Regulation of consumer credit
6. Rationing of credit
7. Moral suasion
8. Direct action

Bank rate means the minimum rate at which the central bank rediscounts bills or grants loans against approved securities. It will be raised to control inflation and reduced to control deflation.

The open market operations mean purchase or sale of government securities. The central bank sells securities to control inflation and purchase securities to control deflation.

Variation of reserve ratio means the percentage of cash to deposits with the central bank will be changed. The central bank raises the reserve ratio to control inflation and reduces the reserve ratio to control deflation.

The central bank raises the margin of the securities like shares or food grains to control inflation and reduces this margin to control deflation.

The central bank raises the percentage of the price to be paid at the time of delivery and reduces the number of instalments and increases the amount of cash instalment to control inflation. The central bank reduces this percentage to control deflation.

The central bank fixes a ceiling on the total amount of loans that can be granted by each commercial bank in order to control inflation. This method plays an important part in planned economies.

Under the moral suasion method the central bank persuades commercial banks not to extend more credit and not to apply for further accommodation in order to control inflation.

Direct action method of controlling credit is very effective. Under this method, the central bank takes action against the banks which work against its credit policy. The direct actions may include charging a penal rate of interest and refusing to grant further loan or reducing counting facilities.

Thus bank rate is becoming ineffective on account of rigidity of economic structure and insensitiveness of investment to changes in interest rates. Open market operations policy is not very effective in underdeveloped money market. Variation in reserve ratio method is best suited to countries with underdeveloped money markets.

It should also be noted that qualitative or selective credit control methods are not competitive but complementary to quantitative credit control methods. Both the methods should be employed to control credit.

FISCAL POLICY

Meaning of Fiscal Policy

Fiscal policy is the policy of the government with regard to financial matters. Fiscal policy is one of the most important and widely used economic policies to achieve economic stability. The term fiscal policy refers to the policy under which the

government uses its taxation, expenditure and other financial programme to achieve certain pre-determined objectives.

Objectives of Fiscal Policy

The most common objectives of fiscal policy are:

1. Economic growth
2. Promotion of employment
3. Stabilization of economy
4. Economic justice (or equitability)

Instruments of Fiscal Policy

The basic instruments of fiscal policy are: Taxation and Public expenditure. Capital formation plays a key role in economic development. Higher the rate of capital formation, higher will be the rate of economic growth. A higher rate of capital formation needs a considerable proportion of natural income saved and invested in the production of capital products. Developed countries have a higher rate of savings and investment than the underdeveloped or developing countries.

The underdeveloped or developing countries are caught in the vicious circle of poverty. Accelerating the pace of capital formation is the only way of breaking the vicious circle of poverty. The following are the major sources of financing capital formation in developing countries.

1. Domestic borrowing
2. Deficit financing
3. Foreign aid
4. Taxation

Among the above four sources of financing capital formation, taxation is an effective instrument for mobilizing domestic savings and investing the same in the accumulation of productive assets.

It is generally suggested that taxation is the only effective financial instrument for reducing private consumption expenditure and transferring resources to the government for economic development.

The role of fiscal policy is not limited to taxation as an instrument of encouraging capital formation in the public sector but as an instrument of encouraging capital formation in the private sector as well. For this purpose, taxation policy would have to be so designed that it discourages consumption and encourages saving and investment.

The impact of taxation on the growth of private investment is generally examined through the effects of taxation on which people desire to work, savings of private firms, and ability to invest.

The role of public expenditure in achieving the various objectives of fiscal policy in general and economic stabilization in particular is considerably significant. Public expenditure is one of the two sides of the government budget. The other side is taxation. The taxation and public expenditure policies are jointly called budgetary policy of the government.

A counter-cyclical fiscal policy needs an increase in public expenditure and reduction in taxation to fight deflation; and reduction in public expenditure and increase in taxation to control inflation.

Questions for discussions

1. Explain about the balance of payments
2. Elaborate the objectives of monetary policy
3. Discuss the objectives of fiscal policy

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