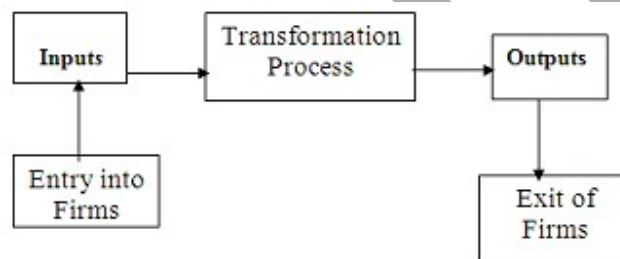


**UNIT – II - PRODUCTION
SYLLABUS**

Unit – II : Production – Factors of production - Production function – Least cost combination – Law of returns – Law of variable proportion – Returns to scale – Economies of scale – Cost and Revenue concepts and curves.

Meaning of Production and Production Function

The concept of production can be represented in the following manner.



The term “Production” means transformation of physical “Inputs” into physical “Outputs”.

The term “Inputs” refers to all those things or items which are required by the firm to produce a particular product. **Four factors of production are land, labor, capital and organization.**

1. Land:

Marshall has defined land as, “the materials and the forces which nature gives freely for man’s aid, in land and water, in air and light and heat.” Land refers to a natural resource that can be utilized to produce income. It is a useful factor of production, but is available in limited quantity.

Certain facts about land are as follows:

- i. Perceived as a gift of nature to man.

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ii. Considered to be available in fixed quantity; therefore, does not have a supply price. This implies that the change in price of land does not affect its supply.

iii. Regarded as a permanent input having certain inherent properties, which are original and indestructible.

iv. Considered as an immobile factor of production.

v. Considered to have infinite variation in terms of fertility. This leads to variation in the prices of land.

2. Labor:

A work that is undertaken by an individual for the sake of interest and pleasure, then the individual would not be regarded as labor in economics. According to Marshall, "Any exertion of mind or body undergone partly or wholly with a view to some good other than the pleasure derived directly from the work is called labor."

Some of the peculiarities of labor are as follows:

i. Labor cannot be separated from laborer. This is because laborer needs to sell his/her labor.

ii. Labor is defined as the perishable factor of production that has no reserve price.

iii. Labor is considered as the weakest commodity in terms of bargaining power.

iv. Change in the price of labor would affect the supply of labor.

v. Adjustments in supply and demand of labor is difficult because it is difficult to increase or decrease labor instantly.

Production is organized on the basis of division of labor. Let us discuss about division of labor in detail.

Division of Labor:

Adam Smith- the father of economics laid a greater emphasis on the concept of division of labor in his book, “An Inquiry into the Mature and Causes of the Wealth of Nations” in 1776. He stated that division of labor plays a vital role in increasing the productivity of labor. According to him, division of labor is the dynamic instrument for economic growth and development.

There are different types of division of labor, which are explained as follows:

- i. Simple Division of Labor:** Refers to the division of labor on the basis of their skills and occupations,
- ii. Complex Division of Labor:** Refers to the division of labor on the basis of business processes and sub-processes.
- iii. Territorial Division of Labor:** Refers to the division of labor on the basis of geographical locations

Advantages and Disadvantages of Division of Labor:

Some of the **advantages of division of labor** are as follows:

- i. Increasing Productivity:
- ii. Increasing Dexterity and Skills:
- iii. Facilitating Inventions:
- iv. Saving Time:
- v. Increasing Employment Opportunities:
- vi. Encouraging Large-scale Production:

3. Capital:

In general terms, capital refers to the part of an individual’s income that is used for Income creation purposes. Capital is not considered as original factor of production. In economics, the term capital is associated with capital goods, such as plant, raw materials, fuel, and machinery. Among capital goods, raw material and goods under process are temporary because these goods are repurchased after a period of time.

4. Enterprise:

An enterprise is an entity, organization, or undertaking that is created for commercial purposes or business ventures and requires efforts. It is focused on providing goods and services keeping in view various aspects, such as financial, commercial, and industrial. An enterprise is composed of individuals and physical assets with a common goal of generating profits.

According to Micro, Small, and Medium Enterprises Development (MSMED) Act, 2006 “Enterprise means an industrial undertaking or a business concern or any other establishment, by whatever name called, engaged in the manufacture or production of goods, in any manner, pertaining to any industry specified in the First Schedule to the Industries (Development and Regulation) Act, 1951 or engaged in providing or rendering of any service or services.”

Definition of an Entrepreneur:

According to Encyclopedia Americana (1988), “An entrepreneur is a businessman who assumes the risk of bringing together the means of production including capital, labor and material and receives his reward in profit from the market value of his product”.

According to Schumpeter, “An entrepreneur characteristically innovates, introduces new technologies, increases efficiency, productivity, or generates new products or services. An entrepreneur acts as a catalyst for economic change and research indicates that entrepreneurs are highly creative individuals who imagine new solutions by generating opportunities-for profit or reward.”

Traits and Characteristics of a Successful Entrepreneur:

Following are certain traits and characteristics of a successful entrepreneur

- i. Creativity:
- ii. Innovation:
- iii. Dynamism:
- iv. Risk Taking and Decision Making Ability:
- v. Self-Motivation:
- vi. Self-Confidence:

- vii. Time Management:
- viii. Persistence:
- ix. Problem Solving:
- x. Flexibility:
- xi. Vision:
- xii. Leadership:
- xiii. Technical Knowledge:

Functions of an Entrepreneur:

An entrepreneur takes the risk and organizes resources to establish and operate his/her enterprise. He/she identifies and traps the existing opportunities in the market, converts idea into action, bears the risk and uncertainties involved, and takes promotional activities to launch the enterprise. In addition, they strive for excellence in their field.

Some of the functions of an entrepreneur are described as follows:

- i. Idea Generation:
- ii. Promotion:
- iii. Risk and Uncertainty Bearing:
- iv. Arranging Finance:
- v. Staffing:

PRODUCTION FUNCTION

The entire theory of production centres round the concept of production function.

“A production Function” expresses the technological or engineering relationship between physical quantity of inputs employed and physical quantity of outputs obtained by a firm”.

It specifies a flow of output resulting from a flow of inputs during a specified period of time. A production function can be represented in the form of a mathematical model or equation as $Q = f(L, N, K, \dots \text{etc})$ where Q stands for quantity of output per unit of time and L N K etc are the various factor inputs like land, capital

labor etc which are used in the production of output. The rate of output Q is thus, a function of the factor inputs L N K etc, employed by the firm per unit of time.

Factor inputs are of two types.

1. Fixed Inputs. Fixed inputs are those factors the quantity of which remains constant irrespective of the level of output produced by a firm. For example, land, buildings, machines, tools, equipments, superior types of labor, top management etc.

2. Variable inputs. Variable inputs are those factors the quantity of which varies with variations in the levels of output produced by a firm. For example, raw materials, power, fuel, water, transport and communication etc.

The distinction between the two will hold good only in the short run. In the long run, all factor inputs will become variable in nature.

Short run is a period of time in which only the variable factors can be varied while fixed factors like plants, machineries, top management etc would remain constant.

Time available at the disposal of a producer to make changes in the quantum of factor inputs is very much limited in the short run.

Long run is a period of time where in the producer will have adequate time to make any sort of changes in the factor combinations.

Generally speaking, there are two types of production functions. They are as follows.

1. Short Run Production Function

In this case, the producer will keep all fixed factors as constant and change only a few variable factor inputs. In the short run, we come across two kinds of production functions-

1. Quantities of all inputs both fixed and variable will be kept constant and only one variable input will be varied. For example, Law of Variable Proportions.
2. Quantities of all factor inputs are kept constant and only two variable factor inputs are varied. For example, Iso-Quants and Iso- Cost curves.

2. Long Run Production Function

In this case, the producer will vary the quantities of all factor inputs, both fixed as well as variable in the same proportion. For Example, The laws of returns to scale.

Each firm has its own production function which is determined by the state of technology, managerial ability, organizational skills etc of a firm. If there are any improvements in them, the old production function is disturbed and a new one takes its place. It may be in the following manner:-

- The quantity of inputs may be reduced while the quantity of output may remain same.
- The quantity of output may increase while the quantity of inputs may remain same.
- The quantity of output may increase and quantity of inputs may decrease.

Principle of Least Cost Combination

The objective of profit maximization can be achieved by two ways, one by increasing output and other by minimizing the cost. The minimization of cost can be possible by deciding the use of more than one resource in substitution of other resources.

The objective of factor-factor relationship is two fold

- 1) Minimization of cost at a given level of Output.

2) Optimization of output to the fixed factors through alternative resource use combinations.

$$y = f(x_1, x_2, x_3, x_4, \dots, x_n)$$

Y is the function of x_1 and x_2 while other inputs are kept at constant. The relationship can be better explained by the principle of least cost combination.

Principle of Least Cost combination:

A given level of output can be produced using many different combinations of two variable inputs. In choosing between the two completing resources, the saving in the resource replaced must be greater than the cost of resource added.

The principle of least cost combination states that if two factor inputs are considered for a given output the least cost combination will be such where their inverse price ratio is equal to their marginal rate of substitution.

1. Marginal Rate of substitution: MRS is defined as the units of one input factor that can be substituted for a single unit of the other input factor. So MRS of x_2 for one unit of x_1 is

$$= \frac{\text{Number of unit of replaced resource (x}_2\text{)}}{\text{Number of unit of added resource (x}_1\text{)}}$$

2. Price Ratio (PR)

$$= \frac{\text{Cost per unit of added resource}}{\text{Cost per unit of replaced resource}}$$

$$= \frac{\text{Price of } x_1}{\text{Price of } x_2}$$

Therefore the least cost combination of two inputs can be obtained by equating MRS with inverse price ratio.

$$\text{i.e. } x_2 * P_{x2} = x_1 * P_{x1}$$

This combination can be obtained by following algebraic method or Graphic method.

A) Isoquant (Iso product) curve: Iso means equal and quant means quantity. An Isoquant represents the different combinations of two variable inputs used in the production of a given amount of output.

Properties of Isoquant:

- 1) **They slope down ward to the right:** If more of one is used less of another input will be employed at the given level of output.
- 2) **They are convex to the origin:** It is because of diminishing MRS of one input for another. The additional units of an input will replace less and less units of another input.
- 3) **Isoquant does not intersect:** It is not possible to have different outputs from a single combination of inputs.
- 4) **Slope of Isoquant represents the MRS.**

B) Iso-Cost line: An Iso-cost line indicates all possible combinations of two inputs which can be purchased with a given amount of investment fund (outlay)

Each combination of inputs has same total cost which includes the cost of two inputs. (X_1 and X_2) combined.

$$\text{Total cost} = P_{x1} \cdot x_1 + P_{x2} \cdot x_2$$

Properties of Iso-cost line:

- 1) As total outlay increases, the Iso- cost line moves higher and higher away from the origin and vis- a-visa.
- 2) The Iso- cost lines are straight

3) Slope of Iso-cost line represents price ratio i.e. P_{x1}/P_{x2} when x_1 is taken on x axis and x_2 on y axis.

Least cost combination point: One Iso-cost and Iso-quant curves are depicted, it is now easy to locate the point of least cost combination. The slope of Isoquant and Iso-cost line represent the MRS and Price ratio respectively. The criteria for obtaining least and combination is $MRS = PR$ and hence graphically it can be obtained where slope of Isoquant = slope of Iso-cost lines. This is found where Iso-quant and Iso-cost lines tangent to each other. From this tangency point takes perpendiculars to both axis and obtains units of x_1 and x_2 . That combination is having least cost combination.

As discussed, Isoquants represent combination of inputs which can be produced the given level of output. Therefore different Isoquants represent different quantities of output. Isoquants nearer to origin represent less quantity of output and vis-a-visa. If we have numerous Isoquants then we can depict the isocline, ridge line and expansion path. These are depicted in the above diagram. The meaning of these concepts is given below.

1) Iso-cline: It is a line passes through the points of equal slope or MRS on an Isoquant surface. With the input price ratio being constant for each Isoquant the MRS between the inputs is the same for each level of output.

2) Ridge line: These are also called as border line. Ridge lines join the end points of Isoquants. The area within the ridge lines is rational region of production and beyond that the two regions are irrational. Therefore these lines represent the limits of economic relevance.

3) Expansion Path: It is Isoclines for one set of prices for a given period. It connects the points of least cost combinations of inputs for all output level. As such, the MRS must be equal to the input price ratio.

Least-Cost Combination

The problem of least-cost combination of factors refers to a firm getting the largest volume of output from a given cost outlay on factors when they are combined in an optimum manner.

In the theory of production, a producer will be in equilibrium when, given the cost-price function, he maximizes his profits on the basis of the least-cost combination of factor. For this he will choose that

combination of factors which maximizes his cost of production. This will be the optimum combination for him.

Assumptions

The assumptions on which this analysis is based are:

There are two factors. Capital and labor.

1. All units of capital and labor are homogeneous.
2. The prices of factors of production are given and constant.
3. Money outlay at any time is also given.
4. Perfect competition is prevailing in the factor market.

On the basis of given prices of factors of production and given money outlay we draw a line A, B.

The firm cannot choose and neither combination beyond line AB nor will it chooses any combination below this line. AB is known as the factor price line or cost outlay line or iso-cost line. It is an iso-cost line because it represents various combinations of inputs that may be purchased for the given amount of money allotted. The slope of AB shows the price ratio of capital and labour, *i.e.*, By combining the isoquants and the factor-price line, we can find out the optimum combination of factors. Fig. illustrates this point.

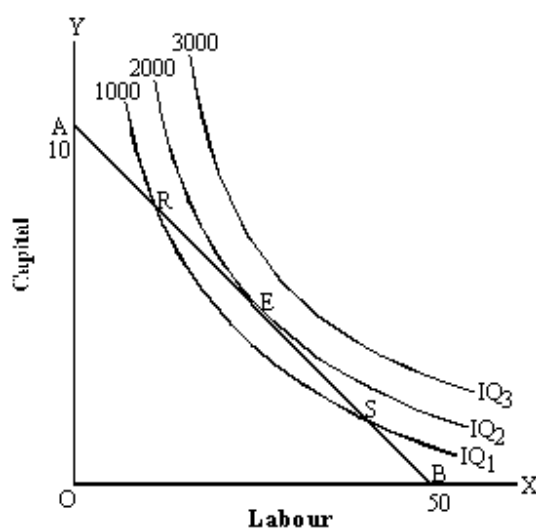


Fig. 5.10

In the Fig. equal product curves IQ_1 , IQ_2 and IQ_3 represent outputs of 1,000 units, 2,000 units and 3,000 units respectively. AB is the factor-price line. At point E the factor-price line is tangent to iso-quant IQ_2 representing 2,000 units of output. Iso-quant IQ_3 falls outside the factor-price line AB and, therefore, cannot be chosen by the firm. On the other hand, iso-quant IQ_1 will not be preferred by the firm even though between R and S it falls within the factor-price line. Points R and S are not suitable because output can be increased without increasing additional cost by the selection of a more appropriate input combination. Point E , therefore, is the ideal combination which maximizes output or minimizes cost per unit: it is the point at which the firm is in equilibrium.

At that point the slope of the factor-price line AB and the slope of the iso-quant IQ_2 are equal. The slope of the factor-price line reflects the ratio of prices of the two factors. Viz, capital and labour. The slope of the iso-quant reflects the marginal rate of technical substitution. At point E the ratio of prices of capital and labour is equal to the marginal rate of technical substitution. The condition of optimal combination is, therefore, given by the equality of the ratio of prices between any two factors and the rate of technical substitution between them. This is the point at which a firm is able to produce maximum quantity and at minimum cost.

Every firm, interested in maximising output or minimising cost, must therefore, consider (a) factor-price ratio which tells the firm the rate at which it can substitute one factor for another in purchasing, and (d) the

marginal rate of technical substitution which tells the firm the rate at which it can substitute one factor for another in production. So long as the two are not equal, a firm can achieve a greater output or a lower cost by moving in the direction of equality.

LAWS OF DIMINISHING RETURNS

The concept of returns to scale is a long run phenomenon. In this case, we study the change in output when all factor inputs are changed or made available in required quantity. An increase in scale means that all factor inputs are increased in the same proportion. In returns to scale, all the necessary factor inputs are increased or decreased to the same extent so that whatever the scale of production, the proportion among the factors remains the same.

Three Phases of Returns to Scale

When the quantity of all factor inputs are increased in a given proportion and output increases more than proportionately, then the returns to scale are said to be increasing; when the output increases in the same proportion, then the returns to scale are said to be constant; when the output increases less than proportionately, then the returns to scale are said to be diminishing.

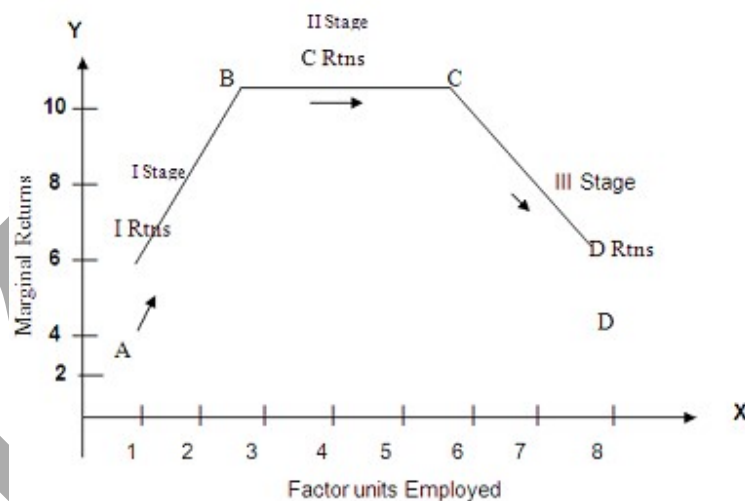
S.NO	Scale	Total Product in Units	Marginal Product in units
1	1 Acre of land + 3 labor	5	5
2	2 Acre of land + 5 labor	12	7
3	3 Acre of land + 7 labor	21	9
4	4 Acre of land + 9 labor	32	11
5	5 Acre of land + 11 labor	43	11
6	6 Acre of land + 13 labor	54	11
7	7 Acre of land + 15 labor	63	9
8	8 Acre of land + 17 labor	70	7

It is clear from the table that the quantity of land and labor (Scale) is increasing in the same proportion, i.e. by 1 acre of land and 2 units of labor throughout in our example. The output increases more than

proportionately when the producer is employing 4 acres of land and 9 units of labor. Output increases in the same proportion when the quantity of land is 5 acres and 11 units of labor and 6 acres of land and 13 units of labor. In the later stages, when he employs 7 & 8 acres of land and 15 & 17 units of labor, output increases less than proportionately. Thus, one can clearly understand the operation of the three phases of the laws of returns to scale with the help of the table.

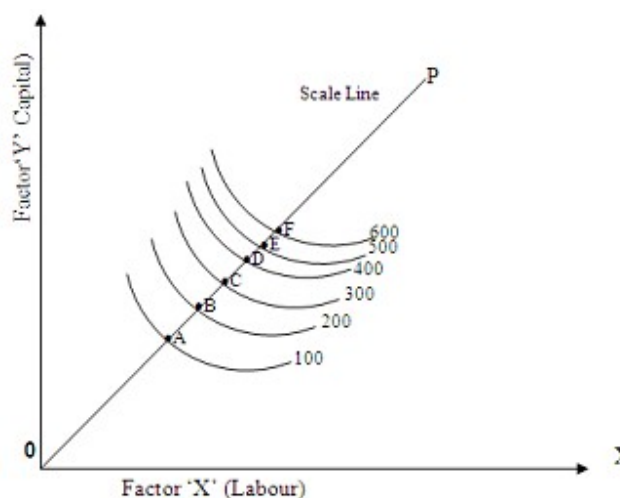
Diagrammatic representation

In the diagram, it is clear that the marginal returns curve slope upwards from A to B, indicating increasing returns to scale. The curve is horizontal from B to C indicating constant returns to scale and from C to D, the curve slope downwards from left to right indicating the operation of diminishing returns to scale.



INCREASING RETURNS TO SCALE:

Increasing returns to scale is said to operate when the producer is increasing the quantity of all factors [scale] in a given proportion, output increases more than proportionately.



Causes for Increasing Returns to Scale

Increasing returns to scale operate in a firm on account of several reasons. Some of the most important ones are as follows

- Wider scope for the use of latest tools, equipments, machineries, techniques etc to increase production and reduce cost per unit.
- Large-scale production leads to full and complete utilization of indivisible factor inputs leading to further reduction in production cost.
- As the size of the plant increases, more output can be obtained at lower cost.
- As output increases, it is possible to introduce the principle of division of labor and specialization, effective supervision and scientific management of the firm etc would help in reducing cost of operations.
- As output increases, it becomes possible to enjoy several other kinds of economies of scale like overhead, financial, marketing and risk-bearing economies etc, which is responsible for cost reduction.
- It is important to note that economies of scale outweigh diseconomies of scale in case of increasing returns to scale.

CONSTANT RETURNS TO SCALE

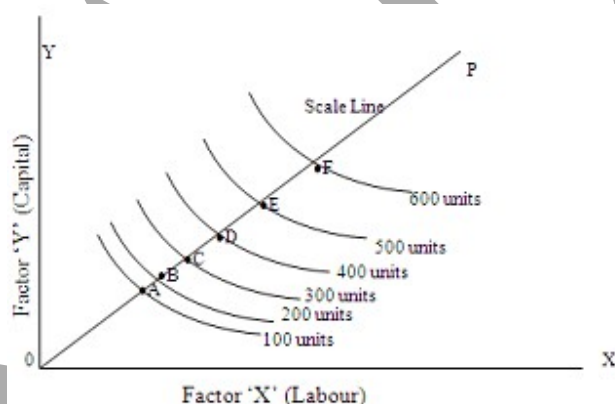
Constant returns to scale is operating when all factor inputs [scale] are increased in a given proportion, output also increases in the same proportion.

Causes for Constant Returns to Scale

In case of constant returns to scale, the various internal and external economies of scale are neutralized by internal and external diseconomies. Thus, when both internal and external economies and diseconomies are exactly balanced with each other, constant returns to scale will operate.

DIMINISHING RETURNS TO SCALE

Diminishing returns to scale is operating when output increases less than proportionately when compared the quantity of inputs used in the production process.



Causes for Diminishing Returns to Scale

Diminishing Returns to Scale operate due to the following reasons-

1. Emergence of difficulties in co-ordination and control.
2. Difficulty in effective and better supervision.
3. Delays in management decisions.
4. Inefficient and mis-management due to over growth and expansion of the firm.

5. Productivity and efficiency declines unavoidably after a point.

THE LAW OF VARIABLE PROPORTIONS

The law can be stated as the following. **As the quantity of different units of only one factor input is increased to a given quantity of fixed factors, beyond a particular point, the marginal, average and total output eventually decline**

The law of variable proportions is the new name for the famous “**Law of Diminishing Returns**” of classical economists. This law is stated by various economists in the following manner.

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

The same idea has been expressed by Prof. Marshall in the following words. “**An increase in the quantity of a variable factor added to fixed factors, at the end results in a less than proportionate increase in the amount of product, given technical conditions**”.

ASSUMPTIONS OF THE LAW

1. Only one variable factor unit is to be varied while all other factors should be kept constant.
 - Different units of a variable factor are homogeneous.
 - Techniques of production remain constant.
 - The law will hold good only for a short and a given period.
 - There are possibilities for varying the proportion of factor inputs.

ILLUSTRATION

A hypothetical production schedule is worked out to explain the operation of the law.

Fixed factors = 1 Acre of land + Rs 5000-00 capital. Variable factor = labor.

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Units of Variable inputs (Labor)	TP in units	AP in units	MP in units	
0	0	0	0	I Stage
1	10	10	10	
2	24	12	14	
3	39	13	15	
4	52	13	13	
5	60	12	8	II Stage
6	66	11	6	
7	70	10	4	
8	72	9	2	
9	72	8	0	
10	70	7	-2	III Stage

Total Product or Output : (TP) It is the output derived from all factors units, both fixed & variable employed by the producer. It is also a sum of marginal output.

Average Product or Output: (AP). It can be obtained by dividing total output by the number of variable factors employed.

Marginal Product or Output: (MP) It is the output derived from the employment of an additional unit of variable factor unit

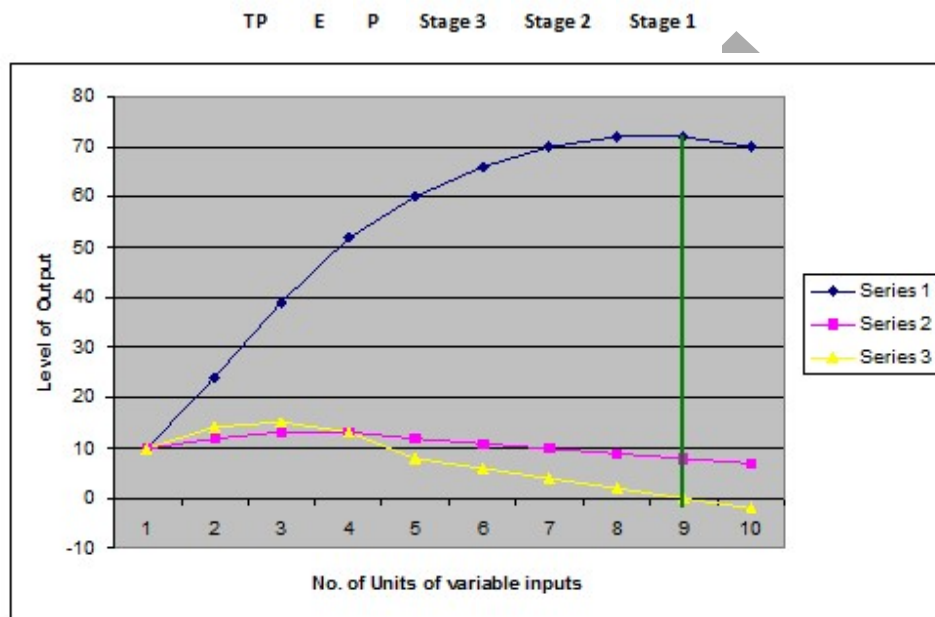
Trends in output

From the table, one can observe the following tendencies in the TP, AP, & MP.

1. Total output goes on increasing as long as MP is positive. It is the highest when MP is zero and TP declines when MP becomes negative.
2. MP increases in the beginning, reaches the highest point and diminishes at the end.

3. AP will also have the same tendencies as the MP. In the beginning MP will be higher than AP but at the end AP will be higher than MP.

Diagrammatic Representation



In the above diagram along with OX axis, we measure the amount of variable factors employed and along OY – axis, we measure TP, AP & MP. From the diagram it is clear that there are III stages.

Stage Number I. The Law Of Increasing Returns

The total output increases at an increasing rate (More than proportionately) up to the point P because corresponding to this point P the MP is rising and reaches its highest point. After the point P, MP decline and as such TP increases gradually.

The first stage comes to an end at the point where MP curve cuts the AP curve when the AP is maximum at N.

The I stage is called as the law of increasing returns on account of the following reasons.

1. The proportion of fixed factors is greater than the quantity of variable factors. When the producer increases the quantity of variable factor, intensive and effective utilization of fixed factors become possible leading to higher output.
2. When the producer increases the quantity of variable factor, output increases due to the complete utilization of the “Indivisible Factors”
3. As more units of the variable factor is employed, the efficiency of variable factors will go up because it creates more opportunity for the introduction of division of labor and specialization resulting in higher output.

Stage Number II The Law Of Diminishing Returns

In this case as the quantity of variable inputs is increased to a given quantity of fixed factors, output increases less than proportionately. In this stage, the T.P increases at a diminishing rate since both AP & MP are declining but they are positive. The II stage comes to an end at the point where TP is the highest at the point E and MP is zero at the point B. It is known as the stage of “Diminishing Returns” because both the AP & MP of the variable factor continuously fall during this stage. It is only in this stage, the firm is maximizing its total output.

Diminishing returns arise due to the following reasons:

1. The proportions of variable factors are greater than the quantity of fixed factors. Hence, both AP & MP decline.
2. Total output diminishes because there is a limit to the full utilization of indivisible factors and introduction of specialization. Hence, output declines.
3. Diseconomies of scale will operate beyond the stage of optimum production.
4. Imperfect substitutability of factor inputs is another cause. Up to certain point substitution is beneficial. Once optimum point is reached, the fixed factors cannot be compensated by the variable factor. Diminishing returns are bound to appear as long as one or more factors are fixed and cannot be substituted by the others.

The III Stage The Stage Of Negative Returns.

In this case, as the quantity of variable input is increased to a given quantity of fixed factors, output becomes negative. During this stage, TP starts diminishing, AP continues to diminish and MP becomes negative. The negative returns are the result of excessive quantity of variable factors to a constant quantity of fixed factors. Hence, output declines. The proverb “Too many cooks spoil the broth” and “Too much is too bad” aptly applies to this stage. Generally, the III stage is a theoretical possibility because no producer would like to come to this stage.

The producer being rational will not select either the stage I (because there is opportunity for him to increase output by employing more units of variable factor) or the III stage (because the MP is negative). The stage I & III is described as NON-Economic Region or Uneconomic Region. Hence, the producer will select the II stage (which is described as the most economic region) where he can maximize the output. The II stage represents the range of rational production decision.

It is clear that in the above example, the most ideal or optimum combination of factor units = 1 Acre of land+ Rs. 5000 – 00 capital and 9 laborers.

All the 3 stages together constitute the law of variable proportions. Since the second stage is the most important, in practice we normally refer this law as the law of Diminishing Returns

Economies of Scale

They are gain to a firm. They help in reducing production cost and establishing an optimum size of a firm. Thus, they help a lot and go a long way in the development and growth of a firm. According to Prof. Marshall these economies are of two types, viz Internal Economies and External Economics Now we shall study both of them in detail.

I Internal Economies or Real Economies

Internal Economies are those economies which arise because of the actions of an individual firm to economize its cost. They arise due to increased division of labor or specialization and complete utilization

of indivisible factor inputs. Prof. Cairncross points out that “internal economies are open to a single factory or a single firm independently of the actions of other firms”. They arise on account of an increase in the scale of output of a firm and cannot be achieved unless output increases. The following are some of the important aspects of internal economies.

1. They arise “with in” or “inside” a firm.
2. They arise due to improvements in internal factors.
3. They arise due to specific efforts of one firm.
4. They are particular to a firm and enjoyed by only one firm.
5. They arise due to increase in the scale of production.
6. They are dependent on the size of the firm.
7. They can be effectively controlled by the management of a firm.
8. They are called as “Business Secrets “of a firm.

Kinds of Internal Economies

1. Technical Economies

a. Economies of superior techniques:

b. Economies of increased dimension:

c. Economies of linked process: It is quite possible that a firm may not have various processes of production within its own premises. Also it is possible that different firms through mutual agreement may decide to work together and derive the benefits of linked processes, for example, in diary farming, printing press, nursing homes etc.

d. Economies arising out of research and by – products:

e. Inventory Economies. Inventory management is a part of better materials management. A big firm can save a lot of money by adopting latest inventory management techniques.

2. Managerial Economies.

They arise because of better, efficient, and scientific management of a firm. Such economies arise in two different ways.

a. Delegation of details The general manager of a firm cannot look after the working of all processes of production. In order to keep an eye on each production process he has to delegate some of his powers or functions to trained or specialized personnel and thus relieve himself for co-ordination, planning and executing the plans. This will enable him to bring about improvements in production process and in bringing down the cost of production.

b. Functional Specialization. It is possible to secure economies of large scale production by dividing the work of management into several separate departments. Each department is placed under an expert and the rest of the work is left into the hands of specialists. This will ensure better and more efficient productive management with scientific business administration. This would lead to higher efficiency and reduction in the cost of production.

3. Marketing or Commercial economies: These economies will arise on account of buying and selling goods on large scale basis at favorable terms.

4. Financial Economies: They arise because of the advantages secured by a firm in mobilizing huge financial resources. A large firm on account of its reputation, name and fame can mobilize huge funds from money market, capital market, and other private financial institutions at concessional interest rates. It can borrow from banks at relatively cheaper rates. It is also possible to have large overdrafts from banks. A large firm can float debentures and issue shares and get subscribed by the general public.

5 Labor Economies: These economies will arise as a result of employing skilled, trained, qualified and highly experienced persons by offering higher wages and salaries. As a firm expands, it can employ a large number of highly talented persons and get the benefits of specialization and division of labor.

6. Transport and Storage Economies: They arise on account of the provision of better, highly organized and cheap transport and storage facilities and their complete utilization. A large company

can have its own fleet of vehicles or means of transport which are more economical than hired ones. Similarly, a firm can also have its own storage facilities which reduce cost of operations.

7. Over Head Economies: These economies will arise on account of large scale operations. The expenses on establishment, administration, book-keeping, etc, are more or less the same whether production is carried on small or large scale. Hence, cost per unit will be low if production is organized on large scale.

8. Economies of Vertical integration: A firm can also reap this benefit when it succeeds in integrating a number of stages of production. It secures the advantages that the flow of goods through various stages in production processes is more readily controlled. Because of vertical integration, most of the costs become controllable costs which help an enterprise to reduce cost of production.

9. Risk-bearing or survival economies: These economies will arise as a result of avoiding or minimizing several kinds of risks and uncertainties in a business.

Diversification of output Instead of producing only one particular variety, a firm has to produce multiple products. If there is loss in one item it can be made good in other items.

Diversification of market: Instead of selling the goods in only one market, a firm has to sell its products in different markets. If consumers in one market desert a product, it can cover the losses in other markets.

Diversification of source of supply: Instead of buying raw materials and other inputs from only one source, it is better to purchase them from different sources. If one person fails to supply, a firm can buy from several sources.

Diversification of the process of manufacture: Instead of adopting only one process of production to manufacture a commodity, it is better to use different processes or methods to produce the same commodity so as to avoid the loss arising out of the failure of any one process.

II. External Economies or Pecuniary Economies

External economies are those economies which accrue to the firms as a result of the expansion in the output of whole industry and they are not dependent on the output level of individual firms. These

economies or gains will arise on account of the over all growth of an industry or a region or a particular area. They arise due to benefit of localization and specialized progress in the industry or region. Prof. Stonier & Hague points out that “external economies are those economies in production which depend on increase in the output of the whole industry rather than increase in the output of the individual firm”. The following are some of the important aspect of external economies.

1. They arise ‘outside’ the firm.
2. They arise due to improvement in external factors.
3. They arise due to collective efforts of an industry.
4. They are general, common & enjoyed by all firms.
5. They arise due to overall development, expansion & growth of an industry or a region.
6. They are dependent on the size of industry.
7. They are beyond the control of management of a firm.
8. They are called as “open secrets “of a firm.

Kinds of External Economies

Economies of concentration or Agglomeration: They arise because in a particular area a very large number of firms which produce the same commodity are established. In other words, this is an advantage which arises from what is called ‘Localization of Industry’.

Economies of Information: These economies will arise as a result of getting quick, latest and up to date information from various sources.

Economies of Disintegration: These economies will arise as a result of dividing one big unit in to different small units for the sake of convenience of management and administration.

Economies of Government Action: These economies will arise as a result of active support and assistance given by the government to stimulate production in the private sector units.

Economies of Physical Factors: These economies will arise due to the availability of favorable physical factors and environment.

Economies of Welfare: These economies will arise on account of various welfare programs under taken by an industry to help its own staff.

Meaning of cost of production

Cost of production refers to the total money expenses (Both explicit and implicit) incurred by the producer in the process of transforming inputs into outputs.

In short, it refers total money expenses incurred to produce a particular quantity of output by the producer. The knowledge of various concepts of costs, cost-output relationship etc. occupies a prominent place in cost analysis.

Managerial Uses of Cost Analysis

A detailed study of cost analysis is very useful for managerial decisions. It helps the management –

1. To find the most profitable rate of operation of the firm.
2. To determine the optimum quantity of output to be produced and supplied.
3. To determine in advance the cost of business operations.
4. To locate weak points in production management to minimize costs.
5. To fix the price of the product.
6. To decide what sales channel to use.
7. To have a clear understanding of alternative plans and the right costs involved in them.
8. To have clarity about the various cost concepts.
9. To decide and determine the very existence of a firm in the production field.
10. To regulate the number of firms engaged in production.
11. To decide about the method of cost estimation or calculations.

12. To find out decision making costs by re-classifications of elements, reprising of input factors etc, so as to fit the relevant costs into management planning, choice etc.

Different Kinds of Cost Concepts

1. Money Cost and Real Cost

When cost is expressed in terms of money, it is called as money cost. It relates to money outlays by a firm on various factor inputs to produce a commodity. When cost is expressed in terms of physical or mental efforts put in by a person in the making of a product, it is called as real cost.

2. Implicit or Imputed Costs and Explicit Costs

Explicit costs are those costs which are in the nature of contractual payments and are paid by an entrepreneur to the factors of production [excluding himself] in the form of rent, wages, interest and profits, utility expenses, and payments for raw materials etc.

3. Actual costs and Opportunity Costs

They are the actual expenses incurred for producing or acquiring a commodity or service by a firm. Opportunity cost of a good or service is measured in terms of revenue which could have been earned by employing that good or service in some other alternative uses.

4. Direct costs and indirect costs Direct costs are those costs which can be specifically attributed to a particular product, a department, or a process of production.

5. Past and future costs.

Past costs are those costs which are spent in the previous periods. On the other hand, future costs are those which are to be spent in the future. Past helps in taking decisions for future.

6. Marginal and Incremental costs: Marginal cost refers to the cost incurred on the production of another or one more unit. **It implies additional cost incurred to produce an additional unit of output.** It has nothing to do with fixed cost and is always associated with variable cost.

7. Fixed costs and variable costs.

Fixed costs are those costs which do not vary with either expansion or contraction in output. They remain constant irrespective of the level of output. They are positive even if there is no production. They are also called as supplementary or over head costs.

On the other hand, **variable costs are those costs which directly and proportionately increase or decrease with the level of output produced.** They are also called as prime costs or direct costs.

8. Accounting costs and economic costs.

Accounting costs are those costs which are already incurred on the production of a particular commodity. It includes only the acquisition costs. They are the actual costs involved in the making of a commodity. On the other hand, **economic costs are those costs that are to be incurred by an entrepreneur on various alternative programs.** It involves the application of opportunity costs in decision making.

Determinants of Costs

1. Technology: Modern technology leads to optimum utilization of resources, avoid all kinds of wastages, saving of time, reduction in production costs and resulting in higher output. On the other hand, primitive technology would lead to higher production costs.

2. Rate of output: (the degree of utilization of the plant and machinery): Complete and effective utilization of all kinds of plants and equipments would reduce production costs and under utilization of existing plants and equipments would lead to higher production costs.

3. Size of Plant and scale of production: Generally speaking big companies with huge plants and machineries organize production on large scale basis and enjoy the economies of scale which reduce the cost per unit.

4. Prices of input factors: Higher market prices of various factor inputs result in higher cost of production and vice-versa.

5. Efficiency of factors of production and the management: Higher productivity and efficiency of factors of production would lead to lower production costs and vice-versa.

6. Stability of output: Stability in production would lead to optimum utilization of the existing capacity of plants and equipments. It also brings savings of various kinds of hidden costs of interruption and learning leading to higher output and reduction in production costs.

7. Law of returns: Increasing returns would reduce cost of production and diminishing returns increase cost.

8. Time period: In the short run, cost will be relatively high and in the long run, it will be low as it is possible to make all kinds of adjustments and readjustments in production process.

Thus, many factors influence cost of production of a firm.

Short – run and long – run cost functions

Cost and output are correlated. Cost output relations play an important role in almost all business decisions. It throws light on cost minimization or profit maximization and optimization of output. **The relation between the cost and output is technically described as the “cost function”.** The significance of cost-output relationship is so great that in economic analysis the cost function usually refers to the relationship between cost and rate of output alone and we assume that all other independent variables are kept constant. Mathematically speaking $TC = f(Q)$ where TC = Total cost and Q stands for output produced.

Types of cost function.

Generally speaking there are two types of cost functions.

1. Short run cost function.
2. Long run cost function.

MEANING OF SHORT RUN

Short-run is a period of time in which only the variable factors can be varied while fixed factors like plant, machinery etc remains constant.

1. Fixed costs

These costs are incurred on fixed factors like land, buildings, equipments, plants, superior type of labor, top management etc.

Fixed costs in the short run remain constant because the firm does not change the size of plant and the amount of fixed factors employed. Fixed costs do not vary with either expansion or contraction in output.

2. Variable costs

The cost corresponding to variable factors are discussed as variable costs. These costs are incurred on raw materials, ordinary labor, transport, power, fuel, water etc, which directly vary in the short run.

Cost-output relationship and nature and behavior of cost curves in the short run

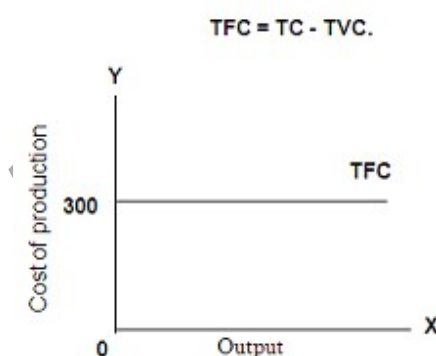
In order to study the relationship between the level of output and corresponding cost of production, we have to prepare the cost schedule of the firm. **A cost-schedule is a statement of a variation in costs resulting from variations in the levels of output. It shows the response of cost to changes in output.** A hypothetical cost schedule of a firm has been represented in the following table.

Output in Units	TFC	TVC	TC	AFC	AVC	AC	MC
0	360	—	360	—	—	—	—
1	360	180	540	360	180	540	180
2	360	240	600	180	120	300	60
3	360	270	630	120	90	210	30
4	360	315	675	90	78.75	168.75	45
5	360	420	780	72	84	156	105
6	360	630	990	60	105	165	210

On the basis of the above cost schedule, we can analyse the relationship between changes in the level of output and cost of production. If we represent the relationship between the two in a geometrical manner, we get different types of cost curves in the short run. In the short run, generally we study the following kinds of cost concepts and cost curves.

1. Total fixed cost (TFC)

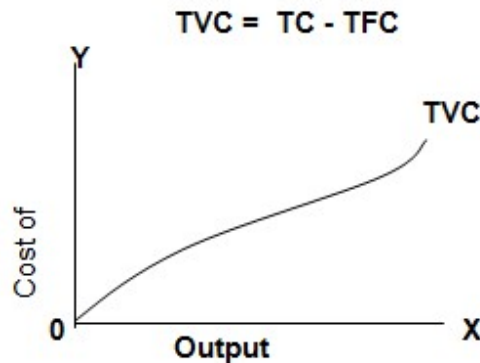
TFC refers to total money expenses incurred on fixed inputs like plant, machinery, tools & equipments in the short run.



2. Total variable cost (TVC)

TVC refers to total money expenses incurred on the variable factors inputs like raw materials, power, fuel, water, transport and communication etc, in the short run.

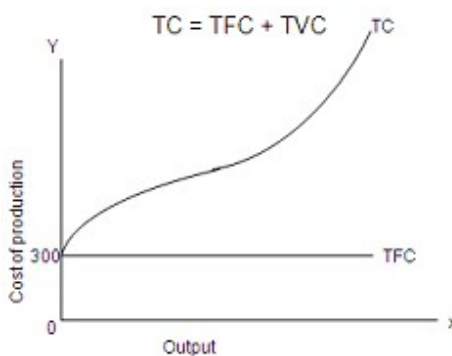
TVC curve slope upwards from left to right. TVC curve rises as output is expanded. When output is Zero, TVC also will be zero. Hence, the TVC curve starts from the origin.



3. Total cost (TC)

The total cost refers to the aggregate money expenditure incurred by a firm to produce a given quantity of output. $TC = TFC + TVC$.

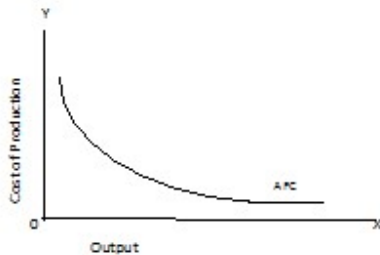
TC varies in the same proportion as TVC. In other words, a variation in TC is the result of variation in TVC since TFC is always constant in the short run.



The total cost curve is rising upwards from left to right. In our example the TC curve starts from Rs. 300-00 because even if there is no output, TFC is a positive amount. TC and TVC have same shape because an increase in output increases them both by the same amount since TFC is constant. TC curve is derived by adding up vertically the TVC and TFC curves. The vertical distance between TVC curve and TC curve is equal to TFC and is constant throughout because TFC is constant.

4. Average fixed cost (AFC)

Average fixed cost is the fixed cost per unit of output. When TFC is divided by total units of output AFC is obtained, Thus, $AFC = TFC/Q$

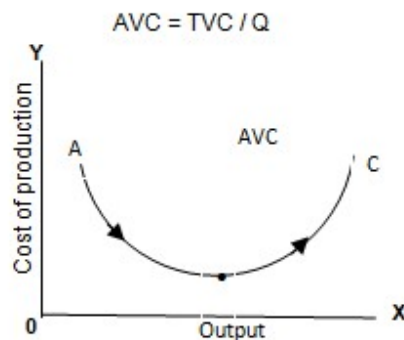


AFC and output have inverse relationship. It is higher at smaller level and lower at the higher levels of output in a given plant. The reason is simple to understand. Since $AFC = TFC/Q$, it is a pure mathematical result that the numerator remaining unchanged, the increasing denominator causes diminishing product. Hence, TFC spreads over each unit of output with the increase in output. Consequently, AFC diminishes continuously. This relationship between output and fixed cost is universal for all types of business concerns.

5. Average variable cost: (AVC)

The average variable cost is variable cost per unit of output. AVC can be computed by dividing the TVC by total units of output. Thus $AVC = TVC/Q$. The AVC will come down in the beginning and then rise as more units of output are produced with a given plant. This is because as we add more units of variable factors in a fixed plant, the efficiency of the inputs first increases and then it decreases.

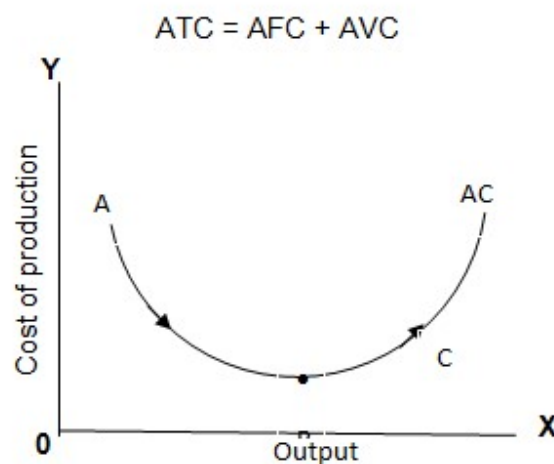
The AVC curve is a U-shaped cost curve.



6. Average total cost (ATC) or Average cost (AC)

Ac refers to cost per unit of output. AC is also known as the unit cost since it is the cost per unit of output produced. AC is the sum of AFC and AVC. Average total cost or average cost is obtained by dividing the total cost by total output produced. $AC = TC/Q$ Also AC is the sum of AFC and AVC.

In the short run AC curve also tends to be U-shaped. The combined influence of AFC and AVC curves will shape the nature of AC curve.



As we observe, average fixed cost begin to fall with an increase in output while average variable costs come down and rise. As long as the falling effect of AFC is much more than the rising effect of AVC, the AC tends to fall. At this stage, increasing returns and economies of scale operate and complete utilization of resources force the AC to fall.

When the firm produces the optimum output, AC becomes minimum. This is called as least – cost output level. Again, at the point where the rise in AVC exactly counter balances the fall in AFC, the balancing effect causes AC to remain constant.

In the third stage when the rise in average variable cost is more than drop in AFC, then the AC shows a rise, When output is expanded beyond the optimum level of output, diminishing returns set in and diseconomies of scale starts operating. At this stage, the indivisible factors are used in wrong proportions. Thus, AC starts rising in the third stage.

The short run AC curve is also called as “**Plant curve**”. It indicates the optimum utilization of a given plant or optimum plant capacity.

7. Marginal Cost (MC)

Marginal cost may be defined as the net addition to the total cost as one more unit of output is produced. In other words, it implies additional cost incurred to produce an additional unit.

For example, if it costs Rs. 100 to produce 50 units of a commodity and Rs. 105 to produce 51 units, then MC would be Rs. 5. It is obtained by calculating the change in total costs as a result of a change in the total output. Also MC is the rate at which total cost changes with output. Hence,

$$MC = \Delta TC / \Delta TQ. \text{ Where } \Delta TC \text{ stands for change in total cost and } \Delta TQ \text{ stands for change in total output. Also } MC_n = TC_n - TC_{n-1}$$

It is necessary to note that MC is independent of TFC and it is directly related to TVC as we calculate the cost of producing only one unit. In the short run, the MC curve also tends to be U-shaped.

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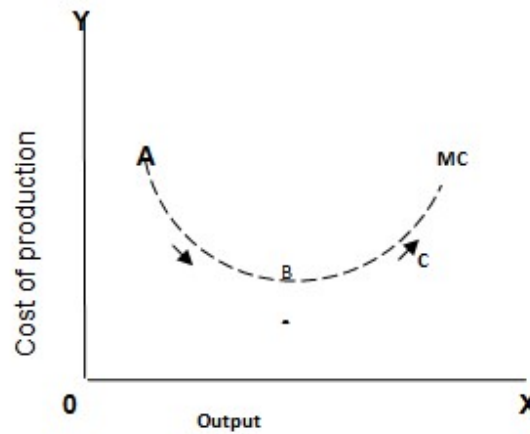
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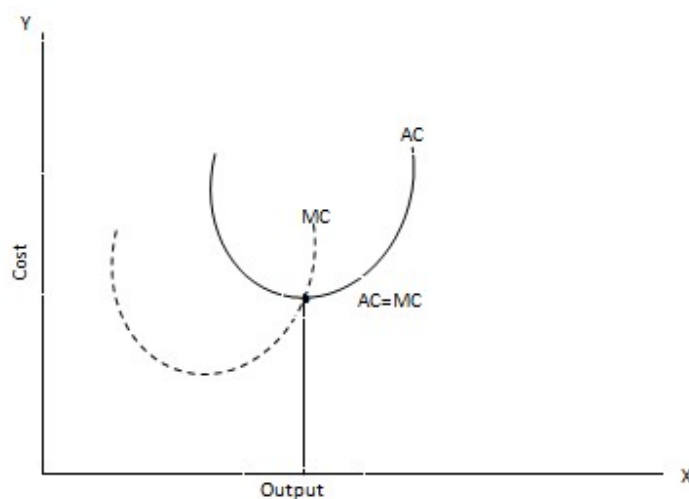
The shape of the MC curve is determined by the laws of returns. If MC is falling, production will be under the conditions of increasing returns and if MC is rising, production will be subject of diminishing returns.



The table indicates the relationship between AC & MC

Output in Unit	TC in Rs.	AC in Rs.	MC in Rs.
1	150	150	—
2	190	95	40
3	220	73.3	30
4	236	59	16
5	270	54	34
6	324	54	54
7	415	59.3	91
8	580	72.2	165

Relation between AC and MC



From the diagram it is clear that:

1. Both MC and AC fall at a certain range of output and rise afterwards.
2. When AC falls, MC also falls but at certain range of output MC tends to rise even though AC continues to fall. However, MC would be less than AC. This is because MC is attributed to a single unit where as in case of AC, the decreasing AC is distributed over all the units of output produced.
3. So long as AC is falling, MC is less than AC. Hence, MC curve lies below AC curve. It indicates that fall in MC is more than the fall in AC. MC reaches its minimum point before AC reaches its minimum.
4. When AC is rising, after the point of intersection, MC will be greater than AC. This is because in case of MC, the increasing MC is attributed to a single unit, where as in case of AC, the increasing AC is distributed over all the output produced.
5. So long as the AC is rising, MC is greater and AC. Hence, AC curve lies to the left side of the MC curve. It indicates that rise in MC is more than the rise in AC.
6. MC curve cuts the AC curve at the minimum point of the AC curve. This is because, when MC decreases, it pulls AC down and when MC increases, it pushes AC up. When AC is at its minimum, it is neither being pulled down or being pushed up by the MC. Thus, When AC is minimum, MC =

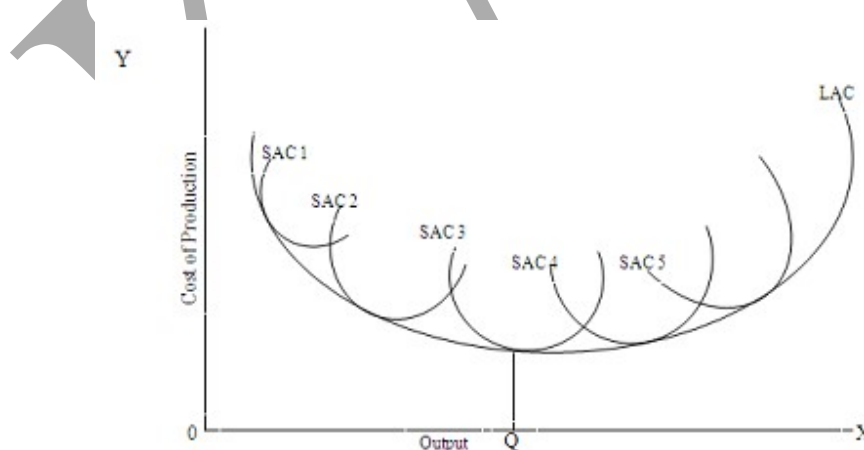
AC. The point of intersection indicates the least cost combination point or the optimum position of the firm. At output Q the firm is working at its “Optimum Capacity” with lowest AC. Beyond Q, there is scope for “Maximum Capacity” with rising cost.

Cost Output Relationship In The Long Run

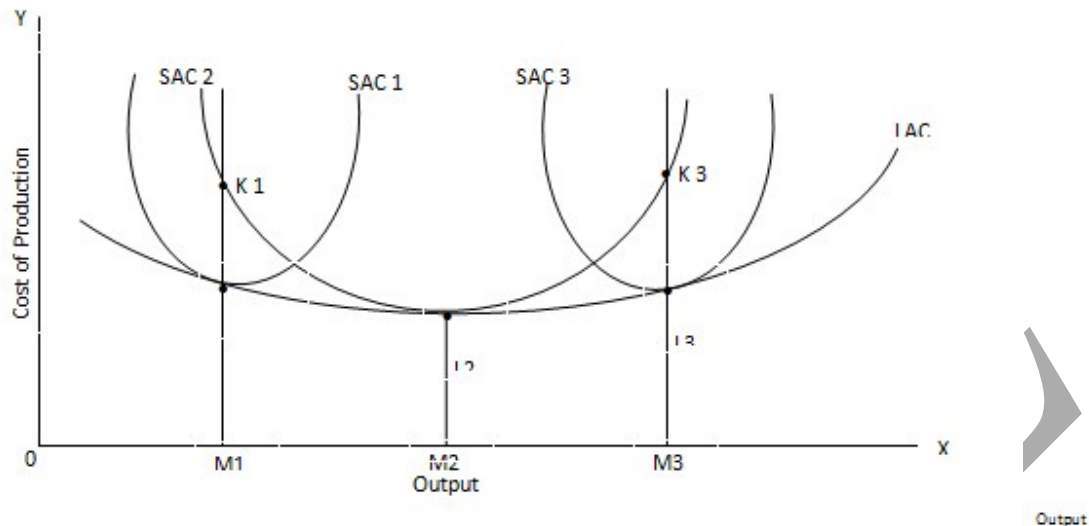
Long run is defined as a period of time where adjustments to changed conditions are complete. It is actually a period during which the quantities of all factors, variable as well as fixed factors can be adjusted. Hence, there are no fixed costs in the long run. In the short run, a firm has to carry on its production within the existing plant capacity, but in the long run it is not tied up to a particular plant capacity. As all costs are variable in the long run, the total of these costs is total cost of production. **Hence, the distinction between fixed and variables costs in the total cost of production will disappear in the long run.** In the long run only the average total cost is important and considered in taking long term output decisions.

Long run average cost is the long run total cost divided by the level of output. In brief, it is the per unit cost of production of different levels of output by changing the size of the plant or scale of production.

The long run cost – output relationship is explained by drawing a long run cost curve through short – run curves as the long period is made up of many short – periods as the day is made up of 24 hours and a week is made out of 7 days. This curve explains how costs will change when the scale of production is varied.



Production cost difference in the short run and long run



Important features of long run AC curves

1. Tangent curve

Different SAC curves represent different operational capacities of different plants in the short run. LAC curve is locus of all these points of tangency. The SAC curve can never cut a LAC curve though they are tangential to each other. This implies that for any given level of output, no SAC curve can ever be below the LAC curve. Hence, SAC cannot be lower than the LAC in the long run. Thus, LAC curve is tangential to various SAC curves.

2. Envelope curve

It is known as Envelope curve because it envelopes a group of SAC curves appropriate to different levels of output.

3. Flatter U-shaped or dish-shaped curve: The LAC curve is also U shaped or dish shaped cost curve. But It is less pronounced and much flatter in nature. LAC gradually falls and rises due to economies and diseconomies of scale.

4. Planning curve.

The LAC curve is described as the **Planning Curve** of the firm because it represents the least cost of producing each possible level of output. This helps in producing optimum level of output at the minimum LAC. This is possible when the entrepreneur is selecting the optimum scale plant. Optimum scale plant is that size where the minimum point of SAC is tangent to the minimum point of LAC.

5. Minimum point of LAC curve should be always lower than the minimum point of SAC curve.

This is because LAC can never be higher than SAC or SAC can never be lower than LAC. The LAC curve will touch the optimum plant SAC curve at its minimum point.

A rational entrepreneur would select the optimum scale plant. Optimum scale plant is that size at which SAC is tangent to LAC, such that both the curves have the minimum point of tangency. In the diagram, OM2 is regarded as the optimum scale of output, as it has the least per unit cost. At OM2 output $LAC = SAC$.

LAC curve will be tangent to SAC curves lying to the left of the optimum scale or right side of the optimum scale. But at these points of tangency, neither LAC is minimum nor will SAC be minimum. SAC curves are either rising or falling indicating a higher cost.

Total Revenue, Average Revenue and Marginal Revenue

Revenue is the income generated from the sale of goods and services in a market

Average Revenue (AR) = price per unit = total revenue / output

The AR curve is the same as the demand curve

Marginal Revenue (MR) = the change in revenue from selling one extra unit of output

Total Revenue (TR) = Price per unit x quantity

The table below shows the demand for a product where there is a downward sloping demand curve.

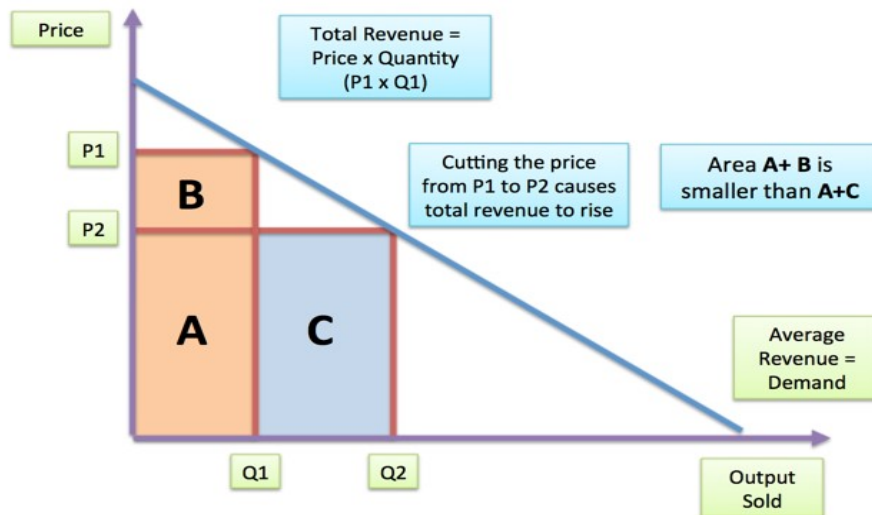
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Price per unit (Average Revenue)	Quantity Demanded (Qd)	Total Revenue (TR) (PxQ)	Marginal Revenue (MR)
Rs	units	Rs	Rs
34	46	1564	-
31	58	1798	195
28	70	1960	135
25	82	2050	75
22	94	2068	15
19	106	2014	-45

Average and Marginal Revenue

- In the table above, as price per unit falls, demand expands and total revenue rises although because average revenue falls as more units are sold, this causes marginal revenue to decline
- Eventually marginal revenue becomes negative, i.e. a further fall in price (e.g. from Rs22 to Rs19) causes total revenue to fall.

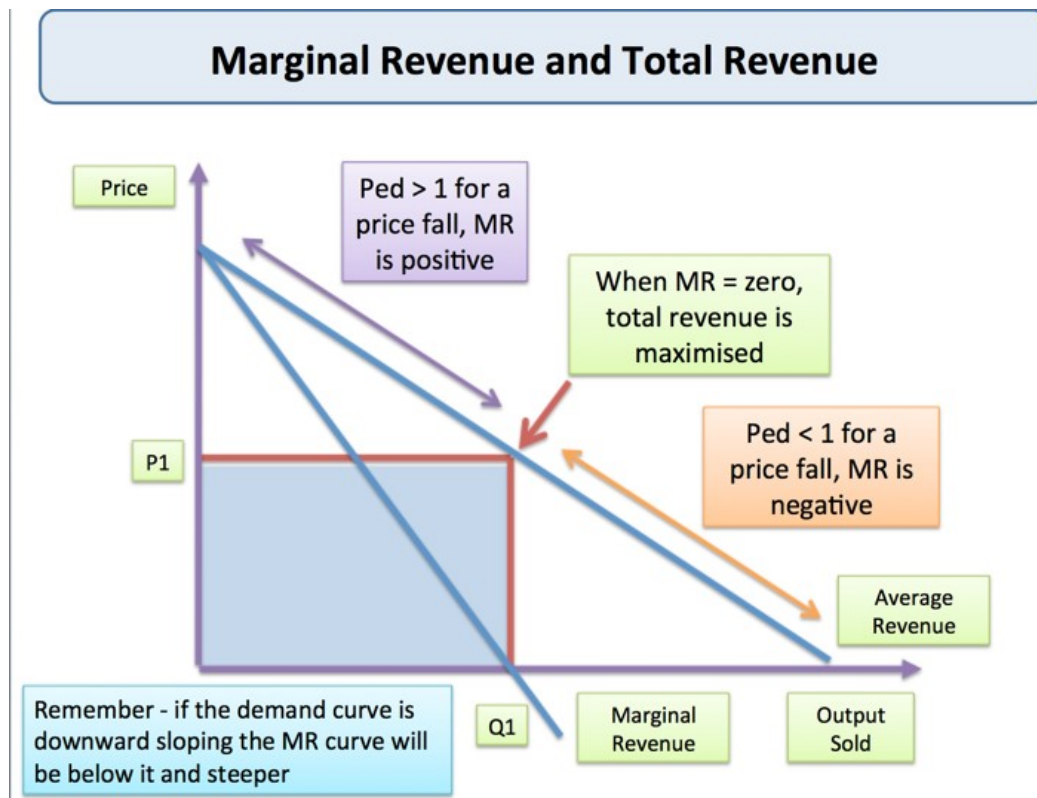
Revenues and the Demand Curve



The demand curve and total revenue

The Relationship between Elasticity of Demand and Total Revenue

- When a firm faces a perfectly elastic demand curve, then average revenue = marginal revenue – each unit sold add the same amount to total revenue (this happens with perfect competition)
- However, most businesses face a downward sloping demand curve! And because the price per unit must be cut to sell extra units, therefore MR lies below AR.
- MR curve will fall at twice the rate of the AR curve.

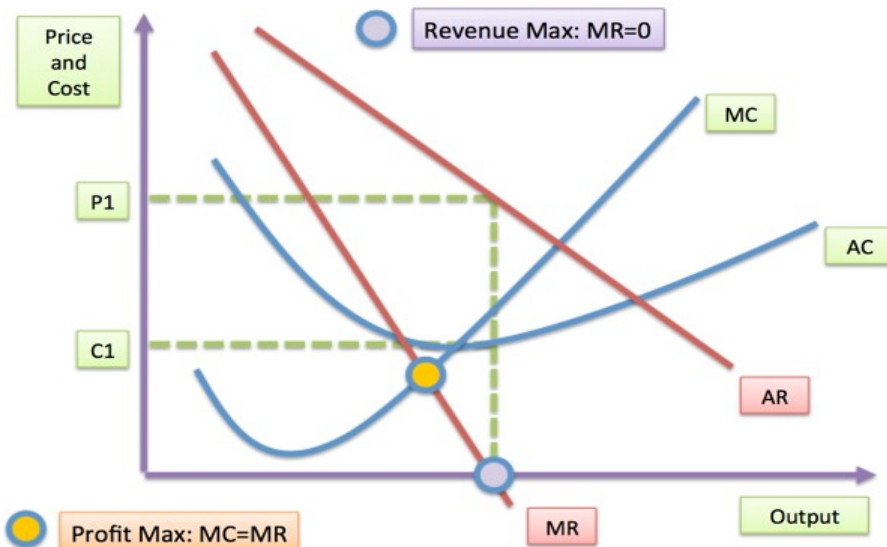


Maximum Revenue

- Maximum total revenue occurs where **marginal revenue is zero**: no more added revenue can be achieved from producing and then selling an extra unit of output
- The point where $MR=0$ is directly underneath the mid-point of a linear demand curve
- When marginal revenue is zero, the price elasticity of demand = 1
- When marginal revenue is zero, if prices were cut total revenue would fall, and if prices were raised total revenue would fall.

Total revenue when demand has low price elasticity ($P_{ed} < 1$)

If price elasticity of demand < 1 (i.e. demand is inelastic), if prices are cut then demand rises by a smaller proportion. Cutting price when demand is relatively inelastic means total revenue falls, or $MR < 0$

Maximising Total Revenue

**UNIT – II
POSSIBLE QUESTIONS**

Part – B (3 X 2 = 6 Marks – CIA)

Part – B (5 X 2 = 10 Marks – ESE)

1. Define production
2. What is production function?
3. What are Fixed Inputs?
4. What are Variable Inputs?
5. What is Short run period?
6. What is long run period?
7. What is Short Run Production Function?
8. What is long Run Production Function?
9. What is Cobb-Douglas Production Function?
10. List the Properties of the Cobb-Douglas Production Function.
11. Define the law of diminishing returns.
12. What is increasing returns to scale?
13. List the causes for increasing returns to scale?
14. What is decreasing returns to scale?
15. List the causes for decreasing returns to scale?
16. What is a constant return to scale?
17. List the causes for constant returns to scale?
18. Define the Law of variable proportion.
19. What is Total Product or Output?
20. What is Average Product or Output?
21. What is Marginal Product or Output?
22. Write a note on increasing returns.
23. Write a note on decreasing returns.
24. Write a note on constant returns.
25. What is total revenue?

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26. Differentiate average revenue and marginal revenue.
27. What is marginal revenue?
28. What is Economies of Scale?
29. What is meant by internal economies of scale?
30. What is meant by external economies of scale?
31. List the kinds of internal economies.
32. List the kinds of external economies.
33. Give the meaning of cost of production.
34. List the managerial Uses of Cost Analysis.
35. List the different types of cost,
36. Differentiate Implicit or Imputed Costs and Explicit Costs
37. Differentiate fixed costs and variable costs.
38. List the determinants of Costs.
39. What is Total cost?
40. What is average and marginal cost?

Part – B (3 X 8 = 24 Marks – CIA) (Either or OR)

Part – C (6X 5 = 30 Marks – ESE) (Either or OR)

1. Explain the Cobb-Douglas Production Function.
2. Discuss the short-run and long-run production function.
3. Explain the law of diminishing returns.
4. Discuss the increasing returns to scale.
5. Enumerate the causes for increasing returns to scale.
6. Discuss the decreasing returns to scale.
7. Examine the causes for decreasing returns to scale.
8. Discuss the constant return to scale.
9. Examine the causes for constant returns to scale.
10. Explain the Law of variable proportion.
11. Explain the Total Product, Average Product Marginal Product.
12. Explain the law of returns to scale.
13. Discuss the Economies of Scale.

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Unit II

Semester: VI

Year: 2017 - 2020 Batch

14. Examine the internal economies of scale?
15. Examine the external economies of scale?
16. Explain the managerial Uses of Cost Analysis.
17. Explain the different types of cost,
18. Differentiate Implicit or Imputed Costs and Explicit Costs
19. Differentiate fixed costs and variable costs.
20. Discuss the determinants of Costs.
21. Discuss the importance of average and marginal revenue.
22. Discuss the short run and long run average cost?

S.No	QUESTIONS	OPTION 1
1	Buyers' market denotes the place where	The supply exceeds the demand
2	Determinant of the maximum profit for a firm is	Price
3	Sellers' market denotes a situation where	Commodities are available at competitive rates
4	Equilibrium price is that price which	Maximizes producers profit
5	For price discrimination to be successful, the elasticity of demand for the product in the two markets should be	Same
6	Price leadership is a form of	Monopolistic competition
7	Maximum exploitation of consumer takes place when there is	Perfect competition
8	A firm profit is _____	$P = \text{TOTAL}$
9	The distinction of pricing by a firm and by an industry is not possible under	Monopolistic competition
10	First degree price discrimination means	Entire consumer surplus goes to consumer
11	Duopoly is a marketing situation when	There is only one producer of a given product
12	The term 'group equilibrium' is related to	Monopolistic competition
13	A firm's marginal revenue	Is always positive
14	Monopolistic competition in comparison to perfect competition ensures—	Lower price and higher output
15	Second condition for the equilibrium of the firm under perfect competition is	MC curve must cut the MR curve from below
16	In an oligopoly, if firms do not aggressively compete with each other on price, then:	More of the gains from trade go to foreign buyers of the products produced by the firms.
17	_____ suggest that a number of small firms produce identical commodity products	Oligopoly
18	Type of market structure represented by the constant returns to scale (CRS) technology, includes	Monopolistic competition
19	Which of the following is not a financial objective of pricing?	Corporate growth.

20	Setting a price below that of the competition is called:	Skimming
21	Which of the following is not a valid option for a perfectly competitive firm?	Increasing its output
22	A firm that is producing at the lowest possible average cost is always	Earning an economic profit
23	Price for a firm under monopolistic competition is _____.	Equal to marginal revenue
24	In the long run, monopolistically competitive firms tend to experience _____.	High economic profits
25	Marginal revenue for a monopolist is _____	Equal to price
26	A price- and quantity-fixing agreement is known as:	Game theory
27	A group of firms that gets together to make price and output decisions is called:	A cartel
28	An profit maximizing, oligopolistic firms produces at an output level where:	$P = ATC$
29	The petroleum industry is an example of	Monopolistic competition
30	Selling cost is the feature of the market form	Monopolistic competition
31	When abnormal profit is earned by a particular firm, there arise	Potential competition
32	A firm that is the sole seller of a product without close substitutes called:	Monopoly
33	Profit Maximisation goal is suitable for ---- and ----- markets	Monopolistic and oligopoly
34	In case of oligopoly, number of firms is -----	Larger
35	What are homogenous products?	Undifferentiated products
36	A distinguishing characteristic of monopolistic competition is -----	Large number of firms
37	If firms can neither enter nor leave an industry, the relevant time period is the -----	Short run
38	In perfect competition equilibrium is attained when -----	$AR = AC$
39	Kinked demand curve is associated with -----	Cournot
40	The upper portion of the kinked demand curve is relatively -----	More inelastic
41	Cartel is a part of -----	Monopoly
42	While determining equilibrium of firm in short run for perfect competition, the X-axis in the diagram represents	Revenue
43	The monopolist can fix any price for his product, but cannot determine ----- for his product.	Revenue
44	The primary objective for discriminating monopolist is -----	Loss minimization
45	A firm shut-down point is reached when -----	Average revenue fails to cover average total cost

46	In a perfectly competitive market, the firm will be ----- -----	A price maker
47	Equilibrium implies a state of -----	Rest
48	Under perfect competition, rivalry is -----	Impersonal
49	A monopolistic firm will expand its output when -----	Marginal revenue exceeds marginal cost
50	A monopolist will never produce at a point where -----	Average cost is constant
51	Which of the following best defines price discrimination?	Charging different prices on the basis of race.
52	Which one is not collusive oligopoly -----	Price leadership
53	In an oligopolistic market, there are -----	Large number of sellers and few buyers
54	The kinked demand curve in Sweezy oligopoly model emerges due to assumption that -----	When one seller decreases or increases his price, others follow.
55	The essential aspects of oligopoly is -----	Excess capacity
56	The equilibrium of a firm occurs when -----	$P=MC$
57	The condition for the long run equilibrium of a perfectly competitive firm	$Price=MC=AC$
58	The implication of the kinked demand curve is reflected in a discontinuity in the:	Marginal revenue curve
59	The concept of monopsony was invented by:	Marshall
60	Monopolistic competition and oligopoly are alike under terms of _____	Non-price competition

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UNIT - III**

Multiple Choice Questions (Each Questions)

OPTION 2	OPTION 3
The demand exceeds the supply	The demand and supply are well balanced
Average cost	Both average cost and price
Demand exceeds supply	Supply exceeds demand
Equates consumers and producers surplus	Maximizes consumer's satisfaction
Different	Constant
Non-collusive oligopoly	Monopoly
Oligopoly	Simple monopoly
$P = \text{Total sales}$	$P = TR - TC$
Perfectly competitive market	Condition of pure oligopoly
Entire consumer surplus goes to producer	A part of consumer surplus goes to producer
There are few producers	More than two producers
Oligopoly	Duopoly
Can be positive	Always negative
Price equal to marginal cost	Output at the minimum average cost
MC must cut the MR from above	$TR = TC$
the firms cannot earn a profit and will eventually lose market share.	each firm can earn a positive economic profit.
Perfect competition	Monopoly
Oligopoly	Duopoly
Return on investment.	Profit maximization.

Penetration pricing	Competitive pricing
Decreasing its output	Increasing its price
Productively efficient	Dominating the other firms in the market.
Greater than marginal revenue	Less than marginal revenue
Zero economic profits	Negative economic profits
Greater than price	Less than price
Price leadership	Collusion
Price leadership	An oligopoly
$MR = MC$	$MR = ATC$
Pure oligopoly	Duopoly
Perfect competition	Oligopoly
Normal profit	Heavy loss
Oligopoly	Competition
Monopolistic and Duopoly	Monopoly and Perfect competition
Infinite	One
Differentiated products	Unrelated products
Low entry baarriers	Product standardisation
Intermediate run	Long run
$TR=TC$	$MR=MC$
Chamberlin	Edgeworth
More elastic	Less elastic
Oligopoly	Duopoly
Output	Cost
Cost	Supply
Profit maximisation	To cover production cost
Average revenue fails to cover average variable cost.	Average revenue fails to cover average fixed cost

Attempting to maximise profits	Producing a product which will be different from its competitors
Inactivity	Absence of motion
Very personal and direct, advertising being important	Nonexistent since the firms cooperate
Marginal cost exceeds marginal revenue	Marginal cost equals marginal revenue
Average is rising	Marginal cost is positive
Charging different prices for goods with different cost of production	Charging different prices based on cost of service difference
Market sharing cartel	Price discrimination
Few sellers and few buyers	Few sellers and large number of buyers
When one seller decreases his price others follow him.	When one sellers decreases his price others follow but when he increases his price others do not follow
Non-price competition	A large number of firms
$MC=MR$	$P=MR$
$Price=TC$	$MC=AVC$
Marginal cost curve	Total revenue curve
AP. Learner	Chamberlin
Strong mutual interdependence among firms	Kinked demand analysis

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OPTION 4	OPTION 5	OPTION 6
Commodities are available at competitive rates		
The output level		
Supply and demand are evenly balanced.		
Equates supply and demand		
Zero		
Collusive oligopoly		
Price discrimination		
$P = TC - MC$		
Oligopolistic market structure		
A part of consumer surplus goes to consumer		
Two producers of a given product		
Perfect competition		
Positive at point at which the total revenue is maximum		
Higher price and lower output		
$MR = MC$		
oligopoly's trade is similar to the monopolistically competitive market.		
Scale economies		
Perfect competition		
Cost minimization		

sales pricing		
Increasing its resources		
Not producing enough output		
Greater than total revenue		
Substantial economic losses		
Equal to average revenue		
Price concentration		
A concentrated industry		
$AVC > MR$		
Differentiated oligopoly		
Monopoly		
Low profit		
Bureaucracy		
Monopsony and Duopsony		
Few		
Common products		
Product differentiation		
Immediate run		
$Q=P$		
Sweezy		
Less inelastic		
Perfect competition		
Price		
Demand		
To increase sales		
Average revenue fails to cover marginal cost.		

Price taker		
Movement		
Control output		
Marginal revenue is negative.		
Marginal cost is increasing		
Selling a certain product of given quality and cost per unit at different prices to different		
Price fixing cartel		
Only one seller		
When one seller increases his price others decrease their prices.		
Mutual recognition of interdependence.		
$AC=MC$		
$MC=MR$		
Total cost curve		
Mrs. J. Robinson		
The number of firms		

ANSWERS
The supply exceeds the demand
Both average cost and price
Demand exceeds supply
Equates supply and demand
Different
Collusive oligopoly
Price discrimination
$P = TR - TC$
Condition of pure oligopoly
Entire consumer surplus goes to consumer
Two producers of a given product
Monopolistic competition
Positive at point at which the total revenue is maximum
Higher price and lower output
MC curve must cut the MR curve from below
each firm can earn a positive economic profit.
Perfect competition
Perfect competition
Corporate growth.

Competitive pricing
Decreasing its output
Productively efficient
Equal to marginal revenue
Zero economic profits
Equal to price
collusion
A cartel
$P = ATC$
Pure oligopoly
Monopolistic competition
Potential competition
Monopoly
Monopoly and Perfect competition
Few
Undifferentiated products
Product differentiation
Short run
$MR=MC$
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More elastic
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Output
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Profit maximisation
Average revenue fails to cover average variable cost.

Price taker
Rest
Very personal and direct, advertising being important
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Selling a certain product of given quality and cost per unit at different prices to different buyers.
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Few sellers and large number of buyers
When one sellers decreases his price others follow but when he increases his price others do not follow
Mutual recognition of interdependence.
$MC=MR$
$Price=MC=AC$
Marginal revenue curve
Mrs. J. Robinson
Strong mutual interdependence among firms

UNIT-III – TYPES OF COMPETITION

SYLLABUS

Market – Meaning – Types of market structure - Equilibrium of the firm and industry - Pricing under perfect competition - Pricing under monopoly market - Price discrimination under monopoly - Pricing under monopolistic competition - Pricing under oligopoly and duopoly.

Meaning of Market and Market Structure

Market in economics does not refer to a place or places but to a commodity and also to buyers and sellers of that commodity who are in competition with one another According to Pappas and Hirschey, “Market structure refers to the number and size distribution of buyers and sellers in the market for a good or service”.

It indicates a set of market characteristics that determine the nature of market in which a firm operates. Different market structures affect the behavior of sellers and buyers in different manners.

The term market hence implies:

- i. Existence of a commodity to be traded.
- ii. Existence of sellers and buyers.
- iii. Establishment of contact between the sellers and buyers.
- iv. Willingness and ability to buy and sell a commodity and
- v. Existence of a price at which the given commodity is to be bought and sold.

Among the different market situations, perfect competition and monopoly form the two extremes. In between these two market situations we come across a number of market situations which may be collectively termed as imperfect markets. In these imperfect markets, we notice the elements of competition as well as monopoly. They are bi-lateral monopoly, monopsony (one buyer), duopoly (two

sellers) duopsony (two buyers), oligopoly (few sellers), oligopsony (few buyers) and monopolistic competition (many sellers). This can be better understood by the following chart.

CLASSIFICATION OF MARKET

Market may be classified into different types:

On the basis of area

Markets may be classified on the basis of area into local, national and international markets. If the buyers and sellers are located in a particular locality, it is called as a local market, e.g. fruits, vegetables etc. These goods are perishable; they cannot be stored for a long time; they cannot be taken to distant places. When a commodity is demanded and supplied all over the country, national market is said to exist. When a commodity commands international market or buyers and sellers all over the world, it is called international market.

Whether a market will be local, national or international in character will depend upon the following factors: (a) nature of commodity; (b) taste and preference of the people; (c) availability of storage; (d) method of business; (e) political stability at home and abroad; (f) portability of the commodity.

On the basis of time

Time element has been used by Marshall for classifying the market. On the basis of time, market has been classified into very short period, short period, long period and very long period. Very short period market refers to the market in which commodities that are fixed in supply or are perishable are transacted. Since supply is fixed, only the changes in demand influence the price. The short period markets are those where supply can be increased but only to a limited extent. Long period market refers to a market where adequate time is available for changing the supply by changing the fixed factors of production. The supply of commodities may be increased by installing a new plant or machinery and the output can be changed accordingly. Very long period or secular period is one in which changes take place in factors like population, supply of capital and raw material etc.

On the basis of nature of transactions

Markets are classified on the basis of nature of transactions into two broad categories viz., Spot market and future market. When goods are physically transacted on the spot, the market is called as spot market. In case the transactions involve the agreements of future exchange of goods, such markets are known as future markets.

On the basis of volume of business

Based on the volume of business, markets are broadly classified into wholesale and retail markets. In the wholesale markets, goods are transacted in large quantities. Wholesale markets are in fact, a link between the producer and the retailer while the retailer is a link between the wholesaler and the consumer.

On the basis of status of sellers

During the process of marketing, a commodity passes through a chain of sellers and middlemen. Markets can be classified into primary, secondary and terminal markets. The primary market consists of manufacturers who produce and sell the product to the wholesalers. The wholesalers who are an international link between the manufacturers and retailers constitute secondary markets while the retailers who sell it to the ultimate consumer constitute the terminal market.

On the basis of regulation

On this basis, market is classified into regulated and unregulated markets. For some goods and services, the government stipulates certain conditions and regulations for their transactions. Market of goods and services is called regulated market. On the other hand, goods and services whose transactions are left to the market forces belong to unregulated market. Regulations of market by the government become essential for those goods whose supply or price can be manipulated against the interests of the general public.

On the basis of competition

Markets are classified on the basis of nature of competition into perfect competition and imperfect competition.

Kinds of Markets

Perfect Competition

Perfect competition is a comprehensive term which includes pure competition also. Before we discuss the details of perfect competition, it is necessary to have a clear idea regarding the nature and characteristics of pure competition.

Pure Competition is a part of perfect competition. Competition in the market is said to be pure when the following conditions are satisfied:

1. Prevalence of a large number of buyers and sellers.
2. The commodity supplied by each firm is homogeneous.
3. Free entry and exit of firms.
4. Absence of any kind of monopoly element.

Under these conditions no individual producer is in a position to influence the market price of the product.

According to Prof. E.H. Chamberlin - **“Under Pure Competition, the individual sellers market being completely merged with the general one, he can sell as much as he please at the going price”.**

A perfectly competitive market is one in which the number of **buyers and sellers** are very large, **all engaged in buying and selling a homogeneous product** without any artificial restriction and **possessing perfect knowledge of market at a time.**

According to Bilas, “the perfect competition is characterized by the presence of many firms: They all sell identically the same product. The seller is the price – taker”.

Features of the Perfect Competition

1. Existence of very large number of buyers and sellers

2. Homogenous products

Different firms constituting the industry produce homogenous goods. They are identical in character. Hence, no firm can raise its price above the general level.

3. Free entry and exit of firms

There is absolute freedom to firms to get in or get out of the industry. If the industry is making profits, new firms are attracted into the industry.

4. Existence of single price

Each unit bought and sold, in the market commands the same price since products are homogeneous.

5. Perfect knowledge of the market

All sellers and buyers will have perfect knowledge of the market. Sellers cannot influence buyers and buyers cannot influence sellers.

6. Perfect mobility of factors of Production

Factors of production are free to move into any use or occupation in order to earn higher rewards. Similarly, they are also free to come out of the occupation or industry if they feel that they are under remunerated.

7. Full and unrestricted competition: Perfectly competitive market is free from all sorts of monopoly, oligopoly conditions. Since there are very large number of buyers and sellers, it is difficult for them to join together and form cartels or some other forms of organizations. Hence, each firm acts independently.

8. Absence of transport cost

All firms will have equal access to the market. Market price charged by the sellers should not vary because of differences in the cost of transportation.

9. Absence of artificial Government controls

The Government should not interfere in matters pertaining to supply and price. It should not place any barriers in the way of smooth exchange. Price of a commodity must be determined only by the interaction of supply and demand forces.

10. The market price is flexible over a period of time

Market price changes only because of changes in either demand or supply force or both. Thus, price is not affected by the sellers, buyers, firm, industry or the Government.

11. Normal Profit

As the market price is equal to cost of production, the firm can earn only normal profits under perfect competition. Normal profits are those which are just sufficient to induce the firms to stay in business. It is the minimum reasonable level of profit which the entrepreneur must get in the long run. It is a part of total cost of production because it is the price paid for the services of the entrepreneur, i.e., profit is an item of expenditure to a firm.

Special Features of Perfect Competition

- i. It is an extreme form of market situation rarely to be found in the real world.
- ii. It is a mere concept, a myth, an illusion and purely theoretical in nature.

- iii. It is a hypothetical model.
- iv. It is an ideal market situation.

$$\text{Equilibrium or Market price} = AR = MR$$

Equilibrium of the Industry and Firm under Perfect Competition

1. Equilibrium of the Industry in the short run

The term 'Equilibrium' in physical science implies a state of balance or rest. In economics, it refers to position or situation from which there is no incentive to change. **At the equilibrium point, an economic unit is maximizing its benefits or advantages.** Hence, always there will be a tendency on the part of each economic unit to move towards the equilibrium condition. Reaching the position of equilibrium is a basic objective of all firms.

In the short period, time available is too short and hence all types of adjustments in the production process are impossible. As plant capacity is fixed, output can be increased only by intensive utilization of existing plants and machineries or by having more shifts. Fixed factors remain the same and only variable factors can be changed to expand output. Total number of firms remains the same in the short period. Hence, total supply of the product can be adjusted to demand only to a limited extent.

In the short run, price is determined in the industry through the interaction of the forces of demand and supply. This price is given to the firm. Hence, the firm is a price taker and not price maker. On the basis of this price, a firm adjusts its output depending on the cost conditions.

An industry under perfect competition in the short run, reaches the position of equilibrium when the following conditions are fulfilled:

1. There is no scope for either expansion or contraction of the output in the entire industry. This is possible when all firms in the industry are producing an equilibrium level of output at which $MR = MC$. In brief, the

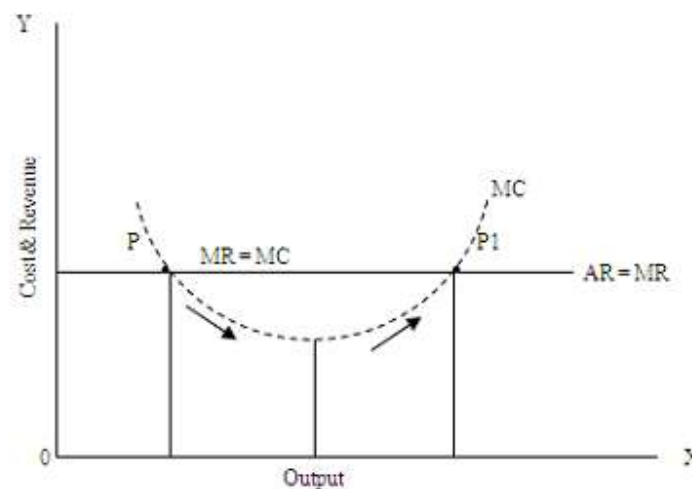
total output remains constant in the short run at the equilibrium point. Thus a firm in the short run has only **temporary equilibrium**.

2. There is no scope for the new firms to enter the industry or existing firms to leave the industry.
3. Short run demand should be equal to short run supply. The price so determined is called as '**subnormal price**'. Normal price is determined only in the long run. Hence, short run price is not a stable price.

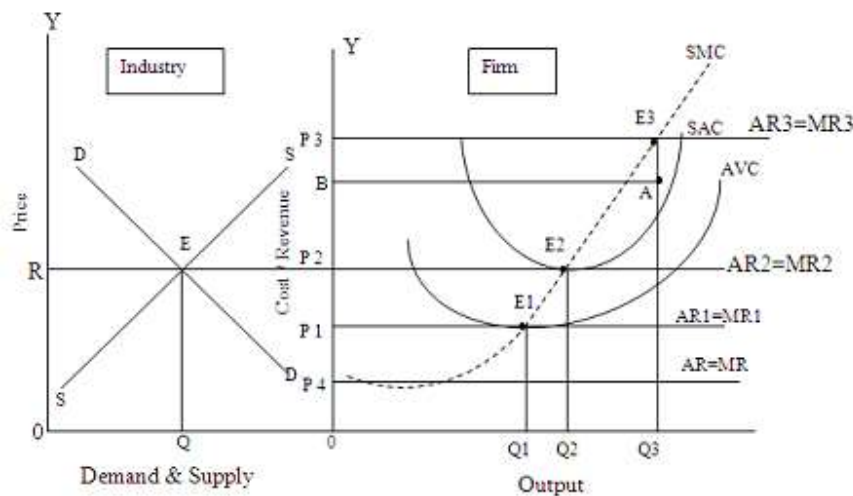
Equilibrium of the competitive firm in the short run

A competitive firm will reach equilibrium position at the point where short run MR equals MC. At this point equilibrium output and price is determined.

The firm in the short run will have only temporary equilibrium. The short run equilibrium price is not a stable price. It is also called as sub – normal price.



The competitive firm, in the short run, will not be in a position to cover its fixed costs. But it must recover short run variable costs for its survival and to continue in the industry. A firm will not produce any output unless the price is at least equal to the minimum AVC. If short run price is just equal to AVC, it will not cover fixed costs and hence, there will be losses. But it will continue in the industry with the hope that it will recover the fixed costs in the future.



If price is above the AVC and below the AC, it is called as “Loss minimization” zone. If the price is lower than AVC, the firm is compelled to stop production altogether.

While analyzing short term equilibrium output and price, apart from making reference to SMC and AVC, we have to look into AC also. If $AC = \text{price}$, there will be normal profits. If AC is greater than price, there will be losses and if AC is lower than price, then there will be super normal profits.

In the short run, a competitive firm can be in equilibrium at various points E1, E2 and E3 depending upon cost conditions and market price. At these various unstable equilibrium points, though $MR = MC$, the firm will be earning either super normal profits or incurring losses or earning normal profits.

In the case of the firm:

1. At OP4 price the firm will neither cover AFC nor AVC and hence it has to wind up its operations. **It is regarded as shut-down point.**
2. At OP1 price, OQ1 is the equilibrium output. E1 indicates the price or $AR = AVC$ only. It does not cover fixed costs. **The firm is ready to suffer this loss and continue in business with the hope that price may go up in the future.**

3. At OP2 price, OQ2 is the equilibrium output. E2 indicates the price = AR = AC. At this point MR is also equal to MC. At this level of output total average revenue = total average cost hence, **the firm is earning only normal profits**. It is also known as Break – even point of the firm, a zone of no loss or no profit. The distance between two equilibrium points E2 and E1 indicates loss-minimization zone.
4. At OP3 price, OQ3 is the output produced by the firm. At E3, MR = MC. But AR is greater than AC. For OQ3 output, the total cost is OQ3AB. The total revenue is OQ3E3P3. Hence, P3E3AB is the **total super normal profits**.

Thus in the short run, a firm can either incur losses or earn super normal profits. The main reason for this is that the producer does not have adequate time to make all kinds of adjustments to avoid losses in the short run.

In case of the industry, E indicates the position of equilibrium where short run demand is equal to short run supply. OR indicates short run price and OQ indicates short run demand and supply.

Equilibrium of the Industry in the long run

In the long run, there is adequate time to make all kinds of changes, adjustments and readjustments in the productive process. All factor inputs become variable in the long run. Total number of firms can be varied and plant capacity also can be changed depending upon the nature of requirements. Economies of scale, technological improvements, better management and organization may reduce production costs substantially in the long run. Hence, production can be either increased or decreased according to the needs of the individual firms and the industry as a whole. In short, supply of the product can be fully adjusted to its demand in the long period.

An industry, in the long run will be reaching the position of equilibrium under the following conditions:

1. At the point of equilibrium, the long run demand and supply of the products of the industry must be equal to each other. This will determine long run normal price.

2. There will be no scope for the industry to either expand or contract output. Hence, the total production remains stable in the long run.
3. All the firms in the industry should be in the position of equilibrium. All firms in the industry must be producing an equilibrium level of output at which long run MC is equated to long run MR. ($MC = MR$).
4. There should be no scope for entry of new firms into the industry or exit of old firms out of the industry. In brief, the total number of firms in the industry should remain constant.
5. All firms should be earning only normal profits. This happens when all firms equate AR (Price) with AC. This will help the industry in attaining a stable equilibrium in the long run.

Equilibrium of the firm in the long run

A competitive firm reaches the equilibrium position when it maximizes its profits. This is possible when:

1. The firm would produce that level of output at which $MR = MC$ and MC curve cuts MR curve from below. The firm adjusts its output and the scale of its plant so as to equate MC with market price.

$$\text{Price} = MC = MR$$

2. The firm in the long run must cover its full costs and should earn only normal profits. This is possible when long run normal price is equal to long run average cost of production. Hence,

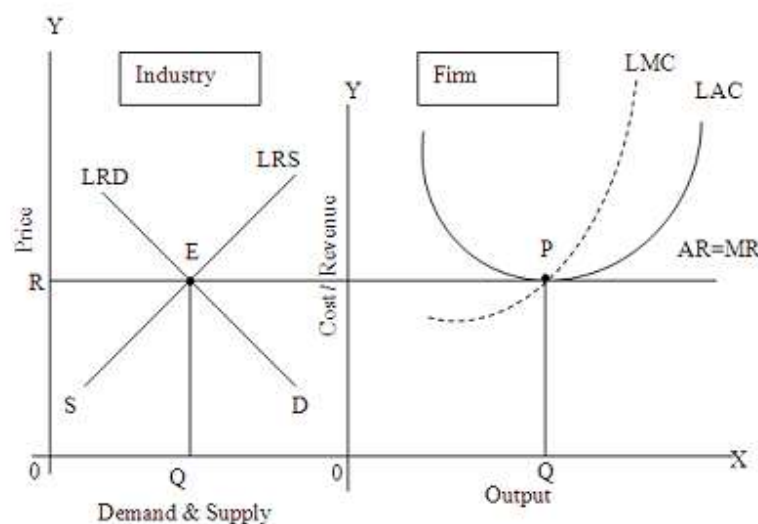
$$\text{Price} = AR = AC$$

3. When AR is greater than AC, there will be place for super normal profits. This leads to entry of new firms – increase in total number of firms – expansion in output – increase in supply – fall in price – fall in the ratio of profits. This process will continue till supernormal profits are reduced to zero. On the

other hand, when AC is greater than AR the industry will be incurring losses. This leads to exit of old firms, number of firms decrease, contraction in output, rise in price, and rise in the ratio of profits. Thus, losses are avoided by automatic adjustments. Such adjustments will continue till the firm reaches the position of equilibrium when AC becomes equal to AR. Thus losses and profits are incompatible with the position of equilibrium. Hence,

$$\text{Price} = \text{MR} = \text{MC} = \text{AR} = \text{AC}$$

4. The firm is operating at its minimum AC making optimum use of available resources.



In the case of the industry, E is the position of equilibrium at which $LRS = LRD$, indicating OR as the equilibrium price and OQ as the equilibrium quantity demanded and supplied.

In case of the firm P indicates the position of equilibrium. At P, $LMR = LMC$ and LMC curve cuts LMR curve from below. At the same point P the minimum point of LAC is tangent to LAR curve. Hence,.

$$\text{LAR} = \text{LAC}$$

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Unit III

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A competitive firm in the long run must operate at the minimum point of the LAC curve. It cannot afford to operate at any other point on the LAC curve. Otherwise, it cannot produce the optimum output or it will incur losses.

Time will play an important role in determining the price of a product in the market. As the time under consideration is short, demand will have a more decisive role than supply in the determination of price. Longer the time under consideration, supply becomes more important than demand in the determination of price.

The price determined in the long run is called as normal price and it remains stable.

Market price:

It refers to that price which is determined by the forces of demand and supply in the very short period where demand plays a major role than supply. Supply plays a passive role. Market price is unstable.

Normal price:

It is determined by demand and supply forces in the long period. It includes normal profits also. It is stable in nature.

Monopoly

Meaning and definition:

The word monopoly is made up of two syllables – ‘MONO’ means single and ‘POLY’ means to sell. Thus, monopoly means existence of a single seller in the market. **Monopoly is that market form in which a single producer controls the whole supply of a single commodity which has no close substitutes.** Monopoly may be defined as a condition of production in which a person or a number of persons acting in combination have the power to fix the price of the commodity or the output of the commodity. It is a situation where there exists a single control over the market producing a commodity having no substitutes and no possibilities for any one to enter the industry to compete.

According to Prof. Watson – “A monopolist is the only producer of a product that has no close substitutes”.

Features of monopoly

1. Absence of competition

Absence of competition in the market creates a situation of monopoly and hence the seller faces no threat of competition.

2. Existence of a single seller

There will be only one seller in the market who exercises single control over the market.

3. Absence of substitutes

There are no close substitutes for his product with a strong cross elasticity of demand. Hence, buyers have no alternatives.

4. Control over supply

He will have complete control over output and supply of the commodity.

5. Price Maker

The monopolist is the price – maker and in taking decisions on price fixation, he is independent. He can set the price to the best of his advantage. Hence, he can either charge a high price for all customers or adopt price discrimination policy.

6. Entry barriers

Entry of other firms is barred somehow. Hence, monopolist will not have direct competitors or direct rivals in the market.

7. Firm and industry is same

There will be no difference between firm and an industry.

8. Nature of firm

The monopoly firm may be a proprietary concern, partnership concern, Joint Stock Company or a public utility which pursues an independent price-output policy.

9. Existence of super normal profits

There will be place for supernormal profits under monopoly, because market price is greater than cost of production.

There are different kinds of monopolies – Private and public, pure monopoly, simple monopoly and discriminatory monopoly. It is to be clearly understood that with the exception of public utilities or institutions of a similar nature, whose price is set by regulatory bodies, monopolies rarely exist. Just like perfect competition, pure monopoly does not exist. Hence, we make a detailed study of simple monopoly and discriminatory monopoly in the foregoing analysis.

Price – Output Determination under Monopoly

Assumptions

- a. The monopoly firm aims at maximizing its total profit.
- b. It is completely free from Govt. controls.
- c. It charges a single & uniform high price to all customers.

It is necessary to note that the price output analysis and equilibrium of the firm and industry is one and the same under monopoly.

As output and supply are under the effective control of the monopolist, the market forces of demand and supply do not work freely in the determination of equilibrium price and output in case of the monopoly market. While fixing the price and output, the monopoly firm generally considers the following important aspects.

1. The monopolist can either fix the price of his product or its supply. He cannot fix the price and control the supply simultaneously. He may fix the price of his product and allow supply to be determined by the demand conditions or he may fix the output and leave the price to be determined by the demand conditions.
2. It would be more beneficial to the monopolist to fix the price of the product rather than fixing the supply because it would be difficult to estimate the accurate demand and elasticity of demand for the products.
3. While determining the price, the monopolist has to consider the conditions of demand, cost of the product, possibility of the emergence of substitutes, potential competition, import possibilities, government control policies etc.
4. If the demand for his product is inelastic, he can charge a relatively higher price and if the demand is elastic, he has to charge a relatively lower price.
5. He can sell larger quantities at lower price or smaller quantities at a higher price.
6. He should charge the most reasonable price which is neither too high nor too low.
7. The most ideal price is that under which the total profit of the monopolist is the highest.

Price-Output Determination in the Short Period

Short period is a time period in which there are two types of factors of production. One is the fixed factors and the other is the variable factors. In the short period, production can be changed only by changing the variable factors of production. Fixed factors of production cannot be changed. In other words, in the short period, supply can be changed only to some extent. In this period volume of production can be changed but

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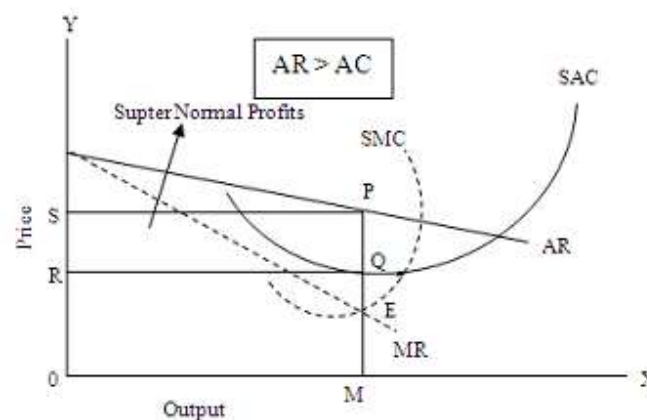
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capacity of the plant cannot be changed. He can increase the supply only with the help of existing machines and plants. New factories and plant-equipment cannot be installed.

The aim of a monopolist is to earn maximum profits or suffer minimum losses if the circumstances compel. Monopolist, being single seller of his product, can fix his price equal to, above or less than the short period average cost of the product. Thus, he can earn normal profits, supernormal profits or incur losses even in the short period. This depends upon the nature and extent of the demand for his product. In order to earn maximum profits or suffer minimum losses, a monopolist compares his marginal revenue (MR) with marginal cost (MC). If marginal revenue exceeds marginal cost of a product, the monopolist can increase his profit by increasing his production. On the contrary, if MC exceeds MR at a particular level of output, the monopolist can minimize his losses by reducing his production. So the monopolist is said to be in equilibrium where marginal revenue is equal to marginal cost.

In the short period, a monopoly firm can earn supernormal profits, normal profits or incur losses. In case of losses, price must be covering at least the average variable costs. Otherwise the firm will stop production. The maximum loss can be equal to fixed costs. The three cases of monopoly equilibrium can be shown through the figures drawn below.



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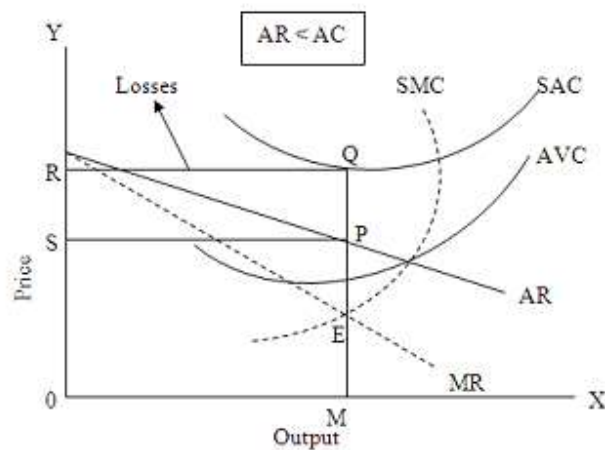
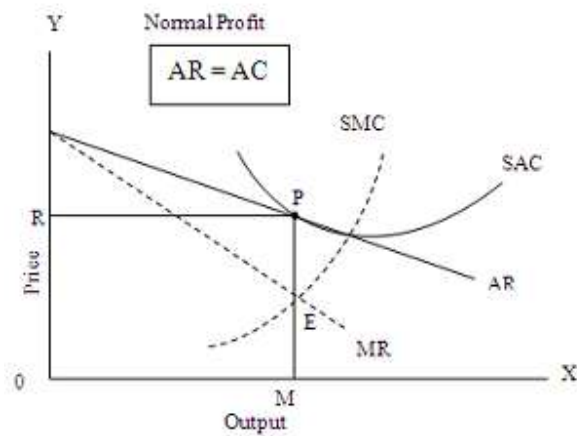
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In figure (a) $AR > AC$. Hence, super normal profits.

In figure (b) $AR = AC$. Hence, normal profits.

In figure (c) $AR < AC$. Hence, losses.

The figures explain how a monopoly firm can earn supernormal profits, normal profits or incur losses in the short period.

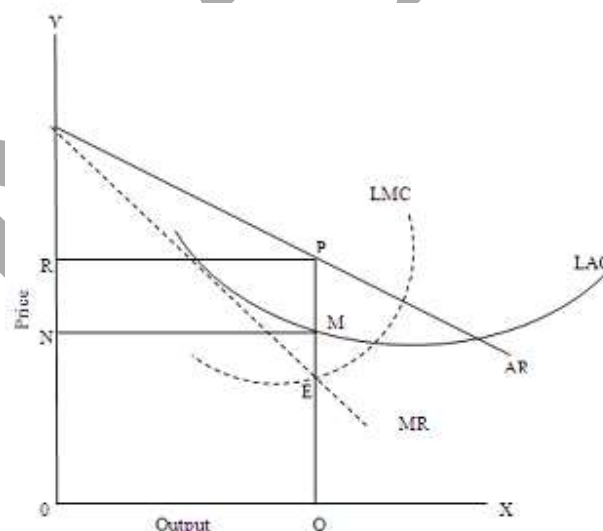
Price-output determination in the long run

In the long run, there is adequate time to make all kinds of adjustments in both fixed as well as variable factor inputs. Supply can be adjusted to demand conditions. The total amount of long run profits will depend on the cost conditions under which the monopolist has to operate and the demand curve he has to face in the long run.

Under monopoly, the AR or demand curve slope downwards from left to right. This is because the monopolist can increase his sales and maximize his profits only when he reduces the price. MR is less than AR and hence, the MR curve lies below the AR curve. This is in accordance with the usual relationship between AR & MR.

The cost curve of the monopoly firm is influenced by the laws of returns. The price he has to charge for his product mainly depends on the nature of his cost curves.

The monopoly firm, in the long run, will continue its operations till it reaches the equilibrium point where long run MR equals long run MC. The price charged at this level of output is known as equilibrium price.



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In the diagram, the monopoly firm reaches the position of equilibrium at E. At this point, $MR = MC$ and MC curve cuts MR curve from below. The monopolist will stop his output before AC reaches its minimum point. He does not bother to reach the minimum point on AC.

He restricts his output in order to maximize his profit, OQ is the output. The price charged by the firm is QR (PQ) which is equal to AR. This price is higher than average cost QM per unit. The excess profit per unit of output is PM and the total profits of the firm is $PM \times RN = NRPM$. Under monopoly, no doubt $MR = MC$ but M R is less than AR. **Hence, monopoly price = AR only. Price is greater than AC, MC and MR.**

Generally speaking, monopoly price is slightly higher than that of competitive price because market price is over and above MC, MR and AC. The single seller has complete control over the supply as he can successfully prevent the entry of other new firms into the market. Thus, the monopoly power is reflected on its price. Monopoly price is generally higher than competitive price and thus detrimental to the interests of the society.

Monopoly price need not be high always on account of the following reasons:

1. Due to the operation of both internal as well as external economies of scale, he may reduce the cost of production and hence, price too.
2. The monopolist need not spend more money on sales promotion programmes. He can save quite a lot of money and charge a lower price for his product.
3. He has the fear that consumers may boycott his product if he charges a very high price.
4. There is the fear of discovery of new substitutes by other competitors in the market. Hence, he charges low prices.
5. He is afraid of the Govt. intervention in controlling monopoly power and hence, he may charge a lower price.

6. He may spend lot of money on R&D and reduce cost of operation. Cost reduction may facilitate price reduction.

Thus, in order to maintain the good will of the consumers and to secure good business, instead of charging high price, he may charge a relatively lower price.

Price Discrimination

Generally, speaking the monopolist will not charge uniform price for all the customers in the market. He will follow different methods under different circumstances. **The policy of price discrimination refers to the practice of a seller to charge different prices for different customers for the same commodity, produced under a single control without corresponding differences in cost.** When a monopoly firm adopts this policy, it will become a discriminatory monopoly. According to Prof. Benham, "Monopolist may be able however, to divide his sales among a number of different markets and to charge a different price in each market."

According to Mrs. Joan Robinson "The act of selling the same article produced under a single control at different prices to different customers is known as price discrimination."

Forms of price discrimination

1. Personal differences:

This is nothing but charging different prices for the same commodity because of personal differences arising out of ignorance and irrationality of consumers, preferences, prejudices and needs.

2. Place:

Markets may be divided on the basis of entry barriers, for e.g. price of goods will be high in the place where taxes are imposed. Price will be low in the place where there are no taxes or low taxes.

3. Different uses of the same commodity:

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When a particular commodity or service is meant for different purposes, different rates may be charged depending upon the nature of consumption. For e.g. different rates may be charged for the consumption of electricity for lighting, heating and productive purposes in industry and agriculture.

4. Time:

Special concessions or rebates may be given during festival seasons or on important occasions.

5. Distance:

Railway companies and other transporters, for e.g., charge lower rates per KM if the distance is long and higher rates if the distance is short.

6. Special orders:

When the goods are made to order it is easy to charge different prices to different customers. In this case, particular consumer will not know the price charged by the firm for other consumers.

7. Nature of the product:

Prices charged also depends on nature of products e.g., railway department charge higher prices for carrying coal and luxuries and less prices for cotton, necessities of life etc.

8. Quantity of purchase:

When customers buy large quantities, discount will be allowed by the sellers. When small quantities are purchased, discount may not be offered.

9. Geographical area:

Business enterprises may charge different prices at the national and international markets. For example, dumping – charging lower price in the competitive foreign market and higher price in protected home market.

10. Discrimination on the basis of income and wealth:

For e.g., A doctor may charge higher fees for rich patients and lower fees for poor patients.

11. Special classification of consumers:

For E.g., Transport authorities such as Railway and Roadways show concessions to students and daily travelers. Different charges for I class and II class traveling, ordinary coach and air conditioned coaches, special rooms and ordinary rooms in hotels etc.

12. Age:

Cinema houses in rural areas and transport authorities charge different rates for adults and children.

13. Preference or brands:

Certain goods will be sold under different brand names or trade marks in order to attract customers. Different brands will be sold at different prices even though there is not much difference in terms of costs.

14. Social and or professional status of the buyer:

A seller may charge a higher price for those customers who occupy higher positions and have higher social status and less price to common man on the street.

15. Convenience of the buyer:

If a customer is in a hurry, higher price would be charged. Otherwise normal price would be charged.

16. Discrimination on the basis of sex:

In selling certain goods, producers may discriminate between male and female buyers by charging low prices to females.

17. If price differences are minor, customers do not bother about such discrimination.

18. Peak season and off peak season services

Hotel and transport authorities charge different rates during peak season and off-peak seasons.

Pre-Requisite Conditions for Price Discrimination (when price discrimination is possible)

1. Existence of imperfect market:

Under perfect competition there is no scope for price discrimination because all the buyers and sellers will have perfect knowledge of market. Under monopoly, there will be place for price discrimination as there are buyers with incomplete knowledge and information about the market.

2. Existence of different degrees of elasticity of demand in different markets:

A Monopolist will succeed in charging higher price in inelastic market and lower price in the elastic market.

3. Existence of different markets for the same commodity:

This will facilitate price discrimination because buyers in one market will not be knowing the prices charged for the same commodity in other markets.

4. No contact among buyers:

If there is possibility of contact and communication among buyers, they will come to know that discriminatory practices are followed by buyers.

5. No possibility of resale:

Monopoly product purchased by consumers in the low priced market should not be resold in the high priced market. Prevention of re exchange of goods is a must for price discrimination.

6. Legal sanction: In some cases, price discrimination is legally allowed. For E.g., The electricity department will charge different rates per unit of electricity for different purposes. Similarly charges on trunk calls; book post, registered posts, insured parcel, and courier parcel are different.

7. Buyers illusion:

When consumers have an irrational attitude that high priced goods are of high quality, a monopolist can resort to price-discrimination.

8. Ignorance and lethargy:

Due to laziness and lethargy consumers may not compare the price of the same product in different shops. Ignorance of consumers with regard to price variations would enable the monopolist to charge different prices.

9. Preferences and Prejudices of buyers:

The monopolist may charge different prices for different varieties or brands of the same product to different buyers. For e.g. low price for popular edition of the book and high price for deluxe edition.

10. Non-Transferability features:

In case of direct personal services like private tuitions, hair-cuts, beauty and medical treatments, a seller can conveniently charge different prices.

11. Purpose of service:

The electricity department charges different rates per unit of electricity for different purposes like lighting, AEH, agriculture, industrial operations etc. railways charge different rates for carrying perishable goods, durable goods, necessities and luxuries etc.

12. Geographical distance and tariff barriers: When markets are separated by large distances and tariff barriers, the monopolist has to charge different prices due to high transport cost and high rate of taxes etc.

Oligopoly

The term oligopoly is derived from two Greek words “Oligoi” means a few and ‘Poly’ means to sell. Under oligopoly, we come across a few producers specializing in the production of identical goods or differentiated goods competing with one another.

The products traded by the oligopolists may be differentiated or homogeneous. In the case of former, we can give the e.g., of automobile industry where different model of cars, ambassador, fiat etc., are manufactured. Other examples are cigarettes, refrigerators, T.V. sets etc., pure or homogeneous oligopoly includes such industries as cooking and commercial gas cement, food, vegetable oils, cable wires, dry batteries, petroleum etc., In the modern industrial set up there is a strong tendency towards oligopoly market situation. To avoid the wastes of competition in case of competitive industries and to face the emergence of new substitutes in case of monopoly industries, oligopoly market is developed. e.g., an electric refrigerator, automatic washing machines, radios etc.

Types of Oligopoly:

1. Pure or Perfect Oligopoly:

If the firms produce homogeneous products, then it is called pure or perfect oligopoly. Though, it is rare to find pure oligopoly situation, yet, cement, steel, aluminum and chemicals producing industries approach pure oligopoly.

2. Imperfect or Differentiated Oligopoly:

If the firms produce differentiated products, then it is called differentiated or imperfect oligopoly. For example, passenger cars, cigarettes or soft drinks. The goods produced by different firms have their own distinguishing characteristics, yet all of them are close substitutes of each other.

3. Collusive Oligopoly:

If the firms cooperate with each other in determining price or output or both, it is called collusive oligopoly or cooperative oligopoly.

4. Non-collusive Oligopoly: If firms in an oligopoly market compete with each other, it is called a non-collusive or non-cooperative oligopoly.

Features of Oligopoly:

The main features of oligopoly are elaborated as follows:

1. Few firms:

Under oligopoly, there are few large firms. The exact number of firms is not defined. Each firm produces a significant portion of the total output. There exists severe competition among different firms and each firm try to manipulate both prices and volume of production to outsmart each other. For example, the market for automobiles in India is an oligopolist structure as there are only few producers of automobiles.

The number of the firms is so small that an action by any one firm is likely to affect the rival firms. So, every firm keeps a close watch on the activities of rival firms.

2. Interdependence:

Firms under oligopoly are interdependent. Interdependence means that actions of one firm affect the actions of other firms. A firm considers the action and reaction of the rival firms while determining its price and output levels. A change in output or price by one firm evokes reaction from other firms operating in the market.

For example, market for cars in India is dominated by few firms (Maruti, Tata, Hyundai, Ford, Honda, etc.). A change by any one firm (say, Tata) in any of its vehicle (say, Indica) will induce other firms (say, Maruti, Hyundai, etc.) to make changes in their respective vehicles.

3. Non-Price Competition:

Under oligopoly, firms are in a position to influence the prices. However, they try to avoid price competition for the fear of price war. They follow the policy of price rigidity. Price rigidity refers to a situation in which price tends to stay fixed irrespective of changes in demand and supply conditions. Firms use other methods like advertising, better services to customers, etc. to compete with each other.

If a firm tries to reduce the price, the rivals will also react by reducing their prices. However, if it tries to raise the price, other firms might not do so. It will lead to loss of customers for the firm, which intended to raise the price. So, firms prefer non- price competition instead of price competition.

4. Existence of Price Rigidity:

In oligopoly situation, each firm has to stick to its price. If any firm tries to reduce its price, the rival firms will retaliate by a higher reduction in their prices. This will lead to a situation of price war which benefits none. On the other hand, if any firm increases its price with a view to increase its profits; the other rival firms will not follow the same. Hence, no firm would like to reduce the price or to increase the price. The price rigidity will take place.

5. Barriers to Entry of Firms:

The main reason for few firms under oligopoly is the barriers, which prevent entry of new firms into the industry. Patents, requirement of large capital, control over crucial raw materials, etc, are some of the reasons, which prevent new firms from entering into industry. Only those firms enter into the industry which is able to cross these barriers. As a result, firms can earn abnormal profits in the long run.

6. Role of Selling Costs:

Due to severe competition and interdependence of the firms, various sales promotion techniques are used to promote sales of the product. Advertisement is in full swing under oligopoly, and many a times advertisement can become a matter of life-and-death. A firm under oligopoly relies more on non-price competition.

Selling costs are more important under oligopoly than under monopolistic competition.

7. Group Behaviour:

Under oligopoly, there is complete interdependence among different firms. So, price and output decisions of a particular firm directly influence the competing firms. Instead of independent price and output strategy, oligopoly firms prefer group decisions that will protect the interest of all the firms. Group Behaviour means that firms tend to behave as if they were a single firm even though individually they retain their independence.

8. Nature of the Product:

The firms under oligopoly may produce homogeneous or differentiated product

i. If the firms produce a homogeneous product, like cement or steel, the industry is called a pure or perfect oligopoly.

ii. If the firms produce a differentiated product, like automobiles, the industry is called differentiated or imperfect oligopoly.

9. Indeterminate Demand Curve:

Under oligopoly, the exact behaviour pattern of a producer cannot be determined with certainty. So, demand curve faced by an oligopolist is indeterminate (uncertain). As firms are inter-dependent, a firm cannot ignore the reaction of the rival firms. Any change in price by one firm may lead to change in prices by the competing firms. So, demand curve keeps on shifting and it is not definite, rather it is indeterminate.

Price – Output Determination under Oligopoly

(a) If an industry is composed of few firms each selling *identical or homogenous products* and having powerful influence on the total market, the price and output policy of each is likely to affect the other appreciably, therefore they will try to promote *collusion*.

(b) In case there is *product differentiation*, an oligopolist can raise or lower his price without any fear of losing customers or of immediate reactions from his rivals. However, keen rivalry among them may create condition of *monopolistic competition*.

There is no single theory which satisfactorily explains the oligopoly behaviour regarding price and output in the market. There are set of theories like Cournot Duopoly Model, Bertrand Duopoly Model, the Chamberlin Model, the Kinked Demand Curve Model, the Centralised Cartel Model, Price Leadership Model, etc., which have been developed on particular set of assumptions about the reaction of other firms to the action of the firm under study.

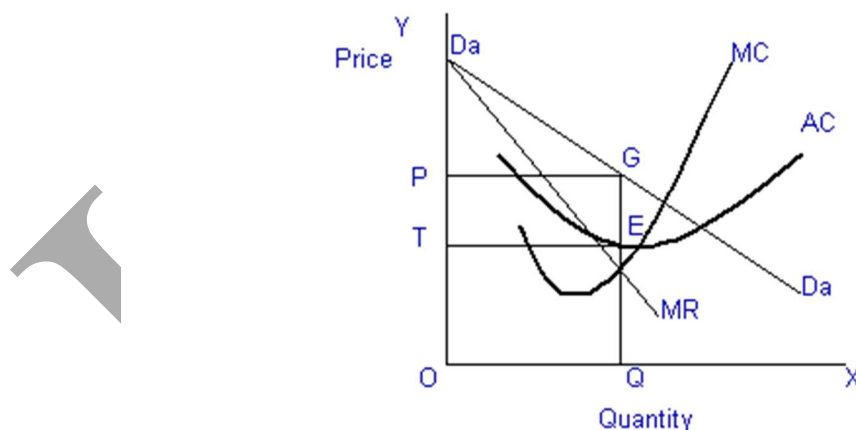
COLLUSIVE OLIGOPOLY:

The degree of imperfect competition in a market is influenced not just by the number and size of firms but by how they behave. When only a few firms operate in a market, they see what their rivals are doing and react. ‘Strategic interaction’ is a term that describes how each firm’s business strategy depends upon its rivals’ business behaviour.

When there are only a small number of firms in a market, they have a choice between 'cooperative' and 'non-cooperative' behaviour:

- Firms act **non-cooperatively** when they act on their own without any explicit or implicit agreement with other firms. That's what produces 'price wars'.
- Firms operate in a **cooperative** mode when they try to minimise competition between them. When firms in an oligopoly actively cooperate with each other, they engage in 'collusion'. Collusion is an oligopolistic situation in which two or more firms jointly set their prices or outputs, divide the market among them, or make other business decisions jointly.

A 'cartel' is an organisation of independent firms, producing similar products, which work together to raise prices and restrict output. It is strictly illegal in Pakistan and most countries of the world for companies to collude by jointly setting prices or dividing markets. Nonetheless, firms are often tempted to engage in 'tacit collusion', which occurs when they refrain from competition without explicit agreements. When firms tacitly collude, they often quote identical (high) prices, pushing up profits and decreasing the risk of doing business. The rewards of collusion, when it is successful, can be great. It is more illustrated in the following diagram:



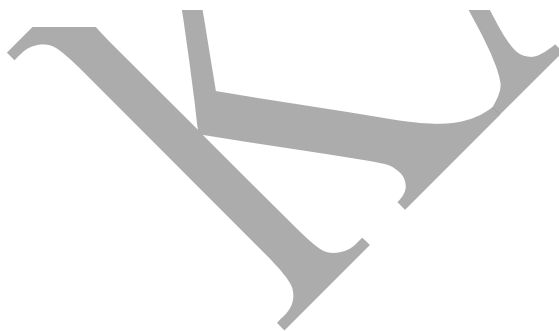
The above diagram illustrates the situation of oligopolist A and his demand curve DaDa assuming that the other firms all follow firm A's lead in raising and lowering prices. Thus the firm's demand curve has the same elasticity as the industry's DD curve. The optimum price for the collusive oligopolist is shown at point G on DaDa just above point E. This price is identical to the monopoly price, it is well above marginal cost and earns the colluding oligopolists a handsome monopoly profit.

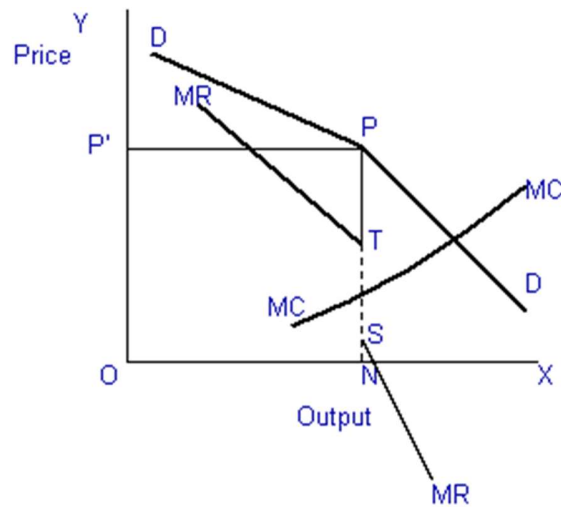
PRICE DETERMINATION MODELS OF OLIGOPOLY:

1. Kinky Demand Curve: The kinky demand curve model tries to explain that in non-collusive oligopolistic industries there are not frequent changes in the market prices of the products. The demand curve is drawn on the assumption that the kink in the curve is always at the ruling price. The reason is that a firm in the market supplies a significant share of the product and has a powerful influence in the prevailing price of the commodity. Under oligopoly, a firm has two choices:

(a) The first choice is that the firm *increases the price* of the product. Each firm in the industry is fully aware of the fact that if it increases the price of the product, it will lose most of its customers to its rival. In such a case, the upper part of demand curve is more elastic than the part of the curve lying below the kink.

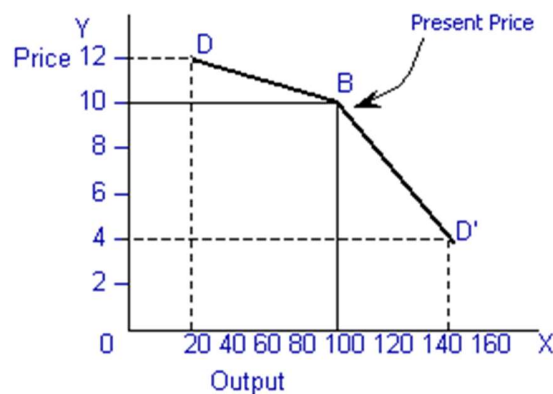
(b) The second option for the firm is to *decrease the price*. In case the firm lowers the price, its total sales will increase, but it cannot push up its sales very much because the rival firms also follow suit with a price cut. If the rival firms make larger price cut than the one which initiated it, the firm which first started the price cut will suffer a lot and may finish up with decreased sales. The oligopolists, therefore avoid cutting price, and try to sell their products at the prevailing market price. These firms, however, compete with one another on the basis of quality, product design, after-sales services, advertising, discounts, gifts, warranties, special offers, etc.





In the above diagram, we shall notice that there is a discontinuity in the marginal revenue curve just below the point corresponding to the kink. During this discontinuity the marginal cost curve is drawn. This is because of the fact that the firm is in equilibrium at output ON where the MC curve is intersecting the MR curve from below.

The kinky demand curve is further explained in the following diagram:



In the above diagram, the demand curve is made up of two segments DB and BD'. The demand curve is kinked at point B. When the price is Rs. 10 per unit, a firm sells 120 units of output. If a firm decides to charge Rs. 12 per unit, it loses a large part of the market and its sales come down to 40 units with a loss of

80 units. In case, the producer lowers the price to Rs. 4 per unit, its competitors in the industry will match the price cut. Its sales with a big price cut of Rs. 6 increases the sale by only 40 units. The firm does not gain as its total revenue decreases with the price cut.

2. Price Leadership Model: Under price leadership, one firm assumes the role of a price leader and fixes the price of the product for the entire industry. The other firms in the industry simply follow the price leader and accept the price fixed by him and adjust their output to this price. The price leader is generally a very large or dominant firm or a firm with the lowest cost of production. It often happens that price leadership is established as a result of price war in which one firm emerges as the winner.

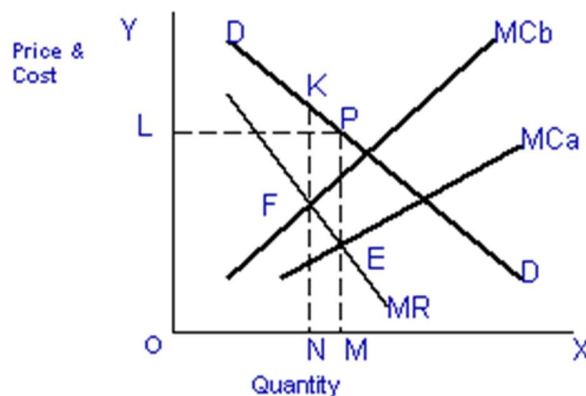
In oligopolistic market situation, it is very rare that prices are set independently and there is usually some understanding among the oligopolists operating in the industry. This agreement may be either tacit or explicit.

Types of Price Leadership: There are several types of price leadership. The following are the principal types:

- (a) ***Price leadership of a dominant firm***, i.e., the firm which produces the bulk of the product of the industry. It sets the price and rest of the firms simply accepts this price.
- (b) ***Barometric price leadership***, i.e., the price leadership of an old, experienced and the largest firm assumes the role of a leader, but undertakes also to protect the interest of all firms instead of promoting its own interests as in the case of price leadership of a dominant firm.
- (c) ***Exploitative or Aggressive price leadership***, i.e., one big firm built its supremacy in the market by following aggressive price leadership. It compels other firms to follow it and accept the price fixed by it. In case the other firms show any independence, this firm threatens them and coerces them to follow its leadership.

Price Determination under Price Leadership: There are various models concerning price-output determination under price leadership on the basis of certain assumptions regarding the behaviour of the price leader and his followers. In the following case, there are few assumptions for determining price-output level under price leadership:

- (a) There are only *two firms A and B* and firm A has a lower cost of production than the firm B.
- (b) The *product is homogenous or identical* so that the customers are indifferent as between the firms.
- (c) Both A and B have *equal share in the market*, i.e., they are facing the same demand curve which will be the half of the total demand curve.



In the above diagram, MC_a is the marginal cost curve of firm A and MC_b is the marginal cost curve of firm B. Since we have assumed that the firm A has a lower cost of production than the firm B, therefore, the MC_a is drawn below MC_b .

Now let us take the firm A first, firm A will be maximising its profit by selling OM level of output at price MP, because at output OM the firm A will be in equilibrium as its marginal cost is equal to marginal revenue at point E. Whereas the firm B will be in equilibrium at point F, selling ON level of output at price

NK, which is higher than the price MP. Two firms have to charge the same price in order to survive in the industry. Therefore, the firm B has to accept and follow the price set by firm A. This shows that firm A is the price leader and firm B is the follower.

Since the demand curve faced by both firms is the same, therefore, the firm B will produce OM level of output instead of ON. Since the marginal cost of firm B is greater than the marginal cost of firm A, therefore, the profit earned by firm B will be lesser than the profit earned by firm A.

Difficulties of Price Leadership: The following are the challenges faced by a price leader:

(a) It is difficult for a price leader to correctly assess the reactions of his followers.



(b) The rival firms may secretly charge lower prices when they find that the leader charged unduly high prices. Such price cutting devices are rebates, favourable credit terms, money back guarantees, after delivery free services, easy instalment sales, etc.

(c) The rivals may indulge in non-price competition. Such non-price competition devices are heavy advertisement and sales promotion.

(d) The high price set by the price leader may also attract new entrants into the industry and these new entrants may not accept his leadership.

ECONOMIC COSTS OF IMPERFECT COMPETITION AND OLIGOPOLY:

(a) **The cost of inflated prices and insufficient output:** The monopolist, by keeping the output a little scarce, raises its price above marginal cost. Hence, the society does not get as much of the monopolist's output as it wants in terms of product's marginal cost and marginal value. The same is true for oligopoly and monopolistic competition.

(b) **Measuring the waste from imperfect competition:** Monopolists cause economic waste by restricting output. If the industry could be competitive, then the equilibrium would be reached at the point where $MC = P$ at point E. Under perfect competition, this industry's quantity would be 6 with a price of 100. The

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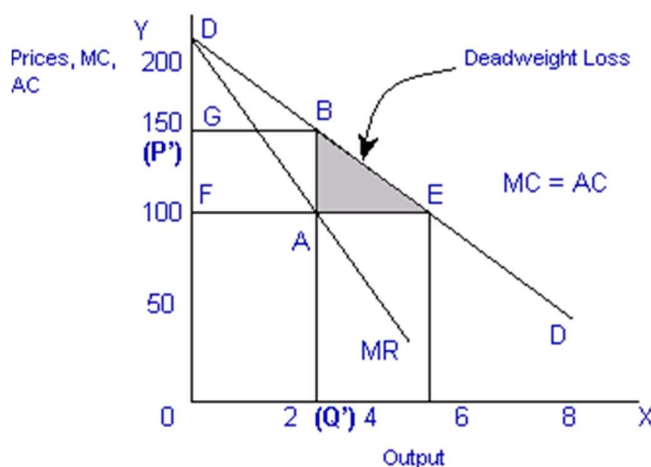
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monopolist would set its MC equal to MR (not to P), displacing the equilibrium to $Q = 3$ and $P = 150$. The GBAF is the monopolist's profit, which compares with a zero-profit competitive equilibrium. Economists measure the economic harm from insufficiency in terms of the deadweight loss; this term signifies the loss in real income that arises because of monopoly, tariffs and quotas, taxes, or other distortions. The efficiency loss is the vertical distance between the demand curve and the MC curve. The total deadweight loss from the monopolist's output restriction is the sum of all such losses represented by the grey triangle ABE:



In the above diagram, DD curve represents the consumers' marginal utility at each level of output, while the MC curve represents the opportunity cost of the devoting production to this good rather than to other industries. For example, at $Q = 3$, the vertical difference between B and A represents the utility that would be gained from a small increase to the output of Q. Adding up all the lost social utility from $Q = 3$ to $Q = 6$ gives the shaded region ABE.

Monopolistic Competition

Perfect competition and monopoly are the two extreme forms of market situations, rarely to be found in the real world. Generally, markets are imperfect. A number of attempts have been made by different economists like Piero Shraffa, Hotelling, Zeuthen and others in the early 1920's, Mrs Joan Robinson and Prof Chamberlin in 1930's to explain the behavior of imperfect competition.

Prof. Chamberlin is the main architect of the theory of Monopolistic Competition. This market exhibits the characteristics of both competition and monopoly. Since modern markets are combined and integrated with monopoly power and competitive forces they are called as Monopolistic Competition. **It is a market structure in which a large number of small sellers sell differentiated products which are close, but not perfect substitutes for one another.** Under this market, the products produced and sold are different, but they are close substitutes for one another. This leads to competition among different sellers. Thus, in this market situation every producer is a sort of monopolist and between such "mini-monopolists" there exists competition. It is one of most popular and realistic market situation to be found in the present day world. A number of examples may be given for this kind of market. Tooth paste, blades, motor cycles and bicycles, cigarettes, cosmetics, biscuits, soaps and detergents, shoes, ice – creams etc.

Characteristics of Monopolistic Competition

- 1. Existence of a large Number of firms:** Under Monopolistic competition, the number of firms producing a product will be large. The size of each firm is small. No individual firm can influence the market price. Hence, each firm will act independently without worrying about the policies followed by other firms. Each firm follows an independent price-output policy.
- 2. Market is characterized by imperfections:** Imperfections may arise due to advertisements, differences in transport cost, irrational preferences of consumers, ignorance about the availability of different brands of products and prices of products etc., sellers may also have inadequate knowledge about market and prices existing at different segments of markets.

3. Free entry and exit of firms: Each firm produces a very close substitute for the existing brands of a product. Thus, differentiation provides ample opportunity for a firm to enter with the group or industry. On the contrary, if the firm faces the problem of product obsolescence, it may be forced to go out of the industry.

4. Element of monopoly and competition: Every firm enjoys some sort of monopoly power over the product it produces. But it is neither absolute nor complete because each product faces competition from rival sellers selling different brands of the product.

5. Similar products but not identical: Under monopolistic competition, the firm produces commodities which are similar to one another but not identical or homogenous. For E.g. toothpastes, blades, cigarettes, shoes etc,

6. Non-price competition: In this market, there will be competition among “Mini-monopolists” for their products and not for the price of the product. Thus, there is “product competition” rather than “price competition”.

7. Definite preference of the consumers: Consumers will have definite preference for particular variety or brands loyalty owing to the special features of a product produced by a particular firm.

8. Product differentiation: The most outstanding feature of monopolistic competition is product differentiation. Firms adopt different techniques to differentiate their products from one another. It may take mainly two forms:

a. Real product difference:

It will arise –

- i. When they are produced out of materials of higher quality, durability and strength.
- ii. When they are extraordinary on the basis of workmanship, higher cost of material, color, design, size, shape, style, fragrance etc.

iii. When personal care is taken to produce it.

b. Imaginary product difference:

Producers adopt different methods to differentiate their products from that of other close substitutes in the following manner.

- i. Proper location of sales depots in busy and prestigious commercial centers.
- ii. Selling goods under different trademarks, patenting rights, different brands and packing them in attractive wrappers or containers.
- iii. Providing convenient Working hours to customers.
- iv. Home delivery of goods with no extra cost.
- v. Courteous treatment to customers, quick and prompt delivery of goods in time and developing cordial, personal and friendly relations with them.
- vi. Offering gifts, discounts, lucky dip schemes, special prices, guarantee of repairs and other free services, guarantee of products, fair dealings, sales on credit or credit cards & debit cards etc.
- vii. Agreement to take back goods if they are unsatisfactory.
- viii. Air conditioned stores etc.

9. Selling Costs: All those expenses which are incurred on sales promotion of a product are called as **selling costs**. In the words of Prof. Chamberlin – “selling Costs are those which are incurred by the producers (sellers) to alter the position or shape of the demand curve for a product”. In short, selling costs represents all those selling activities which are directed to persuade buyers to change their preferences so as to maximized the demand for a given commodity. Selling costs include expenses on sales depots, decoration of the shop, commission given to intermediaries, window displays, demonstrations, exhibitions,

door to door canvassing, distribution of free samples, printing & distributing pamphlets, cinema slides, radio, T.V., newspaper advertisements (informative and manipulative advertisements) etc.

10. The concept of Industry & Product Groups: Prof. Chamberlin introduced the concept of group in place of industry. Industry in economics refers to a number of firms producing similar products. Under monopolistic competition no doubt, different firms produce similar products but they are not identical. Hence, Prof. Chamberlin has made an attempt to redefine the industry. According to him, the monopolistically competitive industry is a 'group' of firms producing a "closely related" commodity referred to as "product group" thus group refers to a collection of firms that produce closely related but not identical products.

11. More elastic demand curve: Product differentiation makes the demand curve of the firm much more elastic. It implies that a slight reduction in the price of one product assuming the price of all other products remaining constant leads to a large increase in the demand for the given product.

PRICE – OUTPUT DETERMINATION

Short run equilibrium

Short period is a period of time where time is inadequate to make all sorts of changes and adjustments in the productive process. The demand & cost conditions may vary substantially forcing the firm either to charge a higher or lower price leading to supernormal profits or losses. However, each firm fixes such price and produce output which maximizes its profit. The equilibrium price and output is determined at the point where Short run Marginal cost equals Marginal revenue. Thus, the first condition for Short run equilibrium is $MC = MR$.

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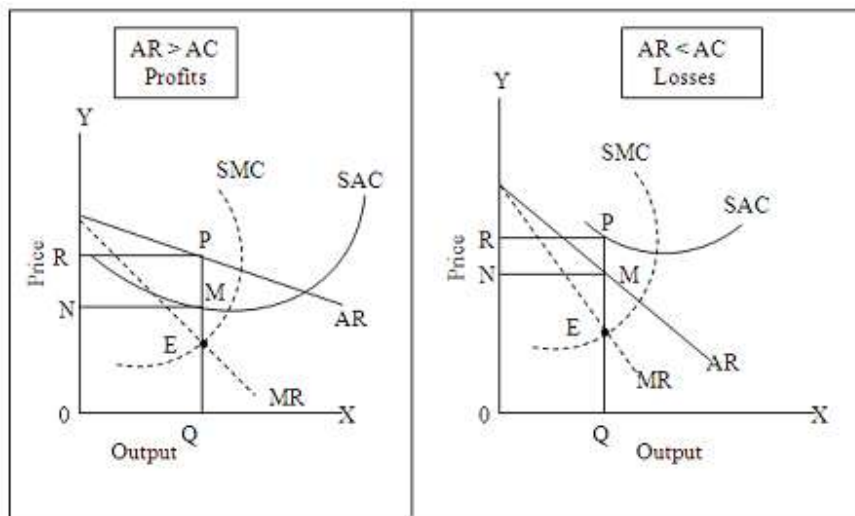
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The first diagram shows supernormal profits. In this case, price (AR) is greater than AC (cost Per Unit). MQ is the cost per unit and total cost for OQ output is = $MQ \times OQ = ONMQ$. PQ is the price or revenue per unit and the total revenue for OQ output is = $PQ \times OQ = ORPQ$. Supernormal profit = TR (ORPQ) – TC (ONMQ). Hence, NRPM is the total profit.

The second diagram shows losses. In this case, AC is greater than AR. PQ is the cost per unit and the total cost is $PQ \times OQ = ORPQ$. MQ is the revenue per unit & the total revenue for OQ output is $MQ \times OQ = ONMQ$.

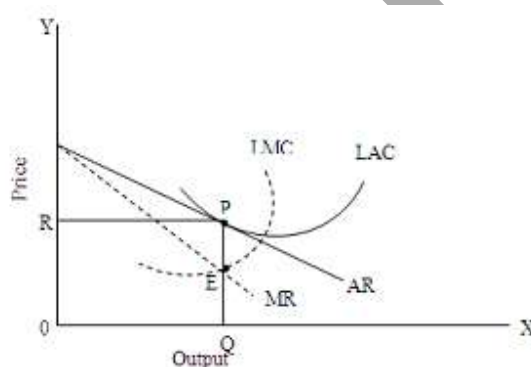
Total losses = TC (ORPQ) – TR (ONMQ) = NRPM. Thus, in the Short run, there will be place for supernormal profits or losses.

Price output determination in the long run

Long run is a period of time where a firm will get adequate time to make any changes in the productive process or business. A firm can initiate several measures to minimize its production costs and enjoy all the benefits of large scale production. The cost conditions, as a result differ slightly in the long run. While fixing the price, a firm in the long run should consider its AC & AR.

Generally speaking in the long run a firm can earn only normal profits. If AR is greater than AC, there will be super normal profits. This leads to entry of new firms – increase in the total number of firms – total production – fall in prices – decline in profit ratio. On the other hand, if AC is greater than AR, there will be losses. This leads to exit of old firms – decrease in the number of firms – total production – rise in prices – increase in profit ratio. Thus, the entry and exit of firms continue till AR becomes equal to AC. Thus, in the long run, two conditions are required for the equilibrium of the firm –

- 1) $MR=MC$ and
- 2) $AR=AC$. However, it should be noted that price is greater than MR & MC .



In the diagram E is the equilibrium position where $MR = MC$ and MC curve cuts MR curve from below. At P, $AR = AC = \text{price}$.

It is necessary to understand that a firm under monopolistic competition in the long run also can earn supernormal normal profits. Prof. Stonier & Hague suggest that a firm can go for innovation to introduce new changes in the context of a modern competitive business. This appears to be more realistic because today almost all firms make heavy profits. Hence, it is regarded as one of the most practical forms of market situations in the present day world.

Duopoly Competition

“Duopoly is that situation of a market in which there are two producers of a product, either perfectly identical or almost identical. They are not bound by the agreement regarding price or quantity of production.” Dr. John.

Following are the characteristics of duopoly:

- i. Two producers or sellers of a product
- ii. Perfectly identical or almost identical products
- iii. Independent price policy followed by both the sellers or they may agree upon a uniform price
- iv. Both the sellers may compete with each other or agree to co-operate with each other

Duopoly can be of two types, which are explained as follows:

i. Duopoly without product differentiation:

Refers to a type of duopoly, when organizations sell identical products. In such a situation, an agreement may be formed between organizations to set a fixed price or divide the markets. In case, if there is no agreement, the price war may take place among organizations.

The one with the lower price would gain the market share and a simple monopoly would be established. Organizations will be able to maximize the profits in case they collude together by charging same prices.

ii. Duopoly with product differentiation: Refers to a duopoly market when the organizations sell differentiated products. There is no fear of rivals and there will be no agreement between the organizations. The organization with better products will gain supernormal profits.

There are three types of duopoly models pertaining to price-output decisions under duopoly market situation;

1. Cournot's Duopoly Model:

Cournot duopoly model was propounded by a French economist, Augustin Cournot in 1838 for price-output determination under duopoly. Cournot model is based on the market condition in which there are

only two sellers, that is duopoly. However, the model is also applicable to oligopolistic market conditions. Let us explain the model with the help of an example taken by Cournot. Suppose there are two producers, each operating two identical springs of mineral water, being produced at zero cost.

Following assumptions are taken in this model:

- i. Both the producers operate at zero cost of producing water
- ii. Both the producers face the same demand curve with negative slope
- iii. Both the producers assumes that competitors will not react to the change in price or output

Figure shows the Cournot's duopoly model:

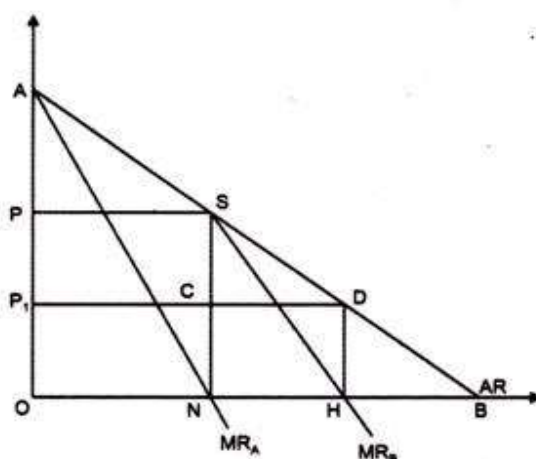


Figure-6: Cournot's Duopoly Model

In the Figure, the demand curve (AR curve) faced by two organizations for mineral water is given by a straight line AB. The total output produced is equal to OB where maximum daily output of each mineral spring is $ON = NB$. Assume that producer A starts the business first. It implies that he/she is the monopolist and produces ON level of the output, which is the maximum level of output.

Since costs are zero, the profit will be equal to ONPS. The price charged is equal to OP. Now, suppose that the producer B enters into business and notices that producer A is producing ON amount of output. The market which is unsupplied by A is the market open for B equal to NB. B will produce output assuming that A will not change its price and output (as he is making maximum profits).

The demand curve faced by producer B is equal to SB and thus, MRB can be drawn equal to SH. At this point, price falls to OP1 and thus output produced is equal to NH (one-fourth of the market = $\frac{1}{2}$ of NB = $\frac{1}{2}$ of $\frac{1}{2}$ = $\frac{1}{4}$). The total profits of producer B are equal of NHCD.

From the Figure, it can be seen that with the entry of producer B, price has fallen to P1, which has decreased the profits of A to ONCP1. Thus, A would make adjustments in price and output assuming that B would not change his output and price levels. He/she would produce $\frac{1}{2}$ of the (OB-NH) of the market.

$$OB-NH = 1 - \frac{1}{4} = \frac{3}{4}$$

Thus, output produced by A is = $\frac{1}{2}(\frac{3}{4}) = \frac{3}{8}$.

Now, B will notice that his/her total profits are less than that of A. Thus, he/she will produce $\frac{1}{2}$ of (OB-new output of A)

$$= \frac{1}{2}(1 - \frac{3}{8}) = \frac{1}{2} \times \frac{5}{8} = \frac{5}{16} \text{ of the market}$$

This process of adjustments will continue until both of their market shares are equal to one third. Till that, B would continue to gain and A would continue to lose. This model concludes that under Cournot's duopoly situation, each seller ultimately supplies one-third of the market. Both the producers charge the same price and one-third of the market remains unsupplied.

Cournot's model attains the stable equilibrium; however it is criticized on the following grounds:

- i. Assumes that each producer would be producing the same level of output. However, this assumption is wrong as output of the rivals does not remain fixed.
- ii. Assumes that the cost of production remains nil, which is not true in every kind business.

2. Edge-worth Model:

As discussed, in Cournot model, the output of rival organization is assumed to be constant and unchanged. In the Edge-worth model, the price of the rival organization is assumed to be unchanged.

The assumptions of this model are as follows:

- i. Each organization believes that its rival organization will not change its price
- ii. Neither of the organizations can produce an output as large as the competitive output
- iii. The maximum possible output is the same for both the organizations

- iv. The product is homogenous, which implies there are no brand and quality variations
- v. Consumers prefer to buy at the lowest price possible

The Edge-worth model is explained with the help of Figure

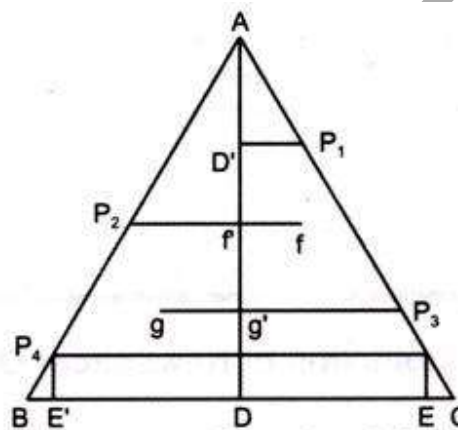


Figure-7: Edgeworth Model

In Figure AC is the organization A's demand curve, whereas AB is the organization's B's demand curve. The maximum output that can be produced by A and B is DE and DE', respectively. Suppose organization A is the first to enter the market and sets the price P1 where output is D'P1. Now, organization B enters the market and sets price lower than A that is P2.

In such a case, organization B captures the market share of A which is equal to ff'. Now, A reacts and lowers its price to P3 and captures B's market share equal to gg'. This process will continue until price equals P4 and output produced by both A and B equals maximum output.

At P4, no one can snatch the market share of each other. Now, A again raises the price to P1 considering that B has fixed its entire supply at P4. B again follows A and thus process continues between P1 and P4.

3. Chamberlin Model:

Chamberlin model is based on an assumption that both the organizations existing in the market are mutually interdependent on each other.

Let us understand Chamberlin model with the help of Figure

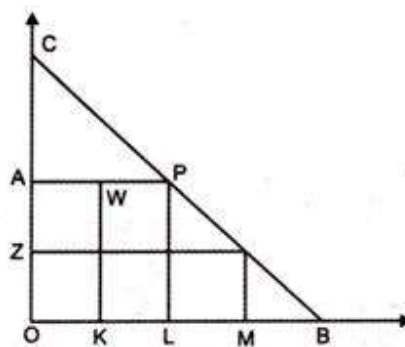


Figure-8: Chamberlin Model

Suppose there are two organizations A and B in the market. Organization A enters the market first. In Figure, BC is the demand curve and OL is the total output produced by A which is sold at price OA. The total profit is OLPA. Now, producer B enters the market and produce LM level of output. Thus, the total quantity produced is equal to $OL + LM - OM$.

UNIT – III

POSSIBLE QUESTIONS

Part – B (3X 2 = 6 Marks – CIA)

Part – B (5 X 2 = 10 Marks – ESE)

1. Define market.
2. Define market structure

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3. What is perfect competition?
4. What is pure competition?
5. List the features of the Perfect Competition
6. What is normal profit?
7. What is abnormal profit?
8. What is super- normal profit?
9. What is equilibrium price?
10. Give for conditions for profit maximisaation.
11. What is market price?
12. Give the condition for equilibrium in perfect competition.
13. Define monopoly.
14. List the features of monopoly competition.
15. Define duopoly.
16. Write a note on Duopoly without product differentiation.
17. Write a note on Duopoly with product differentiation.
18. List the assumptions of Cournot's Duopoly Model
19. Bring out the features of duopoly competition.
20. What is Monopolistic Competition?
21. List the characteristics of Monopolistic Competition.
22. What is Product differentiation of monopolistic competition?
23. What is Selling Costs?
24. Define Oligopoly competition.
25. Write a note on types of Oligopoly.
26. What is Collusive Oligopoly?
27. What is Non - Collusive Oligopoly?
28. List the features of Oligopoly.
29. What is Non-Price Competition of oligopoly?
30. What is Price Rigidity of oligopoly?
31. What is Group Behaviour of oligopoly?

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32. What is cartel?
33. What is Kinked Demand Curve?
34. What is Price Leadership?
35. Bring out the types of Price Leadership.
36. What is oligopsony?
37. List the features of oligopsony.
38. What is monopsony?
39. List the features of monopsony.

Part – C (3 X 8 = 24 Marks – CIA) (Either or OR)

Part – C (6X 5 = 30 Marks – ESE) (Either or OR)

1. Discuss different market structures and their features.
2. Explain price and output determination under perfect competition.
3. Examine the features of the Perfect Competition.
4. Discuss the conditions for profit maximisation under different market competition.
5. Explain the features of monopoly competition.
6. Explain duopoly without product differentiation and with product differentiation.
7. Explain the Cournot's Duopoly Model
8. Discuss the features of duopoly competition.
9. Explain the features of Monopolistic Competition.
10. Explain the Product differentiation and selling cost of monopolistic competition?
11. Explain different types of Oligopoly competition.
12. Discuss the Collusive Oligopoly and Non - Collusive Oligopoly.
13. Discuss the features of Oligopoly.
14. Explain the Non-Price Competition and Price Rigidity features of oligopoly.
15. Explain the reasons for Kinked Demand Curve of oligopoly competition.
16. Explain the Price Leadership Model.
17. Explain how price is determined under monopoly competition.
18. Explain the price and output determination under duopoly competition.

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19. Explain the price and output determination under monopolistic competition.
20. Explain how Price is determined under oligopoly competition.
21. Discuss the features of Monopsony market.
22. Examine the characteristics of oligopsony market competition.

KAHE

S.No	QUESTIONS	OPTION 1
1	Buyers' market denotes the place where	The supply exceeds the demand
2	Determinant of the maximum profit for a firm is	Price
3	Sellers' market denotes a situation where	Commodities are available at competitive rates
4	Equilibrium price is that price which	Maximizes producers profit
5	For price discrimination to be successful, the elasticity of demand for the product in the two markets should be	Same
6	Price leadership is a form of	Monopolistic competition
7	Maximum exploitation of consumer takes place when there is	Perfect competition
8	A firm profit is _____	$P = \text{TOTAL}$
9	The distinction of pricing by a firm and by an industry is not possible under	Monopolistic competition
10	First degree price discrimination means	Entire consumer surplus goes to consumer
11	Duopoly is a marketing situation when	There is only one producer of a given product
12	The term 'group equilibrium' is related to	Monopolistic competition
13	A firm's marginal revenue	Is always positive
14	Monopolistic competition in comparison to perfect competition ensures—	Lower price and higher output
15	Second condition for the equilibrium of the firm under perfect competition is	MC curve must cut the MR curve from below
16	In an oligopoly, if firms do not aggressively compete with each other on price, then:	More of the gains from trade go to foreign buyers of the products produced by the firms.
17	_____ suggest that a number of small firms produce identical commodity products	Oligopoly
18	Type of market structure represented by the constant returns to scale (CRS) technology, includes	Monopolistic competition
19	Which of the following is not a financial objective of pricing?	Corporate growth.

20	Setting a price below that of the competition is called:	Skimming
21	Which of the following is not a valid option for a perfectly competitive firm?	Increasing its output
22	A firm that is producing at the lowest possible average cost is always	Earning an economic profit
23	Price for a firm under monopolistic competition is _____.	Equal to marginal revenue
24	In the long run, monopolistically competitive firms tend to experience _____.	High economic profits
25	Marginal revenue for a monopolist is _____	Equal to price
26	A price- and quantity-fixing agreement is known as:	Game theory
27	A group of firms that gets together to make price and output decisions is called:	A cartel
28	An profit maximizing, oligopolistic firms produces at an output level where:	$P = ATC$
29	The petroleum industry is an example of	Monopolistic competition
30	Selling cost is the feature of the market form	Monopolistic competition
31	When abnormal profit is earned by a particular firm, there arise	Potential competition
32	A firm that is the sole seller of a product without close substitutes called:	Monopoly
33	Profit Maximisation goal is suitable for ---- and ----- markets	Monopolistic and oligopoly
34	In case of oligopoly, number of firms is -----	Larger
35	What are homogenous products?	Undifferentiated products
36	A distinguishing characteristic of monopolistic competition is -----	Large number of firms
37	If firms can neither enter nor leave an industry, the relevant time period is the -----	Short run
38	In perfect competition equilibrium is attained when -----	$AR = AC$
39	Kinked demand curve is associated with -----	Cournot
40	The upper portion of the kinked demand curve is relatively -----	More inelastic
41	Cartel is a part of -----	Monopoly
42	While determining equilibrium of firm in short run for perfect competition, the X-axis in the diagram represents	Revenue
43	The monopolist can fix any price for his product, but cannot determine ----- for his product.	Revenue
44	The primary objective for discriminating monopolist is -----	Loss minimization
45	A firm shut-down point is reached when -----	Average revenue fails to cover average total cost

46	In a perfectly competitive market, the firm will be ----- -----	A price maker
47	Equilibrium implies a state of -----	Rest
48	Under perfect competition, rivalry is -----	Impersonal
49	A monopolistic firm will expand its output when -----	Marginal revenue exceeds marginal cost
50	A monopolist will never produce at a point where -----	Average cost is constant
51	Which of the following best defines price discrimination?	Charging different prices on the basis of race.
52	Which one is not collusive oligopoly -----	Price leadership
53	In an oligopolistic market, there are -----	Large number of sellers and few buyers
54	The kinked demand curve in Sweezy oligopoly model emerges due to assumption that -----	When one seller decreases or increases his price, others follow.
55	The essential aspects of oligopoly is -----	Excess capacity
56	The equilibrium of a firm occurs when -----	$P=MC$
57	The condition for the long run equilibrium of a perfectly competitive firm	$Price=MC=AC$
58	The implication of the kinked demand curve is reflected in a discontinuity in the:	Marginal revenue curve
59	The concept of monopsony was invented by:	Marshall
60	Monopolistic competition and oligopoly are alike under terms of _____	Non-price competition

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MANAGERIAL ECONOMICS - 17
UNIT - III**

Multiple Choice Questions (Each Questions)

OPTION 2	OPTION 3
The demand exceeds the supply	The demand and supply are well balanced
Average cost	Both average cost and price
Demand exceeds supply	Supply exceeds demand
Equates consumers and producers surplus	Maximizes consumer's satisfaction
Different	Constant
Non-collusive oligopoly	Monopoly
Oligopoly	Simple monopoly
$P = \text{Total sales}$	$P = TR - TC$
Perfectly competitive market	Condition of pure oligopoly
Entire consumer surplus goes to producer	A part of consumer surplus goes to producer
There are few producers	More than two producers
Oligopoly	Duopoly
Can be positive	Always negative
Price equal to marginal cost	Output at the minimum average cost
MC must cut the MR from above	$TR = TC$
the firms cannot earn a profit and will eventually lose market share.	each firm can earn a positive economic profit.
Perfect competition	Monopoly
Oligopoly	Duopoly
Return on investment.	Profit maximization.

Penetration pricing	Competitive pricing
Decreasing its output	Increasing its price
Productively efficient	Dominating the other firms in the market.
Greater than marginal revenue	Less than marginal revenue
Zero economic profits	Negative economic profits
Greater than price	Less than price
Price leadership	Collusion
Price leadership	An oligopoly
$MR = MC$	$MR = ATC$
Pure oligopoly	Duopoly
Perfect competition	Oligopoly
Normal profit	Heavy loss
Oligopoly	Competition
Monopolistic and Duopoly	Monopoly and Perfect competition
Infinite	One
Differentiated products	Unrelated products
Low entry baarriers	Product standardisation
Intermediate run	Long run
$TR=TC$	$MR=MC$
Chamberlin	Edgeworth
More elastic	Less elastic
Oligopoly	Duopoly
Output	Cost
Cost	Supply
Profit maximisation	To cover production cost
Average revenue fails to cover average variable cost.	Average revenue fails to cover average fixed cost

Attempting to maximise profits	Producing a product which will be different from its competitors
Inactivity	Absence of motion
Very personal and direct, advertising being important	Nonexistent since the firms cooperate
Marginal cost exceeds marginal revenue	Marginal cost equals marginal revenue
Average is rising	Marginal cost is positive
Charging different prices for goods with different cost of production	Charging different prices based on cost of service difference
Market sharing cartel	Price discrimination
Few sellers and few buyers	Few sellers and large number of buyers
When one seller decreases his price others follow him.	When one sellers decreases his price others follow but when he increases his price others do not follow
Non-price competition	A large number of firms
$MC=MR$	$P=MR$
$Price=TC$	$MC=AVC$
Marginal cost curve	Total revenue curve
AP. Learner	Chamberlin
Strong mutual interdependence among firms	Kinked demand analysis

EDUCATION
ESTER
BPU604A

carries ONE Mark)

OPTION 4	OPTION 5	OPTION 6
Commodities are available at competitive rates		
The output level		
Supply and demand are evenly balanced.		
Equates supply and demand		
Zero		
Collusive oligopoly		
Price discrimination		
$P = TC - MC$		
Oligopolistic market structure		
A part of consumer surplus goes to consumer		
Two producers of a given product		
Perfect competition		
Positive at point at which the total revenue is maximum		
Higher price and lower output		
$MR = MC$		
oligopoly's trade is similar to the monopolistically competitive market.		
Scale economies		
Perfect competition		
Cost minimization		

sales pricing		
Increasing its resources		
Not producing enough output		
Greater than total revenue		
Substantial economic losses		
Equal to average revenue		
Price concentration		
A concentrated industry		
$AVC > MR$		
Differentiated oligopoly		
Monopoly		
Low profit		
Bureaucracy		
Monopsony and Duopsony		
Few		
Common products		
Product differentiation		
Immediate run		
$Q=P$		
Sweezy		
Less inelastic		
Perfect competition		
Price		
Demand		
To increase sales		
Average revenue fails to cover marginal cost.		

Price taker		
Movement		
Control output		
Marginal revenue is negative.		
Marginal cost is increasing		
Selling a certain product of given quality and cost per unit at different prices to different		
Price fixing cartel		
Only one seller		
When one seller increases his price others decrease their prices.		
Mutual recognition of interdependence.		
$AC=MC$		
$MC=MR$		
Total cost curve		
Mrs. J. Robinson		
The number of firms		

ANSWERS
The supply exceeds the demand
Both average cost and price
Demand exceeds supply
Equates supply and demand
Different
Collusive oligopoly
Price discrimination
$P = TR - TC$
Condition of pure oligopoly
Entire consumer surplus goes to consumer
Two producers of a given product
Monopolistic competition
Positive at point at which the total revenue is maximum
Higher price and lower output
MC curve must cut the MR curve from below
each firm can earn a positive economic profit.
Perfect competition
Perfect competition
Corporate growth.

Competitive pricing
Decreasing its output
Productively efficient
Equal to marginal revenue
Zero economic profits
Equal to price
collusion
A cartel
$P = ATC$
Pure oligopoly
Monopolistic competition
Potential competition
Monopoly
Monopoly and Perfect competition
Few
Undifferentiated products
Product differentiation
Short run
$MR=MC$
Sweezy
More elastic
Oligopoly
Output
Demand
Profit maximisation
Average revenue fails to cover average variable cost.

Price taker
Rest
Very personal and direct, advertising being important
Marginal revenue exceeds marginal cost
Marginal cost is increasing
Selling a certain product of given quality and cost per unit at different prices to different buyers.
Market sharing cartel
Few sellers and large number of buyers
When one sellers decreases his price others follow but when he increases his price others do not follow
Mutual recognition of interdependence.
$MC=MR$
$Price=MC=AC$
Marginal revenue curve
Mrs. J. Robinson
Strong mutual interdependence among firms

UNIT-IV – Introduction to Macroeconomics

SYLLABUS

Unit – IV: Introduction to macroeconomics- Definition - Basic issues studied in macroeconomics - National income – concepts - Measurement of national income - Inflation – Meaning – Types - Causes and controlling methods -Trade cycle – Meaning – Phases of trade cycle - Balance of payments – Disequilibrium and correction.

Introduction to macroeconomics

Macroeconomics is that branch of Economic Analysis in which groups created to the whole economies, like national income, Total production, total consumption, total savings, wage-level, general cost, and general price level are studied.

Definitions of Macroeconomics

“Macroeconomics, then, is that part of the subject which deals with the Great aggregates and averages of the system rather than with particular item in it, and attempts to define, these aggregates in a useful manner and to examine their relations.” **Professor Bouding**

“Macroeconomics deals with economic affairs in the large.” It looks at the total size and shape and functioning of ‘Elephant’ of Economics experience, rather than the working or articulation or dimensions of the individual parts. To alter the metaphor it studies the character of the forest, independently of the trees which compose it.” – **Gardner Acley**

Scope of Macroeconomics

The scope of macroeconomics is very wide following points can be studied under it:

1. Theory of Income and Employment

In it, formulation of income and Employment level is done and study of consumption, function, investment, function, multiple and accelerator is also done.

2. Theory of General Price Level

In it, formulation of the general price level is studied and problems related to inflation, deflation are a prime subject matter of Macro Economics.

3. Theory of Development and Planning: For fast and balanced development, developing countries apply many economic theories. So, the study of process and theories of economic development and planning is also an important subject matter of Macro Economics.

4. Theory of trade cycle

In macroeconomics study of the trade, the cycle is done. The factor of Boom and Depression in the trade cycle, there effects and removal of these effects are studied in Macro Economics.

5. Theory of International Trade and Foreign Exchange

It is also a subject matter of Macroeconomics. Under it theory of International Trade, terms of trade, determination of foreign exchange rates etc. Are studied.

6. Theory of Public Finance

In it, the study of theories, policies, and effects related to government income, expenditure loan etc. is done. Study of fiscal policy is the prime subject matter of public finance.

7. Principles of Money and Banking

In macroeconomics, theories related Money and banking, country's monetary and credit system, functions of the central bank and other banks and international finance are studied.

8. Macro-Theory of Distribution

In macroeconomics study of Distribution of wages and profits in national income is done. So it is clear that the scope of Macro Economics it's very wide.

Importance of Macroeconomics

1. Useful in Formulation of Economic Policies

The Macroeconomics is very useful in the formulation of economic policies. Related to this matter **professor Boulding** has written, "Macro Economics is very important in the view of economic policies because economic policies of the government are related to the group of individuals and not with individuals.

2. Helpful in Understanding the Collective and Complex Operation of Economy

In Micro Economics knowledge of only individual units can be done but for the collective and complex operation of while the economy, Macroeconomics is helpful.

3. Helpful in Development of Micro Economics

It is helpful in the development of microeconomics because the formulation of laws and theories of microeconomics is done with the help of macroeconomics.

4. Useful in solving various Economic Problems

Economists take the help of macroeconomics in solving the problem related to the whole economy, like- National income, National Savings, and investment, consumption, production etc.

5. Useful in Economic Planning

At present, for the solution of economic problems and for fast and balanced economic development.

Every nation takes help of economic planning and determination of targets in plans is done on the basis of Macro Analysis.

6. Analysis of trade cycle

On the basis of macroeconomics by doing the analysis of factors Boom and Depression important steps are taken for the removal of the cycles.

7. Analysis of monetary problems

Knowledge of determination of monetary policy of a country, the study of its effect and cause of monetary problems and solutions for the removal of these problems is done only by Macroanalysis.

8. Due to Micro Paradoxes, It is Essential to Study the Whole Economy

Due to micro paradoxes, it is essential to study the whole economy because those decisions which are applicable to individual units it is not necessary that the same decision will be applicable to the whole economy.

9. Analysis of Unemployment

In a country reason for unemployment is due to a lack of effective demand. So for the removal of unemployment increase in effective demand is essential. This factors of unemployment, its effect, and solutions for removal of these effects is possible through Macro Analysis.

National Income: Concept and Measurement

National income is an uncertain term which is used interchangeably with national dividend, national output and national expenditure. In common parlance, national income means the total value of goods and services produced annually in a country.

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Definitions of National Income

The Marshallian Definition. According to Marshall: "The labour and capital of a country acting on its natural resources produce annually a certain net aggregate of commodities, material and immaterial including services of all kinds . . . This is the true net annual income or revenue of the country or national dividend". In this definition, the word 'net' refers to deductions from the gross national income in respect of depreciation and wearing out of machines. And to this must be added income from abroad

Concepts of National Income

There are a number of concepts pertaining to national income and methods of measurement relating to them.

(A) Gross Domestic Product (GDP):

GDP is the total value of goods and services produced within the country during a year. This is calculated at market prices and is known as GDP at market prices. Dernberg defines GDP at market price as "the market value of the output of final goods and services produced in the domestic territory of a country during an accounting year."

There are three different ways to measure GDP:

Product Method, Income Method and Expenditure Method

These three methods of calculating GDP yield the same result because National Product = National Income = National Expenditure.

1. The Product Method:

In this method, the value of all goods and services produced in different industries during the year is added up. This is also known as the value added method to GDP or GDP at factor cost by industry of origin. The following items are included in India in this: agriculture and allied services; mining; manufacturing, construction, electricity, gas and water supply; transport, communication and trade; banking and insurance, real estates and ownership of dwellings and business services; and public administration and defense and other services (or government services). In other words, it is the sum of gross value added.

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2. The Income Method:

The people of a country who produce GDP during a year receive incomes from their work. Thus GDP by income method is the sum of all factor incomes: Wages and Salaries (compensation of employees) + Rent + Interest + Profit.

3. Expenditure Method:

This method focuses on goods and services produced within the country during one year.

GDP by expenditure method includes:

- (1) Consumer expenditure on services and durable and non-durable goods (C),
- (2) Investment in fixed capital such as residential and non-residential building, machinery, and inventories (I),
- (3) Government expenditure on final goods and services (G),
- (4) Export of goods and services produced by the people of country (X),
- (5) Less imports (M). That part of consumption, investment and government expenditure which is spent on imports is subtracted from GDP. Similarly, any imported component, such as raw materials, which is used in the manufacture of export goods, is also excluded.

Thus GDP by expenditure method at market prices = $C + I + G + (X - M)$, where $(X - M)$ is net export which can be positive or negative.

(B) GDP at Factor Cost:

GDP at factor cost is the sum of net value added by all producers within the country. Since the net value added gets distributed as income to the owners of factors of production, GDP is the sum of domestic factor incomes and fixed capital consumption (or depreciation).

Thus GDP at Factor Cost = Net value added + Depreciation.

GDP at factor cost includes:

- (i) Compensation of employees i.e., wages, salaries, etc.

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(ii) Operating surplus which is the business profit of both incorporated and unincorporated firms. [Operating Surplus = Gross Value Added at Factor Cost—Compensation of Employees—Depreciation]

(iii) Mixed Income of Self- employed.

Conceptually, GDP at factor cost and GDP at market price must be identical/This is because the factor cost (payments to factors) of producing goods must equal the final value of goods and services at market prices. However, the market value of goods and services is different from the earnings of the factors of production.

In GDP at market price are included indirect taxes and are excluded subsidies by the government. Therefore, in order to arrive at GDP at factor cost, indirect taxes are subtracted and subsidies are added to GDP at market price.

Thus, $\text{GDP at Factor Cost} = \text{GDP at Market Price} - \text{Indirect Taxes} + \text{Subsidies}$.

(C) Net Domestic Product (NDP):

NDP is the value of net output of the economy during the year. Some of the country's capital equipment wears out or becomes obsolete each year during the production process. The value of this capital consumption is some percentage of gross investment which is deducted from GDP. Thus $\text{Net Domestic Product} = \text{GDP at Factor Cost} - \text{Depreciation}$.

(D) Nominal and Real GDP:

When GDP is measured on the basis of current price, it is called GDP at current prices or nominal GDP. On the other hand, when GDP is calculated on the basis of fixed prices in some year, it is called GDP at constant prices or real GDP.

Nominal GDP is the value of goods and services produced in a year and measured in terms of rupees (money) at current (market) prices. In comparing one year with another, we are faced with the problem that the rupee is not a stable measure of purchasing power. GDP may rise a great deal in a year, not because the economy has been growing rapidly but because of rise in prices (or inflation).

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On the contrary, GDP may increase as a result of fall in prices in a year but actually it may be less as compared to the last year. In both 5 cases, GDP does not show the real state of the economy. To rectify the underestimation and overestimation of GDP, we need a measure that adjusts for rising and falling prices.

This can be done by measuring GDP at constant prices which is called real GDP. To find out the real GDP, a base year is chosen when the general price level is normal, i.e., it is neither too high nor too low. The prices are set to 100 (or 1) in the base year.

The general price level of the year for which real GDP is to be calculated is related to the base year on the basis of the following formula which is called the deflator index:

$$\text{Real GDP} = \frac{\text{GDP for the Current Year}}{\frac{\text{Base Year (=100)}}{\text{Current Year Index}}} \times$$

Suppose 1990-91 is the base year and GDP for 1999-2000 is Rs. 6, 00,000 crores and the price index for this year is 300.

Thus, Real GDP for 1999-2000 = Rs. 6, 00,000 x 100/300 = Rs. 2, 00,000 crores

(E) GDP Deflator:

GDP deflator is an index of price changes of goods and services included in GDP. It is a price index which is calculated by dividing the nominal GDP in a given year by the real GDP for the same year and multiplying it by 100. Thus,

$$\text{GDP Deflator} = \frac{\text{Nominal (or Current Prices) GDP}}{\text{Real (or Constant Prices) GDP}} \times 100$$
$$\text{For example, GDP Deflator in 1997-98} = \frac{1426.7 \text{ th. crores}}{1049.2 \text{ th. crores at}} \times 100 = 135.9$$

It shows that at constant prices (1993-94), GDP in 1997-98 increased by 135.9% due to inflation (or rise in prices) from Rs. 1049.2 thousand crores in 1993-94 to Rs. 1426.7 thousand crores in 1997-98.

(F) Gross National Product (GNP):

GNP is the total measure of the flow of goods and services at market value resulting from current production during a year in a country, including net income from abroad.

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GNP includes four types of final goods and services:

- (1) Consumers' goods and services to satisfy the immediate wants of the people;
- (2) Gross private domestic investment in capital goods consisting of fixed capital formation, residential construction and inventories of finished and unfinished goods;
- (3) Goods and services produced by the government; and
- (4) Net exports of goods and services, i.e., the difference between value of exports and imports of goods and services, known as net income from abroad.

In this concept of GNP, there are certain factors that have to be taken into consideration: First, GNP is the measure of money, in which all kinds of goods and services produced in a country during one year are measured in terms of money at current prices and then added together.

But in this manner, due to an increase or decrease in the prices, the GNP shows a rise or decline, which may not be real. To guard against erring on this account, a particular year (say for instance 1990-91) when prices be normal, is taken as the base year and the GNP is adjusted in accordance with the index number for that year. This will be known as GNP at 1990-91 prices or at constant prices.

Second, in estimating GNP of the economy, the market price of only the final products should be taken into account. Many of the products pass through a number of stages before they are ultimately purchased by consumers.

If those products were counted at every stage, they would be included many a time in the national product. Consequently, the GNP would increase too much. To avoid double counting, therefore, only the final products and not the intermediary goods should be taken into account.

Third, goods and services rendered free of charge are not included in the GNP, because it is not possible to have a correct estimate of their market price. For example, the bringing up of a child by the mother, imparting instructions to his son by a teacher, recitals to his friends by a musician, etc.

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Fourth, the transactions which do not arise from the produce of current year or which do not contribute in any way to production are not included in the GNP. The sale and purchase of old goods, and of shares, bonds and assets of existing companies are not included in GNP because these do not make any addition to the national product, and the goods are simply transferred.

Fifth, the payments received under social security, e.g., unemployment insurance allowance, old age pension, and interest on public loans are also not included in GNP, because the recipients do not provide any service in lieu of them. But the depreciation of machines, plants and other capital goods is not deducted from GNP.

Sixth, the profits earned or losses incurred on account of changes in capital assets as a result of fluctuations in market prices are not included in the GNP if they are not responsible for current production or economic activity.

For example, if the price of a house or a piece of land increases due to inflation, the profit earned by selling it will not be a part of GNP. But if, during the current year, a portion of a house is constructed anew, the increase in the value of the house (after subtracting the cost of the newly constructed portion) will be included in the GNP. Similarly, variations in the value of assets, that can be ascertained beforehand and are insured against flood or fire, are not included in the GNP.

Last, the income earned through illegal activities is not included in the GNP. Although the goods sold in the black market are priced and fulfill the needs of the people, but as they are not useful from the social point of view, the income received from their sale and purchase is always excluded from the GNP.

There are two main reasons for this. One, it is not known whether these things were produced during the current year or the preceding years. Two, many of these goods are foreign made and smuggled and hence not included in the GNP.

Three Approaches to GNP:

After having studied the fundamental constituents of GNP, it is essential to know how it is estimated. Three approaches are employed for this purpose. One, the income method to GNP; two, the expenditure method to GNP and three, the value added method to GNP. Since gross income equals gross expenditure, GNP estimated by all these methods would be the same with appropriate adjustments.

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1. Income Method to GNP:

The income method to GNP consists of the remuneration paid in terms of money to the factors of production annually in a country.

Thus GNP is the sum total of the following items:

(i) Wages and salaries:

Under this head are included all forms of wages and salaries earned through productive activities by workers and entrepreneurs. It includes all sums received or deposited during a year by way of all types of contributions like overtime, commission, provident fund, insurance, etc.

(ii) Rents:

Total rent includes the rents of land, shop, house, factory, etc. and the estimated rents of all such assets as are used by the owners themselves.

(iii) Interest:

Under interest comes the income by way of interest received by the individual of a country from different sources. To this is added, the estimated interest on that private capital which is invested and not borrowed by the businessman in his personal business. But the interest received on governmental loans has to be excluded, because it is a mere transfer of national income.

(iv) Dividends:

Dividends earned by the shareholders from companies are included in the GNP

(v) Undistributed corporate profits:

Profits which are not distributed by companies and are retained by them are included in the GNP.

(vi) Mixed incomes:

These include profits of unincorporated business, self-employed persons and partnerships. They form part of GNP.

(vii) Direct taxes:

Taxes levied on individuals, corporations and other businesses are included in the GNP.

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(viii) Indirect taxes:

The government levies a number of indirect taxes, like excise duties and sales tax.

These taxes are included in the price of commodities. But revenue from these goes to the government treasury and not to the factors of production. Therefore, the income due to such taxes is added to the GNP.

(ix) Depreciation:

Every corporation makes allowance for expenditure on wearing out and depreciation of machines, plants and other capital equipment. Since this sum also is not a part of the income received by the factors of production, it is, therefore, also included in the GNP.

(x) Net income earned from abroad:

This is the difference between the value of exports of goods and services and the value of imports of goods and services. If this difference is positive, it is added to the GNP and if it is negative, it is deducted from the GNP.

Thus GNP according to the Income Method = Wages and Salaries + Rents + Interest + Dividends + Undistributed Corporate Profits + Mixed Income + Direct Taxes + Indirect Taxes + Depreciation + Net Income from abroad.

2. Expenditure Method to GNP:

From the expenditure view point, GNP is the sum total of expenditure incurred on goods and services during one year in a country.

It includes the following items:

(i) Private consumption expenditure:

It includes all types of expenditure on personal consumption by the individuals of a country. It comprises expenses on durable goods like watch, bicycle, radio, etc., expenditure on single-used consumers' goods like milk, bread, ghee, clothes, etc., as also the expenditure incurred on services of all kinds like fees for school, doctor, lawyer and transport. All these are taken as final goods.

(ii) Gross domestic private investment:

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Under this comes the expenditure incurred by private enterprise on new investment and on replacement of old capital. It includes expenditure on house construction, factory- buildings, and all types of machinery, plants and capital equipment.

In particular, the increase or decrease in inventory is added to or subtracted from it. The inventory includes produced but unsold manufactured and semi-manufactured goods during the year and the stocks of raw materials, which have to be accounted for in GNP. It does not take into account the financial exchange of shares and stocks because their sale and purchase is not real investment. But depreciation is added.

(iii) Net foreign investment:

It means the difference between exports and imports or export surplus. Every country exports to or imports from certain foreign countries. The imported goods are not produced within the country and hence cannot be included in national income, but the exported goods are manufactured within the country. Therefore, the difference of value between exports (X) and imports (M), whether positive or negative, is included in the GNP.

(iv) Government expenditure on goods and services:

The expenditure incurred by the government on goods and services is a part of the GNP. Central, state or local governments spend a lot on their employees, police and army. To run the offices, the governments have also to spend on contingencies which include paper, pen, pencil and various types of stationery, cloth, furniture, cars, etc.

It also includes the expenditure on government enterprises. But expenditure on transfer payments is not added, because these payments are not made in exchange for goods and services produced during the current year.

Thus GNP according to the Expenditure Method=Private Consumption Expenditure (C) + Gross Domestic Private Investment (I) + Net Foreign Investment (X-M) + Government Expenditure on Goods and Services (G)
 $= C + I + (X-M) + G$.

As already pointed out above, GNP estimated by either the income or the expenditure method would work out to be the same, if all the items are correctly calculated.

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Another method of measuring GNP is by value added. In calculating GNP, the money value of final goods and services produced at current prices during a year is taken into account. This is one of the ways to avoid double counting. But it is difficult to distinguish properly between a final product and an intermediate product.

For instance, raw materials, semi-finished products, fuels and services, etc. are sold as inputs by one industry to the other. They may be final goods for one industry and intermediate for others. So, to avoid duplication, the value of intermediate products used in manufacturing final products must be subtracted from the value of total output of each industry in the economy.

Thus, the difference between the value of material outputs and inputs at each stage of production is called the value added. If all such differences are added up for all industries in the economy, we arrive at the GNP by value added. $\text{GNP by value added} = \text{Gross value added} + \text{net income from abroad}$. Its calculation is shown in Tables 1, 2 and 3.

Table 1 is constructed on the supposition that the entire economy for purposes of total production consists of three sectors. They are agriculture, manufacturing, and others, consisting of the tertiary sector.

Out of the value of total output of each sector is deducted the value of its intermediate purchases (or primary inputs) to arrive at the value added for the entire economy. Thus the value of total output of the entire economy as per Table 1, is Rs. 155 crores and the value of its primary inputs comes to Rs. 80 crores. Thus the GDP by value added is Rs. 75 crores (Rs. 155 minus Rs. 80 crores).

TABLE 1 : GDP BY VALUE ADDED

(Rs. crores)			
Industry	Total Output	Intermediate Purchases	Value Added
(1)	(2)	(3)	(4) = (2-3)
1. Agriculture	30	10	20
2. Manufacturing	70	45	25
3. Others	55	25	30
Total	155	80	75

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The total value added equals the value of gross domestic product of the economy. Out of this value added, the major portion goes in the form wages and salaries, rent, interest and profits, a small portion goes to the government as indirect taxes and the remaining amount is meant for depreciation. This is shown in Table 3.

Thus we find that the total gross value added of an economy equals the value of its gross domestic product. If depreciation is deducted from the gross value added, we have net value added which comes to Rs. 67 crores (Rs. 75 minus Rs. 8 crores).

This is nothing but net domestic product at market prices. Again, if indirect taxes (Rs. 7 crores) are deducted from the net domestic product of Rs. 67 crores, we get Rs. 60 crores as the net value added at factor cost which is equivalent to net domestic product at factor cost. This is illustrated in Table 2.

TABLE 2
VALUE ADDED AT FACTOR COST
(Rs. Crores)

1. Market Value of output	155
2. Less: cost of intermediate Goods	80
3. Gross value added	75
4. Less: depreciation	8
5. Net value added or domestic product at market prices	67
6. Less: indirect taxes	7
7. Net value added at factor cost	60

Net value added at factor cost is equal to the net domestic product at factor cost, as given by the total of items 1 to 4 of Table 2 (Rs. 45+3+4+8 crores=Rs. 60 crores). By adding indirect taxes (Rs 7 crores) and depreciation (Rs 8 crores), we get gross value added or GDP which comes to Rs 75 crores.

If we add net income received from abroad to the gross value added, this gives -us, gross national income. Suppose net income from abroad is Rs. 5 crores. Then the gross national income is Rs. 80 crores (Rs. 75 crores + Rs. 5 crores) as shown in Table 3.

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TABLE 3 : GROSS DOMESTIC PRODUCT
(Rs Crores)

1.	Wages and salaries	45
2.	Income from rent	3
3.	Net interest	4
4.	Profits of companies	8
	Net Value Added or NDP	60
5.	Indirect taxes	+ 7
6.	Depreciation	+ 8
	Gross Value Added or GDP	75
7.	Net income from abroad	+ 5
	Gross National Income	80

It's Importance:

The value added method for measuring national income is more realistic than the product and income methods because it avoids the problem of double counting by excluding the value of intermediate products. Thus this method establishes the importance of intermediate products in the national economy. Second, by studying the national income accounts relating to value added, the contribution of each production sector to the value of the GNP can be found out.

For instance, it can tell us whether agriculture is contributing more or the share of manufacturing is falling, or of the tertiary sector is increasing in the current year as compared to some previous years. Third, this method is highly useful because “it provides a means of checking the GNP estimates obtained by summing the various types of commodity purchases.”

It's Difficulties:

However, difficulties arise in the calculation of value added in the case of certain public services like police, military, health, education, etc. which cannot be estimated accurately in money terms. Similarly, it is difficult to estimate the contribution made to value added by profits earned on irrigation and power projects.

(G) GNP at Market Prices:

When we multiply the total output produced in one year by their market prices prevalent during that year in a country, we get the Gross National Product at market prices. Thus GNP at market prices means the gross value of final goods and services produced annually in a country plus net income from abroad. It includes the gross

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value of output of all items from (1) to (4) mentioned under GNP. $\text{GNP at Market Prices} = \text{GDP at Market Prices} + \text{Net Income from Abroad}$.

(H) GNP at Factor Cost:

GNP at factor cost is the sum of the money value of the income produced by and accruing to the various factors of production in one year in a country. It includes all items mentioned above under income method to GNP less indirect taxes.

GNP at market prices always includes indirect taxes levied by the government on goods which raise their prices. But GNP at factor cost is the income which the factors of production receive in return for their services alone. It is the cost of production.

Thus GNP at market prices is always higher than GNP at factor cost. Therefore, in order to arrive at GNP at factor cost, we deduct indirect taxes from GNP at market prices. Again, it often happens that the cost of production of a commodity to the producer is higher than a price of a similar commodity in the market.

In order to protect such producers, the government helps them by granting monetary help in the form of a subsidy equal to the difference between the market price and the cost of production of the commodity. As a result, the price of the commodity to the producer is reduced and equals the market price of similar commodity.

For example if the market price of rice is Rs. 3 per kg but it costs the producers in certain areas Rs. 3.50. The government gives a subsidy of 50 paise per kg to them in order to meet their cost of production. Thus in order to arrive at GNP at factor cost, subsidies are added to GNP at market prices.

$\text{GNP at Factor Cost} = \text{GNP at Market Prices} - \text{Indirect Taxes} + \text{Subsidies}$.

(I) Net National Product (NNP):

NNP includes the value of total output of consumption goods and investment goods. But the process of production uses up a certain amount of fixed capital. Some fixed equipment wears out, its other components are damaged or destroyed, and still others are rendered obsolete through technological changes.

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All this process is termed depreciation or capital consumption allowance. In order to arrive at NNP, we deduct depreciation from GNP. The word 'net' refers to the exclusion of that part of total output which represents depreciation. So $NNP = GNP - \text{Depreciation}$.

(J) NNP at Market Prices:

Net National Product at market prices is the net value of final goods and services evaluated at market prices in the course of one year in a country. If we deduct depreciation from GNP at market prices, we get NNP at market prices. So $NNP \text{ at Market Prices} = GNP \text{ at Market Prices} - \text{Depreciation}$.

(K) NNP at Factor Cost:

Net National Product at factor cost is the net output evaluated at factor prices. It includes income earned by factors of production through participation in the production process such as wages and salaries, rents, profits, etc. It is also called National Income. This measure differs from NNP at market prices in that indirect taxes are deducted and subsidies are added to NNP at market prices in order to arrive at NNP at factor cost. Thus

$NNP \text{ at Factor Cost} = NNP \text{ at Market Prices} - \text{Indirect taxes} + \text{Subsidies}$

$= GNP \text{ at Market Prices} - \text{Depreciation} - \text{Indirect taxes} + \text{Subsidies}$.

$= \text{National Income}$.

Normally, NNP at market prices is higher than NNP at factor cost because indirect taxes exceed government subsidies. However, NNP at market prices can be less than NNP at factor cost when government subsidies exceed indirect taxes.

(L) Domestic Income:

Income generated (or earned) by factors of production within the country from its own resources is called domestic income or domestic product.

Domestic income includes: (i) Wages and salaries, (ii) rents, including imputed house rents, (iii) interest, (iv) dividends, (v) undistributed corporate profits, including surpluses of public undertakings, (vi) mixed incomes consisting of profits of unincorporated firms, self-employed persons, partnerships, etc., and (vii) direct taxes.

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Since domestic income does not include income earned from abroad, it can also be shown as: Domestic Income = National Income - Net income earned from abroad. Thus the difference between domestic income and national income is the net income earned from abroad. If we add net income from abroad to domestic income, we get national income, i.e., National Income = Domestic Income + Net income earned from abroad.

But the net national income earned from abroad may be positive or negative. If exports exceed imports, net income earned from abroad is positive. In this case, national income is greater than domestic income. On the other hand, when imports exceed exports, net income earned from abroad is negative and domestic income is greater than national income.

(M) Private Income:

Private income is income obtained by private individuals from any source, productive or otherwise, and the retained income of corporations. It can be arrived at from NNP at Factor Cost by making certain additions and deductions.

The additions include transfer payments such as pensions, unemployment allowances, sickness and other social security benefits, gifts and remittances from abroad, windfall gains from lotteries or from horse racing, and interest on public debt. The deductions include income from government departments as well as surpluses from public undertakings, and employees' contribution to social security schemes like provident funds, life insurance, etc.

Thus Private Income = National Income (or NNP at Factor Cost) + Transfer Payments + Interest on Public Debt — Social Security — Profits and Surpluses of Public Undertakings.

(N) Personal Income:

Personal income is the total income received by the individuals of a country from all sources before payment of direct taxes in one year. Personal income is never equal to the national income, because the former includes the transfer payments whereas they are not included in national income.

Personal income is derived from national income by deducting undistributed corporate profits, profit taxes, and employees' contributions to social security schemes. These three components are excluded from national income because they do not reach individuals.

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But business and government transfer payments, and transfer payments from abroad in the form of gifts and remittances, windfall gains, and interest on public debt which are a source of income for individuals are added to national income. Thus $\text{Personal Income} = \text{National Income} - \text{Undistributed Corporate Profits} - \text{Profit Taxes} - \text{Social Security Contribution} + \text{Transfer Payments} + \text{Interest on Public Debt}$.

Personal income differs from private income in that it is less than the latter because it excludes undistributed corporate profits.

Thus $\text{Personal Income} = \text{Private Income} - \text{Undistributed Corporate Profits} - \text{Profit Taxes}$.

(O) Disposable Income:

Disposable income or personal disposable income means the actual income which can be spent on consumption by individuals and families. The whole of the personal income cannot be spent on consumption, because it is the income that accrues before direct taxes have actually been paid. Therefore, in order to obtain disposable income, direct taxes are deducted from personal income. Thus $\text{Disposable Income} = \text{Personal Income} - \text{Direct Taxes}$.

But the whole of disposable income is not spent on consumption and a part of it is saved. Therefore, disposable income is divided into consumption expenditure and savings. Thus $\text{Disposable Income} = \text{Consumption Expenditure} + \text{Savings}$.

If disposable income is to be deduced from national income, we deduct indirect taxes plus subsidies, direct taxes on personal and on business, social security payments, undistributed corporate profits or business savings from it and add transfer payments and net income from abroad to it.

Thus $\text{Disposable Income} = \text{National Income} - \text{Business Savings} - \text{Indirect Taxes} + \text{Subsidies} - \text{Direct Taxes on Persons} - \text{Direct Taxes on Business} - \text{Social Security Payments} + \text{Transfer Payments} + \text{Net Income from abroad}$.

(P) Real Income: Real income is national income expressed in terms of a general level of prices of a particular year taken as base. National income is the value of goods and services produced as expressed in terms of money at current prices. But it does not indicate the real state of the economy.

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It is possible that the net national product of goods and services this year might have been less than that of the last year, but owing to an increase in prices, NNP might be higher this year. On the contrary, it is also possible that NNP might have increased but the price level might have fallen, as a result national income would appear to be less than that of the last year. In both the situations, the national income does not depict the real state of the country. To rectify such a mistake, the concept of real income has been evolved.

In order to find out the real income of a country, a particular year is taken as the base year when the general price level is neither too high nor too low and the price level for that year is assumed to be 100. Now the general level of prices of the given year for which the national income (real) is to be determined is assessed in accordance with the prices of the base year. For this purpose the following formula is employed.

Real NNP = NNP for the Current Year x Base Year Index (=100) / Current Year Index

Suppose 1990-91 is the base year and the national income for 1999-2000 is Rs. 20,000 crores and the index number for this year is 250. Hence, Real National Income for 1999-2000 will be = $20000 \times 100/250$ = Rs. 8000 crores. This is also known as national income at constant prices.

(Q) Per Capita Income:

The average income of the people of a country in a particular year is called Per Capita Income for that year. This concept also refers to the measurement of income at current prices and at constant prices. For instance, in order to find out the per capita income for 2001, at current prices, the national income of a country is divided by the population of the country in that year.

$$\text{Per Capita Income for 2001} = \frac{\text{National income for 2001}}{\text{Population in 2001}}$$

Similarly, for the purpose of arriving at the Real Per Capita Income, this very formula is used.

$$\text{Real Per Capita Income for 2001} = \frac{\text{Real national income for 2001}}{\text{Population in 2001}}$$

This concept enables us to know the average income and the standard of living of the people. But it is not very reliable, because in every country due to unequal distribution of national income, a major portion of it goes to

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the richer sections of the society and thus income received by the common man is lower than the per capita income.

Methods of Measuring National Income:

There are four methods of measuring national income. Which method is to be used depends on the availability of data in a country and the purpose in hand.

(1) Product Method:

According to this method, the total value of final goods and services produced in a country during a year is calculated at market prices. To find out the GNP, the data of all productive activities, such as agricultural products, wood received from forests, minerals received from mines, commodities produced by industries, the contributions to production made by transport, communications, insurance companies, lawyers, doctors, teachers, etc. are collected and assessed at market prices. Only the final goods and services are included and the intermediary goods and services are left out.

(2) Income Method:

According to this method, the net income payments received by all citizens of a country in a particular year are added up, i.e., net incomes that accrue to all factors of production by way of net rents, net wages, net interest and net profits are all added together but incomes received in the form of transfer payments are not included in it. The data pertaining to income are obtained from different sources, for instance, from income tax department in respect of high income groups and in case of workers from their wage bills.

(3) Expenditure Method:

According to this method, the total expenditure incurred by the society in a particular year is added together and includes personal consumption expenditure, net domestic investment, government expenditure on goods and services, and net foreign investment. This concept is based on the assumption that national income equals national expenditure.

(4) Value Added Method: Another method of measuring national income is the value added by industries. The difference between the value of material outputs and inputs at each stage of production is the value added. If all such differences are added up for all industries in the economy, we arrive at the gross domestic product.

DIFFICULTIES IN THE MEASUREMENT OF NATIONAL INCOME

To calculate the national income of a country is a complicated problem and is beset with the following difficulties:

First there is a difficulty of defining 'nation' in national income.

National income is always measured in money, but there are a number of goods and services which are difficult to be assessed in terms of money.

The greatest difficulty in calculating the national income is of double counting, which arises from the failure to distinguish properly between a final and an intermediate product.

Income earned through illegal activities such as gambling, or illicit extraction of wine, etc. is not included in national income.

Then there arises the difficulty of including transfer payments on the national income.

Capital gains or *losses* which accrue to property owners by increases or decreases in the market value of their capital assets or changes in demand are excluded from the GNP because such changes do not result from current economic activities.

All *inventory changes* whether negative or positive are included in the GNP. The procedure is to take positive or negative changes in physical units of inventories and multiply them by current prices.

When we deduct capital *depreciation* from GNP, the resulting measure is NNP. Depreciation is a charge on profits which lowers national income. But the problem of estimating the current depreciated value of a piece of capital whose expected life is fifty years is very difficult.

Another difficulty in calculating national income is that of price-changes which fail to keep stable the measuring rod of money for national income.

Moreover, the calculation of national income in terms of money is under-estimation of real national income. It does not include the leisure foregone in the process of production of a commodity.

In calculating national income, a good number of public services are also taken which cannot be estimated correctly.

Problems of Measurement in a Developing Economy

Non-monetised Sector

Lack of Occupational Specialisation

Non-market Transactions

Illiteracy

Non-availability of data

Inflation

Inflation is a situation in which the general price level rises or it is the same thing as saying that the value of money falls.

According to Coulbrun, “too much money chasing to few goods”. Crowther defines, “inflation is a state in which the value of money is falling”.

The types of inflation based on coverage or scope:

1. Comprehensive Inflation: When the prices of all commodities rise in the entire economy, it is known as Comprehensive Inflation. Economy-Wide Inflation is its another name.

2. Sporadic Inflation: Time when prices of only a few commodities in some regions (areas) rise, it is called Sporadic Inflation. It is sectional in nature. For example, increase in food prices due to bad monsoon (winds that bring seasonal rains in India).

The types of inflation based on the time or period of occurrence

War-Time Inflation: Inflation that takes place during the period of a warlike situation is Wartime Inflation. During war, scant productive resources are all diverted and prioritized to manufacture military goods and equipments. Overall it results in very limited supply and extreme shortage (low availability) of resources (raw materials) to produce essential commodities. Production and supply of needed goods slow down and can no longer meet the soaring demand from people. Consequently, prices of necessary goods keep on rising in the market, resulting in Wartime Inflation.

Post-War Inflation: Inflation that takes place soon after a war is a Post-War Inflation. After the war, government controls are relaxed, resulting in a faster hike in prices than what experienced during the war.

Peace-Time Inflation: When prices rise during the peace period, it is known as Peacetime Inflation. It is due to enormous government expenditure or spending on capital projects of a long gestation (development) time.

The types of inflation based on the government's reaction or its degree of control:

Open Inflation: When government does not attempt to restrict inflation, it is known as an Open Inflation. In a free-market economy, where prices are allowed to take its course, Open Inflation occurs.

Suppressed Inflation: When government prevents the price rise through price controls, rationing, etc., it is known as Suppressed Inflation. Repressed Inflation is its another name. However, when government removes its controls, it becomes Open Inflation. It then leads to corruption, black marketing, artificial scarcity, etc

The types of inflation based on the rising prices:

Creeping Inflation: When prices are gently rising, it is referred as Creeping Inflation. It is the mildest form of inflation and also known as a Mild Inflation or Low Inflation. According to R.P. Kent, when prices rise by not more than (i.e. Up to) 3% per annum (year), it is called Creeping Inflation.

Chronic Inflation: If creeping inflation persists (continues to increase) for a longer period, then it is often called as Chronic or Secular Inflation. Chronic-Creeping Inflation can be either Continuous (which remains consistent without any downward movement) or Intermittent (which occurs at regular intervals). It is named

chronic because if an inflation rate continues to grow for a longer period without any downturn, then it possibly leads to Hyperinflation.

Walking Inflation: When the rate of rising prices is more than the Creeping Inflation, it is known as Walking Inflation. Trotting Inflation is its another name. When prices rise by more than 3%, but less than 10% per annum (i.e., between 3%, and 10% per annum), it is called as Walking Inflation. According to some economists, we must take Walking Inflation seriously as it gives a cautionary signal for the occurrence of running inflation. Furthermore, if, not checked in due time, it can eventually result in Galloping Inflation.

Moderate Inflation: Prof. Samuelson clubbed together concept of Creeping and Walking inflation into Moderate Inflation. It happens when prices rise by less than 10% per annum (single digit inflation rate). According to him, it is a stable inflation and not a serious economic problem.

Running Inflation: A rapid acceleration in the rate of rising prices is called running Inflation. It occurs when prices rise by more than 10% in a year. Though economists have not suggested a fixed range for measuring running inflation, we may consider a price increase between 10% to 20% per annum (double-digit inflation rate) as a running Inflation.

Galloping Inflation: According to Prof. Samuelson, if prices rise by dual or triple digit inflation rates like 30% or 400% or 999% yearly, then the situation can be termed as Galloping Inflation. When prices rise by more than 20%, but less than 1000% per annum (i.e. Between 20% to 1000% per annum), Galloping Inflation occurs. Jumping Inflation is it's another name. India has been witnessing it from second five-year plan period.

Hyperinflation refers to a situation where the prices rise at an alarming high rate. The prices rise so fast that it becomes very difficult to measure its magnitude. However, in quantitative terms, when prices rise above 1000% per annum (quadruple or four-digit inflation rate), it is termed as Hyperinflation. During a worst-case scenario of hyperinflation, the value of the national currency (money) of an affected country reduces almost to zero. Paper money becomes worthless, and people start trading either in gold and silver or sometimes even use the old barter system of commerce. Two worst examples of hyperinflation recorded in the world history are of those experienced by Hungary in the year 1946 and Zimbabwe during 2004-2009 under Robert Mugabe's regime.

The types of inflation based on different or miscellaneous causes:

- **Deficit Inflation** takes place due to deficit financing.
- **Credit Inflation occurs** due to excessive bank credit or the money supply in the economy.
- **Scarcity Inflation** occurs due to hoarding.
- **Profit Inflation:** When entrepreneurs are interested in boosting their profit margins, prices rise.
- **Pricing Power Inflation:** Usually, it is referred as Administered Price Inflation. It occurs when industries and business houses increase the price of their goods and services with an objective to boost their profit margins. It does not occur during a financial crisis and economic depression, and not seen when there is a downturn in the economy. As Oligopolies have an ability to set prices of their goods and services, it is also called as an Oligopolistic Inflation.
- **Tax Inflation:** Due to the rising indirect taxes, sellers charge high price to the consumers.
- **Wage Inflation:** If the rise in wages is not accompanied by an increase in output, prices rise.
- **Build-In Inflation:** Vicious cycle of Build-In Inflation gets induced by adaptive expectations of workers or employees who try to keep their wages or salaries high in anticipation of inflation. Employers and Organizations raise the prices of their respective goods and services in anticipation of the workers or employees' demands. This overall forms a vicious cycle of rising wages followed by an increase in general prices of commodities. If this cycle continues, then it keeps on accumulating inflation at each round turn and thereby results in a Build-In Inflation.
- **Development Inflation:** During the process of the development of an economy, income increases, causing an increase in demand and rise in prices.
- **Fiscal Inflation:** It occurs due to excess government expenditure or spending when there is a budget deficit.
- **Population Inflation:** Prices rise due to a rapid increase in population.
- **Foreign Trade Induced Inflation: It has two categories, viz.,**
- **Export-Boom Inflation, and Import Price-Hike Inflation.**
- **Export-Boom Inflation:** Considerable increase in exports may cause a shortage at home (within exporting country) and results in price rise (within exporting country).

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- **Import Price-Hike Inflation:** If a country imports goods from a foreign country and the prices of these goods increases due to inflation abroad, then the prices of domestic products using imported goods also rise.
- **Sectoral Inflation:** It occurs when there is a rise in the prices of goods and services produced by certain sectors of the industries. For instance, if prices of the crude oil increase, then it will also affect all other sectors or areas (like aviation, road transportation, etc.) which are directly dependent on the oil industry. For example, if oil prices hike, air ticket fares and road transportation cost will increase.

Demand-Pull Inflation: Inflation, which arises due to various factors like rising income, exploding population, etc., leads to aggregate demand and exceeds aggregated supply, and tends to raise prices of goods and services. Excess Demand Inflation is its another name.

Cost-Push Inflation: When prices rise due to the growing cost of production of goods and services, it is known as Cost-Push (Supply-side) Inflation. For example, if the wages of workers get raised, then the unit cost of production also increases. As a result, the prices of end products and services being manufactured and supplied are consequently, hiked.

The types of inflation based on the expectation or predictability

Anticipated Inflation: If the rate of inflation corresponds to what the majority of people are either expecting or predicting, then is called Anticipated Inflation. Expected Inflation is its another name.

Unanticipated Inflation: If the rate of inflation corresponds to what the majority of people are neither anticipating nor predicting, then is called Unanticipated Inflation. Unexpected Inflation is it's another name.

Inflation is mainly caused by excess demand/ or decline in aggregate supply or output. Former leads to a rightward shift of the aggregate demand curve while the latter causes aggregate supply curve to shift leftward. Former is called demand-pull inflation (DPI), and the latter is called cost-push inflation (CPI). Before describing the factors, that lead to a rise in aggregate demand and a decline in aggregate supply, we like to explain “demand-pull” and “cost-push” theories of inflation.

(i) Demand-Pull Inflation Theory:

There are two theoretical approaches to the DPI—one is classical and other is the Keynesian.

According to classical economists or monetarists, inflation is caused by an increase in money supply which leads to a rightward shift in negative sloping aggregate demand curve. Given a situation of full employment, classicists maintained that a change in money supply brings about an equiproportionate change in price level.

That is why monetarists argue that inflation is always and everywhere a monetary phenomenon. Keynesians do not find any link between money supply and price level causing an upward shift in aggregate demand.

According to Keynesians, aggregate demand may rise due to a rise in consumer demand or investment demand or government expenditure or net exports or the combination of these four components of aggregate demand. Given full employment, such increase in aggregate demand leads to an upward pressure in prices. Such a situation is called DPI. This can be explained graphically.

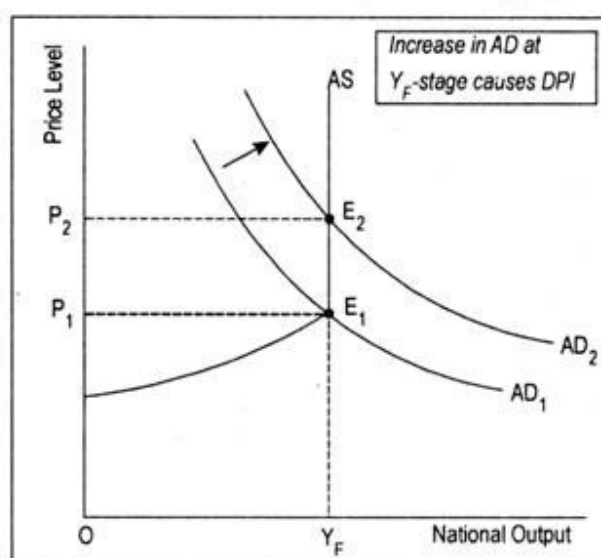


Fig. 4.3: DPI: Shifts in AD Curve

Just like the price of a commodity, the level of prices is determined by the interaction of aggregate demand and aggregate supply. In Fig. 4.3, aggregate demand curve is negative sloping while aggregate supply curve before the full employment stage is positive sloping and becomes vertical after the full employment stage is reached. AD_1 is the initial aggregate demand curve that intersects the aggregate supply curve AS at point E_1 .

The price level, thus, determined is OP_1 . As aggregate demand curve shifts to AD_2 , price level rises to OP_2 . Thus, an increase in aggregate demand at the full employment stage leads to an increase in price level only, rather than the level of output. However, how much price level will rise following an increase in aggregate demand depends on the slope of the AS curve.

(ii) Causes of Demand-Pull Inflation:

DPI originates in the monetary sector. Monetarists' argument that "only money matters" is based on the assumption that at or near full employment excessive money supply will increase aggregate demand and will, thus, cause inflation.

An increase in nominal money supply shifts aggregate demand curve rightward. This enables people to hold excess cash balances. Spending of excess cash balances by them causes price level to rise. Price level will continue to rise until aggregate demand equals aggregate supply.

Keynesians argue that inflation originates in the non-monetary sector or the real sector. Aggregate demand may rise if there is an increase in consumption expenditure following a tax cut. There may be an autonomous increase in business investment or government expenditure. Government expenditure is inflationary if the needed money is procured by the government by printing additional money.

In brief, increase in aggregate demand i.e., increase in $(C + I + G + X - M)$ causes price level to rise. However, aggregate demand may rise following an increase in money supply generated by the printing of additional money (classical argument) which drives prices upward. Thus, money plays a vital role. That is why Milton Friedman argues that inflation is always and everywhere a monetary phenomenon.

There are other reasons that may push aggregate demand and, hence, price level upwards. For instance, growth of population stimulates aggregate demand. Higher export earnings increase the purchasing power of the exporting countries. Additional purchasing power means additional aggregate demand. Purchasing power and, hence, aggregate demand may also go up if government repays public debt.

Again, there is a tendency on the part of the holders of black money to spend more on conspicuous consumption goods. Such tendency fuels inflationary fire. Thus, DPI is caused by a variety of factors.

(iii) Cost-Push Inflation Theory:

In addition to aggregate demand, aggregate supply also generates inflationary process. As inflation is caused by a leftward shift of the aggregate supply, we call it CPI. CPI is usually associated with non-monetary factors. CPI arises due to the increase in cost of production. Cost of production may rise due to a rise in cost of raw materials or increase in wages.

However, wage increase may lead to an increase in productivity of workers. If this happens, then the AS curve will shift to the right-ward not leftward—direction. We assume here that productivity does not change in spite of an increase in wages.

Such increases in costs are passed on to consumers by firms by raising the prices of the products. Rising wages lead to rising costs. Rising costs lead to rising prices. And, rising prices again prompt trade unions to demand higher wages. Thus, an inflationary wage-price spiral starts. This causes aggregate supply curve to shift leftward.

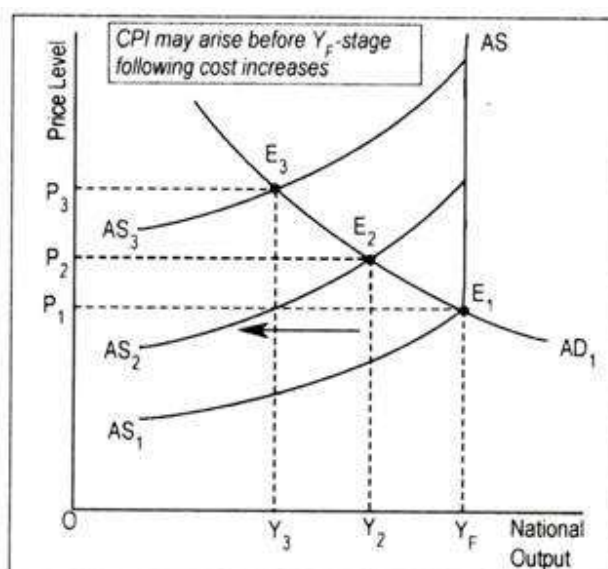


Fig. 4.4: CPI: Shifts in AS Curve

This can be demonstrated graphically where AS₁ is the initial aggregate supply curve. Below the full employment stage this AS curve is positive sloping and at full employment stage it becomes perfectly inelastic.

Intersection point (E₁) of AD₁ and AS₁ curves determine the price level (OP₁). Now there is a leftward shift of aggregate supply curve to AS₂. With no change in aggregate demand, this causes price level to rise to OP₂ and output to fall to OY₂. With the reduction in output, employment in the economy declines or unemployment rises. Further shift in AS curve to AS₃ results in a higher price level (OP₃) and a lower volume of aggregate output (OY₃). Thus, CPI may arise even below the full employment (Y_F) stage.

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(iv) Causes of Cost-Push Inflation:

It is the cost factors that pull the prices upward. One of the important causes of price rise is the rise in price of raw materials. For instance, by an administrative order the government may hike the price of petrol or diesel or freight rate. Firms buy these inputs now at a higher price. This leads to an upward pressure on cost of production.

Not only this, CPI is often imported from outside the economy. Increase in the price of petrol by OPEC compels the government to increase the price of petrol and diesel. These two important raw materials are needed by every sector, especially the transport sector. As a result, transport costs go up resulting in higher general price level.

Again, CPI may be induced by wage-push inflation or profit-push inflation. Trade unions demand higher money wages as a compensation against inflationary price rise. If increase in money wages exceed labour productivity, aggregate supply will shift upward and leftward. Firms often exercise power by pushing prices up independently of consumer demand to expand their profit margins.

Fiscal policy changes, such as increase in tax rates also leads to an upward pressure in cost of production. For instance, an overall increase in excise tax of mass consumption goods is definitely inflationary. That is why government is then accused of causing inflation.

Finally, production setbacks may result in decreases in output. Natural disaster, gradual exhaustion of natural resources, work stoppages, electric power cuts, etc., may cause aggregate output to decline. In the midst of this output reduction, artificial scarcity of any goods created by traders and hoarders just simply ignite the situation.

Inefficiency, corruption, mismanagement of the economy may also be the other reasons. Thus, inflation is caused by the interplay of various factors. A particular factor cannot be held responsible for any inflationary price rise.

4. Effects of Inflation:

People's desires are inconsistent. When they act as buyers they want prices of goods and services to remain stable but as sellers they expect the prices of goods and services should go up. Such a happy outcome may arise for some individuals; "but, when this happens, others will be getting the worst of both worlds."

When price level goes up, there is both a gainer and a loser. To evaluate the consequence of inflation, one must identify the nature of inflation which may be anticipated and unanticipated. If inflation is anticipated, people can adjust with the new situation and costs of inflation to the society will be smaller.

In reality, people cannot predict accurately future events or people often make mistakes in predicting the course of inflation. In other words, inflation may be unanticipated when people fail to adjust completely. This creates various problems.

One can study the effects of unanticipated inflation under two broad headings:

(a) Effect on distribution of income and wealth; and

(b) Effect on economic growth.

(a) Effects of Inflation on Distribution of Income and Wealth:

During inflation, usually people experience rise in incomes. But some people gain during inflation at the expense of others. Some individuals gain because their money incomes rise more rapidly than the prices and some lose because prices rise more rapidly than their incomes during inflation. Thus, it redistributes income and wealth.

Though no conclusive evidence can be cited, it can be asserted that following categories of people are affected by inflation differently:

(i) Creditors and debtors:

Borrowers gain and lenders lose during inflation because debts are fixed in rupee terms. When debts are repaid their real value declines by the price level increase and, hence, creditors lose. An individual may be interested in buying a house by taking loan of Rs. 7 lakh from an institution for 7 years.

The borrower now welcomes inflation since he will have to pay less in real terms than when it was borrowed. Lender, in the process, loses since the rate of interest payable remains unaltered as per agreement. Because of inflation, the borrower is given 'dear' rupees, but pays back 'cheap' rupees. However, if in an inflation-ridden economy creditors chronically loose, it is wise not to advance loans or to shut down business.

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Never does it happen. Rather, the loan-giving institution makes adequate safeguard against the erosion of real value. Above all, banks do not pay any interest on current account but charges interest on loans.

(ii) Bond and debenture-holders:

In an economy, there are some people who live on interest income—they suffer most. Bondholders earn fixed interest income: These people suffer a reduction in real income when prices rise. In other words, the value of one's savings decline if the interest rate falls short of inflation rate. Similarly, beneficiaries from life insurance programmes are also hit badly by inflation since real value of savings deteriorate.

(iii) Investors:

People who put their money in shares during inflation are expected to gain since the possibility of earning of business profit brightens. Higher profit induces owners of firm to distribute profit among investors or shareholders.

(iv) Salaried people and wage-earners:

Anyone earning a fixed income is damaged by inflation. Sometimes, unionised worker succeeds in raising wage rates of white-collar workers as a compensation against price rise. But wage rate changes with a long time lag. In other words, wage rate increases always lag behind price increases. Naturally, inflation results in a reduction in real purchasing power of fixed income-earners.

On the other hand, people earning flexible incomes may gain during inflation. The nominal incomes of such people outstrip the general price rise. As a result, real incomes of this income group increase.

(v) Profit-earners, speculators and black marketers:

It is argued that profit-earners gain from inflation. Profit tends to rise during inflation. Seeing inflation, businessmen raise the prices of their products. This results in a bigger profit. Profit margin, however, may not be high when the rate of inflation climbs to a high level.

However, speculators dealing in business in essential commodities usually stand to gain by inflation. Black marketers are also benefited by inflation.

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Thus, there occurs a redistribution of income and wealth. It is said that rich becomes richer and poor becomes poorer during inflation. However, no such hard and fast generalisation can be made. It is clear that someone wins and someone loses during inflation.

These effects of inflation may persist if inflation is unanticipated. However, the redistributive burdens of inflation on income and wealth are most likely to be minimal if inflation is anticipated by the people. With anticipated inflation, people can build up their strategies to cope with inflation.

If the annual rate of inflation in an economy is anticipated correctly people will try to protect them against losses resulting from inflation. Workers will demand 10 p.c. wage increase if inflation is expected to rise by 10 p.c.

Similarly, a percentage of inflation premium will be demanded by creditors from debtors. Business firms will also fix prices of their products in accordance with the anticipated price rise. Now if the entire society “learn to live with inflation”, the redistributive effect of inflation will be minimal.

However, it is difficult to anticipate properly every episode of inflation. Further, even if it is anticipated it cannot be perfect. In addition, adjustment with the new expected inflationary conditions may not be possible for all categories of people. Thus, adverse redistributive effects are likely to occur.

Finally, anticipated inflation may also be costly to the society. If people’s expectation regarding future price rise become stronger they will hold less liquid money. Mere holding of cash balances during inflation is unwise since its real value declines. That is why people use their money balances in buying real estate, gold, jewellery, etc. Such investment is referred to as unproductive investment. Thus, during inflation of anticipated variety, there occurs a diversion of resources from priority to non-priority or unproductive sectors.

(b) Effect on Production and Economic Growth:

Inflation may or may not result in higher output. Below the full employment stage, inflation has a favourable effect on production. In general, profit is a rising function of the price level. An inflationary situation gives an incentive to businessmen to raise prices of their products so as to earn higher volume of profit. Rising price and rising profit encourage firms to make larger investments.

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As a result, the multiplier effect of investment will come into operation resulting in a higher national output. However, such a favourable effect of inflation will be temporary if wages and production costs rise very rapidly.

Further, inflationary situation may be associated with the fall in output, particularly if inflation is of the cost-push variety. Thus, there is no strict relationship between prices and output. An increase in aggregate demand will increase both prices and output, but a supply shock will raise prices and lower output.

Inflation may also lower down further production levels. It is commonly assumed that if inflationary tendencies nurtured by experienced inflation persist in future, people will now save less and consume more. Rising saving propensities will result in lower further outputs.

One may also argue that inflation creates an air of uncertainty in the minds of business community, particularly when the rate of inflation fluctuates. In the midst of rising inflationary trend, firms cannot accurately estimate their costs and revenues. That is, in a situation of unanticipated inflation, a great deal of risk element exists.

It is because of uncertainty of expected inflation, investors become reluctant to invest in their business and to make long-term commitments. Under the circumstance, business firms may be deterred in investing. This will adversely affect the growth performance of the economy.

However, slight dose of inflation is necessary for economic growth. Mild inflation has an encouraging effect on national output. But it is difficult to make the price rise of a creeping variety. High rate of inflation acts as a disincentive to long run economic growth. The way the hyperinflation affects economic growth is summed up here. We know that hyper-inflation discourages savings.

A fall in savings means a lower rate of capital formation. A low rate of capital formation hinders economic growth. Further, during excessive price rise, there occurs an increase in unproductive investment in real estate, gold, jewellery, etc. Above all, speculative businesses flourish during inflation resulting in artificial scarcities and, hence, further rise in prices.

Again, following hyperinflation, export earnings decline resulting in a wide imbalances in the balance of payment account. Often galloping inflation results in a 'flight' of capital to foreign countries since people lose

confidence and faith over the monetary arrangements of the country, thereby resulting in a scarcity of resources. Finally, real value of tax revenue also declines under the impact of hyperinflation. Government then experiences a shortfall in investible resources.

Thus economists and policymakers are unanimous regarding the dangers of high price rise. But the consequences of hyperinflation are disastrous. In the past, some of the world economies (e.g., Germany after the First World War (1914-1918), Latin American countries in the 1980s) had been greatly ravaged by hyperinflation.

Control of Inflation

The various methods are usually grouped under three heads: monetary measures, fiscal measures and other measures.

1. Monetary Measures:

Monetary measures aim at reducing money incomes.

(a) Credit Control:

One of the important monetary measures is monetary policy. The central bank of the country adopts a number of methods to control the quantity and quality of credit. For this purpose, it raises the bank rates, sells securities in the open market, raises the reserve ratio, and adopts a number of selective credit control measures, such as raising margin requirements and regulating consumer credit. Monetary policy may not be effective in controlling inflation, if inflation is due to cost-push factors. Monetary policy can only be helpful in controlling inflation due to demand-pull factors.

(b) Demonetisation of Currency:

However, one of the monetary measures is to demonetise currency of higher denominations. Such a measure is usually adopted when there is abundance of black money in the country.

(c) Issue of New Currency:

The most extreme monetary measure is the issue of new currency in place of the old currency. Under this system, one new note is exchanged for a number of notes of the old currency. The value of bank deposits is also fixed accordingly. Such a measure is adopted when there is an excessive issue of notes and there is hyperinflation in the country. It is a very effective measure. But is inequitable for it hurts the small depositors the most.

2. Fiscal Measures:

Monetary policy alone is incapable of controlling inflation. It should, therefore, be supplemented by fiscal measures. Fiscal measures are highly effective for controlling government expenditure, personal consumption expenditure, and private and public investment.

The principal fiscal measures are the following:

(a) Reduction in Unnecessary Expenditure:

The government should reduce unnecessary expenditure on non-development activities in order to curb inflation. This will also put a check on private expenditure which is dependent upon government demand for goods and services. But it is not easy to cut government expenditure. Though this measure is always welcome but it becomes difficult to distinguish between essential and non-essential expenditure. Therefore, this measure should be supplemented by taxation.

(b) Increase in Taxes:

To cut personal consumption expenditure, the rates of personal, corporate and commodity taxes should be raised and even new taxes should be levied, but the rates of taxes should not be so high as to discourage saving, investment and production. Rather, the tax system should provide larger incentives to those who save, invest and produce more.

Further, to bring more revenue into the tax-net, the government should penalise the tax evaders by imposing heavy fines. Such measures are bound to be effective in controlling inflation. To increase the supply of goods within the country, the government should reduce import duties and increase export duties.

(c) Increase in Savings:

Another measure is to increase savings on the part of the people. This will tend to reduce disposable income with the people, and hence personal consumption expenditure. But due to the rising cost of living, people are not in a position to save much voluntarily.

Keynes, therefore, advocated compulsory savings or what he called 'deferred payment' where the saver gets his money back after some years. For this purpose, the government should float public loans carrying high rates of

interest, start saving schemes with prize money, or lottery for long periods, etc. It should also introduce compulsory provident fund, provident fund-cum-pension schemes, etc. All such measures increase savings and are likely to be effective in controlling inflation.

(d) Surplus Budgets:

An important measure is to adopt anti-inflationary budgetary policy. For this purpose, the government should give up deficit financing and instead have surplus budgets. It means collecting more in revenues and spending less.

(e) Public Debt:

At the same time, it should stop repayment of public debt and postpone it to some future date till inflationary pressures are controlled within the economy. Instead, the government should borrow more to reduce money supply with the public.

Like monetary measures, fiscal measures alone cannot help in controlling inflation. They should be supplemented by monetary, non-monetary and non-fiscal measures.

3. Other Measures:

The other types of measures are those which aim at increasing aggregate supply and reducing aggregate demand directly.

(a) To Increase Production:

The following measures should be adopted to increase production:

- (i) One of the foremost measures to control inflation is to increase the production of essential consumer goods like food, clothing, kerosene oil, sugar, vegetable oils, etc.
- (ii) If there is need, raw materials for such products may be imported on preferential basis to increase the production of essential commodities,
- (iii) Efforts should also be made to increase productivity. For this purpose, industrial peace should be maintained through agreements with trade unions, binding them not to resort to strikes for some time,
- (iv) The policy of rationalisation of industries should be adopted as a long-term measure. Rationalisation increases productivity and production of industries through the use of brain, brawn and bullion,

(v) All possible help in the form of latest technology, raw materials, financial help, subsidies, etc. should be provided to different consumer goods sectors to increase production.

(b) Rational Wage Policy:

Another important measure is to adopt a rational wage and income policy. Under hyperinflation, there is a wage-price spiral. To control this, the government should freeze wages, incomes, profits, dividends, bonus, etc.

But such a drastic measure can only be adopted for a short period as it is likely to antagonise both workers and industrialists. Therefore, the best course is to link increase in wages to increase in productivity. This will have a dual effect. It will control wages and at the same time increase productivity, and hence raise production of goods in the economy.

(c) Price Control:

Price control and rationing is another measure of direct control to check inflation. Price control means fixing an upper limit for the prices of essential consumer goods. They are the maximum prices fixed by law and anybody charging more than these prices is punished by law. But it is difficult to administer price control.

(d) Rationing:

Rationing aims at distributing consumption of scarce goods so as to make them available to a large number of consumers. It is applied to essential consumer goods such as wheat, rice, sugar, kerosene oil, etc. It is meant to stabilise the prices of necessities and assure distributive justice. But it is very inconvenient for consumers because it leads to queues, artificial shortages, corruption and black marketing. Keynes did not favour rationing for it “involves a great deal of waste, both of resources and of employment.”

Business Cycle

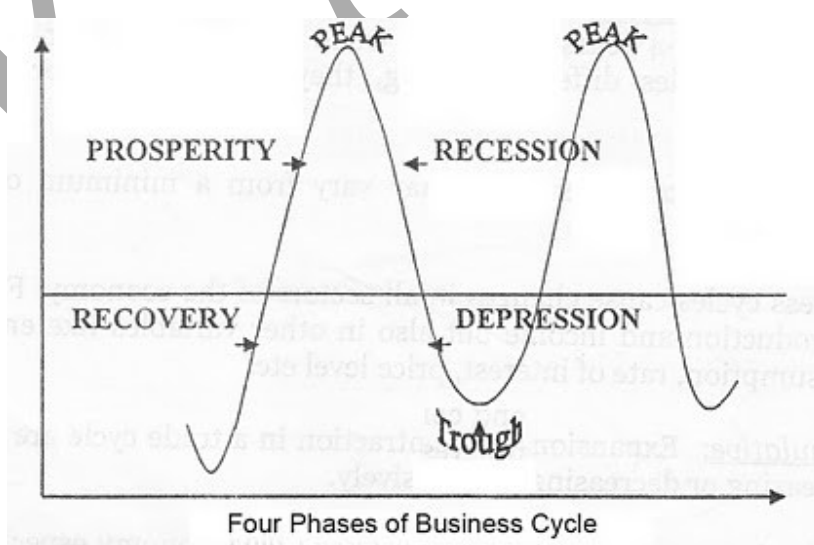
Definition of Trade Cycle

According to **Keynes**, "A trade cycle is composed of periods of good trade, characterized by rising prices and low unemployment percentages, shifting with periods of bad trade characterized by falling prices and high unemployment percentages."

Features of Trade Cycle

The characteristics or features of trade cycle are :-

1. **Movement in Economic Activity:** A trade cycle is a wave-like movement in economic activity showing an upward trend and a downward trend in the economy.
2. **Periodical:** Trade cycles occur periodically but they do not show the same regularity.
3. **Different Phases:** Trade cycles have different phases such as Prosperity, Recession, Depression and Recovery.
4. **Different Types:** There are minor and major trade cycles. Minor trade cycles operate for 3-4 years, while major trade cycles operate for 4-8 years or more. Though trade cycles differ in timing, they have a common pattern of sequential phases.
5. **Duration:** The duration of trade cycles may vary from a minimum of 2 years to a maximum of 12 years.
6. **Dynamic:** Business cycles cause changes in all sectors of the economy. Fluctuations occur not only in production and income but also in other variables like employment, investment, consumption, rate of interest, price level, etc.
7. **Phases are Cumulative:** Expansion and contraction in a trade cycle are cumulative, in effect, i.e. increasing or decreasing progressively.
8. **Uncertainty to businessmen:** There is uncertainty in the economy, especially for the businessmen as profits fluctuate more than any other type of income.
9. **International Nature:** Trade Cycles are international in character. For e.g. Great Depression of 1930s.



The business cycle starts from a trough (lower point) and passes through a recovery phase followed by a period of expansion (upper turning point) and prosperity. After the peak point is reached there is a declining phase of recession followed by a depression. Again the business cycle continues similarly with ups and downs.

Explanation of Four Phases of Business Cycle

The four phases of a business cycle are briefly explained as follows:-

1. Prosperity Phase

When there is an expansion of output, income, employment, prices and profits, there is also a rise in the standard of living. This period is termed as Prosperity phase.

The features of prosperity are :-

- High level of output and trade.
- High level of effective demand.
- High level of income and employment.
- Rising interest rates.
- Inflation.
- Large expansion of bank credit.
- Overall business optimism.
- A high level of MEC (Marginal efficiency of capital) and investment.

Due to full employment of resources, the level of production is Maximum and there is a rise in **GNP** (Gross National Product). Due to a high level of economic activity, it causes a rise in prices and profits. There is an upswing in the economic activity and economy reaches its **Peak**. This is also called as a **Boom Period**.

2. Recession Phase

The turning point from prosperity to depression is termed as Recession Phase.

During a recession period, the economic activities slow down. When demand starts falling, the overproduction and future investment plans are also given up. There is a steady decline in the output, income, employment, prices and profits. The businessmen lose confidence and become pessimistic (Negative). It reduces investment.

The banks and the people try to get greater liquidity, so credit also contracts. Expansion of business stops, stock market falls. Orders are cancelled and people start losing their jobs. The increase in unemployment causes a sharp decline in income and aggregate demand. Generally, recession lasts for a short period.

3. Depression Phase

When there is a continuous decrease of output, income, employment, prices and profits, there is a fall in the standard of living and depression sets in.

The **features of depression** are :-

- Fall in volume of output and trade
- Fall in income and rise in unemployment
- Decline in consumption and demand
- Fall in interest rate
- Deflation
- Contraction of bank credit
- Overall business pessimism
- Fall in MEC (Marginal efficiency of capital) and investment

In depression, there is under-utilization of resources and fall in GNP (Gross National Product). The aggregate economic activity is at the lowest, causing a decline in prices and profits until the economy reaches its **Trough** (low point).

4. Recovery Phase

The turning point from depression to expansion is termed as Recovery or **Revival** Phase.

During the period of revival or recovery, there are expansions and rise in economic activities. When demand starts rising, production increases and this causes an increase in investment. There is a steady rise in output, income, employment, prices and profits. The businessmen gain confidence and become optimistic (Positive). This increases investments. The stimulation of investment brings about the revival or recovery of the economy. The banks expand credit, business expansion takes place and stock markets are activated. There is an increase in employment, production, income and aggregate demand, prices and profits start rising, and business expands. Revival slowly emerges into prosperity, and the business cycle is repeated.

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Thus we see that, during the expansionary or prosperity phase, there is inflation and during the contraction or depression phase, there is a deflation.

The main causes of deflation as under.

Balance of Payment:

It is the difference between a nation's total payments to foreign countries and its total receipts from them. In other words, it is a systematic record of a country's receipts and payments in international economic transactions in a specific period of time.

Since BOP takes into account exchange of both visible and invisible items, therefore, it represents a wider and better picture of a country's international transactions than balance of trade. Each transaction is entered on the credit and debit side of the balance sheet.

Main items (or components) on credit side:

They are:

(i) Exports of Goods (visible exports) (ii) Exports of Services [invisible exports) (iii) Unrequited Receipts [unilateral transfers) and (iv) Capital Receipts.

Similar items are shown on debit side. They are:

(i) Imports of Goods, (ii) Imports of Services, (iii) Unrequited Payments and (iv) Capital Payments. Clearly, the balance of payment is an application of double entry book-keeping with the result that debits and credits will always balance. In other words, balance of payment will always be in equilibrium.

(c) Comparison:

Balance of payment is a wider concept as compared to balance of trade which is just one of the four components of the former. The other three components of balance of payment are export/import of services, unilateral receipts/payments and capital receipts/payments.

BOT does not include any of these three components. Therefore, BOP represents a better picture of a country's economic transactions with the rest of the world than the Balance of Trade. Both are compared below.

What is the balance of payments?

The **balance of payments** (BOP) records all financial transactions made between consumers, businesses and the government in one country with others

- Inflows of foreign currency are counted as a positive entry (e.g. exports sold overseas)
- Outflows of foreign currency are counted as a negative entry (e.g. imported goods and services)

A balance of payments **deficit** means the country imports more goods, services and capital than it exports. It must borrow from other countries to pay for its imports. In the short-term, that fuels the country's economic growth. It's like taking out a school loan to pay for education. In the long-term, the country becomes a net consumer, not a producer, of the world's economic output. It will have to go into debt to pay for consumption instead of investing in future growth. If the deficit continues long enough, the country may have to sell off its assets to pay its creditors. These assets include natural resources land and commodities.

A balance of payments **surplus** means the country exports more than it imports. Its government and residents are savers. They provide enough capital to pay for all domestic production. They might even lend outside the country.

A surplus boosts economic growth in the short term. That's because it's lending money to countries that buy its products. That boosts its factories, allowing them to hire more people.

In the long run, the country becomes too dependent on export-driven growth. It must encourage its residents to spend more. A larger domestic market will protect the country from exchange rate fluctuations. It also allows its companies to develop goods and services by using its own people as a test market.

Basic structure of the balance of payments accounts/BOP Components

The balance of payments has three components. They are the financial account, the capital account and the current account. The financial account describes the change in international ownership of assets. The capital account includes any financial transactions that don't affect economic output. The current account measures international trade, the net income on investments and direct payments. Here are the balance of payments components and how they work together.

Current Account

- Balance of trade in goods
- Balance of trade in services
- Net primary income (this includes incomes from interest, profits, dividends generated from foreign investment and also migrant remittances i.e. payments from people living and working overseas)
- Net secondary income (this includes (for the UK) our annual contributions to EU, spending military aid, overseas development aid etc.)

The current account measures a country's trade balance plus the effects of net income and direct payments. When the activities of a country's people provide enough income and savings to fund all their purchases, business activity and government infrastructure spending, then the current account is in balance.

Capital account

- Sale/transfer of patents, copyrights, franchises, leases and other transferable contracts, and goodwill
- Transfers of ownership of fixed assets

The capital account measures financial transactions that don't affect a country's income, production or savings. For example, it records international transfers of drilling rights, trademarks and copyrights. Many capital account transactions happen infrequently, such as cross-border insurance payments. The capital account is the smallest component of the balance of payments.

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Financial Account

This includes transactions that result in a change of ownership of financial assets and liabilities between residents and non-residents

1. Net balance of foreign direct investment flows (FDI)
2. Net balance of portfolio flows (e.g. inflows and outflows of debt and equity)
3. Balance of banking flows (e.g. hot money flowing in/out of banking system)

The financial account measures 1) changes in domestic ownership of foreign assets and 2) foreign ownership of domestic assets. If foreign ownership increases more than domestic ownership does, it creates a deficit in the financial account. This means the country is selling off its assets, like gold, commodities and corporate stocks, faster than it is acquiring foreign assets.

Balancing item (estimated errors & omissions)

- Changes to the value of reserves of gold and foreign currency
- Overall balance of payments = zero

Current account deficit

A current account deficit is when a country's residents spend more on imports than they save. To fund the deficit, other countries lend to, or invest in, the deficit country's businesses. The lender country is usually willing to pay for the deficit because its businesses profit from exports to the deficit country. In the short run, the current account deficit is a win/win for both nations.

But if the current account deficit continues for a long time, it will slow economic growth. Why? The foreign lenders will begin to wonder whether they will get an adequate return on their investment. If demand falls off, the value of the borrower country's currency may also decline. This leads to inflation as import prices rise. It also creates higher interest rates as the government must pay higher yields on its bonds.

Current account: Trade balance

The trade balance measures a country's imports and exports. This is the largest component of the current account, which is itself the largest component of the balance of payments. Most countries try to avoid a trade deficit, but it's a good thing for emerging market countries. It helps them grow faster than they could if they maintained a surplus.

Current account: Trade deficit

Definition: A trade deficit is when a country imports more than it exports. It is also called a negative balance of trade. It is one way of measuring international trade. To calculate the trade deficit, subtract the total value of exports from the total value of imports.

What Causes a Trade Deficit?

A trade deficit occurs when a country does not produce all it needs. Most nations must borrow from foreign states to pay for the imports.

A trade deficit results when a country's imports more than it exports. Imports are any goods and services produced in a foreign country, even if produced overseas by a domestic company.

Therefore, a trade deficit can occur even if all the imports are being sold by, and sending profit to, a domestic firm. With the rise of multinational corporations, and job outsourcing, trade deficits are on the rise.

Causes and Measures of Disequilibrium

Overall account of BOP is always in equilibrium. This balance or equilibrium is only in accounting sense because deficit or surplus is restored with the help of capital account.

In fact, when we talk of disequilibrium, it refers to current account of balance of payment. If autonomous receipts are less than autonomous payments, the balance of payment is in deficit reflecting disequilibrium in balance of payment.

There are several factors which cause disequilibrium in the BOP indicating either surplus or deficit.

Such causes for disequilibrium in BOP are listed below:

Economic Factors:

(a) Imbalance between exports and imports. (It is the main cause of disequilibrium in BOR), (b) Large scale development expenditure which causes large imports, (c) High domestic prices which lead to imports, (d) Cyclical fluctuations (like recession or depression) in general business activity, (e) New sources of supply and new substitutes.

Population Growth

Most countries experience an increase in the population and in some like India and China the population is not only large but increases at a faster rate. To meet their needs, imports become essential and the quantity of imports may increase as population increases.

Development Programmes

Developing countries which have embarked upon planned development programmes require to import capital goods, some raw materials which are not available at home and highly skilled and specialized manpower. Since development is a continuous process, imports of these items continue for the long time landing these countries in a balance of payment deficit.

Demonstration Effect

When the people in the less developed countries imitate the consumption pattern of the people in the developed countries, their import will increase. Their export may remain constant or decline causing disequilibrium in the balance of payments.

Natural Factors

Natural calamities such as the failure of rains or the coming floods may easily cause disequilibrium in the balance of payments by adversely affecting agriculture and industrial production in the country. The exports may decline while the imports may go up causing a discrepancy in the country's balance of payments.

Cyclical Fluctuations

Business fluctuations introduced by the operations of the trade cycles may also cause disequilibrium in the country's balance of payments. For example, if there occurs a business recession in foreign countries, it

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may easily cause a fall in the exports and exchange earning of the country concerned, resulting in a disequilibrium in the balance of payments.

Inflation

An increase in income and price level owing to rapid economic development in developing countries, will increase imports and reduce exports causing a deficit in balance of payments.

Poor Marketing Strategies

The superior marketing of the developed countries have increased their surplus. The poor marketing facilities of the developing countries have pushed them into huge deficits.

Flight of Capital

Due to speculative reasons, countries may lose foreign exchange or gold stocks. People in developing countries may also shift their capital to developed countries to safeguard against political uncertainties. These capital movements adversely affect the balance of payments position.

Globalisation

Due to globalisation there has been more liberal and open atmosphere for international movement of goods, services and capital. Competition has been increased due to the globalisation of international economic relations. The emerging new global economic order has brought in certain problems for some countries which have resulted in the balance of payments disequilibrium.

Political Factors:

Experience shows that political instability and disturbances cause large capital outflows and hinder Inflows of foreign capital.

Social Factors:

(a) Changes in fashions, tastes and preferences of the people bring disequilibrium in BOP by influencing imports and exports; (b) High population growth in poor countries adversely affects their BOP because it increases the needs of the countries for imports and decreases their capacity to export.

Measures to correct disequilibrium in BOP:

Sustained or prolonged deficit has to be settled by short term loans or depletion of capital reserve of foreign exchange and gold

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Following remedial measures are recommended:

(i) Export promotion:

Exports should be encouraged by granting various bounties to manufacturers and exporters. At the same time, imports should be discouraged by undertaking import substitution and imposing reasonable tariffs.

(ii) Import substitution

Restrictions and Import Substitution are other measures of correcting disequilibrium.

(iii) Reducing inflation:

Inflation (continuous rise in prices) discourages exports and encourages imports. Therefore, government should check inflation and lower the prices in the country.

(iv) Exchange control:

Government should control foreign exchange by ordering all exporters to surrender their foreign exchange to the central bank and then ration out among licensed importers.

(v) Devaluation of domestic currency:

It means fall in the external (exchange) value of domestic currency in terms of a unit of foreign exchange which makes domestic goods cheaper for the foreigners. Devaluation is done by a government order when a country has adopted a fixed exchange rate system. Care should be taken that devaluation should not cause rise in internal price level.

(vi) Depreciation:

Like devaluation, depreciation leads to fall in external purchasing power of home currency. Depreciation occurs in a free market system wherein demand for foreign exchange far exceeds the supply of foreign exchange in foreign exchange market of a country (Mind, devaluation is done in fixed exchange rate system).

Monetary Measures for Correcting the BOP

The monetary methods for correcting disequilibrium in the balance of payment are as follows :-

1. Deflation: Deflation means falling prices. Deflation has been used as a measure to correct deficit disequilibrium. A country faces deficit when its imports exceeds exports.

Deflation is brought through monetary measures like bank rate policy, open market operations, etc or through fiscal measures like higher taxation, reduction in public expenditure, etc. Deflation would make our items cheaper in foreign market resulting a rise in our exports. At the same time the demands for imports fall due to higher taxation and reduced income. This would build a favourable atmosphere in the balance of payment position. However Deflation can be successful when the exchange rate remains fixed.

2. Exchange Depreciation

Exchange depreciation means decline in the rate of exchange of domestic currency in terms of foreign currency. This device implies that a country has adopted a flexible exchange rate policy.

Suppose the rate of exchange between Indian rupee and US dollar is \$1 = Rs. 40. If India experiences an adverse balance of payments with regard to U.S.A, the Indian demand for US dollar will rise. The price of dollar in terms of rupee will rise. Hence, dollar will appreciate in external value and rupee will depreciate in external value. The new rate of exchange may be say \$1 = Rs. 50. This means 25% exchange depreciation of the Indian currency.

Exchange depreciation will stimulate exports and reduce imports because exports will become cheaper and imports costlier. Hence, a favourable balance of payments would emerge to pay off the deficit.

3. Devaluation

Devaluation refers to deliberate attempt made by monetary authorities to bring down the value of home currency against foreign currency. While depreciation is a spontaneous fall due to interactions of market forces, devaluation is official act enforced by the monetary authority. Generally the international monetary fund advocates the policy of devaluation as a corrective measure of disequilibrium for the countries facing adverse balance of payment position. When India's balance of payment worsened in 1991, IMF suggested devaluation.

Accordingly, the value of Indian currency has been reduced by 18 to 20% in terms of various currencies. The 1991 devaluation brought the desired effect. The very next year the import declined while exports picked up.

When devaluation is effected, the value of home currency goes down against foreign currency, Let us suppose the exchange rate remains \$1 = Rs. 10 before devaluation. Let us suppose, devaluation takes place which reduces the value of home currency and now the exchange rate becomes \$1 = Rs. 20. After such a change our goods becomes cheap in foreign market. This is because, after devaluation, dollar is exchanged for more Indian currencies which push up the demand for exports. At the same time, imports become costlier as Indians have to pay more currencies to obtain one dollar. Thus demand for imports is reduced. Generally devaluation is resorted to where there is serious adverse balance of payment problem.

4. Exchange Control

It is an extreme step taken by the monetary authority to enjoy complete control over the exchange dealings. Under such a measure, the central bank directs all exporters to surrender their foreign exchange to the central authority. Thus it leads to concentration of exchange reserves in the hands of central authority. At the same time, the supply of foreign exchange is restricted only for essential goods. It can only help controlling situation from turning worse. In short it is only a temporary measure and not permanent remedy.

Non-Monetary Measures for Correcting the BOP

A deficit country along with Monetary measures may adopt the following non-monetary measures too which will either restrict imports or promote exports.

1. Tariffs

Tariffs are duties (taxes) imposed on imports. When tariffs are imposed, the prices of imports would increase to the extent of tariff. The increased prices will reduced the demand for imported goods and at the same time induce domestic producers to produce more of import substitutes. Non-essential imports can be drastically reduced by imposing a very high rate of tariff.

2. Quotas

Under the quota system, the government may fix and permit the maximum quantity or value of a commodity to be imported during a given period. By restricting imports through the quota system, the deficit is reduced and the balance of payments position is improved.

3. Export Promotion: The government can adopt export promotion measures to correct disequilibrium in the balance of payments. This includes substitutes, tax concessions to exporters, marketing facilities, credit and incentives to exporters, etc.

The government may also help to promote export through exhibition, trade fairs; conducting marketing research & by providing the required administrative and diplomatic help to tap the potential markets.

4. Import Substitution

A country may resort to import substitution to reduce the volume of imports and make it self-reliant. Fiscal and monetary measures may be adopted to encourage industries producing import substitutes. Industries which produce import substitutes require special attention in the form of various concessions, which include tax concession, technical assistance, subsidies, providing scarce inputs, etc.

Non-monetary methods are more effective than monetary methods and are normally applicable in correcting an adverse balance of payments.

**UNIT – IV
POSSIBLE QUESTIONS**

Part – B (3 X 2 = 6 Marks – CIA)

Part – B (5 X 2 = 10 Marks – ESE)

1. Define National Income.
2. What is Gross National Product?
3. What is GNP at Market Prices?
4. What is GNP at Factor Cost?
5. What is Net National Product?
6. What is NNP at Market Prices?
7. What is NNP at Factor Cost?
8. What is Domestic Income or Product?
9. What is Private Income?
10. Define Per Capita Income.
11. List the methods of measuring national income.
12. What is Product Method?
13. What is Income Method?
14. What is Expenditure Method?
15. What is Value Added Method?
16. What is personal income?
17. What is disposable income?
18. What is a transfer payment?
19. What is Gross domestic product?
20. What is net domestic product?
21. Write a note on GDP at factor cost.
22. What is nominal and real GDP/
23. Write a note on net income earned from abroad.
24. What is net foreign investment?
25. What is private income?

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26. What is real income?
27. Define Trade Cycle.
28. List the features of Trade Cycle.
29. What is Prosperity Phase?
30. What is Recession Phase?
31. What is Depression Phase?
32. What is Recovery Phase?
33. What is inflation?
34. What is comprehensive inflation?
35. What is sporadic inflation?
36. What is war-time inflation?
37. What is creeping inflation?
38. What is chronic inflation?
39. What is running inflation?
40. What is galloping inflation?
41. What is cost-push inflation?
42. What is demand-pull inflation?
43. What is deflation?
44. List the effects of deflation

Part – C (3 X 8 = 24 Marks – CIA) (Either or OR)

Part – C (6 X 5 = 30 Marks – ESE) (Either or OR)

1. Discuss the significance of national income estimates.
2. Discuss the different ways of measuring GDP.
3. Explain the expenditure method of GDP estimation.
4. Explain the GNP at Market Prices and GNP at Factor Cost.
5. Explain the NNP at Market Prices NNP at Factor Cost.
6. Explain the methods of measuring national income.
7. Explain the product method of GNP estimation.
8. Discuss the income method of GNP calculation.
9. Discuss the difficulties in measuring national income.

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10. Explain the features of Trade Cycle.
11. Discuss the various phases of trade cycle.
12. Examine the impact of Prosperity Phase and Recession Phase on the economy.
13. Explain the depression phase and recovery phase.
14. Explain the types of inflation.
15. Discuss the cost-push inflation.
16. Explain the causes of cost-push inflation.
17. Discuss the demand-pull inflation.
18. Explain the causes of demand-pull inflation.
19. Discuss the effects of inflation.
20. Explain the measures to control inflation.

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UNIT - V

Multiple Choice Questions (Each Questions carries ONE Mark)

S.No	QUESTIONS	OPTION 1	OPTION 2	OPTION 3	OPTION 4	OPTION 6	ANSWERS
1	When the intrinsic value of money and its face value are equal, it is called	Token Money	Full-bodied money	Quasi-money	Fiat money		Full-bodied money
2	The speculative demand for money, according to Keynes, is a function of	Rate of interest	Level of income	Level of savings	Level of output		Rate of interest
3	M2, money supply measure in India, constitutes_____	M1+ all post office deposits	M1+time deposits of commercial banks	M1+post office savings deposits	M3+all post office deposits		M1+post office savings deposits
4	Supply of money remaining the same, when there is an increase in demand for money, there will be	A fall in the level of prices	An increase in the rate of interest	An decrease in the rate of interest	An increase in the level of income and employment		An increase in the rate of interest
5	The credit multiplier is based on which of the following assumptions	The cash reserve ration remains constant	People have well developed banking habits	Proper prefer higher cash holdings	The banks maintain a fixed relationship between deposit liabilities and cash reserves		People have well developed banking habits

6	If the rate of interest increases, people holding bonds will_____	Experience a capital gain on the bonds	Experience a capital loss on the bonds	Not be able to find a buyer should they decide to sale	Experience neither capital gain nor capital loss		Experience a capital loss on the bonds
7	The balance of trade is	Trader's balance	Export-Import balance	Transaction balance	Disequilibrium balance		Export- Import balance
8	The correct sequence of the stage through which a trade cycle in an economy passes is	Depression, Inflation, Reflation, Disinflation	Reflation, Disinflation, Inflation, Depression	Depression, Reflation, Inflation, Disinflation	Inflation, Depression, Disinflation, Reflation		Depression, Reflation, Inflation, Disinflation
9	Balance of the payments deficit in India can be eased by	Conserving the foreign exchange reserves	Promotion of exports	Liberalisation of imports	Export promotion and import substitution		Export promotion and import substitution
10	Balance of payments must always balance because _____	Trade deficit is cancelled by invisible credits	Imports always equal exports	Of the accounting conversion	What a country gets, it must either pay or save		Of the accounting conversion
11	The budget in which its tax revenue and expenditure are equal is called_____	Surplus budget	Unbalanced budget	Balanced budget	Fiscal budget		Balanced budget
12	Which of the following deposits serve as medium of exchange?	Current and savings	Fixed and savings	Current and fixed	Fixed and post office		Current and savings
13	.If the interest rate is decreased in an economy, it will	Decrease the consumption expenditure in the economy	Increase the tax collection of the Government	Increase the investment expenditure in the economy	Increase the total savings in the economy		Increase the investment expenditure in the economy

14	The relative importance of deposit money in total money supply is _____	Higher in underdeveloped countries	Lower in underdeveloped countries	Lower in poor countries	The same in both developed and underdeveloped countries		Lower in underdeveloped countries
15	Which of the following is responsible for differences in gross rate of interest?	Shortage of money	Difference in productivity	Difference in risk	Different use of money		Difference in risk
16	Fiscal policy is connected with _____	Issue of currency	Exports and imports	Public revenue and expenditure	Private sector regulations		Public revenue and expenditure
17	High – powered money is _____	Only banks reserves at the central bank	All loans of banks	All loans and securities of banks	Rupees held as legal bank reserve		Rupees held as legal bank reserve
18	Money multiplier is the ratio between _____	Quantity of total money and national income	Quantity of primary money and quantity of secondary money	Quantity of primary money and quantity of total money	Quantity of money and aggregate investment		Quantity of primary money and quantity of secondary money
19	The speculative demand for money depends on _____	Interest rate	Income	Profit	Output		Interest rate
20	Devaluation of currency leads to _____	Fall in domestic prices	Increase in domestic prices	Remains constant	Can't be predicted		Increase in domestic prices
21	Trade policy measures for correction of balance of payments disequilibrium include _____	Export promotion	Import promotion	Decline in exports	Import substitution		Export promotion
22	In India which of the following measures of money denotes broad money	M1	M2	M3	M4		M3
23	Which of the following is most liquid measure of money supply in India	M1	M2	M3	M4		M1

24	What is 'Bank rate'?	The rate at which commercial banks borrow money from RBI	The rate at which commercial banks lend money to customers	The rate at which commercial banks lend money to RBI	The rate at which RBI borrow money from foreign banks		The rate at which commercial banks borrow money from RBI
25	The RBI can increase the money supply in the market by:	selling government securities	Buying government securities	Borrowing money from commercial banks	Borrowing money from foreign banks		Buying government securities
26	The RBI can decrease the money supply in the market by:	selling government securities	Buying government securities	Borrowing money from commercial banks	Borrowing money from foreign banks		selling government securities
27	By increasing the 'Bank Rate', the RBI can:	Provide incentives to commercial banks to lend more to public	Provide incentives to commercial banks to lend less to public	Increase the money supply in the market	Increase the saving rate		Provide incentives to commercial banks to lend less to public
28	The primary function of a bank is to	Control the money supply	Provide notes and coins for trade	Make a profit	Provide a cheque clearing system		Make a profit
29	Banks create money by	Printing it	Issuing debit cards	Accepting cheques	Lending out part of their deposits		Lending out part of their deposits
30	If banks and the private sector decide to hold less cash the money multiplier will be _____	Unchanged	Larger	Smaller	Unstable		Larger

31	Three variables affect the demand for money; they are _____, _____ and _____	Bank opening hours, the proportion of weekly paid employees, interest rates	The price level, interest rates, real income	The time of year, bank opening hours, the price level	The proportion of weekly paid employees, the time of year, real income		The price level, interest rates, real income
32	All of the following are types of monetary policy except	A nominal money stock target	A balanced budget	An inflation target	The pursuit of a target real interest rate		A balanced budget
33	If the economy grows, the government's budget position should automatically:	Worsen	Improve	Stay the same	Decrease with inflation		Improve
34	A budget deficit is likely to:	Boost aggregate demand	Lead to less import spending	Lead to falling prices	Leads to more unemployment		Boost aggregate demand
35	Revenue equals expenditure in a	Balanced budget	Surplus budget	Deficit budget	Unbalanced budget		Balanced budget
36	Increase in monetary deficit will lead to increase in	Money demand	High powered money	Saving	Export		High powered money
37	System where minimum gold reserve is fixed by law is called	Proportional reserve system	Minimum gold reserve system	Simple deposit system	Bonus deposit system		Minimum gold reserve system
38	The existence of a parallel economy or a black money	Makes the economy more competitive	Make the monetary policies less effective	Ensures a better distribution of income and wealth	Ensures increasing productive investment		Make the monetary policies less effective
39	Which among them formulates the fiscal policy?	RBI	Finance ministry	President	Planning commission		Finance ministry
40	Dear money policy relates to	High price level	Large money supply	High production	High interest rate		High interest rate

41	Which of the following is a indirect tax	Tax on income	Tax on wealth	Tax on expenditure	Tax on entertainment		Tax on entertainment
42	The term 'Invisible trade" refers to the trade	Of government with public institutions	Of government with other countries	of non-tangible services like the customer service, bank, marine and shipping	Of corporate and financial institutions with governement		of non-tangible servies like the customer service, bank, marine and shipping
43	The expenditure expensedd immediately is known as	Revenue expenditure	Capital expenditure	Current expenditure	Investment expenditure		Revenue expenditure
44	When RBI announces an increase of Cash reserve ratio, what does it mean	The commercial bank will have more money to lend	The commercial bank will have less money to lend	The RBI will have less money to lend	The union government will have less money to lend		The commercial bank will have less money to lend
45	Cash which has to be depoisted with bank is called	Statutory liquidity ratio	Cash reserve ratio	Credit ratio	Investment ratio		Cash reserve ratio
46	Funds which has to be invested in government bonds is called	Investment ratio	Cash reserve ratio	Statutory liquidity ratio	Credit ratio		Statutory liquidity ratio
47	Banks which are entered in the schedule of RBI are called	Nationalised banks	Scheduled banks	Government banks	Foreign banks		Scheduled banks
48	Ratio of currency and deposit is decided by	Business	RBI	Public	Market forces		Public
49	Which instrument of monetary policy is used frequently by RBI	Discount policy	Reserve requirements	Open market operations	Margin requirements		Reserve requirements
50	Monetary deficit leads to	Increase in liquidity	Decrease in liquidity	Constant liquidity	High interest rate		Increase in liquidity
51	Which of the following is an instrument of selective credit control?	Bank rate policy	Margin money requirement	Variable reserve system	Open market operations		Margin money requirement

52	Difference in export and import of services is called as	Balances of invisibles	Balance of trade	Balance of current account	Balance of capital account		Balances of invisibles
53	If a country has exported more than its imports, balance of trade will be	Negative	Positive	Zero	Indeterminate		Positive
54	All items of flow nature are included in	Balance of trade	Balance of invisibles	Balance of unrequited transfers	Balance of current account		Balance of current account
55	All items of flow nature are included in	Balance of invisibles	Balance of capital account	Balance of trade	Balance of current account		Balance of current account
56	A balance of payment surplus can be corrected through	Export promotion	Exchange control	Increase in interest	Appreciation of currency		Appreciation of currency
57	Which one of the following is likely to help in remedying an adverse balance of payment?	Revaluation of currency	Devaluation of currency	Reduction in taxes	Reductions in customs duty		Devaluation of currency
58	Increase in rate of interest will lead to	Increase in money supply	Decrease in money supply	Increase in investment	Decrease in investment		Decrease in investment
59	In Keynes theory, investment is	Induced variable	Explanatory variable	Autonomous variable	Dependent variable		Autonomous variable
60	In Keynes theory, rate of interest doesn't fall below	Bank rate	Liquidity trap	Ceiling rate	Usury rate		Liquidity trap

UNIT-V – Monetary Policy

SYLLABUS

Money – Meaning – Definition – Functions of money - Quantity theory of money - Determination of money supply and demand - Credit creation – Tools of monetary policy.

Meaning of Money

Money is any good that is widely used and accepted in transactions involving the transfer of goods and services from one person to another. Economists differentiate among three different types of money: commodity money, fiat money, and bank money. Commodity money is a good whose value serves as the value of money. Gold coins are an example of commodity money. In most countries, commodity money has been replaced with fiat money. Fiat money is a good, the value of which is less than the value it represents as money. Dollar bills are an example of fiat money because their value as slips of printed paper is less than their value as money. Bank money consists of the book credit that banks extend to their depositors. Transactions made using checks drawn on deposits held at banks involve the use of bank money.

Definition of Money

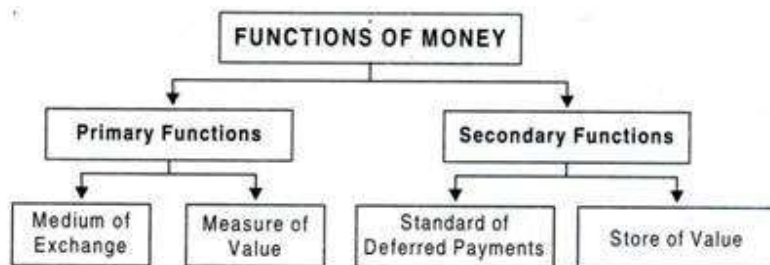
According to Crowther,

"Anything that is generally acceptable as a means of exchange and which at the same time acts as a measure and store of value."

Thus, anything is Money, which is generally acceptable as a medium of exchange, and at the same time it must act as a measure and a store of value. Anything implies a thing to be used as money need not be necessarily composed of any precious metal. The only necessary condition is that, it should be universally accepted by people as a medium of exchange.

Primary and Secondary Functions of Money

1. Primary Functions (Main or Basic Functions)
2. Secondary Functions (Subsidiary or Derivative Functions)



(i) Medium of Exchange:

Money, as a medium of exchange, means that it can be used to make payments for all transactions of goods and services. It is the most essential function of money. Money has the quality of general acceptability. So, all exchanges take place in terms of money.

1. This function has removed the major difficulty of lack of double coincidence of wants and inconveniences associated with the barter system.
2. Use of money allows purchase and sale to be conducted independently of one another.
3. This function of money facilitates trade and helps in conducting transactions in an economy.
4. Money has no power to satisfy human wants, but it commands power to purchase those things, which have utility to satisfy human wants.

For, “How does money separate the acts of sale and purchase”, refer HOTS.

(ii) Measure of Value (Unit of Value):

Money as measure of value means that money works as a common denomination, in which values of all goods and services are expressed.

1. By reducing the value of all goods and services to a single unit (i.e. price), it becomes very easy to find out the exchange ratios between them and comparing their prices.
2. This function facilitates maintenance of business accounts, which would be otherwise impossible.
3. Money helps in calculating relative prices of goods and services. Due to this reason, it is regarded as a 'Unit of Account'. For instance, 'Rupee' is the unit of account in India, 'Pound' in England and so on.

2. Secondary Functions: These refer to those functions of money which are supplementary to the primary functions. These functions are derived from primary functions and, therefore, they are also known as 'Derivative Functions'.

The major secondary functions are:

(i) Standard of Deferred Payments:

Money as a standard of deferred payments means that money acts as a 'standard' for payments, which are to be made in future. Every day, millions of transactions take place in which payments are not made immediately. Money encourages such transactions and helps in capital formation and economic development of the economy.

This function of money is significant because:

1. Money as a standard of deferred payments has simplified the borrowing and lending operations.
2. It has led to the creation of financial institutions.

(ii) Store of Value (Asset Function of Money):

Money as a store of value means that money can be used to transfer purchasing power from present to future. Money is a way to store wealth. Although wealth can be stored in other forms also, but money is the most economical and convenient way. It provides security to individuals to meet contingencies, unpredictable emergencies and to pay future debts. Under barter system, it was difficult to use goods as a store of wealth due to perishable nature of some goods and high cost of storage.

Money as store of value has the following advantages:

1. Money is available in fractional denomination, ranging from Rs 1 to Rs 1,000.
2. Money is easily portable. So, it is easy and economical to store money as its storage does not require much space.
3. Money has the merit of general acceptability so; it can be easily exchanged for goods at all times.
4. Savings in terms of money are much more secured than in terms of goods.

Quantity Theory of Money— Fisher's Version:

Like the price of a commodity, value of money is determined by the supply of money and demand for money. In his theory of demand for money, Fisher attached emphasis on the use of money as a medium of exchange. In other words, money is demanded for transaction purposes.

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As a truism, in a given time period, total money expenditure is equal to the total value of goods traded in the economy. In other words, national expenditure, i.e., the value of money, must be identically equal to national income or total value of the goods for which money is exchanged, i.e.,

$$MV = \sum p_i q_i = PT \dots(4.1)$$

where

M = total stock of money in an economy;

V = velocity of circulation of money, that is, the number of times a unit of money changes its hand;

P_i = prices of individual goods;

$\sum P = p_1 q_1 + p_2 q_2 + \dots + p_n q_n$ are the prices and outputs of all individual goods;

q_i = quantities of individual goods transacted;

P = average or general price level or index of prices;

T = total volume of goods transacted or index of physical volume of transactions.

This equation is an identity that always holds true: It tells us that the total stock of money used for transactions must equal to the value of goods sold in the economy. In this equation, supply of money consists of nominal quantity of money multiplied by the velocity of circulation.

The average number of times that a unit of money changes its hand is called the velocity of circulation of money. The concept that provides the link between M and P x T is also called the velocity of money. V is, thus, defined as total expenditure, P x T, divided by the amount of money, M, i.e.,

$$V = P \times T / M$$

If P x T in a year is Rs. 5 crore and the quantity of money is Rs. 1 crore then V = 5. This means that a unit of money is spent 5 times in buying goods and services in the economy. Thus, the supply of money or the total expenditure on national income is MV. On the other hand, total value of all transactions or money demand comprises P multiplied by T.

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Fisher assumed fixity in V in the short run. V is determined by (i) the payment habits of the people, (ii) the nature of the banking system, and (iii) general factors (e.g., density of population, rapidity of transportation). As far as T is concerned, Say's Law suggests that it would remain fixed because of full employment.

With V and T constant, the above identity is modified as:

$$MV = PT \dots (4.2)$$

$$\text{or } P = V/T \times M \dots (4.3)$$

Where the bar signs over the heads of ' V ' and ' T ' indicates that these two are fixed. It now follows that an increase in M leads to an equi-proportional increase in P .

The stock of money, thus, determines the price level. People hold money more than their need for transactions when money supply increases. Holding of money is useless. So they spend money. This additional expenditure, given full employment, raises the price level.

Obviously, a rise in the price level means an increase in the value of transactions and, hence, demand for money rises. The process will continue until the equality between demand for and supply of money is reestablished.

Fisher's cash transaction version can be extended by including bank deposits in the definition of money supply. Now money supply comprises not only legal tender money, M but also bank money, M' . This bank money has also a stable velocity of circulation, V' .

Thus the above equation can be written as:

$$MV + M'V' = PT$$

$$\text{Or } P = \frac{MV + M'V'}{T}$$

Assuming V , V' , T and the ratio of M and M' constant, an increase in M and M' , say by 5 p.c., will cause P to rise also by the same percentage.

It is, however, not easier to measure the number of transactions T. Let us replace T by Y. Thus P. Y is the nominal income or output where Y is the total income. Now the quantity theory equation becomes: $PY = MV$. This is known as the 'income version' of quantity theory of money.

2. Quantity Theory of Money: Cambridge Version:

An alternative version, known as cash balance version, was developed by a group of Cambridge economists like Pigou, Marshall, Robertson and Keynes in the early 1900s. These economists argue that money acts both as a store of wealth and a medium of exchange. Here, by cash balance and money balance we mean the amount of money that people want to hold rather than savings.

According to Cambridge economists, people wish to hold cash to finance transactions and for security against unforeseen needs. They also suggested that an individual's demand for cash or money balances is proportional to his income. Obviously, larger the income of the individual, greater is the demand for cash or money balances.

Thus, the demand for cash balances is specified by:

$$M_d = kPY$$

where Y is the physical level of aggregate or national output, P is the average price and k is the proportion of national output or income that people want to hold. Let us assume that the supply of money, MS' is determined by the monetary authority, i.e.,

$$M_S = M$$

Equilibrium requires that the supply of money must equal the demand for money, or

$$M_S = M_d$$

or $M_d = kPY$

$$M = kPY$$

Or $P = \frac{M}{kY}$

k and Y are determined independently of the money supply. With k constant given by the transaction demand for money and Y constant because of full employment, increase or decrease in money supply leads to a proportional increase and decrease in price level. This conclusion holds for Fisherian version also. Note that Cambridge ' k ' and Fisherian V are reciprocals of one another, that is, $1/k$ is the same as V in Fisher's equation.

The classical relationship between money supply and price level can be illustrated in terms of Fig. 4.1. This diagram is interesting in the sense that it first establishes the relationship between money supply and national output or national income below the full employment stage (Y_F).

Now the relationship between money supply and price level after the full employment stage can be established assuming O' as the origin. Before the attainment of full employment state (Y_F), an increase in money supply (from OM_1 to OM_2 and to OY_F) causes national income (shown by the steep output curve) to rise more rapidly than the price level.

By utilising its resources efficiently and fully, an economy can increase its output level by increasing the volume of investment consequent upon an increase in money supply. Since there is a limit to output expansion due to full employment (i.e., beyond which output will not increase), an increase in money supply from (M_3 to M_4) will cause price level to rise from (P_3 to P_4) proportionally (shown in the upper

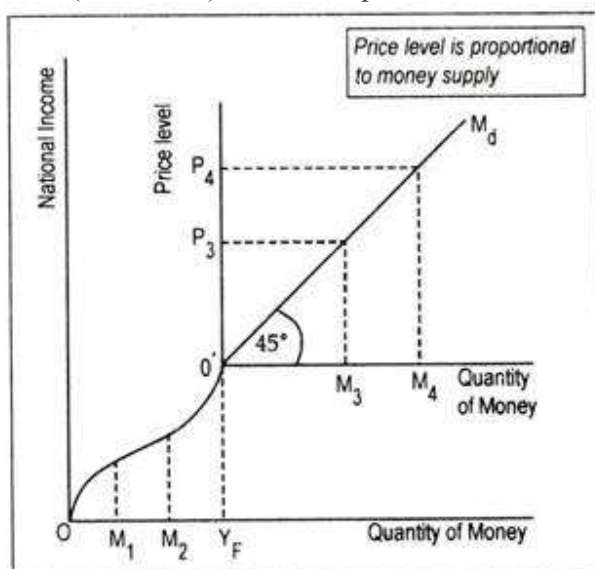


Fig. 4.1: Quantity of Money and Price Level

panel)

DEMAND AND SUPPLY OF MONEY

The demand for money is the relationship between the quantity of money people want to hold and the factors that determine that quantity. To simplify our analysis, we will assume there are only two ways to hold wealth: as money in a checking account or as funds in a bond market mutual fund that purchases long-term bonds on behalf of its subscribers. A bond fund is not money. Some money deposits earn interest, but the return on these accounts is generally lower than what could be obtained in a bond fund. The advantage of checking accounts is that they are highly liquid and can thus be spent easily. We will think of the demand for money as a curve that represents the outcomes of choices between the greater liquidity of money deposits and the higher interest rates that can be earned by holding a bond fund. The difference between the interest rates paid on money deposits and the interest return available from bonds is the cost of holding money.

Motives for Holding Money

One reason people hold their assets as money is so that they can purchase goods and services. The money held for the purchase of goods and services may be for everyday transactions such as buying groceries or paying the rent, or it may be kept on hand for contingencies such as having the funds available to pay to have the car fixed or to pay for a trip to the doctor.

The transactions demand for money is money people hold to pay for goods and services they anticipate buying. When you carry money in your purse or wallet to buy a movie ticket or maintain a checking account balance so you can purchase groceries later in the month, you are holding the money as part of your transactions demand for money.

The money people hold for contingencies represents their precautionary demand for money. Money held for precautionary purposes may include checking account balances kept for possible home repairs or health-care needs. People do not know precisely when the need for such expenditures will occur, but they can prepare for them by holding money so that they'll have it available when the need arises.

People also hold money for speculative purposes. Bond prices fluctuate constantly. As a result, holders of bonds not only earn interest but experience gains or losses in the value of their assets. Bondholders enjoy gains when bond prices rise and suffer losses when bond prices fall. Because of this, expectations play an important role as a determinant of the demand for bonds. Holding bonds is one alternative to holding money, so these same expectations can affect the demand for money.

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John Maynard Keynes, who was an enormously successful speculator in bond markets himself, suggested that bondholders who anticipate a drop in bond prices will try to sell their bonds ahead of the price drop in order to avoid this loss in asset value. Selling a bond means converting it to money. Keynes referred to the speculative demand for money as the money held in response to concern that bond prices and the prices of other financial assets might change.

Of course, money is money. One cannot sort through someone's checking account and locate which funds are held for transactions and which funds are there because the owner of the account is worried about a drop in bond prices or is taking a precaution. We distinguish money held for different motives in order to understand how the quantity of money demanded will be affected by a key determinant of the demand for money: the interest rate.

Interest Rates and the Demand for Money

The quantity of money people hold to pay for transactions and to satisfy precautionary and speculative demand is likely to vary with the interest rates they can earn from alternative assets such as bonds. When interest rates rise relative to the rates that can be earned on money deposits, people hold less money. When interest rates fall, people hold more money. The logic of these conclusions about the money people hold and interest rates depends on the people's motives for holding money.

The quantity of money households want to hold varies according to their income and the interest rate; different average quantities of money held can satisfy their transactions and precautionary demands for money. To see why, suppose a household earns and spends \$3,000 per month. It spends an equal amount of money each day. For a month with 30 days, that is \$100 per day. One way the household could manage this spending would be to leave the money in a checking account, which we will assume pays zero interest. The household would thus have \$3,000 in the checking account when the month begins, \$2,900 at the end of the first day, \$1,500 halfway through the month, and zero at the end of the last day of the month. Averaging the daily balances, we find that the quantity of money the household demands equals \$1,500. This approach to money management, which we will call the "cash approach," has the virtue of simplicity, but the household will earn no interest on its funds.

Consider an alternative money management approach that permits the same pattern of spending. At the beginning of the month, the household deposits \$1,000 in its checking account and the other \$2,000 in a bond fund. Assume the bond fund pays 1% interest per month, or an annual interest rate of 12.7%. After 10

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days, the money in the checking account is exhausted, and the household withdraws another \$1,000 from the bond fund for the next 10 days. On the 20th day, the final \$1,000 from the bond fund goes into the checking account. With this strategy, the household has an average daily balance of \$500, which is the quantity of money it demands. Let us call this money management strategy the “bond fund approach.”

Remember that both approaches allow the household to spend \$3,000 per month, \$100 per day. The cash approach requires a quantity of money demanded of \$1,500, while the bond fund approach lowers this quantity to \$500.

The bond fund approach generates some interest income. The household has \$1,000 in the fund for 10 days ($1/3$ of a month) and \$1,000 for 20 days ($2/3$ of a month). With an interest rate of 1% per month, the household earns \$10 in interest each month ($[\$1,000 \times 0.01 \times 1/3] + [\$1,000 \times 0.01 \times 2/3]$). The disadvantage of the bond fund, of course, is that it requires more attention—\$1,000 must be transferred from the fund twice each month. There may also be fees associated with the transfers.

Of course, the bond fund strategy we have examined here is just one of many. The household could begin each month with \$1,500 in the checking account and \$1,500 in the bond fund, transferring \$1,500 to the checking account midway through the month. This strategy requires one less transfer, but it also generates less interest—\$7.50 ($= \$1,500 \times 0.01 \times 1/2$). With this strategy, the household demands a quantity of money of \$750. The household could also maintain a much smaller average quantity of money in its checking account and keep more in its bond fund. For simplicity, we can think of any strategy that involves transferring money in and out of a bond fund or another interest-earning asset as a bond fund strategy.

Which approach should the household use? That is a choice each household must make—it is a question of weighing the interest a bond fund strategy creates against the hassle and possible fees associated with the transfers it requires. Our example does not yield a clear-cut choice for any one household, but we can make some generalizations about its implications.

First, a household is more likely to adopt a bond fund strategy when the interest rate is higher. At low interest rates, a household does not sacrifice much income by pursuing the simpler cash strategy. As the interest rate rises, a bond fund strategy becomes more attractive. That means that the higher the interest rate, the lower the quantity of money demanded.

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Second, people are more likely to use a bond fund strategy when the cost of transferring funds is lower. The creation of savings plans, which began in the 1970s and 1980s, that allowed easy transfer of funds between interest-earning assets and checkable deposits tended to reduce the demand for money.

Some money deposits, such as savings accounts and money market deposit accounts, pay interest. In evaluating the choice between holding assets as some form of money or in other forms such as bonds, households will look at the differential between what those funds pay and what they could earn in the bond market. A higher interest rate in the bond market is likely to increase this differential; a lower interest rate will reduce it. An increase in the spread between rates on money deposits and the interest rate in the bond market reduces the quantity of money demanded; a reduction in the spread increases the quantity of money demanded.

Firms, too, must determine how to manage their earnings and expenditures. However, instead of worrying about \$3,000 per month, even a relatively small firm may be concerned about \$3,000,000 per month. Rather than facing the difference of \$10 versus \$7.50 in interest earnings used in our household example, this small firm would face a difference of \$2,500 per month (\$10,000 versus \$7,500). For very large firms such as Toyota or AT&T, interest rate differentials among various forms of holding their financial assets translate into millions of dollars per day.

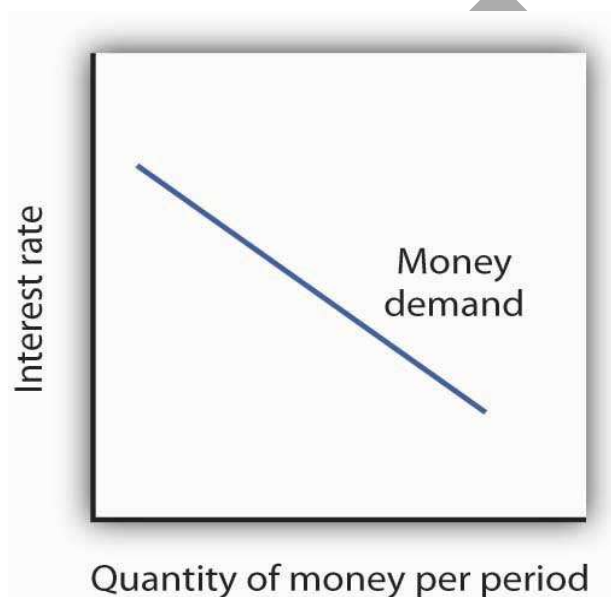
How is the speculative demand for money related to interest rates? When financial investors believe that the prices of bonds and other assets will fall, their speculative demand for money goes up. The speculative demand for money thus depends on expectations about future changes in asset prices. Will this demand also be affected by present interest rates?

If interest rates are low, bond prices are high. It seems likely that if bond prices are high, financial investors will become concerned that bond prices might fall. That suggests that high bond prices—low interest rates—would increase the quantity of money held for speculative purposes. Conversely, if bond prices are already relatively low, it is likely that fewer financial investors will expect them to fall still further. They will hold smaller speculative balances. Economists thus expect that the quantity of money demanded for speculative reasons will vary negatively with the interest rate.

The Demand Curve for Money

We have seen that the transactions, precautionary, and speculative demands for money vary negatively with the interest rate. Putting those three sources of demand together, we can draw a demand curve for money to show how the interest rate affects the total quantity of money people hold. The demand curve for money shows the quantity of money demanded at each interest rate, all other things unchanged. Such a curve is shown in Figure “The Demand Curve for Money”. An increase in the interest rate reduces the quantity of money demanded. A reduction in the interest rate increases the quantity of money demanded.

The Demand Curve for Money



The demand curve for money shows the quantity of money demanded at each interest rate. Its downward slope expresses the negative relationship between the quantity of money demanded and the interest rate.

The relationship between interest rates and the quantity of money demanded is an application of the law of demand. If we think of the alternative to holding money as holding bonds, then the interest rate—or the differential between the interest rate in the bond market and the interest paid on money deposits—represents the price of holding money. As is the case with all goods and services, an increase in price reduces the quantity demanded.

Other Determinants of the Demand for Money

We draw the demand curve for money to show the quantity of money people will hold at each interest rate, all other determinants of money demand unchanged. A change in those “other determinants” will shift the

demand for money. Among the most important variables that can shift the demand for money are the level of income and real GDP, the price level, expectations, transfer costs, and preferences.

Real GDP

A household with an income of \$10,000 per month is likely to demand a larger quantity of money than a household with an income of \$1,000 per month. That relationship suggests that money is a normal good: as income increases, people demand more money at each interest rate, and as income falls, they demand less. An increase in real GDP increases incomes throughout the economy. The demand for money in the economy is therefore likely to be greater when real GDP is greater.

The Price Level

The higher the price level, the more money is required to purchase a given quantity of goods and services. All other things unchanged, the higher the price level, the greater the demand for money.

Expectations

The speculative demand for money is based on expectations about bond prices. All other things unchanged, if people expect bond prices to fall, they will increase their demand for money. If they expect bond prices to rise, they will reduce their demand for money.

The expectations that bond prices are about to change actually causes bond prices to change. If people expect bond prices to fall, for example, they will sell their bonds, exchanging them for money. That will shift the supply curve for bonds to the right, thus lowering their price. The importance of expectations in moving markets can lead to a self-fulfilling prophecy.

Expectations about future price levels also affect the demand for money. The expectation of a higher price level means that people expect the money they are holding to fall in value. Given that expectation, they are likely to hold less of it in anticipation of a jump in prices.

Expectations about future price levels play a particularly important role during periods of hyperinflation. If prices rise very rapidly and people expect them to continue rising, people are likely to try to reduce the amount of money they hold, knowing that it will fall in value as it sits in their wallets or their bank accounts. Toward the end of the great German hyperinflation of the early 1920s, prices were doubling as often as three times a day. Under those circumstances, people tried not to hold money even for a few minutes—within the space of eight hours money would lose half its value.

Transfer Costs

For a given level of expenditures, reducing the quantity of money demanded requires more frequent transfers between non money and money deposits. As the cost of such transfers rises, some consumers will choose to make fewer of them. They will therefore increase the quantity of money they demand. In general, the demand for money will increase as it becomes more expensive to transfer between money and non money accounts. The demand for money will fall if transfer costs decline. In recent years, transfer costs have fallen, leading to a decrease in money demand.

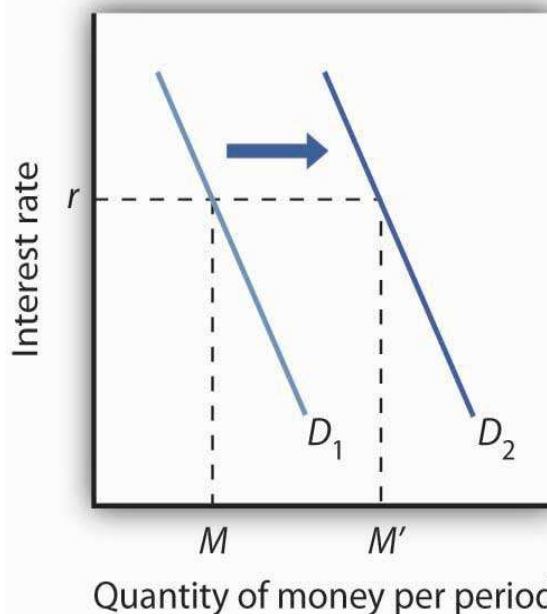
Preferences

Preferences also play a role in determining the demand for money. Some people place a high value on having a considerable amount of money on hand. For others, this may not be important.

Household attitudes toward risk are another aspect of preferences that affect money demand. As we have seen, bonds pay higher interest rates than money deposits, but holding bonds entails a risk that bond prices might fall. There is also a chance that the issuer of a bond will default, that is, will not pay the amount specified on the bond to bondholders; indeed, bond issuers may end up paying nothing at all. A money deposit, such as a savings deposit, might earn a lower yield, but it is a safe yield. People's attitudes about the trade-off between risk and yields affect the degree to which they hold their wealth as money. Heightened concerns about risk in the last half of 2008 led many households to increase their demand for money.

Figure "An Increase in Money Demand" shows an increase in the demand for money. Such an increase could result from a higher real GDP, a higher price level, a change in expectations, an increase in transfer costs, or a change in preferences.

An Increase in Money Demand

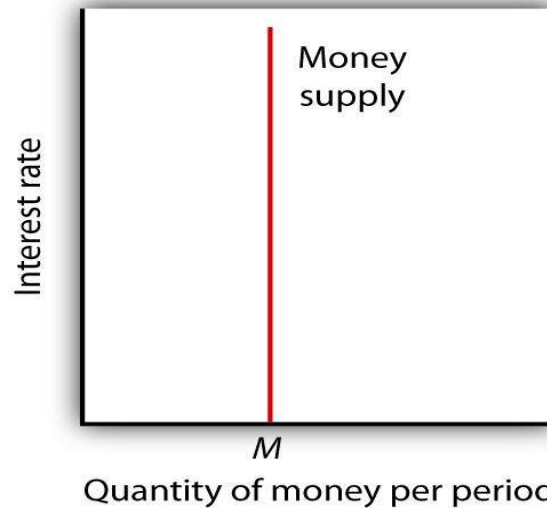


An increase in real GDP, the price level, or transfer costs, for example, will increase the quantity of money demanded at any interest rate r , increasing the demand for money from D_1 to D_2 . The quantity of money demanded at interest rate r rises from M to M' . The reverse of any such events would reduce the quantity of money demanded at every interest rate, shifting the demand curve to the left.

The Supply of Money

The supply curve of money shows the relationship between the quantity of money supplied and the market interest rate, all other determinants of supply unchanged. We have learned that the Fed, through its open-market operations, determines the total quantity of reserves in the banking system. We shall assume that banks increase the money supply in fixed proportion to their reserves. Because the quantity of reserves is determined by Federal Reserve policy, we draw the supply curve of money in Figure "The Supply Curve of Money" as a vertical line, determined by the Fed's monetary policies. In drawing the supply curve of money as a vertical line, we are assuming the money supply does not depend on the interest rate. Changing the quantity of reserves and hence the money supply is an example of monetary policy.

The Supply Curve of Money

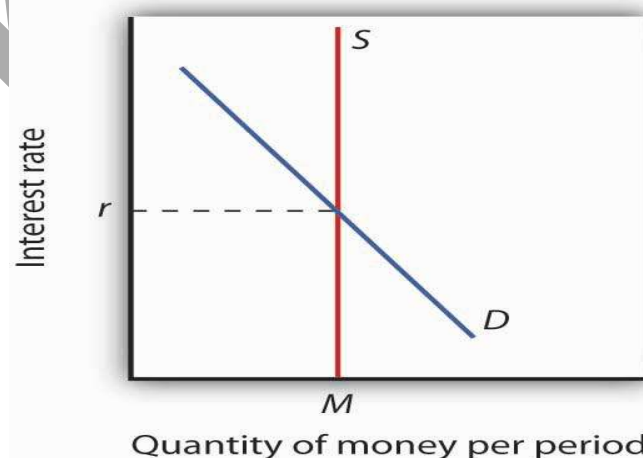


We assume that the quantity of money supplied in the economy is determined as a fixed multiple of the quantity of bank reserves, which is determined by the Fed. The supply curve of money is a vertical line at that quantity.

Equilibrium in the Market for Money

The money market is the interaction among institutions through which money is supplied to individuals, firms, and other institutions that demand money. Money market equilibrium occurs at the interest rate at which the quantity of money demanded is equal to the quantity of money supplied. Figure "Money Market Equilibrium" combines demand and supply curves for money to illustrate equilibrium in the market for money. With a stock of money (M), the equilibrium interest rate is r .

Money Market Equilibrium



The market for money is in equilibrium if the quantity of money demanded is equal to the quantity of money supplied. Here, equilibrium occurs at interest rate r .

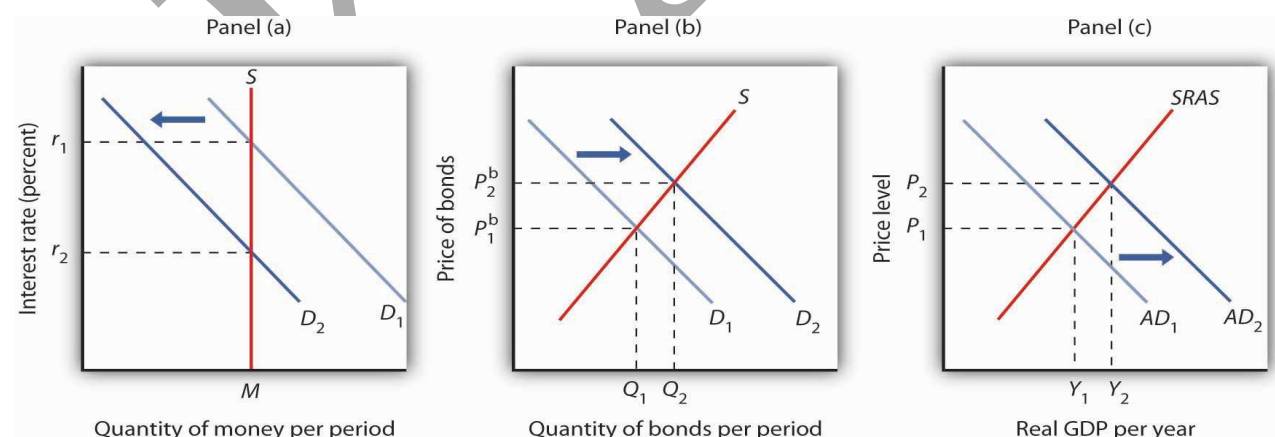
Effects of Changes in the Money Market

A shift in money demand or supply will lead to a change in the equilibrium interest rate. Let's look at the effects of such changes on the economy.

Changes in Money Demand

Suppose that the money market is initially in equilibrium at r_1 with supply curve S and a demand curve D_1 as shown in Panel (a) of Figure "A Decrease in the Demand for Money". Now suppose that there is a decrease in money demand, all other things unchanged. A decrease in money demand could result from a decrease in the cost of transferring between money and no money deposits, from a change in expectations, or from a change in preferences. In this chapter we are looking only at changes that originate in financial markets to see their impact on aggregate demand and aggregate supply. Changes in the price level and in real GDP also shift the money demand curve, but these changes are the result of changes in aggregate demand or aggregate supply and are considered in more advanced courses in macroeconomics. Panel (a) shows that the money demand curve shifts to the left to D_2 . We can see that the interest rate will fall to r_2 . To see why the interest rate falls, we recall that if people want to hold less money, then they will want to hold more bonds. Thus, Panel (b) shows that the demand for bonds increases. The higher price of bonds means lower interest rates; lower interest rates restore equilibrium in the money market.

A Decrease in the Demand for Money



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A decrease in the demand for money due to a change in transactions costs, preferences, or expectations, as shown in Panel (a), will be accompanied by an increase in the demand for bonds as shown in Panel (b), and a fall in the interest rate. The fall in the interest rate will cause a rightward shift in the aggregate demand curve from AD_1 to AD_2 , as shown in Panel (c). As a result, real GDP and the price level rise.

Lower interest rates in turn increase the quantity of investment. They also stimulate net exports, as lower interest rates lead to a lower exchange rate. The aggregate demand curve shifts to the right as shown in Panel (c) from AD_1 to AD_2 . Given the short-run aggregate supply curve $SRAS$, the economy moves to a higher real GDP and a higher price level.

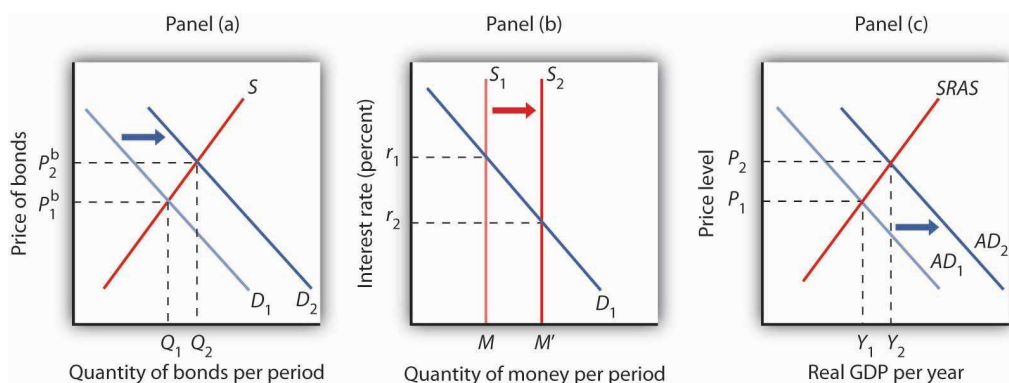
An increase in money demand due to a change in expectations, preferences, or transactions costs that make people want to hold more money at each interest rate will have the opposite effect. The money demand curve will shift to the right and the demand for bonds will shift to the left. The resulting higher interest rate will lead to a lower quantity of investment. Also, higher interest rates will lead to a higher exchange rate and depress net exports. Thus, the aggregate demand curve will shift to the left. All other things unchanged, real GDP and the price level will fall.

Changes in the Money Supply

Now suppose the market for money is in equilibrium and the Fed changes the money supply. All other things unchanged, how will this change in the money supply affect the equilibrium interest rate and aggregate demand, real GDP, and the price level?

Suppose the Fed conducts open-market operations in which it buys bonds. This is an example of expansionary monetary policy. The impact of Fed bond purchases is illustrated in Panel (a) of Figure "An Increase in the Money Supply". The Fed's purchase of bonds shifts the demand curve for bonds to the right, raising bond prices to P^b_2 . As we learned, when the Fed buys bonds, the supply of money increases. Panel (b) of Figure "An Increase in the Money Supply" shows an economy with a money supply of M , which is in equilibrium at an interest rate of r_1 . Now suppose the bond purchases by the Fed as shown in Panel (a) result in an increase in the money supply to M' ; that policy change shifts the supply curve for money to the right to S_2 . At the original interest rate r_1 , people do not wish to hold the newly supplied money; they would prefer to hold non money assets. To reestablish equilibrium in the money market, the interest rate must fall to increase the quantity of money demanded. In the economy shown, the interest rate must fall to r_2 to increase the quantity of money demanded to M' .

An Increase in the Money Supply



The Fed increases the money supply by buying bonds, increasing the demand for bonds in Panel (a) from D_1 to D_2 and the price of bonds to P_2^b . This corresponds to an increase in the money supply to M' in Panel (b). The interest rate must fall to r_2 to achieve equilibrium. The lower interest rate leads to an increase in investment and net exports, which shifts the aggregate demand curve from AD_1 to AD_2 in Panel (c). Real GDP and the price level rise.

The reduction in interest rates required to restore equilibrium to the market for money after an increase in the money supply is achieved in the bond market. The increase in bond prices lowers interest rates, which will increase the quantity of money people demand. Lower interest rates will stimulate investment and net exports, via changes in the foreign exchange market, and cause the aggregate demand curve to shift to the right, as shown in Panel (c), from AD_1 to AD_2 . Given the short-run aggregate supply curve $SRAS$, the economy moves to a higher real GDP and a higher price level.

Concept of Money Supply and Its Measurement:

By money supply we mean the total stock of monetary media of exchange available to a society for use in connection with the economic activity of the country.

According to the standard concept of money supply, it is composed of the following two elements:

1. Currency with the public,
2. Demand deposits with the public.

Before explaining these two components of money supply two things must be noted with regard to the money supply in the economy. First, the money supply refers to the total sum of money available to the public in the economy at a point of time. That is, money supply is a stock concept in sharp contrast to the

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national income which is a flow representing the value of goods and services produced per unit of time, usually taken as a year.

Secondly, money supply always refers to the amount of money held by the public. In the term public are included households, firms and institutions other than banks and the government. The rationale behind considering money supply as held by the public is to separate the producers of money from those who use money to fulfill their various types of demand for money.

Since the Government and the banks produce or create money for the use by the public, the money (cash reserves) held by them are not used for transaction and speculative purposes and are excluded from the standard measures of money supply. This separation of producers of money from the users of money is important from the viewpoint of both monetary theory and policy.

Let us explain the two components of money supply at some length:

Currency with the Public:

In order to arrive at the total currency with the public in India we add the following items:

1. Currency notes in circulation issued by the Reserve Bank of India.
2. The number of rupee notes and coins in circulation.
3. Small coins in circulation.

It is worth noting that cash reserves with the banks have to be deducted from the value of the above three items of currency in order to arrive at the total currency with the public. This is because cash reserves with the banks must remain with them and cannot therefore be used for making payments for goods or by any commercial bank's transactions.

It may further be noted that these days paper currency issued by Reserve Bank of India (RBI) are not fully backed by the reserves of gold and silver, nor it is considered necessary to do so. Full backing of paper currency by reserves of gold prevailed in the past when gold standard or silver standard type of monetary system existed.

According to the modern economic thinking the magnitude of currency issued should be determined by the monetary needs of the economy and not by the available reserves of gold and silver. In other developed countries, since 1957 Reserve Bank of India follows Minimum Reserve System of issuing currency.

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Under this system, minimum reserves of Rs. 200 crores of gold and other approved securities (such as dollars, pound sterling, etc.) have to be kept and against this any amount of currency can be issued depending on the monetary requirements of the economy.

RBI is not bound to convert notes into equal value of gold or silver. In the present times currency is inconvertible. The word written on the note, say 100 rupee notes and signed by the governor of RBI that 'I promise to pay the bearer a sum of 100 rupees' is only a legacy of the past and does not imply its convertibility into gold or silver.

Another important thing to note is that paper currency or coins are fiat money, which means that currency notes and metallic coins serve as money on the bases of the fiat (i.e. order) of the Government. In other words, on the authority of the Government no one can refuse to accept them in payment for the transaction made. That is why they are called legal tender.

Demand Deposits with the Public:

The other important components of money supply are demand deposits of the public with the banks. These demand deposits held by the public are also called bank money or deposit money. Deposits with the banks are broadly divided into two types: demand deposits and time deposits. Demand deposits in the banks are those deposits which can be withdrawn by drawing cheque on them.

Through cheque these deposits can be transferred to others for making payments from which goods and services have been purchased. Thus, cheque make these demand deposits as a medium of exchange and therefore make them to serve as money. It may be noted that demand deposits are fiduciary money proper.

Fiduciary money is one which functions as money on the basis of trust of the persons who make payment rather than on the basis of the authority of Government. Thus, despite the fact that demand deposits and cheque through which they are operated are not legal tender, they function as money on the basis of the trust commanded by those who draw cheque on them. They are money as they are generally acceptable as medium of payment.

Bank deposits are created when people deposit currency with them. But far more important is that banks themselves create deposits when they give advances to businessmen and others. On the basis of small cash reserves of currency, they are able to create a much larger amount of demand deposits through a system called fractional reserve system which will be explained later in detail.

In the developed countries such as USA and Great Britain deposit money accounted for over 80 per cent of the total money supply, currency being a relatively small part of it. This is because banking system has greatly developed there and also people have developed banking habits.

On the other hand, in the developing countries banking has not developed sufficiently and also people have not acquired banking habits and they prefer to make transactions in currency. However in India after 50 years of independence and economic development the proportion of bank deposits in the money supply has risen to about 50 per cent.

Four Measures of Money Supply:

Several definitions of money supply have been given and therefore various measures of money supply based on them have been estimated. First, different components of money supply have been distinguished on the basis of the different functions that money performs. For example, demand deposits, credit card and currency are used by the people primarily as a medium of exchange for buying goods and services and making other transactions.

Obviously, they are money because they are used as a medium of exchange and are generally referred to as M_1 . Another measure of money supply is M_3 which includes both M_1 and time deposits held by the public in the banks. Time deposits are money that people hold as store of value.

The main reason why money supply is classified into various measures on the basis of its functions is that effective predictions can be made about the likely effects on the economy of changes in the different components of money supply. For example, if M_1 is increasing firstly it can be reasonably expected that people are planning to make a large number of transactions.

On the other hand, if time-deposits component of money supply measure M_3 which serves as a store of value is increasing rapidly, it can be validly concluded that people are planning to save more and accordingly consume less.

Therefore, it is believed that for monetary analysis and policy formulation, a single measure of money supply is not only inadequate but may be misleading too. Hence various measures of money supply are prepared to meet the needs of monetary analysis and policy formulation.

Recently in India as well as in some developed countries, four concepts of money supply have been distinguished. The definition of money supply given above represents a narrow measure of money supply and is generally described as M_1 .

From April 1977, the Reserve Bank of India has adopted four concepts of money supply in its analysis of the quantum of and variations in money supply. These four concepts of measures of money supply are explained below.

Money Supply M1 or Narrow Money:

This is the narrow measure of money supply and is composed of the following items:

$$M1 = C + DD + OD$$

Where, C = Currency with the public

DD = Demand deposits with the public in the commercial and cooperative banks.

OD = Other deposits held by the public with Reserve Bank of India.

The money supply is the most liquid measure of money supply as the money included in it can be easily used as a medium of exchange, that is, as a means of making payments for transactions.

Currency with the public (C) in the above measure of money supply consists of the following:

- (i) Notes in circulation.
- (ii) Circulation of rupee coins as well as small coins
- (iii) Cash reserves on hand with all banks.

Note that in measuring demand deposits with the public in the banks (i.e., DD), inter-bank deposits, that is, deposits held by a bank in other banks, are excluded from this measure.

In the other deposits with Reserve Bank of India (i.e., OD) deposits held by the Central and State Governments and a few others such as RBI Employees Pension and Provident Funds are excluded.

However, these other deposits of Reserve Bank of India include the following items:

- (i) Deposits of Institutions such as UTI, IDBI, IFCL, NABARD etc.
- (ii) Demand deposits of foreign Central Banks and Foreign Governments.
- (iii) Demand deposits of IMF and World Bank.

It may be noted that other deposits of Reserve Bank of India constitute a very small proportion (less than one per cent).

Money Supply M2:

M2 is a broader concept of money supply in India than M1. In addition to the three items of M1, the concept of money supply M₂ includes savings deposits with the post office savings banks. Thus,

$$M2 = M1 + \text{Savings deposits with the post office savings banks.}$$

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The reason why money supply M2 has been distinguished from M1 is that saving deposits with post office savings banks are not as liquid as demand deposits with commercial and cooperative banks as they are not chequable accounts. However, saving deposits with post offices are more liquid than time deposits with the banks.

Money Supply M3 or Broad Money:

M3 is a broad concept of money supply. In addition to the items of money supply included in measure M1, in money supply M3 time deposits with the banks are also included. Thus

$M3 = M1 + \text{Time Deposits with the banks.}$

It is generally thought that time deposits serve as store of value and represent savings of the people and are not liquid as they cannot be withdrawn through drawing cheque on them. However, since loans from the banks can be easily obtained against these time deposits, they can be used if found necessary for transaction purposes in this way. Further, they can be withdrawn at any time by forgoing some interest earned on them.

It may be noted that recently M3 has become a popular measure of money supply. The working group on monetary reforms under the chairmanship of late Prof. Sukhamoy Chakravarty recommended its use for monetary planning of the economy and setting target of the growth of money supply in terms of M3.

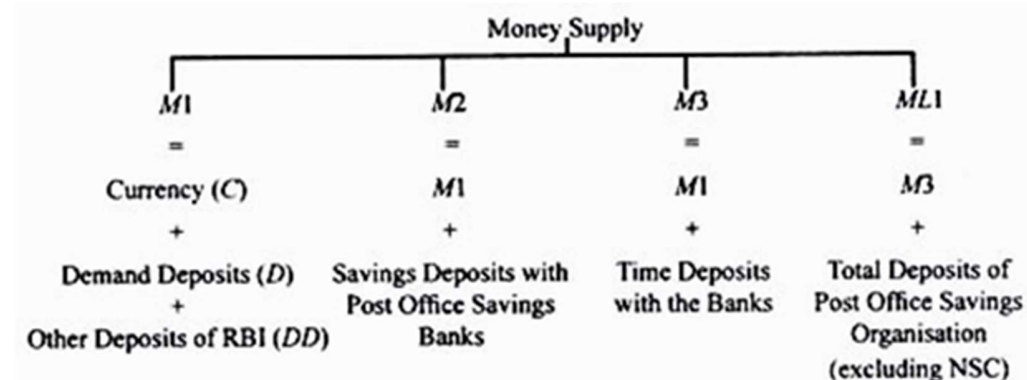
Therefore, recently RBI in its analysis of growth of money supply and its effects on the economy has shifted to the use of M3 measure of money supply. In the terminology of money supply employed by the Reserve Bank of India till April 1977, this M3 was called Aggregate Monetary Resources (AMR).

Money Supply M4:

The measure M4 of money supply includes not only all the items of M3 described above but also the total deposits with the post office savings organisation. However, this excludes contributions made by the public to the national saving certificates. Thus,

$M4 = M3 + \text{Total Deposits with Post Office Savings Organisation.}$

Let us summaries the four concepts of money supply as used by Reserve Bank of India in the following tabular form:



Process of Credit creation and money supply

The supply of money is a stock at a particular point of time, though it conveys the idea of a flow over time. The term ‘the supply of money’ is synonymous with such terms as ‘money stock’, ‘stock of money’, ‘money supply’ and ‘quantity of money’.

The supply of money at any moment is the total amount of money in the economy. There are three alternative views regarding the definition or measures of money supply. The most common view is associated with the traditional and Keynesian thinking which stresses the medium of exchange function of money.

According to this view, money supply is defined as currency with the public and demand deposits with commercial banks. Demand deposits are savings and current accounts of depositors in a commercial bank. They are the liquid form of money because depositors can draw cheques for any amount lying in their accounts and the bank has to make immediate payment on demand. Demand deposits with commercial banks plus currency with the public are together denoted as M1, the money supply. This is regarded as a narrower definition of the money supply.

The second definition is broader and is associated with the modern quantity theorists headed by Friedman. Professor Friedman defines the money supply at any moment of time as “literally the number of dollars people are carrying around in their pockets, the number of dollars they have to their credit at banks or dollars they have to their credit at banks in the form of demand deposits, and also commercial bank time deposits.”

Time deposits are fixed deposits of customers in a commercial bank. Such deposits earn a fixed rate of interest varying with the time period for which the amount is deposited. Money can be withdrawn before the expiry of that period by paying a penal rate of interest to the bank. So time deposits possess liquidity

and are included in the money supply by Friedman. Thus this definition includes M1 plus time deposits of commercial banks in the supply of money. This wider definition is characterised as M2 in America and M3 in Britain and India. It stresses the store of value function of money or what Friedman says, 'a temporary abode of purchasing power'.

The third definition is the broadest and is associated with Gurley and Shaw. They include in the supply of money, M2 plus deposits of savings banks, building societies, loan associations, and deposits of other credit and financial institutions.

Determinants of Money Supply:

There are two theories of the determination of the money supply. According to the first view, the money supply is determined exogenously by the central bank. The second view holds that the money supply is determined endogenously by changes in the economic activity which affects people's desire to hold currency relative to deposits, the rate of interest, etc.

Thus the determinants of money supply are both exogenous and endogenous which can be described broadly as: the minimum cash reserve ratio, the level of bank reserves, and the desire of the people to hold currency relative to deposits. The last two determinants together are called the monetary base or the high powered money.

1. The Required Reserve Ratio:

The required reserve ratio (or the minimum cash reserve ratio or the reserve deposit ratio) is an important determinant of the money supply. An increase in the required reserve ratio reduces the supply of money with commercial banks and a decrease in required reserve ratio increases the money supply.

The RR1 is the ratio of cash to current and time deposit liabilities which is determined by law. Every commercial bank is required to keep a certain percentage of these liabilities in the form of deposits with the central bank of the country. But notes or cash held by commercial banks in their tills are not included in the minimum required reserve ratio.

But the short-term assets along with the cash are regarded as the liquid assets of a commercial bank. In India the statutory liquidity ratio (SLR) has been fixed by law as an additional measure to determine the money supply. The SLR is called secondary reserve ratio in other countries while the required reserve ratio is referred to as the primary ratio. The raising of the SLR has the effect of reducing the money supply with

commercial banks for lending purposes, and the lowering of the SLR tends to increase the money supply with banks for advances.

2. The Level of Bank Reserves:

The level of bank reserves is another determinant of the money supply. Commercial bank reserves consist of reserves on deposits with the central bank and currency in their tills or vaults. It is the central bank of the country that influences the reserves of commercial banks in order to determine the supply of money. The central bank requires all commercial banks to hold reserves equal to a fixed percentage of both time and demand deposits. These are legal minimum or required reserves.

Required reserves (RR) are determined by the required reserve ratio (RRr) and the level of deposits (D) of a commercial bank: $RR = RRr \times D$. If deposits amount of Rs 80 lakhs and required reserve ratio is 20 percent, then the required reserves will be $20\% \times 80 = \text{Rs } 16$ lakhs. If the reserve ratio is reduced to 10 per cent, the required reserves will also be reduced to Rs 8 lakhs.

Thus the higher the reserve ratio, the higher the required reserves to be kept by a bank, and vice versa. But it is the excess reserves (ER) which are important for the determination of the money supply. Excess reserves are the difference between total reserves (TR) and required reserves (RR): $ER = TR - RR$. If total reserves are Rs 80 lakhs and required reserves are Rs 16 lakhs, then the excess reserves are Rs 64 lakhs ($80 - 16$ lakhs).

When required reserves are reduced to Rs 8 lakhs, the excess reserves increase to Rs 72 lakhs. It is the excess reserves of a commercial bank which influence the size of its deposit liabilities. A commercial bank advances loans equal to its excess reserves which are an important component of the money supply. To determine the supply of money with a commercial bank, the central bank influences its reserves by adopting open market operations and discount rate policy.

Open market operations refer to the purchase and sale of government securities and other types of assets like bills, securities, bonds, etc., both government and private in the open market. When the central bank buys or sells securities in the open market, the level of bank reserves expands or contracts.

The purchase of securities by the central bank is paid for with cheques to the holders of securities who, in turn, deposit them in commercial banks thereby increasing the level of bank reserves. The opposite is the case when the central bank sells securities to the public and banks who make payments to the central bank through cash and cheques thereby reducing the level of bank reserves.

The discount rate policy affects the money supply by influencing the cost and supply of bank credit to commercial banks. The discount rate, known as the bank rate in India, is the interest rate at which commercial banks borrow from the central bank. A high discount rate means that commercial banks get less amount by selling securities to the central bank. The commercial banks, in turn, raise their lending rates to the public thereby making advances dearer for them. Thus there will be contraction of credit and the level of commercial bank reserves. Opposite is the case when the bank rate is lowered. It tends to expand credit and the consequent bank reserves.

It should be noted that commercial bank reserves are affected significantly only when open market operations and discount rate policy supplement each other. Otherwise, their effectiveness as determinants of bank reserves and consequently of money supply is limited.

3. Public's Desire to Hold Currency and Deposits:

People's desire to hold currency (or cash) relative to deposits in commercial banks also determines the money supply. If people are in the habit of keeping less in cash and more in deposits with the commercial banks, the money supply will be large. This is because banks can create more money with larger deposits. On the contrary, if people do not have banking habits and prefers to keep their money holdings in cash, credit creation by banks will be less and the money supply will be at a low level.

High Powered Money and the Money Multiplier:

The current practice is to explain the determinants of the money supply in terms of the monetary base or high-powered money. High-powered money is the sum of commercial bank reserves and currency (notes and coins) held by the public. High-powered money is the base for the expansion of bank deposits and creation of the money supply. The supply of money varies directly with changes in the monetary base, and inversely with the currency and reserve ratios.

4. Other Factors:

The money supply is a function not only of the high-powered money determined by the monetary authorities, but of interest rates, income and other factors. The latter factors change the proportion of money balances that the public holds as cash. Changes in business activity can change the behaviour of banks and the public and thus affect the money supply. Hence the money supply is not only an exogenous controllable item but also an endogenously determined item.

Conclusion:

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We have discussed above the factors which determine money supply through the creation of bank credit. But money supply and bank credit are indirectly related to each other. When the money supply increases, a part of it is saved in banks depending upon the depositors' propensity to save. These savings become deposits of commercial banks who, in turn, lend after meeting the statutory reserve requirements. Thus with every increase in the money supply, the bank credit goes up. But it may not happen in exactly the same proportion due to the following factors:

- (a) The marginal propensity to save does not remain constant. It varies from time to time depending on changes in income levels, prices, and subjective factors.
- (b) Banks may also create more or less credit due to the operation of leakages in the credit creation process.
- (c) The velocity of circulation of money also affects the money supply. If the velocity of money circulation increases, the bank credit neither may nor fall even after a decrease in the money supply. The central bank has little control over the velocity of money which may adversely affect bank credit.

Process of Credit Creation by Commercial Banks

The multiple credit creation process can be explained with a single bank or more than one bank. The former is called single bank credit creation and the latter multiple bank credit creation model. To explain both these models, let us assume that;

- 1. There are three banks A, B, and C
- 2. The cash reserve ratio is 10% and
- 3. An initial deposit (primary deposit) of Rs. 10000 is made into bank A.

When bank A receives the new deposit its balance sheet will appear as below

Liabilities		Assets	
New deposit	Rs. 10000	New Cash	Rs.10000
	<u>Rs. 10000</u>		<u>Rs.10000</u>

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Out of this new deposit of Rs. 10000 the bank has to maintain a reserve of 10% which works out to Rs. 1000. The balance of Rs. 9000, can be lent by the banker. Suppose Bank A lends Rs. 9000 to Mr. P, a borrower, who uses this fund to pay off his creditors. On giving the loan to Mr. P, the balance sheet of Bank A will be

Liabilities		Assets	
Deposits	Rs. 10000	<u>Cash (Reserve) Loan to Mr. P</u>	<u>Rs.1000</u>
			<u>Rs.9000</u>
	<u>Rs. 10000</u>		<u>Rs.10000</u>

The creditors of Mr. P may have an account with bank B and so they may deposit Rs. 9000 received from Mr. P in bank B. This is the primary deposit of fresh deposit bank B. Of this the bank will maintain a reserve of Rs. 900 and it may give a loan, of Rs. 8100 to Mr. Q. Then the balance sheet of bank B will appear thus

Liabilities		Assets	
New deposit	Rs. 9000	<u>Cash (Reserve) Loan to Mr. Q</u>	Rs.900
			Rs.8100
	<u>Rs. 9000</u>		<u>Rs.9000</u>

Suppose Mr. Q uses this loan of Rs. 8100 to pay off his creditor who has an account with Bank C. Bank C will, then, get a fresh deposit of Rs. 8100 and it would lend Rs. 7290 after keeping a cash reserve of Rs. 810. The balance sheet of bank C will appear as below :

Liabilities	Assets
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New deposits	Rs.8100	Cash (reserve)Loan to Mr. R	Rs.810 Rs.7290
	Rs.8100		Rs.8100

Mr. R may use this loan to repay his creditor who may have an account with Bank D and it would create loan out of the new deposit received. Hence, in the above example, a fresh deposit of Rs. 10000 in Bank A has resulted in the creation of loans to the tune of Rs. 24390 (9000 + 8100 + 7290). If this process continues more amount of credit will be created.

In the above example, we have assumed that each borrower has enabled fresh deposits in different banks. Suppose the amount lent by Bank A is retained by it (because the creditors of Mr. P deposit the money in bank A itself). Hence, the example given above explain the multi bank credit creation model and if it is altered slightly, assume the existence of bank A alone, then it becomes an example for single bank credit creation model.

It is of interest to know the total amount of **credit created by the commercial banks** in the above example. This could be found out that die following formula $K = 1/r$. In the formula K is the deposit multiplier and r is the cash reserve ratio. In the above example $r = 10\%$, ie., $1/0.10$ which is equal to 10. This means that original deposit will multiply by 10 times if the cash reserve ratio is 10% Suppose we increase the cash reserve ratio to 20% then the multiplier will be 5 and the cash reserve ratio is 5%, the multiplier will be 20. Hence a rise in cash reserve ratio will reduce the volume of credit created and a fall in cash reserve ratio will increase the volume of credit created. We find the total amount of credit created we can use the deposit multiplier calculated above multiply it with the initial deposit In otherwords, Addition aggregate deposits = Fresh deposit x K

In the above example, fresh deposit is Rs. 10000 and the multiplier is 10. Hence the total credit created is $10000 \times 10 = 100000$.

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So far we have explained the **credit creation process by the commercial banks**. We can also explain the credit contraction process which means, that whenever the depositors withdraw their deposits then the banks will be left with lesser cash to create only lesser credit.

Both the credit creation and contraction are subjected to the following limitations:

1. The volume of cash in circulation determines the extent of credit created. With larger volume of cash, the primary deposits will be more thereby the credit created will also be more. Any reduction in the volume of cash will reduce primary deposits and so the credit created.
2. Cash reserve ratio, in fact, is a primary determinant of credit created. It has been already shown that higher the cash reserve ratio lesser will be credit created and lower the ratio greater will be the credit created.
3. The external drain or the extent of withdrawal of cash by the depositors also determines the volume of credit created. When there is heavy withdrawal of cash by depositors there will be reduction in credit created and lesser withdrawal will encourage a larger volume of credit created.
4. Banking habit of the people is one of the factors influencing the credit created; If people conduct most of their businesses using cheque rather than cash, then the banks will have more cash (primary deposits) to create more credit when people use more of cash rather than cheque, bills, etc.
5. The central bank is the leader of the monetary system and its decision to follow a liberal credit policy will encourage more of credit creation and a stringent credit policy will bring down the credit created.
6. The availability of a large volume of collateral securities will facilitate larger volume of credit creation and with lesser volume of collateral securities only, lesser credit will be created.
7. The business condition prevailing in the country will be one more factor determining the extent of credit creation activity. With prosperity and boom conditions prevailing there is greater opportunity for additional investment and so the credit creation will take place in large scale. During the period of depression and adversity, as the investment opportunities are very limited, there is no scope for credit creation.

Monetary Policy

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Monetary policy implies those measures designed to ensure an efficient operation of the economic system or set of specific objectives through its influence on the supply, cost and availability of money. The concept of monetary policy has been defined in a different manner according to different economists;

Definition of Monetary Policy

Many economists have given various definitions of monetary policy. Some prominent definitions are as follows.

According to Prof. Harry Johnson, "A policy employing the central banks control of the supply of money as an instrument for achieving the objectives of general economic policy is a monetary policy."

According to A.G. Hart,

"A policy which influences the public stock of money substitute of public demand for such assets of both that is policy which influences public liquidity position is known as a monetary policy."

Objectives of Monetary Policy

The objectives of a monetary policy in India are similar to the objectives of its five year plans. In a nutshell, planning in India aims at growth, stability and social justice. After the Keynesian revolution in economics, many people accepted significance of monetary policy in attaining following objectives.

- Rapid Economic Growth
- Price Stability
- Exchange Rate Stability
- Balance of Payments (BOP) Equilibrium
- Full Employment
- Neutrality of Money

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- Equal Income Distribution

These are the general objectives which every central bank of a nation tries to attain by employing certain tools (Instruments) of a monetary policy. In India, the RBI has always aimed at the controlled expansion of bank credit and money supply, with special attention to the seasonal needs of a credit.

Rapid Economic Growth: It is the most important objective of a monetary policy. The monetary policy can influence economic growth by controlling real interest rate and its resultant impact on the investment. If the RBI opts for a cheap or easy credit policy by reducing interest rates, the investment level in the economy can be encouraged. This increased investment can speed up economic growth. Faster economic growth is possible if the monetary policy succeeds in maintaining income and price stability.

Price Stability: All the economics suffer from inflation and deflation. It can also be called as Price Instability. Both inflation and deflation are harmful to the economy. Thus, **the monetary policy having an objective of price stability tries to keep the value of money stable. It helps in reducing the income and wealth inequalities.** When the economy suffers from recession the monetary policy should be an 'easy money policy' but when there is inflationary situation there should be a 'dear money policy'.

Exchange Rate Stability: Exchange rate is the price of a home currency expressed in terms of any foreign currency. If this exchange rate is very volatile leading to frequent ups and downs in the exchange rate, the international community might lose confidence in our economy. The monetary policy aims at maintaining the relative stability in the exchange rate. **The RBI by altering the foreign exchange reserves tries to influence the demand for foreign exchange and tries to maintain the exchange rate stability.**

Balance of Payments (BOP) Equilibrium: Many developing countries like India suffers from the Disequilibrium in the BOP. The Reserve Bank of India through its monetary policy tries to maintain

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equilibrium in the balance of payments. The BOP has two aspects i.e. the 'BOP Surplus' and the 'BOP Deficit'. The former reflects an excess money supply in the domestic economy, while the later stands for stringency of money. If the monetary policy succeeds in maintaining monetary equilibrium, then the BOP equilibrium can be achieved.

Full Employment: The concept of full employment was much discussed after Keynes's publication of the "General Theory" in 1936. It refers to absence of involuntary unemployment. In simple words 'Full Employment' stands for a situation in which everybody who wants jobs get jobs. However it does not mean that there is Zero unemployment. In that senses the full employment is never full. Monetary policy can be used for achieving full employment. **If the monetary policy is expansionary then credit supply can be encouraged. It could help in creating more jobs in different sector of the economy.**

Neutrality of Money: Economist such as Wicksted, Robertson have always considered money as a passive factor. According to them, money should play only a role of medium of exchange and not more than that. Therefore, the monetary policy should regulate the supply of money. The change in money supply creates monetary disequilibrium. Thus monetary policy has to regulate the supply of money and neutralize the effect of money expansion. However this objective of a monetary policy is always criticized on the ground that if money supply is kept constant then it would be difficult to attain price stability.

Equal Income Distribution: Many economists used to justify the role of the fiscal policy is maintaining economic equality. However in recent years economists have given the opinion that the monetary policy can help and play a supplementary role in attaining an economic equality. Monetary policy can make special provisions for the neglect supply such as agriculture, small-scale industries, village industries, etc. and provide them with cheaper credit for longer term. This can prove fruitful for these sectors to come up.

Thus in recent period, monetary policy can help in reducing economic inequalities among different sections of society.

Role of Monetary Policy in developing economy

The monetary policy in a developing economy will have to be quite different from that of a developed economy mainly due to different economic conditions and requirements of the two types of economies.

A developed country may adopt full employment or price stabilisation or exchange stability as a goal of the monetary policy

But in a developing or underdeveloped country, economic growth is the primary and basic necessity. Thus, in a developing economy the monetary policy should aim at promoting economic growth, the monetary authority of a developing economy can play a vital role by adopting such a monetary policy which creates conditions necessary for rapid economic growth. Monetary policy can serve the following developmental requirements of developing economies.

1. Developmental Role:

Accelerating economic development by influencing the supply and uses of credit, controlling inflation, and maintaining balance of payment.

2. Creation and Expansion of Financial Institutions:

More banks and financial institutions should be set up, particularly in those areas which lack these facilities will help in increasing credit facilities, mobilising voluntary savings of the people, and channelizing them into productive uses.

3. Effective Central Banking:

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To meet the developmental needs the central bank of an underdeveloped country must **function effectively to control and regulate the volume of credit through various monetary instruments, like bank rate, open market operations, cash-reserve ratio etc.**

4. Integration of Organised and Unorganised Money Market:

The unorganised money market remains outside the control of the central bank. By adopting effective measures, the monetary authority should integrate the unorganised and organised sectors of the money market.

5. Developing Banking Habits:

Increase in the bank deposits by developing the banking habits of the people and popularising the use of credit instruments.

6. Monetisation of Economy:

The monetary authority should take measures to monetise this non-monetised sector and bring it under its control.

7. Integrated Interest Rate Structure:

The monetary authority should take effective steps to integrate the interest rate structure of the economy. Moreover, a suitable interest rate structure should be developed which not only **encourages savings and investment in the country but also discourages speculative and unproductive loans.**

8. Debt Management:

Debt management is another function of monetary policy in a developing country. Debt management aims at (a) deciding proper timing and issuing of government bonds, (b) stabilising their prices, and (c) minimising the cost of servicing public debt.

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9. Maintaining Equilibrium in Balance of Payments:

The monetary authority should adopt direct foreign exchange controls and other measures to correct the adverse balance of payments.

10. Controlling Inflationary Pressures:

Thus, the monetary policy in a developing economy should serve **to control inflationary tendencies by increasing savings by the people, checking expansion of credit by the banking system, and discouraging deficit financing by the government.**

11. Long-Term Loans for Industrial Development:

The monetary authority should induce these banks to grant long-term loans to the industrial units by providing rediscounting facilities.

12. Reforming Rural Credit System:

The monetary authority can play an important **role in providing both short-term and long term credit to the small arrangements, such as the establishment of cooperative credit societies, agricultural banks.**

Types of Monetary Policy

There are **two types of Monetary Policy:**





1. Expansionary Monetary Policy: The expansionary monetary policy is adopted when the economy is in a recession, and the unemployment is the problem. The expansion policy is undertaken with an aim to increase the aggregate demand by cutting the interest rates and increasing the supply of money in the economy. The money supply can be increased by buying the government bonds, lowering the interest rates and the reserve ratio. By doing so, the consumer spending increases, the private sector borrowings increases, unemployment reduces and the overall economy grows. Expansionary policy is also called as “**easy monetary policy**”.

Although the expansionary monetary policy is useful during the slow period in a business cycle, it comes with several risks. Such as the economist must know when the money supply should be expanded so as to avoid its side effects like **inflation**. There is often a time lag between the time the policy is made and the time it is implemented across the economy, so up-to-the-minute analysis of the policy is quite difficult or impossible. Also, the central bank and legislators must know when to stop the supply of money in the economy and apply a **Contractionary Policy**.

2. Contractionary Monetary Policy: The Contractionary Monetary policy is applied when the inflation is a problem and economy needs to be slow down by curtailing the supply of money. The inflation is characterized by increased money supply and increased consumer spending. Thus, the Contractionary policy is adopted with an aim to decrease the money supply and the spendings in the economy. This is primarily done by increasing the interest rates so that the borrowing becomes expensive.

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Thus, these are the monetary policies applied by the monetary authority to control the inflationary or recessionary pressures in the economy.

Instruments of Monetary Policy:

The instruments of monetary policy are of two types: first, quantitative, general or indirect; and second, qualitative, selective or direct. They affect the level of aggregate demand through the supply of money, cost of money and availability of credit. Of the two types of instruments, the first category includes bank rate variations, open market operations and changing reserve requirements. They are meant to regulate the overall level of credit in the economy through commercial banks. The selective credit controls aim at controlling specific types of credit. They include changing margin requirements and regulation of consumer credit. We discuss them as under:

Quantitative Methods

1. Bank Rate Policy
2. Open Market Operations
3. Variation of Cash Reserve Ratios
4. Fixation of Lending Rates of Commercial Banks
5. Credit Squeeze

Qualitative Methods

1. Fixation of Margin Requirements
2. Regulation of Consumer Credit
3. Control through Directives
4. Rationing of Credit
5. Prior Authorization Schemes
6. Moral Suasion

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7. Direct Action

8. 'Repo' Transactions

Let us discuss these methods here under:

Quantitative Credit Control by RBI

These methods are called traditional methods because they have been in use for decades. Through these methods, the credit creation is controlled by changing the cash reserves of commercial banks.

The methods of Bank Rate Policy, open market operations and variation of Cash Reserve Ratios, etc., are designed to effect the lendable resources of commercial banks either directly affecting their reserve base or by making the cost of funds cheaper or dearer to them. The important methods of this nature are explained herein below:

1. Bank Rate Policy

According to the Reserve Bank of India Act, the Bank Rate is defined as **"the standard rate at which the RBI is prepared to buy or rediscount bills of exchange or other commercial papers eligible for purchase under the provisions of the Act "**.

Thus, the bank rate is the rate of interest at which RBI rediscounts the first-class bills in the hands of commercial banks to provide them with liquidity in case of need. However, presently RBI does not accept any bills for re-discounting. This function is being done by separate financial institutions like DHFI created for similar purposes.

The bank rate policy as an instrument of monetary control was not successful in India for a long time. The main factors responsible for this are

- (i) Inherent inflexibility involved in the use of this instrument.
- (ii) The dominance of the Public Sector whose investment requirements are cost inelastic.
- (iii) The higher rate of inflation experienced in the economy.
- (iv) Restricted availability of refinance facilities to banks.

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(v) As the government expenditure increase, the tax burden also increases. Under heavy taxation, the businessmen feel that the interest rate is a minor factor. And the decrease in the importance of interest rate has led to the decline in the importance of bank rate.

The effectiveness of this instrument can be improved by restructured monetary system. Particularly necessary steps are to be taken to develop an active money market in the economy.

2. Open Market Operations

Open market operations are conducted by the RBI mainly with a view to manage short- term liquidity in the market. These operations directly or indirectly affect the reserves of the commercial banks and thereby the extent of credit creation is controlled.

Section 17 (8) of the Reserve Bank of India Act confers legal powers on the Reserve Bank to use this instrument of monetary policy. **Under this section the Reserve Bank is authorized to purchase and sell the securities of the Central or State Government of any maturity and the security of a local authority specified by the central government on the recommendation of the banks central board..**

It will sell the securities in open market to drain out excess liquidity from the financial system and thereby contraction of credit. When it buys securities it injects additional funds into the market and consequently credit expansion may take place. "Repos" and "Reverse Repos" transactions may be considered a supplementary operation to this system.

3. Variation of Cash Reserve Ratios : Under this requirement, certain percentage of Deposit liabilities of banks is impounded in cash form with RBI and/or to be maintained in liquid assets like government securities. The reserve requirements were originally evolved as a means for safeguarding the interests of depositors.

Later it was developed as an instrument of credit control. The variation in the reserve requirements has the effect of increasing or decreasing the funds available with commercial banks for lending. In India, the reserve requirements are of two types. They are,

(a) The Cash Reserve Ratio, and

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(b) The Statutory Liquidity Ratio.

(a) Cash Reserve Ratio:

Under the provisions of the RBI Act, the Scheduled banks were required to maintain a minimum amount of cash reserve with the Reserve Bank. The reserve is made out of demand and time liabilities at certain percentage fixed by the RBI.

Section 42 (1) of the Act empowers the RBI to stipulate, by giving notification in the Gazette, the percentage of reserve, on the total net demand and time liabilities to be maintained by every banking company with RBI. In terms of Section 18 of RBI Act non-scheduled banks can maintain the cash reserve either with them or with RBI in cash.

The cash Reserve Ratio is required to be maintained in cash with RBI, in addition to the percentage to be maintained under the Statutory Liquidity Ratio. The cash Reserve Ratio cannot exceed 15% of the net demand and time Liabilities.

The Cash Reserve Ratio at the time of notification of banks was 3% which having been revised a number of times. The flat rate of 15% was introduced in the credit policy for the first half of 1989-90.

(b) Statutory Liquidity Ratio:

Under Section 24 of the Banking Regulation Act 1949, RBI is empowered to stipulate the liquid assets every banking company is required to hold against their demand and time liabilities in addition to cash reserve requirement.

Accordingly the banks both scheduled and non-scheduled have to maintain liquid assets in cash, gold or unencumbered approved securities amounting to not less than 25% of their net demand and time liabilities in India.

This requirement of 25% can be increased by the RBI from time to time by a notification in the official Gazette. But the ratio so prescribed cannot exceed 40% (In the first half of 1986-87 the ratio was 37%) however; Regional Rural Banks, non-scheduled Banks and co-operative Banks are allowed to maintain

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statutory Liquidity Ratio at 25% only. Further, all banks are required to maintain this reserve only at 25% in respect of N.R.E accounts.

The main object of SLR is,

- (a) To assure solvency of Commercial banks by compelling them to hold low risk assets up to the stipulated extent.
- (b) To create or support a market for government securities in the economy which do not have a developed capital market and
- (c) To allocate resources to government for augmenting the resources of the Public Sector.

Banks like Regional Rural Banks may hold entire SLR requirements in the form of cash with the sponsor banks.

Effects of Statutory Liquidity Ratio

The main purpose of prescribing SLR is to ensure the liquidity position of banks in meeting the withdrawal requirements of depositors. Since these funds are mostly invested in Government Securities they are considered to be highly liquid and also no risk of loss of value, i.e., they can be encashed at quick notice or immediately.

One of the effects of SLR is to raise or lower the liquidity requirements of banks thus affecting their capacity to lend. In order to discourage the banks from contravening the liquidity provisions, the RBI may not allow the defaulting banks access to further refinance and may charge additional interest on their borrowings from it.

4. Fixation of Lending Rates of Commercial Banks

The RBI controls the credit created by the commercial banks by fixing the lending rates of the banks. **When the lending rates are fixed at higher level, the credit becomes costlier and it may lead to contraction of credit. Similarly when the rates are lowered, it may result into expansion of credit.**

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Besides controlling the rates of interest on the advances made by the banks, the RBI places certain restrictions on the grant of advances against term deposits. These relate to the quantum of advance that can be granted and the rate of interest to be charged.

5. Credit Squeeze

When the bank rate policy has not been successful in controlling the expansion of credit, the method of credit squeeze is useful. **Under this method, the maximum amount of bank credit is fixed at a certain limit. and, the maximum limit for commercial banks borrowing from the RBI is also fixed.**

The banks are not allowed to expand the credit beyond these limits. These limits may be fixed in general for all credits or may be sector-specific like for steel industry, textile industry, etc.

But it should be noted that a general credit squeeze may make the trade and industry suffer even for legitimate purposes. Reserve Bank rarely applies credit squeeze these days.

Qualitative Credit Control by RBI

The selective or qualitative credit control is intended to ensure an adequate credit flow to the desired sectors and preventing excessive credit for less essential economic activities. The RBI issues directives under Section 21 of the Banking Regulation Act 1949, to regulate the flow of banks' credit against the security of selected commodities.

It is usually applied to control the credit provided by the banks against certain essential commodities which may otherwise lead to traders using the credit facilities for hoarding and black marketing and thereby permitting spiralling prices of these commodities. The selective credit control measures by RBI are resorted to commodities like, wheat, sugar, oilseeds, etc.

Methods of Selective Credit Control

The RBI adopts a number of credit control methods from time to time. The important methods are given here under.

1. Fixation of Margin Requirements on Secured Loans

Prepared by Dr. Ebenezer Paul Rajan T.Y., Assistant Professor, Dept of Management, KAHE,

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Here the term "margin "refers to a portion of the loan amount which cannot be borrowed from bank. In other words, the margin money is required to be brought in by the borrower from his own sources. This much percentage of money will not be lent by banks. The RBI lowers the margin to expand the credit and raises margin to contract or control the credit for stock market operations.

This system was introduced in 1956. The RBI has been prescribing minimum margin for advances against commodities under selective credit control. To begin with there was a single margin for each commodity..

2. Regulation of Consumer Credit

The credit facilities provided by the banks to purchase durable consumer goods like cars, refrigerators, T.V. furniture, etc. is called as consumer credit. If consumer credit is expanded, it leads to the increase in production of consumer goods in the country.

Such increased sale of consumer goods will affect savings of people and capital formation in the economy. Hence, RBI may control the consumer credit extended by the commercial banks. These days RBI does not use such credit control measure as increased consumption lead to more economic activity.

3. Control through Directives

The Reserve Bank of India (Amendment) Act and the Banking Companies Act has empowered the RBI to issue directives to a particular bank or to the banks in general in regard to the following:

The purpose for which advances may or may not be made, the maximum amount of advances that can be granted to any individual, firm or company; the margins to be maintained on secured loans, and the rate of interest to be charged, etc.

For example,

(a) Banks are not allowed to provide finance for speculative purposes in stock market operations or to deal in real estate business.

(b) No banks can make advances to a single borrower company beyond 25 per cent of its paid-up capital and reserves.

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(c) Reserve Bank prescribes margin on advances made by banks against the security of Commodities covered under selective credit control measures like sugar.

(d) Advances made under DRI scheme should be only at interest rate prescribed by RBI, i.e., 4 per cent per annum.

The RBI has used this weapon for many times to bring down the prices of agricultural commodities. The directives are issued by the RBI as supplement to the traditional weapons of control like the bank rate policy, open market operations, etc.

4. Rationing of Credit

This method is used to control the scheduled banks borrowings from the RBI. The RBI shows **differential treatment in giving financial help to its member banks according to the purpose for which the credit is used.**

This is done by framing different eligibility rules for various kinds of paper, as well as offering differential rates of rediscount on different kinds of bills offered for rediscount.

The RBI prescribed a lower rate of interest on advances to sectors like export trade, small scale industries and agriculture. Higher rate of interest was fixed for general loans.

5. Credit Authorization Scheme

Under this Scheme, the commercial banks have to obtain the RBI's prior approval for sanctioning any fresh credit of Rs. 1 crore or more to any single party in the private sector and for sanctioning any fresh credit of Rs.5 crore or more to any single concern in the public sector. The scheme has however, been discontinued from November 1988. Presently no authorization is required from RBI for commercial banks sanctioning credit limit.

6. Moral Suasion

Originally this system was adopted to ensure that borrowers actual need that much credit facility and to find out the purposes for which it was required, was also ensured that most credit facility was not cornered by few borrowers.

In addition to the methods of credit control as given above, the RBI has been exercising moral suasion on banks. **Moral suasion is a means of strengthening mutual confidence an understanding between the monetary authority and the banks as well as financial institute** and, therefore, is an essential instrument of monetary regulation.

7. Direct Action

When the moral suasion proves ineffective the RBI may have to use direct action on banks. The RBI is empowered to take certain penal actions against banks which do not follow the line of policy dictated by it. The banks in default will be made to suffer by way of the following:

- (i) Levying penal interest rates on the defaulting banks.
- (ii) Cancelling the licences of such banks (extreme step)
- (iii) Refusing to grant refinance facilities to such banks
- (iv) Putting lending restrictions on the banks.
- (v) Not permitting opening of new branches for the banks.
- (vi) Not allowing participation in money market, etc.

This method is essentially a corrective measure which may bring about some psychological pressure on the commercial banks to follow the RBI instructions.

UNIT – V

POSSIBLE QUESTIONS

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Part – B (3X 2 = 6 Marks – CIA)

Part – B (5X 2 = 10 Marks – ESE)

1. What is monetary policy?
2. List the objectives of monetary policy.
3. What is bank rate policy?
4. What is an open market operation?
5. What is statutory liquid ratio?
6. What is cash reserve ratio?
7. What is Fixation of Lending Rates of Commercial Banks?
8. What is Credit Squeeze?
9. Write a note on fixation of margin requirements
10. .Write a note on Regulation of Consumer Credit
11. Brief the Control through Directives
12. Write a note on Rationing of Credit.
13. What is Prior Authorization Schemes?
14. What is Moral Suasion?
15. What is Direct Action?
16. What is 'Repo' Transactions?
17. List the instruments of monetary policy.
18. Define fiscal policy.
19. Write down the objectives of fiscal policy.
20. List the Instruments of Fiscal Policy.
21. What is direct tax?
22. What is indirect tax?
23. What is public expenditure?
24. What is Public debt?
25. What is budget?
26. List the steps in budget preparation.
27. What is deficit budget?

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28. Define balance of trade.
29. What are visible items?
30. What are invisible items?
31. What is Balance of payments?
32. What is Favorable Trade Balance?
33. What is unfavorable Trade Balance?
34. What is current and capital account?
35. What is BOP disequilibrium?
36. List the reasons for disequilibrium in BOP.
37. List the measures to correct disequilibrium in BOP.
38. What is money?
39. What are primary functions of money?
40. What are the secondary functions of money?
41. What is demand for money?
42. What is supply of money?
43. How is supply of money measured?
44. What is M1 and M2 money supply?
45. What is M3 money supply?
46. What is commercial bank?
47. What are the functions of commercial bank?
48. What is central bank?
49. What are the functions of central bank?
50. What is credit creation
51. What is high powered money?
52. What is money multiplier?
53. What is interest rate?
54. List the factors in determining the interest rate.

Part – C (3 X 8 = 24 Marks – CIA) (Either or OR)

Part – C (5 X 6 = 30 Marks – ESE) (Either or OR)

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1. Explain the objectives of Monetary Policy.
2. Explain the instruments of monetary policy.
3. Examine the quantitative methods of credit control.
4. Examine the qualitative methods of credit control.
5. Discuss the objectives of fiscal policy.
6. Examine the Instruments of Fiscal Policy.
7. Discuss the steps in budget preparation.
8. Explain the deficit budget.
9. Discuss the components of capital and current account.
10. Discuss the causes for disequilibrium in BOP.
11. Examine the monetary measures to correct disequilibrium in BOP.
12. Examine the non- monetary measures to correct disequilibrium in BOP.
13. Examine the functions of money?
14. Explain the determinants of demand of money.
15. Explain the determinants of supply of money.
16. Discuss the motives for holding money?
17. Explain the measures of money supply.
18. Explain the functions of commercial banks in developing economy.
19. Explain the role of central bank in controlling credit in the economy.
20. Explain the concept of high-powered money.
21. Explain money multiplier.
22. Explain the classical theory of interest
23. Explain the modern theory of interest.

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UNIT - IV

Multiple Choice Questions (Each Questions carries ONE Mark)

S.No	QUESTIONS	OPTION 1	OPTION 2	OPTION 3	OPTION 4
1	The per capita income is obtained by	Summing up the income of all the citizens of the country	Dividing national income by the population	Estimating the minimum income of individual citizens	Dividing the total national capital with the profit earned
2	The sum of money value of the income produced by and accruing to several factors of production in one year in a country is known as_	GNP at market price	GNP at factor cost	NNP at market price	NNP at factor cost
3	Per capita income increases when____	GNP increases at the same rate as population	GNP increases slower than population	GNP increases faster than population	GNP does not increase and population increases slowly
4	The difference between gross domestic product and net domestic product equals	Transfer payments	Depreciation cost	Indirect taxes	Subsidies
5	National Income is less than NNP at market price by the amount of_____	Depreciation cost	Subsidies	Transfer payments	Net indirect taxes
6	Which one of the following items is excluded in calculating national income	Unemployment allowance	Paid household job	Profit of public sector undertakings	Royalty
7	The difference between gross national product and gross domestic product equals	Gross foreign investment	Net foreign investment	Net export	Net factor income from abroad
8	The method by which the CSO estimates the national income is	Income method	Expenditure method	Production method	A combination of all three

9	The National Income is more at current prices than at constant prices because	"increase in price is equal to increase in production"	"increase in price is more than increase in production"	increase in production is more than increase in price"	"of decrease in production only"
10	If we know GNP at market prices we calculate GNP at factor cost by_____	Adding net indirect taxes	Subtracting net indirect taxes	Adding net factor income from abroad	Subtracting net factor income from abroad
11	National income is based on the	Total revenue of the State	Production of goods and services	Net profit earned and expenditure made by the State	The sum of all factor incomes
12	If we know GNP at market prices we calculate GDP by_____	Adding net indirect taxes	Subtracting net indirect taxes	Adding net factor income from abroad	Subtracting net factor income from abroad
13	NNP for a given year can be defined as _____	The profits of manufacturing units after deducting taxes	The real value of final and intermediate goods	The market value of all the final goods and services	The total profits of all the entrepreneurs
14	Which one of the following items is not included in disposable income	International transfer payments	Unemployment allowances	Direct taxes	Corporate dividends
15	Which one of the following items is not included in the estimation of NNP by income method?	Interest	Dividends	Undistributed profits	Depreciation
16	GNP, according to expenditure method, exclude_____	Private consumption expenditure	Net foreign investment	Gross domestic private investment	Government revenue
17	The total income received by the individuals of a country, from all sources before deducting direct taxes is known as	Privat income	Personal Income	Personal disposable income	Per capita income
18	GNP at market prices minus depreciation minus indirect taxes+ subsidies is equal to_____	NNP at market price	GNP at factor cost	National income	NDP at factor cost

19	The net value of final goods and services evaluated at current prices is known as _____	GNP at market price	GNP at factor cost	NNP at market price	NNP at factor cost
20	When national income of a country is calculated in terms of constant prices, it is called as -----	Nominal GNP	GNP at current prices	GNP at constant prices	GDP at constant prices
21	An example of double counting in national income would be _____	Wages of bus drivers and train drivers	Cotton output and cotton cloth output	Electricity output and water output	Tax receipts and earnings of inland revenue officials
22	Double counting must be avoided when calculating NI. This means that there must be a deduction of the value of	Food subsidies	Personal consumption of alcoholic drinks	Transfer payments	Net interest from abroad
23	The best method of computing national income is	Product method	Income method	Expenditure method	Combination of income and production method
24	For a study of the long term growth of the economy we use_	Real GNP	Money GNP	Per capita income	Property of the individual
25	In India, main source of national income is	Primary sector	Secondary sector	Tertiary sector	Foreign sector
26	Which one of the following agencies in India is responsible	NCAER	C.S.O	N.S.S	R.B.I
27	Inflation means -----	More money less value	Less money high value	More money more value	Less money less value
28	Demand pull inflation is the result of -----	Increases in Production	Increase in the supply of goods	Increase in money supply	Increase in the cost of production
29	Inflation is	a persistent increase in the average price level.	a persistent increase in the price of an individual good, service or resource.	a one time increase in the average price level.	a one time increase in the price of an individual good or service.

30	GDP is a measure of country's	Economic activities	Foreign trade	Internal trade	Financial position
31	National income is	Government's revenue	Budget estimate	sum total of income	Revenue of firms
32	National income will be stable where	Investment = Saving	Investment < Saving	Investment > Saving	Investment = consumption
33	When the rise in price is very slow like that of a creeper it is called -----	Walking inflation	Creeping Inflation	Running Inflation	True Inflation
34	Deflation means -----	More money less value	Less money high value	More money more value	Less money less value
35	Anticipation of an increase in the rate of inflation will _____	Cause an increase in the real rate of interest	Reduce the normal rate of unemployment in the long run	Cause the rate of inflation to slow down	Cause a decrease in the real rate of income
36	Situation of severely falling prices and lowest level of economic activities	Boom	Recovery	Recession	Depression
37	Situation with increased investment and increased price is known as	Recession	Progress	Boom	Recovery
38	Which of the following is not a macroeconomic concept?	Business cycle	National income	Government policy	Production policy of a firm
39	Where boom ends,..... starts	Recovery	Recession	Progress	Depression
40	Factors which change over a long period of time are called.....factors	Business	Cyclic	Secular	All the above
41	In business cycle concept, the period of "long wave" is of;	25 years	50 years	100 years	200 years
42	In business cycle concept, the period (approximately) of "Kit chin cycle" is of:	5 years	10 months	2 years	4 months
43	A recession is -----	A period during which aggregate output declines	A period of declining unemployment	A period of very rapidly declining prices	A period of declining prices

44	Business cycle also known as -----	Trade cycle	Contraction	Expansion	Upper tuning point
45	One negative aspect of a business cycle boom is -----	An increasing rate of inflation	A declining rate of inventory investment	A increase in government budget deficits	Government budget deficits
46	The study of ups and downs in economics is -----	Monetary policy	Fiscal policy	Business Cycle	Tax policy
47	In the ----- phase, demand, output, employment and income are at a high level	Depression	Recession	Boom	Recovery
48	When there is a downward descent from the peak which is for a short duration	Depression	Recovery	Boom	Recession
49	During ----- there is a general decline in economic activity	Recovery	Recession	Boom	Depression
50	The measures to control business cycle are -----	Monetary policy	Fiscal Policy	Direct controls	All the above
51	The period of high inflation and low economic growth is termed as	Stagnation	Take - off stage in economy	Stagflation	deflation
52	The period of the business cycle in which real GDP is increasing is called as	Expansion	Peak	Recession	Trough
53	When prices rise slowly and predictably, we call that	Galloping inflation	Low inflation	Hyperinflation	Deflation
54	When inflation is in triple digits, we call it	Galloping inflation	Low inflation	Hyperinflation	Deflation
55	When inflation is at million or trillion percent per year, we call that	Galloping inflation	Low inflation	Hyperinflation	Deflation
56	Cost push inflation leads to	Increase in profit	Decrease in profit	Increase in debt	Increase in savings
57	Demand pull inflation leads to	Increase in savings	Increase in investment	Increase in profit	Increase in expenditure

OPTION 5	OPTION 6	ANSWERS
		Dividing national income by the population
		GNP at factor cost
		GNP increases faster than population
		Depreciation cost
		Net indirect taxes
		Unemployment allowance
		Net factor income from abroad
		A combination of all three

		"increase in price is more than increase in production"
		Subtracting net indirect taxes
		The sum of all factor incomes
		Subtracting net factor income from abroad
		The market value of all the final goods and services
		Direct taxes
		Depreciation
		Government revenue
		Personal Income
		National income

		NNP at market price
		GNP at constant prices
		Cotton output and cotton cloth output
		Transfer payments
		Combination of income and production method
		Real GNP
		Tertiary sector
		C.S.O
		More money less value
		Increase in money supply
		a persistent increase in the average price level.

		Economic activities
		sum total of income
		Investment = Saving
		Creeping Inflation
		Less money high value
		Cause an increase in the real rate of interest
		Depression
		Boom
		Production policy of a firm
		Recession
		Secular
		50 years
		4 months
		A period during which aggregate output declines

		Trade cycle
		Government budget deficits
		Business Cycle
		Boom
		Recession
		Depression
		All the above
		Stagflation
		Expansion
		Low inflation
		Galloping inflation
		Hyperinflation
		Decrease in profit
		Increase in profit

Course Objectives**To make the students**

1. To enable the students to understand nature and scope of economics.
2. To make the students understand the production function and economics of scale.
3. To impart knowledge about the competition and its types.
4. To introduce the concepts of macro economics to the students.
5. To familiarized the concepts of monetary policy.

Course Outcomes**Learners should be able to**

1. Students will have understanding about basic concept in economics.
2. Students will be able to ascertain the economics of scale.
3. Students will be familiarized with different competition.
4. Students will have understanding about macro economics.
5. Students will have the knowledge of monetary policy.

Unit I

Introduction:Economics – Definition – Nature – Scope - Objectives of Firm – Social responsibilities of firm – Utility Analysis – Law of Diminishing Marginal Utility – Law of Equi-Marginal Utility. Demand – Meaning - Types- Demand Analysis --Indifference Curve Analysis – Elasticity of Demand – Consumer’s Surplus.

Unit II

Production:Production – Factors of production – Production Function – Least Cost Combination – Laws of Returns – Law of Variable Proportions – Returns to Scale – Economies of Scale – Cost and Revenue concepts and curves.

Unit III

Types of Competition:Market – Meaning – Types – Equilibrium of the firm – Industry – Pricing under Perfect Competition –Monopoly – Price Discrimination – Pricing under Monopolistic Competition – Pricing under Oligopoly and duopoly.

Unit IV

Introduction to Macroeconomics: Definition- Basic issues studied in macroeconomics- National Income-concepts and measurement, Inflation-types- causes and controlling methods, Trade cycle-phases of trade cycle- Balance of Payments- Disequilibrium and correction.

Unit V

Monetary Policy: Money Functions of Money - Quantity Theory of Money - Determination of Money Supply and Demand- Credit Creation - Tools of Monetary Policy.

Suggested Readings:**Text Book**

1. Sankaran (2013). *Indian Economy* Chennai, Margham Publication.,

Reference Books

1. Kaveri, Sudha Nayak, Girija and Meenakshi(2010), Micro Economic Theory. New Delhi, Sultan Chand & Sons
2. Varshini and Maheswari (2013). Managerial Economics. New Delhi, S. Chand & Company.
3. M.L.Jhingan (2014). Microeconomic Theory, Vrinda Publications (P) Ltd



KARPAGAM ACADEMY OF HIGHER EDUCATION

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Department of Commerce

Name: **Dr.Ebenezer Paul Rajan.T.Y (Assistant Professor)**

Department: **Management**

Subject Code: **17BPU604A**

Semester: **VI**

Year: **2017-2020 Batch**

Subject: **Managerial Economics - Lesson Plan**

UNIT 1			
Sl. No	Lecture Hours	Contents	
1	1	Economics – Definition – Nature	T2: Pg.No:1-7 R2: Pg.No:1-2 R3: Pg.No:1- 6,
2	1	Scope of Economics – Objectives of firm	T2: Pg.No:7-11 R2: Pg.No:6-7 R3: Pg.No:21-34
3	1	Objectives of firm - Social responsibilities of firm	T2: Pg.No:18-20,32-40, 689-694 R2: Pg.No:19-27
4	1	T1:	
5	1	Utility Analysis – Law of Diminishing Marginal Utility	T2: Pg.No:116-128 R3: Pg.No:96- 100
6	1	Law of Equi-Marginal Utility	T2: Pg.No:121-129 R3: Pg.No:100-104
7	1	Demand – Meaning – Types	T2: Pg.No:1-2 R2: Pg.No:60-67 R3: Pg.No:104-106
8	1	T2:	
9	1	Demand analysis – Changes in demand – Shift in demand – Law of demand	T2: Pg.No:158-172 R2: Pg.No:30-34 R3: Pg.No: 107-110
10	1	Indifference Curve analysis	T2: Pg.No:130-139 R3: Pg.No:116-124
11	1	Elasticity of demand – Types – Price elasticity of demand	T2: Pg.No:172-181 R2: Pg.No:34-56 R3: Pg.No:203-210
12	1	T3:	
13	1	Price elasticity of demand, Income, cross	T2: Pg.No:182-186 R3: Pg.No:213-220
14	1	Advertising elasticity of demand - Consumer's surplus	T2: Pg.No:186-190 R3: Pg.No:220-222 R3: Pg. No: 227-230

15	1	Consumer's surplus	T2: Pg.No: R3: Pg.No:230-233
16	1	T4:	
17	1	Recapitulation and discussion of Important questions	
Total Number of hours planned for Unit 1			17
UNIT 2			
1	1	Production – Meaning – Factors of production - Features	T2: Pg.No:226-228 R2: Pg.No:157- 158 R3: Pg.No:253-254
2	1	Production function – short run and long run	T2: Pg.No:228-230 R2: Pg.No:160-163 R3: Pg.No:254-256
3	1	Least cost combination – Law of returns	T2: Pg.No:237-246 R2: Pg.No:261-264, 289-291
4	1	T5:	
5	1	Law of variable proportion - Returns to scale	T2: Pg.No:232-237 R2: Pg.No:158-165 R3: Pg.No:256-261, 283-286
6	1	Economies of scale	T2: Pg.No:277-280 R2: Pg.No:137-143 R3: Pg.No:264-269
7	1	T6:	
8	1	Cost concepts - Types – cost function	T2: Pg.No:260-265 R2: Pg.No:99-122 R3: Pg.No:315-320
9	1	Cost output relationship in the short run	T2: Pg.No:265-273 R2: Pg.No:123-130 R3: Pg.No:320-324
10	1	Cost output relationship in the long run	T2: Pg.No:274-276 R2: Pg. No: 130-136 R3: Pg.No:324-327
11	1	T7:	
12	1	Revenue concepts – Total revenue, average revenue and marginal revenue	R3: Pg.No:340-342
13	1	Relations between revenue curves	T2: Pg.No:186-190 R3: Pg.No:342-346
14	1	T8:	
15	1	Recapitulation and discussion of important questions	

Total Number of hours planned for Unit 2			15
UNIT 3			
1	1	Market – Meaning – Types of market structure Equilibrium of the firm and industry	T2: Pg.No:315-317 R3: Pg.No:359-369
2	1	Pricing under perfect competition	T2: Pg.No: 317-320 R2: Pg.No:179-189 R3: Pg.No:371-376
3	1	T9:	
4	1	Pricing under perfect competition	T2: Pg.No:320-323 R2: Pg.No:189-195 R3: Pg.No:377-380
5	1	Pricing under monopoly market	T2: Pg.No:323-326 R2: Pg.No:196-198 R3: Pg.No:390-394
6	1	Pricing under monopoly market	T2: Pg.No:326-328 R2: Pg.No:198-200 R3: Pg.No:395-399
7	1	T10:	
8	1	Price discrimination under monopoly	T2: Pg.No:329-332 R2: Pg.No:201-207 R3: Pg.No:399-407
9	1	Pricing under monopolistic competition	T2: Pg.No:338-343 R2: Pg.No:208-212 R3: Pg.No:428-432
10	1	Pricing under monopolistic competition	T2: Pg.No:343-345 R2: Pg.No:212-214 R3: Pg.No:432-434
11	1	T11:	
12	1	Pricing under oligopolistic competition	T2: Pg.No:346-358 R2: Pg.No:216-224 R3: Pg.No:471-478
13	1	Pricing under oligopolistic competition	T2: Pg.No:358-363 R2: Pg.No:225-234 R3: Pg.No:479-491
14	1	Pricing under duopoly competition	R3: Pg.No:459-465
15	1	Pricing under duopoly competition	R3: Pg.No:465-471
16	1	T12:	
17	1	Recapitulation and discussion of important questions	
Total Number of hours planned for Unit 3			17
UNIT 4			
1	1	Introduction to macroeconomics- Definition - Basic issues studied in macroeconomics	T2: Pg.No:448-454

			R3: Pg.No:53-59
2	1	National income – concepts	T2: Pg.No:461-463 R2: Pg.No:462-475
3	1	Measurement of national income	T2: Pg.No:463-467 R2: Pg.No:458-462
4	1	T13:	
5	1	Inflation – Meaning – Types	T2: Pg.No:533-536,538-539
6	1	Causes and controlling methods	T2: Pg.No:546-550
7	1	Measures to control inflation	T2: Pg.No:552-556
8	1	T14:	
9	1	Trade cycle – Meaning – Phases of trade cycle	T2: Pg.No:510-515 R2: Pg.No:413-424
10	1	Balance of payments – Components	T2: Pg.No:605-607
11	1	T15:	
12	1	Disequilibrium – types and causes	T2: Pg.No:607-611
13	1	Measures to correct disequilibrium	T2: Pg.No:611-617
14	1	T16:	
15	1	Recapitulation and discussion of important questions	
Total Number of hours planned for Unit 4			15
UNIT 5			
1	1	Money – Meaning – Definition – Functions of money	T2: Pg.No:
2	1	Functions of money - Quantity theory of money	T2: Pg.No:
3	1	Quantity theory of money	T2: Pg.No:
4	1	T17:	
5	1	Determination of money supply and demand	T2: Pg.No:
6	1	Money supply and demand	T2: Pg.No:
7	1	Credit creation – Process of credit creation	T2: Pg.No:
8	1	T18:	
9	1	T19:	
10	1	Monetary policy – Objectives of monetary policy – Tools – Quantitative measures	T2: Pg.No:655-661
11	1	Qualitative measure	T2: Pg.No:661-664
12	1	T20:	

13	1	Recapitulation and discussion of Important questions	
Total Number of hours planned for Unit 5			13
14	1	Discussion of previous year ESE Question papers	
15	1	Discussion of previous year ESE Question papers	
16	1	Discussion of previous year ESE Question papers	
Total Number of hours planned for Unit 5 and discussion of previous year ESE Question papers			13+3=16

Suggested Readings:**Text books:**

1. Sankaran. (2013). *Indian Economy*. Chennai: Margham Publications
2. Dwivedi, D.N. (2015). *Managerial Economics*. New Delhi: Vikas Publishing House

Reference Books:

1. Kaveri, Sudha Nayak, Girija and Meenakshi. *Micro Economic Theory*. New Delhi: Sultan Chand and Sons
2. Varshini and Maheswari. (2013). *Managerial Economics*. New Delhi: Sultan Chand and Sons
3. Jhingan. M.L. (2014). *Micro Economic Theory*. New Delhi: Vrinda publications

UNIT-I-Consumer's Behavior and Demand

SYLLABUS

Unit – I : Introduction – Definition - Nature - Scope of Managerial Economics, Objectives of Firm – Social responsibilities of firm - Utility analysis – Law of Diminishing Marginal Utility - Law of Equi-Marginal utility – Demand – Meaning - Types of Demand – Demand analysis – Indifference Curve Analysis - Elasticity of Demand – Consumer's surplus

Meaning and Definitions of Managerial Economics

Managerial economics is a science that deals with the application of various economic theories, principles, concepts and techniques to business management in order to solve business and management problems. It deals with the practical application of economic theory and methodology to decision-making problems faced by private, public and non-profit making organizations.

“Managerial Economics is the integration of economic theory with business practice for the purpose of facilitating decision making and forward planning by the management”

According to Mc Nair and Meriam, “Managerial economics is the use of economic modes of thought to analyze business situation”.

Brighman and Pappas define managerial economics as,” the application of economic theory and methodology to business administration practice”.

Joel dean is of the opinion that use of economic analysis in formulating business and management policies is known as managerial economics.

Nature of managerial Economics

- **Managerial Economic is a Science:** We know that science is systematic body of knowledge and proved. On the other hand M.E is also science because the Principles and theory of Managerial Economics is proved. Which is applicable for all level of Organization and theory of demand, theory of price, theory of profit, theory of capital is also proved, So we can say that managerial economic is science.
- **Managerial economic is an art:** Managerial economics is an art because an art is application of skills can used for the purpose of getting some relevant information and the other, In *Managerial economics* theory is implement in Practice way in M.E managerial skills is implemented. So *Managerial economics* is an art.
- **M.E for administrations of Organization:** Managerial economic for administration of organization because administration give the relevant data. They find out the problem and solve the problem immediately in organisation and the admin decide the target on the basis of price, Quality of the products, Demand of product. Administration forecast the demand according to the situation of present demand of the market.
- **M.E is helpful in optimum resources allocation:** In the organization are limited resources and this resources can used in several places at a time by the tools and techniques of managerial economic. The resources will used to get optimum output. In the organisations our ultimate objective to earn profit so the limited resources used in such a way to get maximum profit because, resources are limited. Our resources in human and non-human resources. Human resources that means labor, employees, and Non-human resources that means land, building, machine, raw materials Etc.
- **Managerial economic has component of micro economic:** Managerial economics has component of Micro economics. It is related with the internal factors of organization. Internal factor of the organisations are demand of the products, purchasing the raw materials, How to use the resource to get maximum profits. These are related with micro component of M.E.

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- **Managerial economic has components of macro economics:** Managerial economic has a component of macroeconomic which is related with the outside of the organisation or a external factor of the organisation. External factor of the organisation are competition market, nature of business, Government rules and regulations, industrial law, Industrial Policies, Taxes these are the External factor of the organisation and these types of problems solved by the managerial economics.
- **Managerial economic is dynamic in nature:** Managerial economics is dynamic in nature that means managerial economics is used all space of the organisation and all except of the organisation. By the tools and technique of managerial economic to give the relevant information and to solve the problem of the organisations So, Managerial economic is dynamic in nature.

Importance of the study of Managerial Economics

The following points indicate the significance of the study of this subject in its right perspective.

1. It gives guidance for identification of key variables in decision-making process.
2. It helps the business executives to understand the various intricacies of business and managerial problems and to take right decision at the right time.
3. It provides the necessary conceptual, technical skills, toolbox of analysis and techniques of thinking and other such most modern tools and instruments like elasticity of demand and supply, cost and revenue, income and expenditure, profit and volume of production etc to solve various business problems.
4. It is both a science and an art. In the context of globalization, privatization, liberalization and marketization and a highly competitive dynamic economy, it helps in identifying various business and managerial problems, their causes and consequence, and suggests various policies and programs to overcome them.
5. It helps the business executives to become much more responsive, realistic and competent to face the ever changing challenges in the modern business world.
6. It helps in the optimum use of scarce resources of a firm to maximize its profits.
7. It also helps in achieving other objectives a firm like attaining industry leadership, market share expansion and social responsibilities etc.

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8. It helps a firm in forecasting the most important economic variables like demand, supply, cost, revenue, price, sales and profit etc and formulate sound business policies
9. It also helps in understanding the various external factors and forces which affect the decision-making of a firm.

Thus, it has become a highly useful and practical discipline in recent years to analyze and find solutions to various kinds of problems in a systematic and rational manner.

SCOPE OF MANAGERIAL ECONOMICS

The term “scope” indicates the area of study, boundaries, subject matter and width of a subject. The following topics are covered in this subject.

1. DEMAND ANALYSIS AND FORECASTING

A business firm is an economic organisation which is engaged in transforming productive resources into goods that are to be sold in the market. A major part of managerial decision making depends on accurate estimates of demand. A forecast of future sales serves as a guide to management for preparing production schedules and employing resources. It will help management to maintain or strengthen its market position and profit base. Demand analysis also identifies a number of other factors influencing the demand for a product. Demand analysis and forecasting occupies a strategic place in Managerial Economics.

2. PRODUCTION AND COST ANALYSIS

A firm's profitability depends much on its cost of production. A wise manager would prepare cost estimates of a range of output, identify the factors causing variations in cost estimates and choose the cost-minimising output level, taking also into consideration the degree of uncertainty in production and cost calculations. Production processes are under the charge of engineers but the business manager is supposed to carry out the production function analysis in order to avoid wastages of materials and time. Sound pricing practices depend much on cost control. The main topics discussed under cost and production analysis are: Cost concepts, cost-output relationships, Economics and Diseconomies of scale and cost control.

3. PRICING DECISIONS, POLICIES AND PRACTICES: Pricing is a very important area of Managerial Economics. In fact, price is the genesis of the revenue of a firm and as such the success of a business firm largely depends on the correctness of the price decisions taken by it. The important aspects dealt with this area are: Price determination in various market forms, pricing methods, differential pricing, product-line pricing and price forecasting.

4. PROFIT MANAGEMENT

Business firms are generally organized for earning profit and in the long period, it is profit which provides the chief measure of success of a firm. Economics tells us that profits are the reward for uncertainty bearing and risk taking. A successful business manager is one who can form more or less correct estimates of costs and revenues likely to accrue to the firm at different levels of output. The more successful a manager is in reducing uncertainty, the higher are the profits earned by him. In fact, profit-planning and profit measurement constitute the most challenging area of Managerial Economics.

5. CAPITAL MANAGEMENT

The problems relating to firm's capital investments are perhaps the most complex and troublesome. Capital management implies planning and control of capital expenditure because it involves a large sum and moreover the problems in disposing the capital assets off are so complex that they require considerable time and labour. The main topics dealt with under capital management are cost of capital, rate of return and selection of projects.

6. LINEAR PROGRAMMING AND THE THEORY OF GAMES

The term linear means that the relationships handled are the same as those represented by straight lines and programming implies systematic planning or decision-making. It implies maximization or minimization of a linear function of variables subject to a constraint of linear inequalities. It offers actual numerical solution to the problems of making optimum choices. It involves either maximization of profits or minimization of costs. The theory of games basically attempts to explain what is the rational course of action for an individual firm or an entrepreneur who is confronted with the a situation where in the outcome depends not

only on his own actions, but also on the actions of others who are also confronted with the same problem of selecting a rational course of action. Both these techniques are extensively used in business economics to solve various business and managerial problems.

8. OTHER AREAS

1. Macroeconomic management of the country relating to economic system, national income, trade cycles Savings and investments and its impact on the working of a firm.
2. Knowledge and information about various government policies like monetary, fiscal, physical, industrial, labor, foreign trade, foreign capital and technology, MNCs etc and their impact on the working of a firm.
3. Impact of international changes, role of international financial and trade institutions in formulating domestic policies of a firm.

Objectives of firm

Objective 1: Profit Maximisation:

In the conventional theory of the firm, the principal objective of a business firm is profit maximisation. Under the assumptions of given tastes and technology, price and output of a given product under perfect competition are determined with the sole objective of maximising profits. The firm is supposed to act as one of a large number of producers which cannot influence the market price of the product.

It is the price-taker and quantity-adjuster. Thus the demand and cost conditions for the product of the firm are determined by factors external to the firm. In this theory, maximum profits refer to pure profits which are a surplus above the average cost of production. It is the amount left with the entrepreneur after he has made payments to all factors of production, including his wages of management.

In other words, it is a residual income over and above his normal profits. It is a necessary payment for an entrepreneur to stay in the business. The rules for profit maximisation are (1) $MC = MR$ and (2) MC should cut MR from below.

Objective 2.Multiple Objectives:

The basis of the difference between the objectives of the neo-classical firm and the modern corporation arises from the fact that the profit maximisation objective relates to the entrepreneurial behaviour. While modern corporations are motivated by different objectives because of the separate roles of shareholders and managers. In the latter, shareholders have practically no influence over the actions of the managers.

As early as in 1932, Berle and Means suggested that managers have different goals from shareholders. They are not interested in profit maximisation. They manage firms in their own interest rather than in the interests of shareholders. Shareholders cannot have much influence on managers because they do not possess adequate information about companies.

The majority of shareholders cannot attend annual general meetings of companies and thus give their proxies to the directors. Thus modern firms are motivated by objectives relating to sales maximisation, output maximisation, utility maximisation, satisfaction maximisation and growth maximisation which we explain briefly.

a. Simon's Satisfying Objective:

Nobel laureate, Herbert Simon was the first economist to propound the behavioural theory of the firm. According to him, the firm's principal objective is not maximising profits but satisfying or satisfactory profits.

In Simon's words:

"We must expect the firm's goals to be not maximising profits but attaining a certain level or rate of profit holding a certain share of the market or a certain level of sales." Under conditions of uncertainty, a firm cannot know whether profits are being maximised or not.

In analysing the behaviour of the firm, Simon compares the organisational behaviour with individual behaviour. According to him, a firm, like an individual, has its aspiration level in keeping with its needs, drives and achievement of goals.

The firm aspires to achieve a certain minimum or 'target' level of profits. Its aspiration level is based on its different goals such as production, price, sales, profits, etc., and on its past experience. This also takes

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into account uncertainties in the future. The aspiration level defines the boundary between satisfactory and unsatisfactory outcomes.

In this context, the firm may face three alternative situations:

- (a) The actual achievement is less than the aspiration level;
- (b) The actual achievement is greater than the aspiration level; and
- (c) The actual achievement equals the aspiration level.

In the first situation, when the actual achievement lags behind the aspiration level, it may be due to wide fluctuations in economic activity or on account of qualitative deterioration in the performance level of the firm.

In the second situation, when the actual achievement is greater than the aspiration level, the firm is satisfied with its commendable performance. The firm is also satisfied in the third situation when its actual performance matches its aspiration level. But the firm does not feel satisfied in the first situation.

It may be that the firm has set its aspiration level very high. It will, therefore, revise it downward and start a search activity to fulfil its various goals in order to achieve the aspiration level in the future. Similarly, if the firm finds that the aspiration level can be achieved, it will be revised upward. It is through such search activity that the firm will be able to reach the aspiration level set by the decision-maker.

The search process may be done through sequence of possible alternatives using past experience and rules-of-thumb as guidelines. But the search activity is not a costless affair. "The advantage of search activity must be balanced against its cost, and once search has revealed that what appears to be a satisfactory course of action, it will be abandoned for the time being. In this way, the firm's aspiration level is periodically adapted to circumstances and the firm's reaction to them. The firm is not maximising, since, partly on account of the cost, it limits its searching activities. The firm, while behaving rationally, is 'satisfying' rather than maximising."

b. Behavioural theory of organisational goals: Cyert and March have put forth a systematic behavioural theory of the firm. In a modern large multiproduct firm, ownership is separate from management. Here the firm is not considered as a single entity with a single goal of profit maximisation by the entrepreneur.

Instead, Cyert and March regard the modern business firm as a group of individuals who are engaged in the decision-making process relating to its internal structure having multiple goals. They emphasize that the modern business firm is so complex that individuals within it have limited information and imperfect foresight with respect to both internal and external developments.

Organisational goals:

Cyert and March regard the modern business firm as a complex organisation in which the decision-making process should be analysed in variables that affect organisational goals, expectations and choices. They look at the firm as an organisational coalition of managers, workers, shareholders, suppliers, customers, and so on.

Looked at it from this angle, the firm can be supposed to have five different goals: production, inventory, sales, and market share and profit goals.

Implications of the Cyert-March Model for Price Behaviour:

They illustrate the key processes at work in an oligopolistic firm when it makes its decisions on price, output, costs, profits, etc. In this theory, each firm is assumed to have three sets of goals for profits, production and sales, and three basic decisions to make on price, output and sales effort in each time period.

It takes into consideration the firm's environment at the beginning of each period which reflects its past experience. Its aspiration levels are modified in the light of this experience. The organisational slack is the difference between total available resources and total necessary payments to members of the coalition.

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Price is sensitive to factors influencing increases and decreases in the amount of organisational slack, to feasible reductions in expenditure on sales promotion and to changes in profit goals.

Each firm is assumed to estimate its demand and production costs and choose its output level. If this output level does not yield the aspired level of profits, it searches for ways to reduce costs, re-estimate demand and, if required, to lower its profit goal.

If the firm is prepared to lower its profit goal, it will readily reduce its price. Thus price is found to be sensitive to factors affecting costs due to the close relationship between prices, costs and profits.

c. Williamson's Utility Maximisation:

Williamson has developed managerial utility-maximisation objective as against profit maximisation. It is one of the managerial theories and is also known as the 'managerial discretion theory'. In large modern firms, shareholders and managers are two separate groups. The former wants maximum return on their investment and hence the maximisation of profits.

The managers, on the other hand, have consideration other than profit maximisation in their utility functions. Thus the managers are interested not only in their own emoluments but also in the size of their staff and expenditure on them.

Thus Williamson's theory is related to the maximisation of the manager's utility which is a function of the expenditure on staff and emoluments and discretionary funds. "To the extent that pressure from the capital market and competition in the product market is imperfect, the manager, therefore, has discretion to pursue goals other than profits."

The managers derive utility from a wide range of variables. For this Williamson introduces the concept of expense preferences. It means "that managers get satisfaction from using some of the firm's potential profits for unnecessary spending on items from which they personally benefit."

To pursue his goal of utility maximisation, the manager directs the firm's resources in three ways:

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1. The manager desires to expand his staff and to increase his salaries. "More staff is valued because they lead to the manager getting more salary, more prestige and more security." Such staff expenditures by the manager are denoted by S.

2. To maximise his utility, the manager indulges in 'featherbedding' such as pretty secretaries, company cars, too many company phones, 'perks' for employees, etc. Such expenditures are characterised as 'management slack' (M) by Williamson.

3. The manager likes to set up 'discretionary funds' for making investments to advance or promote company projects that are close to his heart. Discretionary profits or investments (D) are what remain with the manager after paying taxes and dividends to shareholders in order to retain an effective control of the firm.

Thus the manager's utility function is

$$U = f(S, M, D).$$

Where U is the utility function, S is the staff expenditure, M is the management slack and D is the discretionary investments. These decision variables (S, M, and D) yield positive utility and the firm will always choose their values subject to the constraints, $S \geq 0$, $M \geq 0$ and $D \geq 0$. Williamson assumes that the law of diminishing marginal utility applies so that when additions are made to each of S, M and D, they yield smaller increments of utility to the manager.

To explain Williamson's utility maximisation theory diagrammatically, it is assumed for the sake of simplicity that

$$U = f(S, D)$$

So that discretionary profits (D) are measured along the vertical axis and staff expenditures (S) on the horizontal axis in Figure 1. FC is the feasibility curve showing the combinations of D and S available to the manager. It is also known as the profit-staff curve. UU1 and UU2 are the indifference curves of the manager which show the combinations of D and S.

To begin, as we move along the profit-staff curve from point F upward, both profits and staff expenditures increase till point P is reached.

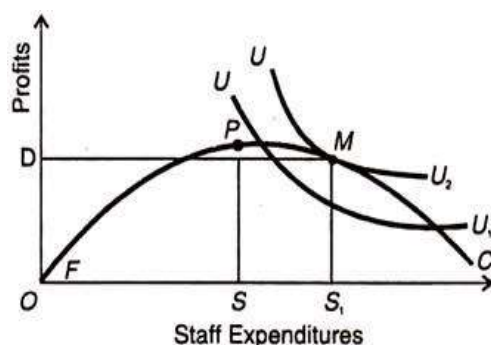


Fig. 1

P is the profit maximisation point for the firm where SP is the maximum profit levels when OS staff expenditures are incurred. But the equilibrium of the firm takes place when the manager chooses the tangency point M where his highest possible utility function U_2 and the feasibility curve FC touch each other. Here the manager's utility is maximised.

The discretionary profits OD ($=S_1M$) are less than the profit maximisation profits SP. But the staff emoluments OS_1 are maximised. However, Williamson points out that factors like taxes, changes in business conditions, etc. by affecting the feasibility curve can shift the optimum tangency point, like M in Figure 1. Similarly, factors like changes in staff, emoluments, profits of stockholders, etc. by changing the shape of the utility function will shift the optimum position.

Objective 3. Marris Growth Maximisation:

Robin Marris in his book *The Economic Theory of 'Managerial' Capitalism* (1964) has developed a dynamic balanced growth maximising theory of the firm. He concentrates on the proposition that modern big firms are managed by managers and the shareholders are the owners who decide about the management of the firms.

The managers aim at the maximisation of the growth rate of the firm and the shareholders aim at the maximisation of their dividends and share prices. To establish a link between such a growth rate and the

share prices of the firm, Marris develops a balanced growth model in which the manager chooses a constant growth rate at which the firm's sales, profits, assets, etc., grow.

If he chooses a higher growth rate, he will have to spend more on advertisement and on R & D in order to create more demand and new products.

He will, therefore, retain a higher proportion of total profits for the expansion of the firm. Consequently, profits to be distributed to shareholders in the form of dividends will be reduced and the share prices will fall. The threat of take-over of the firm will loom large among the managers.

As the managers are concerned more about their job security and growth of the firm, they will choose that growth rate which maximises the market value of shares, give satisfactory dividends to shareholders, and avoid the take-over of the firm.

On the other hand, the owners (shareholders) also want balanced growth of the firm because it ensures fair return on their capital. Thus the goals of the managers may coincide with that of owners of the firm and both try to achieve balanced growth of the firm.

Objective 4. Baumol's Sales Maximisation:

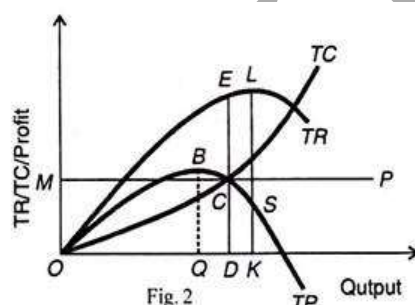
Baumol's findings of oligopoly firms in America reveal that they follow the sales maximisation objective. According to Baumol, with the separation of ownership and control in modern corporations, managers seek prestige and higher salaries by trying to expand company sales even at the expense of profits.

Being a consultant to a number of firms, Baumol observes that when asked how their business went last year, the business managers often respond, "Our sales were up to three million dollars". Thus, according to Baumol, revenue or sales maximisation rather than profit maximisation is consistent with the actual behaviour of firms.

Baumol cites evidence to suggest that short-run revenue maximisation may be consistent with long-run profit maximisation. But sales maximisation is regarded as the short-run and long-run goal of the

management. Sales maximisation is not only a means but an end in itself. He gives a number of arguments in support of his theory. According to him, a firm attaches great importance to the magnitude of sales and is much concerned about declining sales.

If the sales of a firm are declining, banks, creditors and the capital market are not prepared to provide finance to it. Its own distributors and dealers might stop taking interest in it. Consumers might not buy its products because of its unpopularity. But if sales are large, the size of the firm expands which, in turn, means larger profits.



Baumol's model is illustrated in Figure 2 where TC is the total cost curve, TR the total revenue curve, TP the total profit curve and MP the minimum profit or profit constraint line. The firm maximises its profits at OQ level of output corresponding to the highest point B on the TP curve. But the aim of the firm is to maximise its sales rather than profits.

Its sales maximisation output is OK where the total revenue KL is the maximum at the highest point of TR. This sales maximisation output OK is higher than the profit maximisation output OQ. But sales maximisation is subject to minimum profit constraint.

Suppose the minimum profit level of the firm is represented by the line MP. The output OK will not maximize sales as the minimum profits OM are not being covered by total profits KS.

For sales maximisation, the firm should produce that level of output which not only covers the minimum profits but also gives the highest total revenue consistent with it. This level is represented by OD level of

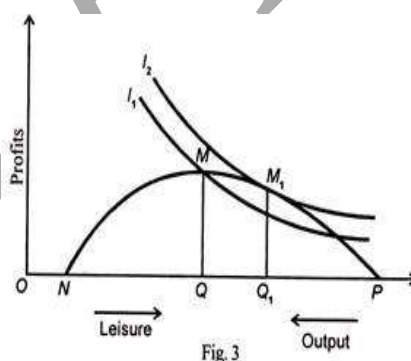
output where the minimum profits $DC (=OM)$ are consistent with DE amount of total revenue at the price DE/OD , (i.e., total revenue/total output).

Objective 5. Output Maximization: Milton Kafolgis suggests output maximization as the objective of a business firm. According to him, “The performance of firms frequently is measured directly in terms of physical output with revenue occupying a secondary position.” Thus Kafolgis prefers output maximization both to profit maximization and revenue maximization as the objective of a firm.

Given some minimum level of profits, a firm wants to maximise its output. It will spend its funds on increasing its production rather than on advertising. Thus the firm will produce a larger output and its revenue sales may be less than the sales-maximization firm.

Objective 7. Satisfaction Maximization:

Scitovsky favours maximization of satisfaction in preference to the profit-maximization objective of the firm. He is concerned with managerial effort and the distaste that managers have for work. According to him an entrepreneur would maximise profits only if his choice between more income and more leisure is independent of his income. In other words, the supply of entrepreneurship should have zero income elasticity.



This is because as his income (profit) increases, he prefers leisure to effort (output) Scitovsky's maximisation of satisfaction hypothesis is illustrated in Fig 3 where NP is the net profit (income) curve, the difference between the TR and TC curves, which have not been drawn to simplify the analysis. Thus profits are measured on the vertical axis.

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Assuming managerial effort and output to be proportional output is measured along the horizontal axis from P toward O so that at point P output is zero. Since more efforts mean less leisure, and vice versa, leisure is also measured on the horizontal axis from O to-ward P.

The curves L1 and L2 are the entrepreneur's indifference curves which represent his levels of satisfaction yielding combinations of his money income (profits) and leisure.

The entrepreneur's satisfaction would be the greatest at the level of output where the net profit curve is tangential to an indifference curve. In the figure, M is his point of maximum satisfaction where the net profit curve NP is tangent to his indifference curve L2. He will be producing PQ1 output.

This level of output is less than the profit-maximisation output PQ. The entrepreneurial profits, Q1M1, at PQ1 output level are also less than the maximum profits QM at PQ level of output. At Q1M1, level of profit, the entrepreneur maximises his satisfaction because he enjoys OQ1 leisure which is QQ1 more than he would have enjoyed under profit maximisation (OQ).

Social responsibility of business

The social responsibility of business means various obligations or responsibilities or duties that a business-organization has towards the society within which it exists and operates from.

Generally, the social responsibility of business comprises of certain duties towards entities, which are depicted and listed below.



Figure No. 1 Social Responsibility of Business Towards Society.

Definitions

1. Social responsibilities refer to the businessman's decisions and actions taken to reasons at least partially beyond the firm's direct economic or technical interests." —Keith Davis

(2) "Social responsibilities refer to the obligation (of businessmen) to pursue those policies, to make those decisions, or to follow those lines of action which are desirable, in terms of objectives and values of society." —Howard R. Bowen

(1) Responsibilities towards Owners/Investors:

Some specific social responsibilities of business towards owners are:

- (i) Paying a reasonable rate of dividend as a reward for risking capital in business.
- (ii) Ensuring safety of investment of funds provided by owners.
- (iii) Giving owners a true and fair account of the functioning, profitability and financial position of the company.
- (iv) Showing due regard towards the interest of minority of members.

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(v) Ensuring growth of the company.

(vi) Not to indulge in undesirable speculation to the detriment of the interests of genuine investors.

(vii) Not to mislead prospective investors, by any means, whatsoever, to invest in the company.

(2) Responsibilities towards employees

Some specific social responsibilities of business towards employees are:

(i) Payment of adequate and timely wages

(ii) Providing congenial work environment

(iii) Providing adequate industrial safety devices

(iv) Granting job security.

(v) Providing opportunities for promotion and advancement.

(vi) Providing benefits like – subsidized housing, free medical care, leave with pay, entertainment and recreational facilities etc.

(vii) Ensuring reasonable workers participation in management.

(viii) Giving workers their due share in the excess profits of the business.

(ix) Giving humane treatment to workers.

(x) Taking care of the personal problems of workers, of a serious nature.

(3) Responsibilities towards Consumers:

Some specific responsibilities of business towards consumers are:

(i) Supplying goods of good quality, at fair prices.

(ii) Avoidance of indulging in unfair trade practices like:

1. Supplying lesser weight

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2. Defective packing of goods

3. Black-marketing, hoarding and profiteering.

4. Adulteration etc.

(iii) Taking due care of after-sales services.

(iv) Not to indulge in false, misleading and vulgar advertising.

(v) Immediate redress of consumer grievances.

(vi) Discouraging salesmen from resorting to pressurizing tactics to win customers.

(4) Responsibilities towards the State or Government:

Some specific responsibilities of the business towards the State (i.e. the government) are:

(i) Timely payment of legitimate taxes.

(ii) Co-operating with the government in the implementation of its economic and social policies.

(iii) Supplying the required information to government departments, from time to time.

(iv) Refraining from corrupting public servants.

(v) Not to indulge in winning political favours for selfish interests.

(5) Responsibilities towards Community and Public in General:

Some specific responsibilities of business towards community and public in general are:

(i) Ensuring best utilization of the scarce economic resources of society.

(ii) Generation of maximum employment opportunities.

(iii) Controlling environmental pollution.

- (iv) Preventing urban congestion.
- (v) Undertaking programmes for rural development.
- (vi) Helping in spread of housing, medical, educational and recreational facilities in society.
- (vii) Innovating and implementing schemes for the uplift of the downtrodden.

Utility Analysis: Cardinal Utility Analysis

The price of a product depends upon the demand for and the supply of it. In this part of the book we are concerned with the theory of consumer's behaviour, which explains his demand for a good and the factors determining it. Individual's demand for a product depends upon price of the product, income of the individual, the prices of related goods.

It can be put in the following functional form:

$$D_x = f(P_x, I, P_y, P_z, T \text{ etc.})$$

where D_x stands for the demand of good X, P_x for price of good X, I for individual's income, P_y P_z for the prices of related goods and T for tastes and preferences of the individual. But among these determinants of demand, economists single out price of the good in question as the most important factor governing the demand for it. Indeed, the function of a theory of consumer's behaviour is to establish a relationship between quantity demanded of a good and its own price and to provide an explanation for it.

Recently, cardinal utility approach to the theory of demand has been subjected to severe criticisms and as a result some alternative theories, namely, Indifference Curve Analysis, Samuelson's Revealed Preference Theory, and Hicks' Logical Weak Ordering Theory have been propounded.

Assumptions of Cardinal Utility Analysis:

Cardinal utility analysis of demand is based upon certain important assumptions. Before explaining how cardinal utility analysis explains consumer's equilibrium in regard to the demand for a good, it is essential

to describe the basic assumptions on which the whole utility analysis rests. As we shall see later, cardinal utility analysis has been criticized because of its unrealistic assumptions.

The basic assumptions or premises of cardinal utility analysis are as follows:

The Cardinal Measurability of Utility:

The exponents of cardinal utility analysis regard utility to be a cardinal concept. In other words, they hold that utility is a measurable and quantifiable entity. According to them, a person can express utility or satisfaction he derives from the goods in the quantitative cardinal terms. Thus, a person can say that he derives utility equal to 10 units from the consumption of a unit of good A, and 20 units from the consumption of a unit of good B.

Moreover, the cardinal measurement of utility implies that a person can compare utilities derived from goods in respect of size, that is, how much one level of utility is greater than another. A person can say that the utility he gets from the consumption of one unit of good B is double the utility he obtains from the consumption of one unit of good A.

According to Marshall, marginal utility is actually measurable in terms of money. Money represents the general purchasing power and it can therefore be regarded as a command over alternative utility-yielding goods. Marshall argues that the amount of money which a person is prepared to pay for a unit of a good rather than go without it is a measure of the utility he derives from that good.

Thus, according to him, money is the measuring rod of utility. Some economists belonging to the cardinalist school measure utility in imaginary units called “utils”. They assume that a consumer is capable of saying that one apple provides him utility equal to 4 utils. Further, on this ground, he can say that he gets twice as much utility from an apple as compared to an orange.

The Hypothesis of Independent Utilities:

The second important tenet of the cardinal utility analysis is the hypothesis of independent utilities. On this hypothesis, the utility which a consumer derives from a good is the function of the quantity of that

good and of that good only. In other words, the utility which a consumer obtains from a good does not depend upon the quantity consumed of other goods; it depends upon the quantity purchased of that good alone.

On this assumption, then the total utility which a person gets from the whole collection of goods purchased by him is simply the total sum of the separate utilities of the goods. Thus, the cardinalist school regards utility as 'additive', that is, separate utilities of different goods can be added to obtain the total sum of the utilities of all goods purchased.

Constancy of the Marginal Utility of Money:

Another important assumption of the cardinal utility analysis is the constancy of the marginal utility of money. Thus, while the cardinal utility analysis assumes that marginal utilities of commodities diminish as more of them are purchased or consumed, but the marginal utility of money remains constant throughout when the individual is spending money on a good and due to which the amount of money with him varies. Daniel Bernoulli first of all introduced this assumption but later Marshall adopted this in his famous book "Principles of Economics".

As stated above, Marshall measured marginal utilities in terms of money. But measurement of marginal utility of goods in terms of money is only possible if the marginal utility of money itself remains constant. It should be noted that the assumption of constant marginal utility of money is very crucial to the Marshallian analysis, because otherwise Marshall could not measure the marginal utilities of goods in terms of money. If money which is the unit of measurement itself varies as one is measuring with it, it cannot then yield correct measurement of the marginal utility of goods.

When price of a good falls and as a result the real income of the consumer rises, marginal utility of money to him will fall but Marshall ignored this and assumed that marginal utility of money did not change as a result of the change in price. Likewise, when price of a good raises the real income of the consumer will fall and his marginal utility of money will rise. But Marshall ignored this and assumed that marginal utility of money remains the same. Marshall defended this assumption on the ground that "his (the individual consumer's) expenditure on any one thing is only a small part of his whole expenditure."

Introspective Method:

Another important assumption of the cardinal utility analysis is the use of introspective method in judging the behaviour of marginal utility. "Introspection is the ability of the observer to reconstruct events which go on in the mind of another person with the help of self-observation. This form of comprehension may be just guesswork or intuition or the result of long lasting experience."

Thus, the economists construct with the help of their own experience the trend of feeling which goes on in other men's mind. From his own response to certain forces and by experience and observation one gains understanding of the way other people's minds would work in similar situations. To sum up, in introspective method we attribute to another person what we know of our own mind. That is, by looking into ourselves we see inside the heads of other individuals.

So the law of diminishing marginal utility is based upon introspection. We know from our own mind that as we have more of a thing, the less utility we derive from an additional unit of it. We conclude from it that other individuals' mind will work in a similar fashion, that is, marginal utility to them of a good will diminish as they have more units of it.

With the above basic premises, the founders of cardinal utility analysis have developed two laws which occupy an important place in economic theory and have several applications and uses.

These two laws are:

(1) Law of Diminishing Marginal Utility and

(2) Law of Equi-Marginal Utility.

It is with the help of these two laws about consumer's behaviour that the exponents of cardinal utility analysis have derived the law of demand. We explain below these two laws in detail and how law of demand is derived from them.

Law of Diminishing Marginal Utility:

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An important tenet of cardinal utility analysis relates to the behaviour of marginal utility. This familiar behaviour of marginal utility has been stated in the Law of Diminishing Marginal Utility according to which marginal utility of a good diminishes as an individual consumes more units of a good. In other words, as a consumer takes more units of a good, the extra utility or satisfaction that he derives from an extra unit of the good goes on falling.

It should be carefully noted that it is the marginal utility and not the total utility that declines with the increase in the consumption of a good.

Marshall who has been a famous exponent of the cardinal utility analysis has stated the law of diminishing marginal utility as follows:

“The additional benefit which a person derives from a given increase of his stock of a thing diminishes with every increase in the stock that he already has.”

This law is based upon two important facts. First, while the total wants of a man are virtually unlimited, each single want is satiable. Therefore, as an individual consumes more and more units of a good, intensity of his want for the good goes on falling and a point is reached where the individual no longer wants any more units of the good. That is, when saturation point is reached, marginal utility of a good becomes zero. Zero marginal utility of a good implies that the individual has all that he wants of the good in question.

The second fact on which the law of diminishing marginal utility is based is that the different goods are not perfect substitutes for each other in the satisfaction of various wants. When an individual consumes more and more units of a good, the intensity of his particular want for the good diminishes but if the units of that good could be devoted to the satisfaction of other wants and yielded as much satisfaction as they did initially in the satisfaction of the first want, marginal utility of the good would not have diminished.

It is obvious from above that the law of diminishing marginal utility describes a familiar and fundamental tendency of human nature. This law has been arrived at by introspection and by observing how consumers behave.

Illustration of the Law of Diminishing Marginal Utility:

The table represents the total and marginal utilities derived by a person from cups of tea consumed per day. When one cup of tea is taken per day the total utility derived by the person is 12 utils. And because this is the first cup its marginal utility is also 12 utils with the consumption of 2nd cup per day, the total utility rises to 22 utils but marginal utility falls to 10. It will be seen from the table that as the consumption of tea increases to six cups per day, marginal utility from the additional cup goes on diminishing (i.e. the total utility goes on increasing at a diminishing rate).

However, when the cups of tea consumed per day increases to seven, then instead of giving positive marginal utility, the seventh cup gives negative marginal utility equal to – 2 utils. This is because too many cups of tea consumed per day (say more than six for a particular individual) may cause acidity and gas trouble. Thus, the extra cups of tea beyond six to the individual in question gives him disutility rather than positive satisfaction.

Diminishing Marginal Utility

Cups of tea consumed per day (Q)	Total utility (utils)	Marginal utility (utils)
1	12	12
2	22	10
3	30	8
4	36	6
5	40	4
6	41	1
7	39	-2
8	34	-5

Figure illustrates the total utility and the marginal utility curves. The total utility curve drawn in Figure 1 is based upon three assumptions. First, as the quantity consumed per period by a consumer increases his total utility increases but at a decreasing rate. This implies that as the consumption per period of a commodity by the consumer increases, marginal utility diminishes as shown in the lower panel of Figure.

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Secondly, as will be observed from the figure when the rate of consumption of a commodity per period increases to Q4, the total utility of the consumer reaches its maximum level.

Therefore, the quantity Q4 of the commodity is called satiation quantity or satiety point. Thirdly, the increase in the quantity consumed of the good per period by the consumer beyond the satiation point has an adverse effect on his total utility that is, his total utility declines if more than Q4 quantity of the good is consumed.

This means beyond Q4 marginal utility of the commodity for the consumer becomes negative and will be seen from the lower panel of Figure 7.1 beyond the satiation point Q4 marginal utility curve MU goes below the X-axis indicating it becomes negative beyond quantity Q4 per period of the commodity consumed.

It is important to understand how we have drawn the marginal utility curve. As stated above marginal utility is the increase in total utility of the consumer caused by the consumption of an additional unit of the commodity per period. We can directly find out the marginal utility of the successive units of the commodity consumed by measuring the additional utility which a consumer obtains from successive units of the commodity and plotting them against their respective quantities.

However, in terms of calculus, marginal utility of a commodity X is the slope of the total utility function $U = f(Q_x)$. Thus, we can derive the marginal utility curve by measuring the slope at various points of the total utility curve TU in the upper panel of Figure 7.1 by drawing tangents at them. For instance, at the quantity Q1 marginal utility (i.e. $dU/dQ = MU_1$) is found out by drawing tangent at point A and measuring its slope which is then plotted against quantity in the lower panel of Figure 7.1. In the lower panel we measure marginal utility of the commodity on the Y-axis. Likewise, at quantity Q2 marginal utility of the commodity has been obtained by measuring slope of the total utility curve TU at point B and plotting it in the lower panel against the quantity Q2.

It will be seen from the figure that at Q4 of the commodity consumed, the total utility reaches at the maximum level T. Therefore, at quantity Q4 the slope of the total utility curve is zero at this point.

Beyond the quantity Q_4 the total utility declines and marginal utility becomes negative. Thus, quantity Q_4 of the commodity represents the satiation quantity.

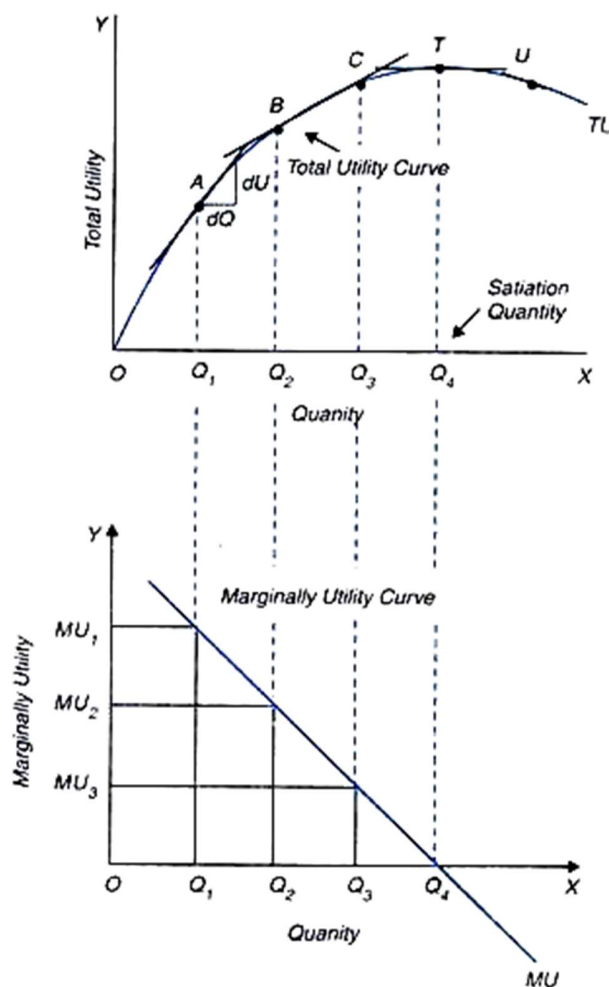


Fig. 7.1. . Total Utility and Marginal Utility

Another important relationship between total utility and marginal utility is worth noting. At any quantity of a commodity consumed the total utility is the sum of the marginal utilities. For example, if marginal utility of the first, second, and third units of the commodity consumed are 15, 12, and 8 units, the total

utility obtained from these three units of consumption of the commodity must equals 35 units ($15 + 12 + 8 = 35$).

Similarly, in terms of graphs of total utility and marginal utility depicted in Figure 7.1 the total utility of the quantity Q4 of the commodity consumed is the sum of the marginal utilities of the units of commodity up to point Q4. That is, the entire area under the marginal utility curve MU in lower panel up to the point Q4 is the sum of marginal utilities which must be equal to the total utility Q4T in the upper panel.

Marginal Utility and Consumer's Tastes and Preferences:

The utility people derive from consuming a particular commodity depends on their tastes and preferences. Some consumers like oranges, others prefer apples and still others prefer bananas for consumption. Therefore, the utility which different individuals get from these various fruits depends on their tastes and preferences.

An individual would have different marginal utility curves for different commodities depending on his tastes and preferences. Thus, utility which people derive from various goods reflect their tastes and preferences for them. However, it is worth noting that we cannot compare utility across consumers. Each consumer has a unique subjective utility scale. In the context of cardinal utility analysis, a change in consumer's tastes and preferences means a shift in his one or more marginal utility curves.

However, it may be noted that a consumer's tastes and preferences do not frequently change, as these are determined by his habits. Of course, tastes and preferences can change occasionally. Therefore, in economic theory we generally assume that tastes or preferences are given and relatively stable.

Significance of Diminishing Marginal Utility:

The significance of the diminishing marginal utility of a good for the theory of demand is that it helps us to show that the quantity demanded of a good increase as its price falls and vice versa. Thus, it is because of the diminishing marginal utility that the demand curve slopes downward. If properly understood the law of diminishing marginal utility applies to all objects of desire including money.

But it is worth mentioning that marginal utility of money is generally never zero or negative. Money represents purchasing power over all other goods, that is, a man can satisfy all his material wants if he possesses enough money. Since man's total wants are practically unlimited, therefore, the marginal utility of money to him never falls to zero.

The marginal utility analysis has a good number of uses and applications in both economic theory and policy. The concept of marginal utility is of crucial significance in explaining determination of the prices of commodities. The discovery of the concept of marginal utility has helped us to explain the paradox of value which troubled Adam Smith in "The Wealth of Nations."

Adam Smith was greatly surprised to know why water which is so very essential and useful to life has such a low price (indeed no price), while diamonds which are quite unnecessary, have such a high price. He could not resolve this water-diamond paradox. But modern economists can solve it with the aid of the concept of marginal utility.

According to the modern economists, the total utility of a commodity does not determine the price of a commodity and it is the marginal utility which is crucially important determinant of price. Now, the water is available in abundant quantities so that its relative marginal utility is very low or even zero. Therefore, its price is low or zero. On the other hand, the diamonds are scarce and therefore their relative marginal utility is quite high and this is the reason why their prices are high.

Consumer's Equilibrium: Principle of Equi-Marginal Utility:

Principle of equi-marginal utility occupies an important place in cardinal utility analysis. It is through this principle that consumer's equilibrium is explained. A consumer has a given income which he has to spend on various goods he wants. Now, the question is how he would allocate his given money income among various goods, that is to say, what would be his equilibrium position in respect of the purchases of the various goods. It may be mentioned here that consumer is assumed to be 'rational', that is, he carefully calculates utilities and substitutes one good for another so as to maximise his utility or satisfaction.

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Suppose there are only two goods X and Y on which a consumer has to spend a given income. The consumer's behaviour will be governed by two factors first, the marginal utilities of the goods and secondly, the prices of two goods. Suppose the prices of the goods are given for the consumer.

The law of equi-marginal utility states that the consumer will distribute his money income between the goods in such a way that the utility derived from the last rupee spent on each good is equal. In other words, consumer is in equilibrium position when marginal utility of money expenditure on each good is the same. Now, the marginal utility of money expenditure on a good is equal to the marginal utility of a good divided by the price of the good. In symbols,

$$MU_m = MU_x / P_x$$

Where MU_m is marginal utility of money expenditure and MU_x is the marginal utility of X and P_x is the price of X. The law of equi-marginal utility can therefore be stated thus: the consumer will spend his money income on different goods in such a way that marginal utility of money expenditure on each good is equal. That is, consumer is in equilibrium in respect of the purchases of two goods X and Y when

$$MU_x / P_x = MU_y / P_y$$

Now, if MU_x / P_x and MU_y / P_y are not equal and MU_x / P_x is greater than MU_y / P_y , then the consumer will substitute good X for good Y. As a result of this substitution, the marginal utility of good X will fall and marginal utility of good Y will rise. The consumer will continue substituting good X for good Y until MU_x / P_x becomes equal to MU_y / P_y . When MU_x / P_x becomes equal to MU_y / P_y the consumer will be in equilibrium.

But the equality of MU_x / P_x with MU_y / P_y can be achieved not only at one level but at different levels of expenditure. The question is how far does a consumer go in purchasing the goods he wants. This is determined by the size of his money income. With a given income and money expenditure a rupee has a certain utility for him: this utility is the marginal utility of money to him.

Since the law of diminishing marginal utility applies to money income also, the greater the size of his money income the smaller the marginal utility of money to him. Now, the consumer will go on purchasing

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goods until the marginal utility of money expenditure on each good becomes equal to the marginal utility of money to him.

Thus, the consumer will be in equilibrium when the following equation holds good:

$$MU_x / P_x = MU_y / P_y = MU_m$$

Where MU_m is marginal utility of money expenditure (that is, the utility of the last rupee spent on each good).

If there are more than two goods on which the consumer is spending his income, the above equation must hold good for all of them. Thus

$$MU_x / P_x = MU_y / P_y = \dots\dots\dots = MU_m$$

Let us illustrate the law of equi-marginal utility with the aid of an arithmetical table given below:

Marginal utility of Good X and Y

Utils	MU_x (utils)	MU_y (utils)
1	20	24
2	18	21
3	16	18
4	14	15
5	12	9
6	10	3

Let the prices of goods X and Y be Rs. 2 and Rs. 3 respectively. Reconstructing the above table by dividing marginal utilities (MU) of X by Rs. 2 and marginal utilities (MU) of Y by Rs. 3 we get the Table 7.3.

Marginal utility of money expenditure

Utils	$\frac{MU_x}{P_x}$	$\frac{MU_y}{P_y}$
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1	10	8
2	9	7
3	8	6
4	7	5
5	6	3
6	5	1

Suppose a consumer has money income of Rs. 24 to spend on the two goods. It is worth noting that in order to maximise his utility the consumer will not equate marginal utilities of the goods because prices of the two goods are different. He will equate the marginal utility of the last rupee (i.e. marginal utility of money expenditure) spent on these two goods.

In other words, he will equate MU_x / P_x with MU_y / P_y while spending his given money income on the two goods. By looking at the Table 7.3 it will become clear that MU_x / P_x is equal to 5 utils when the consumer purchases 6 units of good X and MU_y / P_y is equal to 5 utils when he buys 4 units of good Y. Therefore, consumer will be in equilibrium when he is buying 6 units of good X and 4 units of good Y and will be spending $(Rs. 2 \times 6 + Rs. 3 \times 4) = Rs. 24$ on them that are equal to consumer's given income. Thus, in the equilibrium position where the consumer maximises his utility.

$$MU_x / P_x = MU_y / P_y = MU_m$$

$$10/2 = 15/3 = 5$$

Thus, marginal utility of the last rupee spent on each of the two goods he purchases is the same, that is, 5 utilities.

Consumers' equilibrium is graphically portrayed in Fig. 7.2. Since marginal utility curves of goods slope downward, curves depicting MU_x / P_x and MU_y / P_y also slope downward. Thus, when the consumer is buying OH of X and OK of Y, then

$$MU_x / P_x = MU_y / P_y = MU_m$$

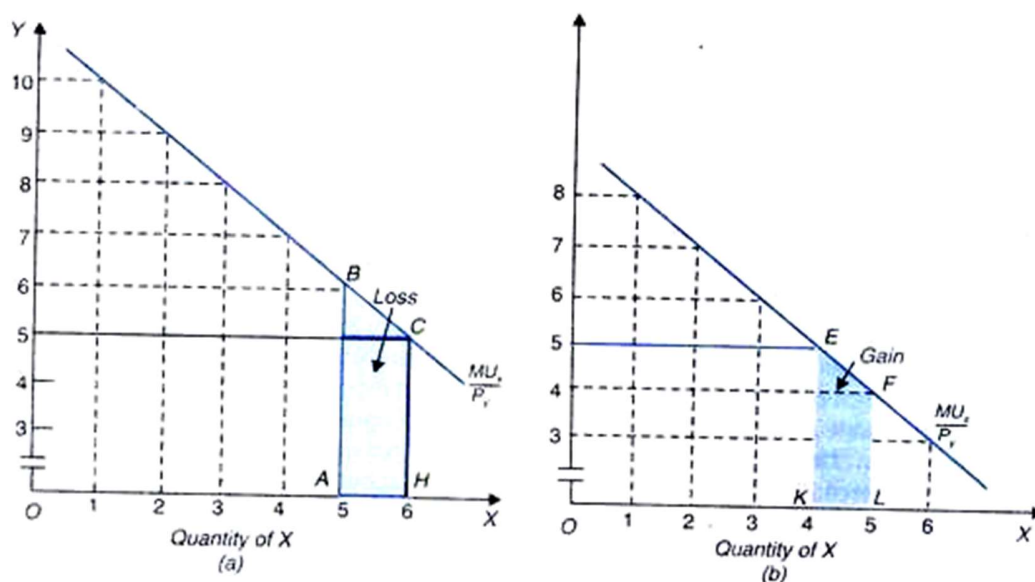


Fig. 7.2. Equi-Marginal Utility Principle and Consumer's Equilibrium

Therefore, the consumer is in equilibrium when he is buying 6 units of X and 4 units of Y. No other allocation of money expenditure will yield him greater utility than when he is buying 6 units of commodity X and 4 units of commodity Y. Suppose the consumer buys one unit less of good X and one unit more of good Y.

This will lead to the decrease in his total utility. It will be observed from Figure 7.2 (a) that the consumption of 5 units instead of 6 units of commodity X means a loss in satisfaction equal to the shaded area ABCH and from Fig. 7.2(b) it will be seen that consumption of 5 units of commodity Y instead of 4 units will mean gain in utility equal to the shaded area KEFL. It will be noticed that with this rearrangement of purchases of the two goods, the loss in utility ABCH exceeds gain in utility KEFL.

Thus, his total satisfaction will fall as a result of this rearrangement of purchases. Therefore, when the consumer is making purchases by spending his given income in such a way that $MU_x / P_x = MU_y / P_y$, he will not like to make any further changes in the basket of goods and will therefore be in equilibrium situation by maximizing his utility.

Demand Analysis

Types of Demand

The different types of demand are;

i) Direct and Derived Demands: Direct demand refers to demand for goods meant for final consumption; it is the demand for consumers' goods like food items, readymade garments and houses. By contrast, derived demand refers to demand for goods which are needed for further production; it is the demand for producers' goods like industrial raw materials, machine tools and equipments.

Thus the demand for an input or what is called a factor of production is a derived demand; its demand depends on the demand for output where the input enters. In fact, the quantity of demand for the final output as well as the degree of substitutability/complementary between inputs would determine the derived demand for a given input.

For example, the demand for gas in a fertilizer plant depends on the amount of fertilizer to be produced and substitutability between gas and coal as the basis for fertilizer production. However, the direct demand for a product is not contingent upon the demand for other products.

ii) Domestic and Industrial Demands: The example of the refrigerator can be restated to distinguish between the demand for domestic consumption and the demand for industrial use. In case of certain industrial raw materials which are also used for domestic purpose, this distinction is very meaningful.

For example, coal has both domestic and industrial demand, and the distinction is important from the standpoint of pricing and distribution of coal.

iii) Autonomous and Induced Demand: When the demand for a product is tied to the purchase of some parent product, its demand is called induced or derived.

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For example, the demand for cement is induced by (derived from) the demand for housing. As stated above, the demand for all producers' goods is derived or induced. In addition, even in the realm of consumers' goods, we may think of induced demand. Consider the complementary items like tea and sugar, bread and butter etc. The demand for butter (sugar) may be induced by the purchase of bread (tea). Autonomous demand, on the other hand, is not derived or induced. Unless a product is totally independent of the use of other products, it is difficult to talk about autonomous demand. In the present world of dependence, there is hardly any autonomous demand. Nobody today consumes just a single commodity; everybody consumes a bundle of commodities. Even then, all direct demand may be loosely called autonomous.

iv) Perishable and Durable Goods' Demands: Both consumers' goods and producers' goods are further classified into perishable/non-durable/single-use goods and durable/non-perishable/repeated-use goods. The former refers to final output like bread or raw material like cement which can be used only once. The latter refers to items like shirt, car or a machine which can be used repeatedly. In other words, we can classify goods into several categories: single-use consumer goods, single-use producer goods, durable-use consumer goods and durable-use producer's goods. This distinction is useful because durable products present more complicated problems of demand analysis than perishable products.

Non-durable items are meant for meeting immediate (current) demand, but durable items are designed to meet current as well as future demand as they are used over a period of time. So, when durable items are purchased, they are considered to be an addition to stock of assets or wealth. Because of continuous use, such assets like furniture or washing machine, suffer depreciation and thus call for replacement. Thus durable goods demand has two varieties – replacement of old products and expansion of total stock. Such demands fluctuate with business conditions, speculation and price expectations. Real wealth effect influences demand for consumer durables.

v) New and Replacement Demands: This distinction follows readily from the previous one. If the purchase or acquisition of an item is meant as an addition to stock, it is a new demand. If the purchase of an item is meant for maintaining the old stock of capital/asset, it is replacement demand. Such replacement expenditure is to overcome depreciation in the existing stock.

Producers' goods like machines. The demand for spare parts of a machine is replacement demand, but the demand for the latest model of a particular machine (say, the latest generation computer) is a new demand. In course of preventive maintenance and breakdown maintenance, the engineer and his crew often express their replacement demand, but when a new process or a new technique or a new product is to be introduced, there is always a new demand.

Replacement demand is induced by the quantity and quality of the existing stock, whereas the new demand is of an autonomous type. However, such a distinction is more of degree than of kind. For example, when demonstration effect operates, a new demand may also be an induced demand. You may buy a new bike, because your neighbor has recently bought one. Yours is a new purchase, yet it is induced by your neighbor's demonstration.

vi) Final and Intermediate Demands: This distinction is again based on the type of goods- final or intermediate. The demand for semi-finished products, industrial raw materials and similar intermediate goods are all derived demands, i.e., induced by the demand for final goods. In the context of input-output models, such distinction is often employed.

vii) Individual and Market Demands: This distinction is often employed by the economist to study the size of the buyers' demand, individual as well as collective. A market is visited by different consumers, consumer differences depending on factors like income, age, sex etc. They all react differently to the prevailing market price of a commodity. For example, when the price is very high, a low-income buyer may not buy anything, though a high income buyer may buy something. In such a case, we may distinguish between the demand of an individual buyer and that of the market which is the aggregate of individuals.

viii) Total Market and Segmented Market Demands: Different individual buyers together may represent a given market segment; and several market segments together may represent the total market. For example, the Hindustan Machine Tools may compute the demand for its watches in the home and foreign markets separately; and then aggregate them together to estimate the total market demand for its HMT watches. This distinction takes care of different patterns of buying behavior and consumers'

preferences in different segments of the market. Such market segments may be defined in terms of criteria like location, age, sex, income, nationality, and so on

x) Company and Industry Demands: An industry is the aggregate of firms (companies). Thus the Company's demand is similar to an individual demand, whereas the industry's demand is similar to aggregated total demand. You may examine this distinction from the standpoint of both output and input.

For example, you may think of the demand for cement produced by the Cement Corporation of India (i.e., a company's demand), or the demand for cement produced by all cement manufacturing units including the CCI (i.e., an industry's demand). Similarly, there may be demand for engineers by a single firm or demand for engineers by the industry as a whole, which is an example of demand for an input. You can appreciate that the determinants of a company's demand may not always be the same as those of an industries. The inter-firm differences with regard to technology, product quality, financial position, market (demand) share, market leadership and competitiveness- all these are possible explanatory factors. In fact, a clear understanding of the relation between company and industry demands necessitates an understanding of different market structures.

Determinates of demand and demand function

Demand for a commodity or service is determined by a number of factors. All such factors are called as 'demand determinants'.

1. Price of the given commodity, prices of other substitutes and/or complements, future expected trend in prices etc.
2. General Price level existing in the country - inflation or deflation
3. Level of income and living standards of the people.
4. Size, rate of growth and composition of population.
5. Tastes, preferences, customs, habits, fashion and styles
6. Publicity, propaganda and advertisements.

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7. Quality of the product.
8. Profit margin kept by the sellers.
9. Weather and climatic conditions.
10. Conditions of trade- boom or prosperity in the economy.
11. Terms & conditions of trade.
12. Governments' policy- taxation, liberal or restrictive measures.
13. Level of savings & pattern of consumer expenditure.
14. Total supply of money circulation and liquidity preference of the people.
15. Improvements in educational standards etc.

Thus, several factors are responsible for bringing changes in the demand for a product in the market. A business executive should have the knowledge and information about all these factors and forces in order to finalize his own production marketing and other business strategies.

Demand function

The demand function for a product explains the quantities of a product demanded due to different factors other than price in the market at a particular point of time

$D_x = f(P_s, P_c, E_p, Y, E_y, T, W, A, U, \dots \text{etc})$ when,

D_x = Demand for commodity X

P_s = Price of the substitution

P_c = Price of the complements

E_p = Expected future price

Y = Income of the consumer

E_y = Expected income in future

T = Tastes and preferences

W = Wealth of the consumer

A = Advertisement and its impact

U = All other determinants

Meaning and Definition

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The term demand is different from desire, want, will or wish. In the language of economics, demand has different meaning. Any want or desire will not constitute demand

Demand = Desire to buy + Ability to pay + Willingness to pay

The term demand refers to total or given quantity of a commodity or a service that are purchased by the consumer in the market at a particular price and at a particular time.

The following are some of the important qualifications of demand-

- It is backed up by adequate purchasing power.
- It is always at a price.
- It should always be expressed in terms of specific quantity
- It is created in the market.
- It is related to a person, place and time.

Consumers create demand. Demand basically depends on utility of a product. There is a direct relation between the two i.e., higher the utility, higher would be demand and lower the utility, lower would be the demand.

Demand Curve

A demand curve is a locus of points showing various alternative price – quantity combinations. **In short, the graphical presentation of the demand schedule is called as a demand curve.**

It represents the functional relationship between quantity demanded and prices of a given commodity. The demand curve has a negative slope or it slope downwards to the right. The negative slope of the demand curve clearly indicates that quantity demanded goes on increasing as price falls and vice versa.

The Law of Demand

“Other things being equal, a fall in price leads to expansion in demand and a rise in price leads to contraction in demand”.

Important Features of Law of Demand

1. There is an inverse relationship between price and demand.
2. Price is an independent variable and demand is a dependent variable
3. It is only a qualitative statement and as such it does not indicate quantitative changes in price and demand.
4. Generally, the demand curve slopes downwards from left to right.

The operation of the law is conditioned by the phrase **“Other things being equal”**. It indicates that given certain conditions certain results would follow. The inverse relationship between price and demand would be valid only when tastes and preferences, customs and habits of consumers, prices of related goods, and income of consumers would remain constant.

Exceptions to the Law of demand

Generally speaking, customers would buy more when price falls in accordance with the law of demand. **Exceptions to law of demand states that with a fall in price, demand also falls and with a rise in price demand also rises.** This can be represented by rising demand curve. In other words, the demand curve slopes upwards from left to right. It is known as an exceptional demand curve or unusual demand curve.

Following are the exception to the law of demand

1. Giffen's Paradox

A paradox is a foolish or absurd statement, but it will be true. Sir Robert Giffen, an Irish Economist, with the help of his own example (inferior goods) disproved the law of demand. The Giffen's paradox holds that **“Demand is strengthened with a rise in price or weakened with a fall in price”**. He gave the

example of poor people of Ireland who were using potatoes and meat as daily food articles. When price of potatoes declined, customers instead of buying greater quantities of potatoes started buying more of meat (superior goods). Thus, the demand for potatoes declined in spite of fall in its price.

2. Veblen's effect

Thorstein Veblen, a noted American Economist contends that there are certain commodities which are purchased by rich people not for their direct satisfaction, but for their 'snob – appeal' or 'ostentation'. **Veblen's effect states that demand for status symbol goods would go up with a rise in price and vice-versa.** In case of such status symbol commodities it is not the price which is important but the prestige conferred by that commodity on a person makes him to go for it. More commonly cited examples of such goods are diamonds and precious stones, world famous paintings, commodities used by world figures, personalities etc. Therefore, commodities having 'snob – appeal' are to be considered as exceptions to the law of demand.

3. Fear of shortage

When serious shortages are anticipated by the people, (e.g., during the war period) they purchase more goods at present even though the current price is higher.

4. Fear of future rise in price

If people expect future hike in prices, they buy more even though they feel that current prices are higher. Otherwise, they have to pay a still high price for the same product.

5. Speculation

Speculation implies purchase or sale of an asset with the hope that its price may rise or fall and make speculative profit. Normally speculation is witnessed in the stock exchange market. People buy more shares only when their prices show a rising trend. This is because they get more profit, if they sell their shares when the prices actually rise. Thus, speculation becomes an exception to the law of demand.

6 Conspicuous necessities

Conspicuous necessities are those items which are purchased by consumers even though their prices are rising on account of their special uses in our modern style of life.

In case of articles like wrist watches, scooters, motorcycles, tape recorders, mobile phones etc customers buy more in spite of their high prices.

7. Emergencies

During emergency periods like war, famine, floods cyclone, accidents etc., people buy certain articles even though the prices are quite high.

8. Ignorance

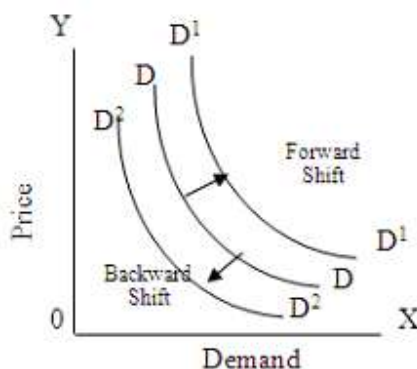
Sometimes people may not be aware of the prices prevailing in the market. Hence, they buy more at higher prices because of sheer ignorance.

9. Necessaries

Necessaries are those items which are purchased by consumers whatever may be the price. Consumers would buy more necessities in spite of their higher prices.

Changes or Shifts in Demand

It is to be clearly understood that if demand changes only because of changes in the price of the given commodity in that case there would be only either expansion or contraction in demand. Both of them can be explained with the help of only one demand curve. **If demand changes not because of price changes but because of other factors or forces, then in that case there would be either increase or decrease in demand.** If demand increases, there would be forward shift in the demand curve to the right and if demand decreases, then there would be backward shift in the demand curve.



Elasticity of demand

The term elasticity is borrowed from physics. It shows the reaction of one variable with respect to a change in other variables on which it is dependent. Elasticity is an index of reaction.

In economics the term elasticity refers to a ratio of the relative changes in two quantities. It measures the responsiveness of one variable to the changes in another variable.

Elasticity of demand is generally defined as the responsiveness or sensitiveness of demand to a given change in the price of a commodity.

It refers to the capacity of demand either to stretch or shrink to a given change in price. Elasticity of demand indicates a ratio of relative changes in two quantities, i.e., price and demand. According to Prof. Boulding, "Elasticity of demand measures the responsiveness of demand to changes in price".¹ In the words of Marshall, "The elasticity (or responsiveness) of demand in a market is great or small according to as the amount demanded much or little for a given fall in price, and diminishes much or little for a given rise in price"

Kinds of elasticity of demand

Broadly speaking there are five kinds of elasticity's of demand. We shall discuss each one of them in some detail.

Price Elasticity of Demand

Price elasticity of demand is one of the important concepts of elasticity which is used to describe the effect of change in price on quantity demanded. In the words of

Prof. Stonier and Hague, price elasticity of demand is a technical term used by economists to explain the degree of responsiveness of the demand for a product to a change in its price. It is measured by using the following formula.

$$E_p = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in price}}$$

$$\text{Symbolically } E_p = \frac{\Delta D}{\Delta P} \times \frac{P}{D} = \frac{40}{-2} \times \frac{6}{20} = -6$$

Original demand = 20 units original price = 6 – 00

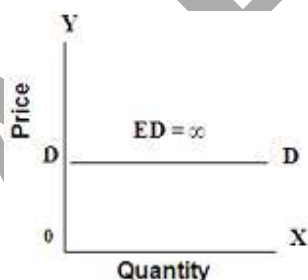
New demand = 60 units New price = 4 – 00

In the above example, price elasticity is – 6.

Based on numerical values of the co-efficient of elasticity, we can have the following five degrees of price elasticity of demand.

Different Degree of Price Elasticity of Demand

Perfectly Elastic Demand: In this case, a very small change in price leads to an infinite change in demand. The demand curve is a horizontal line and parallel to OX axis. The numerical co-efficient of perfectly elastic demand is infinity ($ED = \infty$)



Perfectly Inelastic Demand: In this case, whatever may be the change in price, quantity demanded will remain perfectly constant. The demand curve is a vertical straight line and parallel to OY axis. Quantity demanded would be 10 units, irrespective of price changes from Rs. 10.00 to Rs. 2.00. Hence, the numerical co-efficient of perfectly inelastic demand is zero. $ED = 0$

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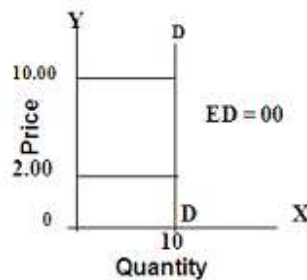
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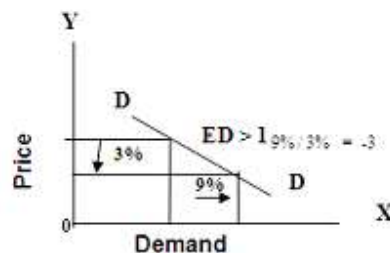
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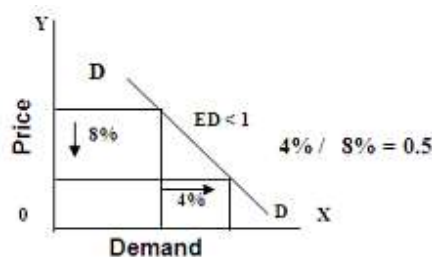
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Relative Elastic Demand: In this case, a slight change in price leads to more than proportionate change in demand. One can notice here that a change in demand is more than that of change in price. Hence, the elasticity is greater than one. For e.g., price falls by 3 % and demand rises by 9 %. Hence, the numerical co-efficient of demand is greater than one.

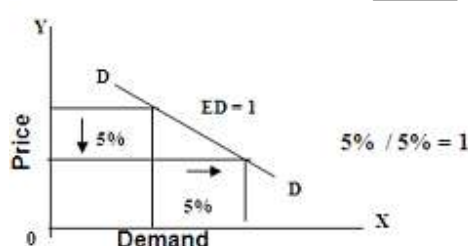


Relatively Inelastic Demand In this case, a large change in price, say 8 % fall price, leads to less than proportionate change in demand, say 4 % rise in demand. One can notice here that change in demand is less than that of change in price. This can be represented by a steeper demand curve. Hence, elasticity is less than one.



In all economic discussion, relatively elastic demand is generally called as 'elastic demand' or 'more elastic' demand while relatively inelastic demand is popularly known as 'inelastic demand' or 'less elastic demand'.

Unitary elastic demand: In this case, proportionate change in price leads to equal proportionate change in demand. For e.g., 5 % fall in price leads to exactly 5 % increase in demand. Hence, elasticity is equal to unity. It is possible to come across unitary elastic demand but it is a rare phenomenon.



Out of five different degrees, the first two are theoretical and the last one is a rare possibility. Hence, in all our general discussion, we make reference only to two terms-relatively elastic demand and relatively inelastic demand.

Determinants of Price Elasticity of Demand

The elasticity of demand depends on several factors of which the following are some of the important ones.

- 1. Nature of the Commodity:** Commodities coming under the category of necessities and essentials tend to be inelastic because people buy them whatever may be the price.
- 2. Existence of Substitutes:** Substitute goods are those that are considered to be economically interchangeable by buyers.
- 3. Number of uses for the commodity:** Single-use goods are those items which can be used for only one purpose and multiple-use goods can be used for a variety of purposes. If a commodity has only

one use (single use product) then in that case, demand tends to be inelastic because people have to pay more prices if they have to use that product for only one use.

4. Durability and reparability of a commodity: Durable goods are those which can be used for a long period of time. Demand tends to be elastic in case of durable and repairable goods because people do not buy them frequently.

5. Possibility of postponing the use of a commodity: In case there is no possibility to postpone the use of a commodity to future, the demand tends to be inelastic because people have to buy them irrespective of their prices.

6. Level of Income of the people: Generally speaking, demand will be relatively inelastic in case of rich people because any change in market price will not alter and affect their purchase plans. On the contrary, demand tends to be elastic in case of poor.

7. Range of Prices: There are certain goods or products like imported cars, computers, refrigerators, TV etc, which are costly in nature. Similarly, a few other goods like nails; needles etc. are low priced goods. In all these cases, a small fall or rise in prices will have insignificant effect on their demand. Hence, demand for them is inelastic in nature. However, commodities having normal prices are elastic in nature.

8. Proportion of the expenditure on a commodity: When the amount of money spent on buying a product is either too small or too big, in that case demand tends to be inelastic. For example, salt, newspaper or a site or house. On the other hand, the amount of money spent is moderate; demand in that case tends to be elastic. For example, vegetables and fruits, cloths, provision items etc.

9 Habits: When people are habituated for the use of a commodity, they do not care for price changes over a certain range. For example, in case of smoking, drinking, use of tobacco etc In that case, demand tends to be inelastic. If people are not habituated for the use of any products, then demand generally tends to be elastic.

10. Period of time: Price elasticity of demand varies with the length of the time period. Generally speaking, in the short period, demand is inelastic because consumption habits of the people, customs and

traditions etc. do not change. On the contrary, demand tends to be elastic in the long period where there is possibility of all kinds' o f changes.

11. Level of Knowledge: Demand in case of enlightened customer would be elastic and in case of ignorant customers, it would be inelastic.

12. Existence of complementary goods: Goods or services whose demands are interrelated so that an increase in the price of one of the product results in a fall in the demand for the other. Goods which are jointly demanded are inelastic in nature. For example, pen and ink, vehicles and petrol, shoes and socks etc have inelastic demand for this reason. If a product does not have complements, in that case demand tends to be elastic. For example, biscuits, chocolates, ice creams etc. In this case the use of a product is not linked to any other products.

13. Purchase frequency of a product: If the frequency of purchase is very high, the demand tends to be inelastic. For e.g., coffee, tea, milk, match box etc. on the other hand, if people buy a product occasionally, in that case demand tends to be elastic for example, durable goods like radio, tape recorders, refrigerators etc.

Thus, the demand for a product is elastic or inelastic will depend on a number of factors.

Practical application of price elasticity of demand

1. Production planning: It helps a producer to decide about the volume of production. If the demand for his products is inelastic, specific quantities can be produced while he has to produce different quantities, if the demand is elastic.

2. Helps in fixing the prices of different goods: It helps a producer to fix the price of his product. If the demand for his product is inelastic, he can fix a higher price and if the demand is elastic, he has to charge a lower price. Thus, price-increase policy is to be followed if the demand is inelastic in the market and price-decrease policy is to be followed if the demand is elastic.

Similarly, it helps a monopolist to practice price discrimination on the basis of elasticity of demand.

2. Helps in fixing the rewards for factor inputs: Factor rewards refers to the price paid for their services in the production process. It helps the producer to determine the rewards for factors of production. If the demand for any factor unit is inelastic, the producer has to pay higher reward for it and vice-versa.

3. Helps in determining the foreign exchange rates: Exchange rate refers to the rate at which currency of one country is converted in to the currency of another country. It helps in the determination of the rate of exchange between the currencies of two different nations. For e.g. if the demand for US dollar to an Indian rupee is inelastic, in that case, an Indian has to pay more Indian currency to get one unit of US dollar and vice-versa.

4. Helps in determining the terms of trade: It is the basis for deciding the 'terms of trade' between two nations. The terms of trade implies the rate at which the domestic goods are exchanged to foreign goods. For e.g. if the demand for Japan's products in India is inelastic, in that case, we have to pay more in terms of our commodities to get one unit of a commodity from Japan and vice-versa.

5. Helps in fixing the rate of taxes: Taxes refer to the compulsory payment made by a citizen to the government periodically without expecting any direct return benefit from it. It helps the finance minister to formulate sound taxation policy of the country. He can impose more taxes on those goods for which the demand is inelastic and fewer taxes if the demand is elastic in the market.

6. Helps in Declaration of Public Utilities: Public utilities are those institutions which provide certain essential goods to the general public at economical prices. The Government may declare a particular industry as 'public utility' or nationalize it, if the demand for its products is inelastic.

7. Poverty in the Midst of Plenty: The concept explains the paradox of poverty in the midst of plenty. A bumper crop of rice or wheat instead of bringing prosperity to farmers may actually bring poverty to them because the demand for rice and wheat is inelastic.

Thus, the concept of price elasticity of demand has great practical application in economic theory.

INCOME ELASTICITY OF DEMAND

Income elasticity of demand may be defined as the ratio or proportionate change in the quantity demanded of a commodity to a given proportionate change in the income.

In short, it indicates the extent to which demand changes with a variation in consumers income. The following formula helps to measure E_y .

$$E_y = \frac{\text{Percentage change in demand}}{\text{Percentage change in income}}$$

Symbolically $E_y = \frac{\frac{\Delta D}{D}}{\frac{\Delta Y}{Y}} = \frac{300}{2000} \times \frac{4000}{400} = 1.5$

Original demand = 400 units Original Income = 4000-00

New demand = 700 units New Income = 6000-00

Generally speaking, E_y is positive. This is because there is a direct relationship between income and demand, i.e. higher the income; higher would be the demand and vice-versa. On the basis of the numerical value of the co-efficient, E_y is classified as greater than one, less than one, equal to one, equal to zero, and negative. The concept of E_y helps us in classifying commodities into different categories.

1. When E_y is positive, the commodity is normal [used in day-to-day life]
2. When E_y is negative, the commodity is inferior. .For example Jowar, beedi etc.
3. When E_y is positive and greater than one, the commodity is luxury.
4. When E_y is positive, but less than one, the commodity is essential.
5. When E_y is zero, the commodity is neutral e.g. salt, match box etc.

Practical application of income elasticity of demand

1. Helps in determining the rate of growth of the firm.

If the growth rate of the economy and income growth of the people is reasonably forecasted, in that case it is possible to predict expected increase in the sales of a firm and vice-versa.

2. Helps in the demand forecasting of a firm.

It can be used in estimating future demand provided the rate of increase in income and E_y for the products are known. Thus, it helps in demand forecasting activities of a firm.

3. Helps in production planning and marketing

The knowledge of E_y is essential for production planning, formulating marketing strategy, deciding advertising expenditure and nature of distribution channel etc in the long run.

4. Helps in ensuring stability in production

Proper estimation of different degrees of income elasticity of demand for different types of products helps in avoiding over-production or under production of a firm. One should also know whether rise or fall in income is permanent or temporary.

5. Helps in estimating construction of houses.

The rate of growth in incomes of the people also helps in housing programs in a country. Thus, it helps a lot in managerial decisions of a firm.

Cross Elasticity of Demand

It may be defined as the proportionate change in the quantity demanded of a particular commodity in response to a change in the price of another related commodity.

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In the words of Prof. Watson cross elasticity of demand is the percentage change in quantity associated with a percentage change in the price of related goods. Generally speaking, it arises in case of substitutes and complements. The formula for calculating cross elasticity of demand is as follows.

$$E_c = \frac{\text{Percentage change in quantity demanded commodity X}}{\text{Percentage change in the price of Y}}$$

$$\text{Symbolically } E_c = \frac{\Delta D_x}{\Delta P_y} \times \frac{P_y}{D_x} = \frac{40}{2} \times \frac{4}{50} = 1.6$$

Price of Tea rises from Rs. 4-00 to 6 -00 per cup

Demand for coffee rises from 50 cups to 80 cups.

Cross elasticity of coffee in this case is 1.6.

It is to be noted that-

1. Cross elasticity of demand is positive in case of good substitutes e.g. coffee and tea.
2. High cross elasticity of demand exists for those commodities which are close substitutes. In other words, if commodities are perfect substitutes For example Bata or Corona Shoes, close up or pepsodent tooth paste, Beans and ladies finger, Pepsi and Coca cola etc.
3. The cross elasticity is zero when commodities are independent of each other. For example, stainless steel, aluminum vessels etc.
4. Cross elasticity between two goods is negative when they are complementary. In these cases, rise in the price of one will lead to fall in the quantity demanded of another commodity For example, car and petrol, pen and ink.etc.

Practical application of cross elasticity of demand

1. Helps at the firm level

Knowledge of cross elasticity of demand is essential to study the impact of change in the price of a commodity which possesses either substitutes or complementary goods. If accurate measures of cross elasticity's are available, a firm can forecast the demand for its product and can adopt necessary safe guard against fluctuating prices of substitutes and complements. The pricing and marketing strategy of a firm would depend on the extent of cross elasticity's between different alternative goods.

2. Helps at the industry level

Knowledge of cross elasticity would help the industry to know whether an industry has any substitutes or complementary in the market. This helps in formulating various alternative business strategies to promote different items in the market.

Advertising or Promotional Elasticity of Demand

Most of the firms, in the present marketing conditions spend considerable amounts of money on advertisement and other such sales promotional activities with the object of promoting its sales. **Advertising elasticity refers to the responsiveness demand or sales to change in advertising or other promotional expenses.** The formula to calculate the advertising elasticity is as follows.

$$E_a = \frac{\text{Percentage change in demand or sales}}{\text{Percentage change in advertisement expenditure}}$$

$$\text{Symbolically } E_a = \frac{\frac{\Delta D \text{ or Sales}}{A}}{\frac{\Delta A}{\text{Demand or sales}}} \times \frac{40,000}{1200} \times \frac{800}{10,000} = 2.67$$

Original sales = 10,000 units original advertisement expenditure = 800-00

New sales = 50,000 units new advertisement expenditure = 2000-00

In the above example, advertising elasticity of demand is 1.67. it implies that for every one time increase in advertising expenditure, the sales would go up 1.67 times Thus, E_a is more than one.

Practical application of advertising elasticity of demand

The study of advertising elasticity of demand is of paramount importance to a firm in recent years because of fierce competition.

1. Helps in determining the level of prices

The level of prices fixed by one firm for its product would depend on the amount of advertisement expenditure incurred by it in the market.

2. Helps in formulating appropriate sales promotional strategy

The volume of advertisement expenditure also throws light on the sales promotional strategies adopted by a firm to push off its total sales in the market. Thus, it helps a firm to stimulate its total sales in the market.

3. Helps in manipulating the sales

It is useful in determining the optimum level of sales in the market. This is because the sales made by one firm would also depend on the total amount of money spent on sales promotion of other firms in the market.

Consumer Surplus

Definition of Consumer Surplus:

1. Regarding this Prof. Marshall has said that “The excess of price which he (consumer) would be willing to pay rather than go without. The thing over that, which he actually does pay, is the economic measure of this surplus satisfaction. It may be called “Consumer’s Surplus”.

2. According to Penson – “The difference between what we would pay and what we have to pay is called Consumer’s Surplus.”

3. According to Prof. J. K. Mehta – “Consumer’s Surplus obtained by a person from a commodity is the difference between satisfaction which he derives from it and which he foregoes in order to procure that commodity.”

4. As per Samuelson – “There is always a gap between total welfare and total economic value. This gap is the nature of a surplus which consumer gets because he always receives more than he pays.”

5. According to Taussig – “Consumer’s Surplus is the difference between the sum which measures total exchange value”.

Assumptions of Consumer’s Surplus:

Prof. Marshall has discussed the concept of Consumer’s Surplus on the basis of the following assumptions:

1. Marginal Utility of Money is Constant: The marginal utility of money to the consumer remains constant. It is so when the money spent on purchasing the commodity is only a small fraction of this total income.

2. No Close Substitutes Available: The commodity in question has no close substitutes and if it does have any substitute, the same may be regarded as an identical commodity and thus only one demand should be prepared.

3. Utility can be Measured: The utility is capable of cardinal measurement through the measuring rod of money. Moreover, the utility obtainable from one good is absolutely independent of the utility from the other goods. No goods affect the utility that can be derived from the other goods.

4. Tastes and Incomes are same: All people are of identical tastes, fashions and their incomes also are the same.

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The above definition of Prof. Marshall can be explained with the help of practical examples:

- (i) Consumer's Surplus when there is single purchase and
- (ii) Consumer's Surplus when there is multiple unit purchase.

(i) Consumer Surplus on Single Unit Purchase:

When a consumer purchases only one unit of a commodity even then the Consumer Surplus arises. Let us suppose a student is willing to pay Rs. 30 for a particular book and when he actually go to market and purchase it at Rs. 25. Thus Rs. 5 (30-25) is the Consumer's Surplus.

(ii) Consumer's Surplus on a Multi-unit Commodity:

In our real life one purchases number of units of a particular commodity. The price that a consumer pays for all the different units of commodity actually measures the utilities of the marginal unit and he pays the same price for different commodities.

The excess of utilities he derives from different commodities and the actual price paid is called as Consumer's Surplus. Let us take an example of a person whose marginal utility, price and Consumer's Surplus schedule for bread is given in the following table:

Marginal Utility, Price and Consumer's Surplus Schedule

Units of bread	Marginal Utility (in Rs.)	Price (in Rs.)	Consumer's Surplus (in Rs.)
1	10	2	8
2	8	2	6
3	6	2	4
4	4	2	2
5	2	2	0
6	0	2	- 2

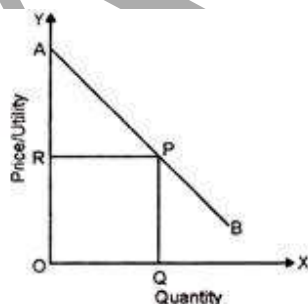
The above table expresses the various amounts of utilities he derives from the consumption of different units of bread. From the first bread alone he derives marginal utility of Rs. 10 but the price which he pays is Rs. 2 and hence Rs. 8 is the Consumer's Surplus.

Similarly, the Consumer's Surplus from 2nd, 3rd, 4th and 5th units are 6, 4, 2 and zero respectively. A rational consumer will consume only 5th commodity where the marginal utility is equal to its price and thereby maximizes his Consumer's Surplus. If he will consume the 6th unit he derive zero marginal utility where as he pays the price as Rs. 2. A rational consumer will not consume that commodity.

Diagrammatic Representation of Consumer Surplus:

This can be shown by the following diagram:

In this diagram AB is a demand curve of a consumer OR is the market price. The price line is parallel to X axis because of perfect competition. At point P the marginal curve AB intersect the market price curve OR. Thus for OQ quantity the consumer derives utility as AOQP where as he pays ROQP. Thus, triangular shaded area ARP is Consumer's Surplus.



Consumer's Surplus = Total Utility - (Marginal Utility) x (Multiply x No. of Units purchased)

Criticism of the Concept of Consumer's Surplus, or Difficulties in the Measurement of Consumer's Surplus:

The concept of Consumer's Surplus has been criticized on several grounds:

1. This Concept is Imaginary:

The concept is complete imaginary, illogical and illusory. You just imagine, what you are prepared to pay and you proceed to deduct from that what you actually pay. It is all hypothetical. One may say that one is prepared to pay anything. Hence it is unreal.

2. Measurement of this Concept is Difficult:

The critics of this concept allege that measurement of Consumer's Surplus is difficult. It is because utility is a subjective concept and will vary from person to person. Total utility is impossible to measure because when we consume more units it is said that the marginal utility of even earlier units start diminishing. Prof. Hicks and Allen have contended and proved that utility being a subjective phenomenon is determinate and immeasurable.

3. This Concept is not Applicable to Substitutes:

The concept may not apply in case of goods which have substitutes. Why should one imagine how much will be willing to pay for a commodity. One finds it hard to think that the substitute of a commodity has no significant effect on the surplus satisfaction he derives from the commodity.

Decidedly, the consumer will feel more satisfied if two good substitutes as well as complements are made available to him than in case he gets only one of the two at a time. The consumer can properly appreciate the utility from a pen only when the same is accompanied by ink.

4. The Marginal Utility of Money never Remains Constant:

It is improper to assume with Prof. Marshall that the marginal utility of money remains constant and does not alter with increase or decrease in the money stock with the consumer. Therefore, it is incorrect to believe the consistency of the marginal utility of money in real life.

5. Exhaustion of Surplus Utility:

It is said that if a consumer knew that any such thing existed, he would go on buying more and more till the surplus utility he enjoyed disappeared. This is not correct. A consumer does not run after a surplus yielded by one commodity. He has to weigh the utilities of other commodities too.

6. This Concept is not Applicable to Necessaries: The idea of Consumer's Surplus does not apply to the necessities of life or conventional necessities. In such cases the surplus is immeasurable. What would not a man be prepared to pay for a glass of water when he is dying of thirst?

7. The Complete List of Demand and Price not Available to Consumer:

Another ground on which the concept has been criticized is that the complete and reliable list of demand and prices is never available to the consumer. The demand schedule according to which he regulates and decides his purchases is not necessary to come true in practice. How much the consumer would be willing to pay rather than go without the thing is something hard to answer correctly.

Practical Importance of Consumer's Surplus:

Economists are of this opinion that the actual measurement of Consumer's Surplus is a difficult task as utility being purely a psychological concept, yet the concept has a great practical importance.

1. Distinction between Value-in-use and Value in Exchange:

Consumer's Surplus points to the distinction between the use value and the exchange value of a thing. Commodities like salt and match-box have a great value-in-use but much less value in exchange. Being necessities and cheap things they yield, however a large Consumer's Surplus. The Consumer's Surplus depends on total utility, where as price depends on marginal utility.

2. Comparison of Gains from the International Trade:

Consumer's Surplus from international transactions enables us to compare the relative gains from the international trade of the different countries. For example—we can import things cheaply from abroad, but before importing, we were paying more for similar home produced goods. The imports therefore yield a

surplus satisfaction. This is Consumer's Surplus. The larger this surplus, the more beneficial is the international trade.

3. Useful to Businessman and Monopolist:

It is of practical importance to the monopolist and businessman in fixing the price of his commodity. If the commodity is such that the consumers are willing to pay more for it, they will enjoy large surplus. In such a case the monopolist and businessman can raise the price without affecting the sale. Thus, the monopolist and businessman is guided by the knowledge of the Consumer's Surplus in fixing the price of his product.

4. Comparing Advantages of Different Places:

Consumer's Surplus proves useful when we compare the advantage of living in two different places. A place where there are greater amenities available at cheaper rates will be better to live in. In these places, the consumers enjoy large surplus of satisfaction. Consumer's Surplus thus indicates environmental and conjunctural advantages i.e., the advantages of environment and opportunities.

5. Importance in Public Finance:

The concept has a great practical importance to the Government in determining the desirability of imposing tax on certain commodity. A tax imposed on a commodity tends to raise its price and to reduce Consumer's Surplus thereby, but it yields some revenue to the government.

The Finance Minister is to compare the Loss of Consumer's surplus to the increase in tax-revenue. A tax is justified when the loss in Consumer's Surplus becomes less than the increase in tax revenue, otherwise it will be harmful.

6. Importance in Welfare Economics:

This concept is an important tool in welfare economics also.

This can be explained in the following manner:

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- (i) In his partial analysis, Marshall deals with the surplus of all the consumers in a market.
- (ii) Next, the effects of price-quantity variations of commodities on the welfare of the commodity are also being worked out with the aid of this concept.
- (iii) Further, the gain which accrues to the community from a new product and the loss from the total disappearance of a product from the market are some of the other problems which are being explained with the idea of Consumer Surplus.
- (iv) In the end, the effects of a tax and a subsidy on total welfare can be explained by it.

Explanation of Consumer's Surplus by Prof. Hicks:

The concept of Consumer's Surplus was rehabilitated by Prof. J. R. Hicks even without the measurement of utility. In this connection Hicks has said that the best way of looking at Consumer's Surplus is to regard it as a means of expressing in terms of money income, the gain which accrues to the consumer as a result of all in price.

Hicks in his "Indifference Curve Analysis" takes resources to the external behavior of a man whereby a man prefer one situation to another and with the help of this ordinal utility function, finds out the Consumer's Surplus.

For example:

Let us suppose that the consumer does not know the price of commodity X. He chooses to have the combination A on IC₁ i.e., OR of X commodity and OS amount of money. In other-words he is prepared to pay for OR commodity of X commodity and OS amount of money. In other words he is prepared to pay for OR commodity of X the TS amount of money.

Now let us suppose he knows the price of X which is indicated by TM budget line. The consumer finds that he can get on to a higher indifference curve with the same income. The consumer's new equilibrium

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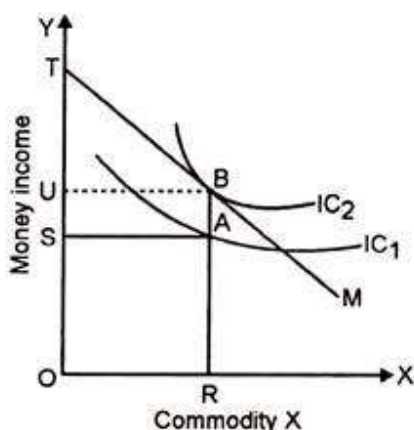
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is represented by B the tendency between IC₂ and TM. At this point consumers combination is OR amount of X commodity + UO amount of money.



In other-words, the consumer has to spend only TU amount of money as compared to TS which he is prepared to pay for the same amount of X commodity. Thus, Consumer's Surplus equivalent to SUBA. We can thus conclude that in indifference curve analysis Consumer's Surplus signifies a passage from a lower to a higher indifference curve which environment makes possible for an economic subject.

**UNIT – I
POSSIBLE QUESTIONS**

Part – B (3X 2 = 6 Marks – CIA)

Part – B (5 X 2 = 10 Marks – ESE)

1. Define managerial economics.

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2. Write down the topics covered under scope of managerial economics.
3. List the significance of managerial economics.
4. List any roles of managerial economist.
5. List the features of managerial economics.
6. What is profit management?
7. What is capital management?
8. What are business decisions?
9. Bring the relationship economic analysis and business decisions.
10. What is micro economics?
11. What is macro economics?
12. Define firm.
13. Define industry.
14. Why business firms need to set objectives?
15. What are economic objectives?
16. Write a note on Profit Maximization objective.
17. Why Sales Revenue Maximization objective is set as business objective?
18. What is social responsibility?
19. List any five social responsibilities of business enterprises
20. What is consumer's equilibrium?
21. What is utility?
22. What is total utility and average utility?
23. What is marginal utility
24. What is equi-marginal utility?
25. Define demand.
26. List the types of demand.
27. What is Direct and Derived Demands?
28. What is meant by Autonomous and Induced Demand?
29. What is meant by Perishable and Durable Goods' Demands?
30. What is meant by New and Replacement Demands?
31. List the determinants of demand.

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32. What is demand function?
33. Define Law Of Demand.
34. What is Elasticity of demand?
35. What is Price Elasticity of demand?
36. What is Income Elasticity of demand?
37. What is Cross Elasticity of demand?
38. What is Advertising Elasticity of demand?
39. List the practical application of Price and Income Elasticity of demand.
40. List the practical application of cross and advertising Elasticity of demand.
41. Define consumer's surplus.

Part – C (3 X 8 = 24 Marks – CIA) (Either or OR)

Part – C (6 X 5 = 30 Marks – ESE) (Either or OR)

1. Explain the scope of managerial economics.
2. Discuss the significance of managerial economics.
3. Examine the roles and responsibilities of managerial economist.
4. Discuss the features of managerial economics.
5. Discuss the relationship between economic analysis and business decisions.
6. Explain the law of diminishing marginal utility
7. Explain the law of equi-marginal utility.
8. Discuss the significance of demand analysis.
9. Explain the different types of demand.
10. Explain the significance of economics in business decision making.
11. Differentiate the Perishable and Durable Goods' Demands.
12. Differentiate the New and Replacement Demands.
13. Examine the determinants of demand.
14. Explain the Law of Demand.
15. Explain the Elasticity of demand.
16. Explain the Price Elasticity of demand.
17. Explain the Income Elasticity of demand.
18. Discuss the Cross Elasticity of demand.

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19. Discuss the Advertising Elasticity of demand.
20. Discuss the practical application of Price and Income Elasticity of demand.
21. Discuss the practical application of cross and advertising Elasticity of demand.
22. Explain the profit maximization objective.
23. Discuss the Baumol's sales maximisation objective
24. Bring the economic objectives of firm
25. Examine the practical applications of consumer's surplus.

S.No	QUESTIONS	OPTION 1
1	The subject matter of economics is	To ensure economic progress of the people
2	In economics the central problem is	Money
3	Modern approach of firms, prefer maximization of	Sales revenue
4	Trade-offs are required because wants are unlimited and resources are	Scarce.
5	'Utility' in economics means the capacity to	Provide comforts
6	Utility is measured by	Wealth
7	The extra utility from consuming one more unit of a commodity is called	Marginal utility
8	A consumer attains equilibrium, in case of one commodity, when:	$MU_x = P_x$
9	Consumer equilibrium in case of two commodities(say X and Y) is struck when:	$MU_x/P_x = MU_y/P_y$
10	Additional utility derived from the consumption of an additional unit of a commodity is called:	Average utility
11	If marginal utility is zero	Total utility is zero
12	The area which lies under the demand curve for a good measures _____	Marginal Utility
13	The price which a consumer would be willing to pay for a commodity equal to his _____	Total utility
14	White goods are	Basic raw materials
15	Capital goods' refer to goods which	Serve as a source of raising further capital
16	When the value of commodity is expressed in terms of money it is known as	Value
17	The change in the demand, for a commodity as a result of change in the price of related goods is called	Cross demand
18	Demand means	Consumers willingness to get a commodity
19	Utility is measured by	Unit price of the commodity
20	The graphic presentation of a table showing price and relationship for a commodity in the market is called:	Individual demand curve
21	Downward slope of the demand curve shows:	Positive relationship between price and quantity demanded

22	In case of Giffen's paradox, the slope of demand curve is:	Negative
23	When income of the consumer rises in case of a normal good:	Demand curve shifts to the left
24	When the value of elasticity is equal to one, the demand is known as	Unitary elastic
25	The degree of change in the quantity demanded of a good as a result of the change in the income is called	Price elasticity
26	Highly elasticity of demand will be	More than one
27	Law of demand does not include	Price of commodity is an independent variable
28	For inferior commodities income effect is -----	Zero
29	In relatively elastic demand ED is -----	E=1
30	A relative change in quantity demanded is less than the relative change in money income is ----- income elasticity	High
31	People demand more of product X when the price of product Y decreases. This means X and Y are	Complements
32	An increase in consumer income will increase demand for a ----- but decrease demand for a -----	Substitute goods, inferior goods
33	The total outlay method explains the relationship between price and -----	Demand
34	The supply of a product does not depend on -----	Labour costs
35	A positive cross elasticity of demand coefficient indicates that-----	A product is an inferior good
36	Supply is a function of -----	A straight line
37	Micro economics studies the economic actions and behavior of	Individual units
38	Who is regarded as a father of Business Economics	Joel Dean
39	Decision making and -----are the two important functions of executive of business firms	Forward planning
40	Allocation of available resources among alternatives is based on the principle	Opportunity cost principle
41	Which of the following is not a function of managerial economists	Advice on trade and public relations
42	The demand has three essentials- Desire, Purchasing power and	Quantity
43means relationship between demand and its various determinants expressed mathematically	Demand extension
44	The change in demand due to change in price only, where other factors remaining constant, it is called.....	Shift in demand

45	In the case of Consumer may moves to higher or lower demand curve	Extension of demand
46	Exceptional Demand Curve (Perverse demand curve)	Moving upward from left to right
47	Quantity remains the same whatever the change in price, this is the case of	Perfectly elastic demand
48	When the change in demand is exactly equal to the change in price, it is called	Perfectly elastic demand
49	EP =in the case of relatively elastic demand	1
50	When income increases, quantity demanded falls, it is	Positive income elasticity
51	Outlay method of measurement of elasticity is also called as	Percentage method
52method measures elasticity between two points	Proportional or Percentage Method
53	The proportionate change in the quantity demanded of a commodity in response to change in the price of another related commodity is called	Price elasticity
54	A rightwards shift in supply curve indicates	A decrease in supply
55	Other things being equal a decrease in the quantity supplied to the market at given prices leads to	A higher price and a contraction of demand
56	If the supply curve of a commodity is positively sloped, a rise in the price of the commodity remains constant, results in	A decrease in supply
57	The market period supply curve for perishable commodities is_____	Relatively inelastic
58	Any supply curve which is a straight line passing through the origin whatever its slopes will possess_____	Unitary elasticity of supply
59	For a positively sloped straight line supply curve that intersects the price axis is_____	Equal to zero
60	The short-run supply curve of market always_____	Slope upward from left to right
61	Any straight line supply curve which cuts the x-axis will have_____	An elasticity greater than one

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UNIT - I

Multiple Choice Questions (Each Questions carries ONE Mar

OPTION 2	OPTION 3
To run business	To satisfy unlimited wants with limited means
Production	Consumption
Cost and revenue	Welfare
Economical.	Efficient.
Earn an income	Satisfy human wants
Price	Value or worth
Surplus utility	Additional utility
$MU_x > P_x$	$MU_x < P_x$
$MU_x/P_x > MU_y/P_y$	$MU_x/p_x = m_u y/p_y = M_u m$
Total utility	Marginal utility
An additional unit of consumption will decrease total utility	Consumption will increase total utility
Total utility	Disutility
Marginal utility	Average utility
Cosmetic articles	Goods imported from the western countries
Help in the further production of goods	Directly go into the satisfaction of human wants
Cost	Service
Income demand	Cross demand
Consumers ability to get a commodity	Consumer desire to get a commodity
Income of the consumer	Tastes of the consumer
Producer's demand curve	Market demand curve
Inverse relationship between price and quantity demanded	No relationship between price and quantity demanded

Positive	parallel to X-axis
Demand curve shifts to the right	There is upward movement along the demand curve
Positive elastic	Negative elastic
Income elasticity	Cross elasticity
Less than one	Unity
Quantity demanded is a dependent variable	Reciprocal relationship is found between price and quantity demanded
Negative	Infinite
$E=0$	$E>1$
Zero	Negative
Substitutes	Not related
Normal goods, inferior goods	Inferior goods, normal goods
Supply	Expenditure
The number of sellers in the market	Consumers tastes
A product is a normal goods	Two products are substitutes
A parabola	A hyperbola
Economic aggregates	Total employment
Adam Smith	J M Keynes
Directing	Supervising
Discounting principle	Equi-marginal principle
Economic analysis of agriculture	Investment analysis
Cash	Supply
Demand contraction	Demand analysis
Extension of demand	Contraction of demand

Contraction of demand	Shift in demand
Moving upward from right to left	Moving horizontally
Perfectly inelastic demand	Relative elastic demand
Perfectly inelastic demand	Relative elastic demand
>1	<1
Zero income elasticity	Negative income elasticity
Expenditure method	Point method
Outlay Method	Geometric method
Related elasticity	Cross elasticity
An increase in quantity supplied	An increase in supply
A lower price and a expansion of demand	A higher price and a expansion of demand
A decrease in quantity supplied	A decrease in demand
Perfectly inelastic	Relatively elastic
An elasticity which is greater than one	An elasticity which is less than one
Equal to one	Greater than one
Slope downward from left to right	Slope horizontally
Unitary elasticity of supply	An elasticity less than one

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OPTION 4	OPTION 5	OPTION 6
To mobilise resources and to use them		
Scarcity		
Market share		
Marginal.		
Satisfy human motives		
Income		
Bonus utility		
$MU_x < P_x$		
$MU_x/P_x < MU_y/P_y$		
Consumer utility		
Total utility is maximised		
Marginal cost of production		
Does not have any relation to any one of these		
Durable consumption goods		
Find multiple uses		
Price		
Advertising demand		
Consumer's willingness backed by ability to get the commodity		
Quality of the product		
Consumer's demand curve		
Constant relationship between price and quantity demanded		

Parallel to Y-axis		
There is downward movement along the demand curve		
Substitution effect		
Advertising elasticity		
Infinity		
Cost of product		
Positive		
$E < 1$		
Low		
Both inexpensive		
Normal goods, complementary goods		
Income		
Existing technology		
Two products are complementary		
Convex to the origin		
General price level		
Ragnar Frisch		
Administration		
Cost-Benefit Analysis		
Supervision and control		
Willingness to purchase		
Demand function		
Both extension and contraction		

Slopes in demand		
Moving vertically		
Relative inelastic demand		
Unitary elastic demand		
0		
Unitary income elasticity		
Geometric method		
Arc Method		
Income elasticity		
Remains constant		
A lower price and a contraction of demand		
A decrease in both demand and supply		
Perfectly elastic		
An elasticity which is greater than zero		
Constant		
Slope vertically		
Zero elasticity of supply		

ANSWERS
To satisfy unlimited wants with limited means
Scarcity
Sales revenue
Scarce.
Satisfy human motives
Value or worth
Marginal utility
$MU_x = P_x$
$MU_x/p_x = m_u_y/p_y = MU_m$
Total utility is maximised
Total utility
Does not have any relation to any one of these
Durable consumption goods
Cross demand
Price
Cross demand
Consumer's willingness backed by ability to get the commodity
Unit price of the commodity
Market demand curve
Inverse relationship between price and quantity demanded

Positive
Demand curve shifts to the right
Unitary elastic
Income elasticity
Infinity
Cost of product
Negative
$E > 1$
Low
Substitutes
Normal goods, inferior goods
Expenditure
Consumers tastes
Two products are substitutes
A hyperbola
Individual units
Joel Dean
Forward planning
Equi-marginal principle
Supervision and control
Willingness to purchase
Demand function
Both extension and contraction

Shift in demand
Moving upward from left to right
Perfectly inelastic demand
Unitary elastic demand
>1
Negative income elasticity
Expenditure method
Arc Method
Cross elasticity
An increase in quantity supplied
A higher price and a contraction of demand
A decrease in supply
Perfectly inelastic
An elasticity which is greater than zero
Greater than one
Slope upward from left to right
Zero elasticity of supply