AECO141 PRINCIPLES OF AGRICULTURAL ECONOMICS 2+0

01. Economics – Definition and Nature & Scope of Economics – Divisions of Economics

02. Economic systems – Definitions and characteristics - capital economy – socialist economy – Mixed economy

03. Theory of Consumer behavior - Utility- definition and measurement – cardinal and ordinal approaches – Law of diminishing marginal utility – Graphical derivation of demand curve

04.Ordinal approach - Indifference curve – characteristics – budget line – equilibrium of consumer.

05.Demand –individual demand – market demand – demand schedule – demand curve – Law of demand and factors affecting it.

06.Elasticity of demand – price, income and cross elasticities – estimation – point and arc elasticity - Giffen Good – normal and inferior goods – substitutes and complementary goods

07.Engel's Law of family expenditure and significance. -Consumer's surplus– estimation and applications.

08.Production – factors of production – land & characteristics; Labour – quantity and quality of labour- - division of labour – efficiency of labour - Malthusian

09.Capital - characteristics - capital formation; Organization of business firms – types and characteristics - Concept of shares &debenture.

10.Supply-Law of diminishing marginal return – its application to agriculture - Cost concepts – short run & long run cost curves - optimum level of production.

11.Graphical derivation of supply from cost curve - - supply schedule – supply curve – Law of supply – elasticity of supply.

12.Market and its structure - perfectly competitive market and derivation of equilibrium price – Definition and characteristics of Imperfectly competitive markets.

13.Factor pricing ; rent - Ricardian rent-economic rent – Quasi – rent; Wage– marginal productivity theory of wage; Interest - Liquidity preference theory; Profit –Risk-bearing theory of profit.

14.Macro economics – Concepts of - Gross National Product (GNP) - Gross Domestic Product (GDP) - Net National Product (NNP) - Percapita income.

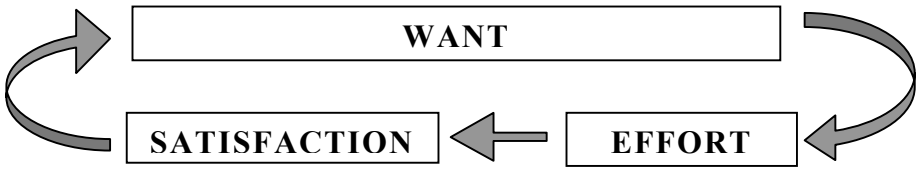
15.Money – Definition & functions of money; inflation –consequences & control.

16.Public finance - public revenue - public expenditure; taxation - principles of taxation.

01. ECONOMICS – DEFINITION AND NATURE & SCOPE OF ECONOMICS – DIVISIONS OF ECONOMICS

Economics is the science that deals with production, exchange and consumption of various commodities in economic systems. It shows how scarce resources can be used to increase wealth and human welfare. The central focus of economics is on scarcity of resources and choices among their alternative uses. The resources or inputs available to produce goods are limited or scarce. This scarcity induces people to make choices among alternatives, and the knowledge of economics is used to compare the alternatives for choosing the best among them. For example, a farmer can grow paddy, sugarcane, banana, cotton etc. in his garden land. But he has to choose a crop depending upon the availability of irrigation water.

Two major factors are responsible for the emergence of economic problems. They are: i) the existence of unlimited human wants and ii) the scarcity of available resources. The numerous human wants are to be satisfied through the scarce resources available in nature. Economics deals with how the numerous human wants are to be satisfied with limited resources. Thus, the science of economics centres on **want - effort - satisfaction.**



Economics not only covers the decision making behaviour of individuals but also the macro variables of economies like national income, public finance, international trade and so on.

A. DEFINITIONS OF ECONOMICS

Several economists have defined economics taking different aspects into account. The word 'Economics' was derived from two Greek words, *oikos* (a house) and *nemein* (to manage) which would mean 'managing an household' using the limited funds available, in the most satisfactory manner possible.

i) Wealth Definition

Adam smith (1723 - 1790), in his book “An Inquiry into Nature and Causes of Wealth of Nations” (1776) defined economics as the science of wealth. He explained how a nation’s wealth is created. He considered that the individual in the society wants to promote only his own gain and in this, he is led by an “invisible hand” to promote the interests of the society though he has no real intention to promote the society’s interests.

Criticism: Smith defined economics only in terms of wealth and not in terms of human welfare. Ruskin and Carlyle condemned economics as a ‘dismal science’, as it taught selfishness which was against ethics. However, now, wealth is considered only to be a mean to end, the end being the human welfare. Hence, wealth definition was rejected and the emphasis was shifted from ‘wealth’ to ‘welfare’.

ii) Welfare Definition

Alfred Marshall (1842 - 1924) wrote a book “Principles of Economics” (1890) in which he defined “Political Economy” or Economics is a study of mankind in the ordinary business of life; it examines that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of well being”. The important features of Marshall’s definition are as follows:

a) According to Marshall, economics is a study of mankind in the ordinary business of life, i.e., economic aspect of human life.

b) Economics studies both individual and social actions aimed at promoting economic welfare of people.

c) Marshall makes a distinction between two types of things, viz. material things and immaterial things. Material things are those that can be seen, felt and touched, (E.g.) book, rice etc. Immaterial things are those that cannot be seen, felt and touched. (E.g.) skill in the operation of a thrasher, a tractor etc., cultivation of hybrid cotton variety and so on. In his definition, Marshall considered only the material things that are capable of promoting welfare of people.

Criticism: a) Marshall considered only material things. But immaterial things, such as the services of a doctor, a teacher and so on, also promote welfare of the people.

b) Marshall makes a distinction between (i) those things that are capable of promoting welfare of people and (ii) those things that are not capable of promoting welfare of people. But anything, (E.g.) liquor, that is not capable of promoting welfare but commands a price, comes under the purview of economics.

c) Marshall's definition is based on the concept of welfare. But there is no clear-cut definition of welfare. The meaning of welfare varies from person to person, country to country and one period to another. However, generally, welfare means happiness or comfortable living conditions of an individual or group of people. The welfare of an individual or nation is dependent not only on the stock of wealth possessed but also on political, social and cultural activities of the nation.

iii) Welfare Definition

Lionel Robbins published a book "An Essay on the Nature and Significance of Economic Science" in 1932. According to him, "economics is a science which studies human behaviour as a relationship between ends and scarce means which have alternative uses". The major features of Robbins' definition are as follows:

a) Ends refer to human wants. Human beings have unlimited number of wants.

b) Resources or means, on the other hand, are limited or scarce in supply. There is scarcity of a commodity, if its demand is greater than its supply. In other words, the scarcity of a commodity is to be considered only in relation to its demand.

c) The scarce means are capable of having alternative uses. Hence, anyone will choose the resource that will satisfy his particular want. Thus, economics, according to Robbins, is a science of choice.

Criticism: a) Robbins does not make any distinction between goods conducive to human welfare and goods that are not conducive to human welfare. In the production of rice and alcoholic drink, scarce resources are used. But the production of rice promotes human welfare while production of alcoholic drinks is not conducive to human welfare. However, Robbins concludes that economics is neutral between ends.

b) In economics, we not only study the micro economic aspects like how resources are allocated and how price is determined, but we also study the macro economic aspect like how national income is generated. But, Robbins has

reduced economics merely to theory of resource allocation.

c) Robbins definition does not cover the theory of economic growth and development.

iv) Growth Definition

Prof. Paul Samuelson defined economics as "the study of how men and society choose, with or without the use of money, to employ scarce productive resources which could have alternative uses, to produce various commodities over time, and distribute them for consumption, now and in the future among various people and groups of society".

The major implications of this definition are as follows:

a) Samuelson has made his definition dynamic by including the element of time in it. Therefore, it covers the theory of economic growth.

b) Samuelson stressed the problem of scarcity of means in relation to unlimited ends. Not only the means are scarce, but they could also be put to alternative uses.

c) The definition covers various aspects like production, distribution and consumption.

Of all the definitions discussed above, the 'growth' definition stated by Samuelson appears to be the most satisfactory. However, in modern economics, the subject matter of economics is divided into main parts, viz., i) Micro Economics and ii) Macro Economics.

Economics is, therefore, rightly considered as the study of allocation of scarce resources (in relation to unlimited ends) and of determinants of income, output, employment and economic growth.

B. SCOPE OF ECONOMICS

Scope means province or field of study. In discussing the scope of economics, we have to indicate whether it is a science or an art and a positive science or a normative science. It also covers the subject matter of economics.

i) Economics - A Science and an Art

a) Economics is a science: Science is a systematized body of knowledge that traces the relationship between cause and effect. Another attribute of science is that its phenomena should be amenable to measurement. Applying these characteristics, we find that economics is a branch of knowledge where the various facts relevant to it have been systematically collected, classified and analyzed. Economics investigates the possibility of deducing generalizations as regards the economic motives of human beings. The motives of individuals and business firms can be very easily measured in terms of money. Thus, economics is a science.

Economics - A Social Science: In order to understand the social aspect of economics, we should bear in mind that labourers are working on materials drawn from all over the world and producing commodities to be sold all over the world in order to exchange goods from all parts of the world to satisfy their wants. There is, thus, a close inter-dependence of millions of people living in distant lands unknown to one another. In this way, the process of satisfying wants is not only an individual process, but also a social process. In economics, one has, thus, to study social behaviour i.e., behaviour of men in-groups.

b) Economics is also an art. An art is a system of rules for the attainment of a given end. A science teaches us to know; an art teaches us to do. Applying this definition, we find that economics offers us practical guidance in the solution of economic problems. Science and art are complementary to each other and economics is both a science and an art.

ii) Positive and Normative Economics

Economics is both positive and normative science.

a) Positive science: It only describes what it is and normative science prescribes what it ought to be. Positive science does not indicate what is good or what is bad to the society. It will simply provide results of economic analysis of a problem.

b) Normative science: It makes distinction between good and bad. It prescribes what should be done to promote human welfare. A positive statement is based on facts. A normative statement involves ethical values. For example, “12 per cent of the labour force in India was unemployed last year” is a positive statement, which could is verified by scientific measurement. “Twelve per cent

unemployment is too high" is normative statement comparing the fact of 12 per cent unemployment with a standard of what is unreasonable. It also suggests how it can be rectified. Therefore, economics is a positive as well as normative science.

iii) Methodology of Economics

Economics as a science adopts two methods for the discovery of its laws and principles, viz., (a) deductive method and (b) inductive method.

a) Deductive method: Here, we descend from the general to particular, i.e., we start from certain principles that are self-evident or based on strict observations. Then, we carry them down as a process of pure reasoning to the consequences that they implicitly contain. For instance, traders earn profit in their businesses is a general statement which is accepted even without verifying it with the traders. The deductive method is useful in analyzing complex economic phenomenon where cause and effect are inextricably mixed up. However, the deductive method is useful only if certain assumptions are valid. (Traders earn profit, if the demand for the commodity is more).

b) Inductive method: This method mounts up from particular to general, i.e., we begin with the observation of particular facts and then proceed with the help of reasoning founded on experience so as to formulate laws and theorems on the basis of observed facts. E.g. Data on consumption of poor, middle and rich income groups of people are collected, classified, analyzed and important conclusions are drawn out from the results.

In **deductive** method, we start from certain principles that are either indisputable or based on strict observations and draw inferences about individual cases. In **inductive** method, a particular case is examined to establish a general or universal fact. Both deductive and inductive methods are useful in economic analysis.

iv) Subject Matter of Economics

Economics can be studied through a) traditional approach and (b) modern approach.

a) Traditional Approach: Economics is studied under five major divisions namely consumption, production, exchange, distribution and public finance.

1.Consumption: The satisfaction of human wants through the use of goods and services is called consumption.

2.Production: Goods that satisfy human wants are viewed as "bundles of utility". Hence production would mean creation of utility or producing (or creating) things for satisfying human wants. For production, the resources like land, labour, capital and organization are needed.

3. Exchange: Goods are produced not only for self-consumption, but also for sales. They are sold to buyers in markets. The process of buying and selling constitutes exchange.

4. Distribution: The production of any agricultural commodity requires four factors, viz., land, labour, capital and organization. These four factors of production are to be rewarded for their services rendered in the process of production. The land owner gets rent, the labourer earns wage, the capitalist is given with interest and the entrepreneur is rewarded with profit. The process of determining rent, wage, interest and profit is called distribution.

5. Public finance: It studies how the government gets money and how it spends it. Thus, in public finance, we study about public revenue and public expenditure.

b) Modern Approach

The study of economics is divided into: i) Microeconomics and ii) Macroeconomics.

1. Microeconomics analyses the economic behaviour of any particular decision making unit such as a household or a firm**.** Microeconomics studies the flow of economic resources or factors of production from the households or resource owners to business firms and flow of goods and services from business firms to households. It studies the behaviour of individual decision making unit with regard to fixation of price and output and its reactions to the changes in demand and supply conditions. Hence, microeconomics is also called price theory.

2. Macroeconomics studies the behaviour of the economic system as a whole or all the decision-making units put together. Macroeconomics deals with the behaviour of aggregates like total employment, gross national product (GNP), national income, general price level, etc. So, macroeconomics is also known as income theory.

Microeconomics cannot give an idea of the functioning of the economy as a whole. Similarly, macroeconomics ignores the individual's preference and

welfare. What is true of a part or individual may not be true of the whole and what is true of the whole may not apply to the parts or individual decision-making units. By studying about a single small-farmer, generalization cannot be made about all small farmers, say in Tamil Nadu state. Similarly, the general nature of all small farmers in the state need not be true in case of a particular small farmer. Hence, the study of both micro and macroeconomics is essential to understand the whole system of economic activities.

02. ECONOMIC SYSTEMS – DEFINITIONS AND CHARACTERISTICS - CAPITAL ECONOMY – SOCIALIST ECONOMY – MIXED ECONOMY

C. ECONOMIC SYSTEMS

i) Circular Flow of Goods and Money in an Economic System

Every economy is a system in which the production of many goods is organized to satisfy many wants of human beings. In an economic system, the two economic units namely households and enterprises are linked by a circular pattern of economic activities as illustrated in Figure 1.1.The choices and decisions of these two main units are the deriving forces of economic activity.

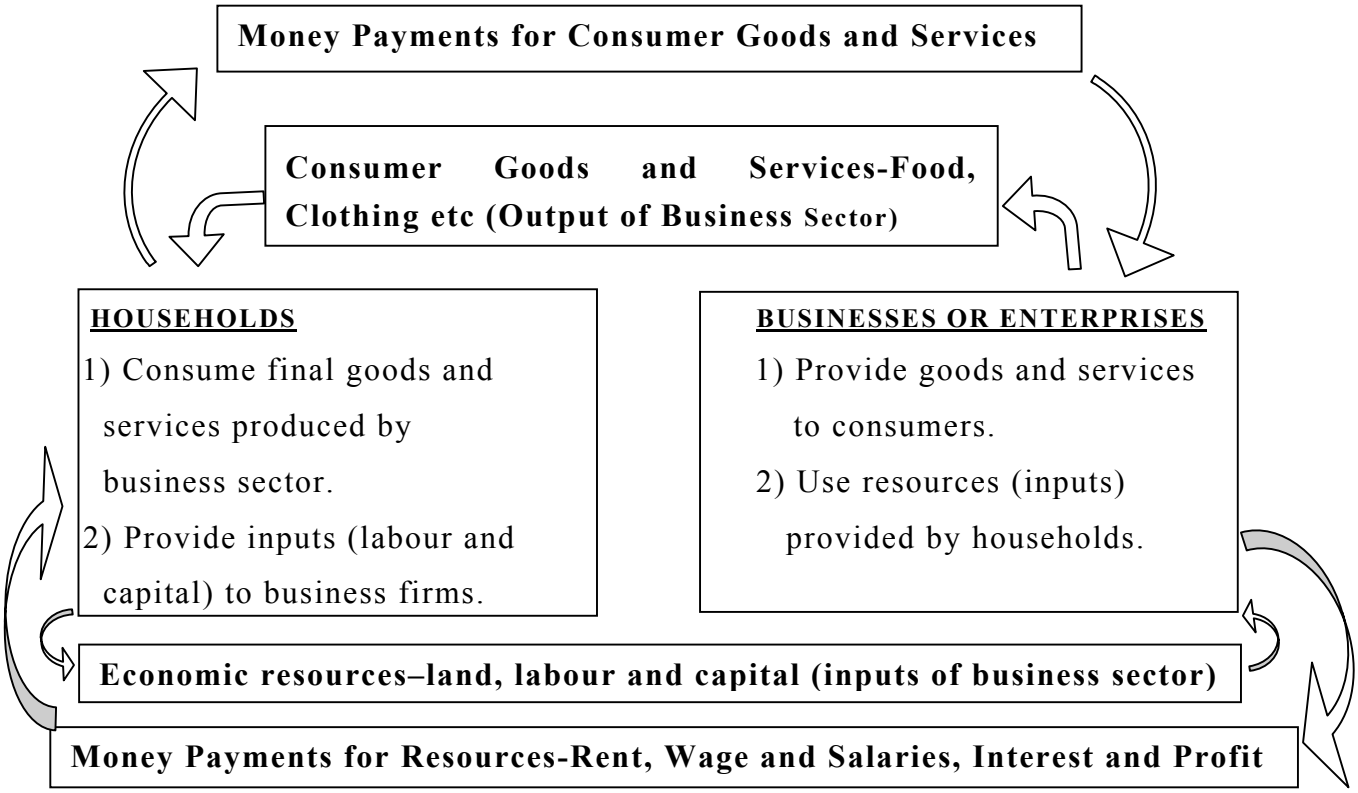


Fig. 1.1: The Flow of Goods, Services, Resources and Money Payments in a Simple Economy.

In their households, people make two sets of decisions: a) selling the inputs they own, primarily their labour and b) buying goods with their incomes. The enterprises or businesses engage in production, using the labour and other inputs bought from households. The goods produced by the firms are sold ultimately to the households.

The interactions of households and firms bring together the two sides of economics: demand and supply. The action occurs in two sets of markets; that

for inputs and that for outputs. In the input markets, households offer their labour, land and capital. Firms buy these inputs at prices set in the markets. In the output markets, the enterprises sell out the goods and services to the consumers or households.

ii) Types of Economy

An economy might be designed to depend exclusively either on the market or on government to make the three fundamental decisions of what, how and for whom. The economic system can be broadly categorized into a) capitalism and b) socialism.

a) Capitalism

Capitalism is a system of economic organization characterized by the private ownership and use of capital with profit motive. The most important feature of capitalism is the existence of private property. Every one has the freedom to form any firm anywhere he likes, provided he has the requisite capital and ability. It is based on the doctrine of *laissez faire* which would mean that the state interference in economic activity should be kept down to the minimum.

b) Socialism

Socialism is an economic system in which the means of production (capital equipment, buildings and land) are owned by the state. The main aim of socialism is to run the economy for social benefit rather than private profit. It emphasizes on work according to one's ability, and equal opportunities for all regardless of caste, class and inherited privileges.

Communism is a form of socialism. It was followed in the erstwhile Soviet Union. Communism means an idealistic system in which all means of production and other forms of properties are owned by the community as a whole, with all members of the community sharing in its work and income. People are supposed to work according to their capacities and get according to their needs. The aim is to create a classless society and the state machinery is utilized to crush all opposition to achieve this end. The main difference between communism and socialism is that the former believes and adopts violent revolutionary methods to capture the machinery of the government while the latter believes in peaceful and parliamentary methods.

c) Mixed Economy

It is neither pure capitalism nor pure socialism but a mixture of the two. In this system, we find the characteristics of both capitalism and socialism. Both private enterprises and public enterprises operate mixed economy. The government intervenes to regulate private enterprises in several ways. Generally, the basic and heavy industries like industries producing defense equipments, atomic power, heavy engineering goods etc. are put in the public sector. On the other hand, the consumer goods industries, small and cottage industries, agriculture etc. are assigned to the private sector. It is realized that in the under developed countries, like India, economic development cannot be achieved at the desired rate of growth without any active government help and guidance. Hence, the government in such countries actively participates in economic activities in order to minimize the evils of capitalism and to accelerate economic growth.

In capitalistic economy, the entrepreneurs utilize the available resources efficiently, as they have strong initiative to earn profit. But the free functioning of private enterprises results in extreme inequalities of income and wealth. In socialistic economy, the inequalities in income and wealth get reduced to the minimum and the national income is more equitably distributed. But the socialistic economy suffers from the problem of lack of private initiative that results in the lack of inventive ability and enterprising spirit and ultimately these lead to inefficient use of available resources. The mixed economy aims at achieving the goals of both capitalism and socialism (i.e., efficient use of resources and equitable distribution of income and wealth) and at the same time, it emphasizes on the reduction of evils of capitalism and socialism.

D. ECONOMICS AS RELATED TO AGRICULTURE

The principles of economics guide the farmers to balance the link between farm and household. As producers, farmers want to earn maximum profit from the scarce resources, which could have alternative uses, and at the same time, they want to provide maximum satisfaction to their families as consuming units. Thus, in an environment where a farmer desires to achieve profit maximization and improving the family standards of living with a limited stock of factors of production (land, labour, capital and organization) which can be put to alternative uses, economic principles, can be applied. Economic principles also form a guiding force in the formulation of policies influencing agricultural growth and development at the macro level.

CHAPTER 1: Questions for Review

1. Fill up the blanks:

a) Lionel Robbins definition of economics is known as _____.

b) Rice is a _____ good while medical service is a _____ good.

c) Wealth definition was propounded by _____.

d) Paul Samuelson gave _____ definition of economics.

f) *Laissez faire* is being followed in _____ economy.

2. Write short notes:

a) Central problems of an economy.

b) Circular flow of an economy.

c) Scarcity definition of economics.

d) Economics as defined by Prof. Samuelson.

e) Economics is both a science and an art.

f) Economics as related to agriculture.

3. Differentiate the following:

a) Deductive method and inductive method.

b) Micro economics and macro economics.

c) Positive economics and normative economics.

4. Answer the following:

a) What are the defects in Adam Smith's definition of economics?

b) What are the merits and demerits of scarcity definition of economics?

c) Explain the traditional approach to the study of economics.

d) Mixed economy is better than other types of economies-Substantiate.

03. CONSUMPTION - THEORY OF CONSUMER BEHAVIOUR - UTILITY- DEFINITION AND MEASUREMENT – CARDINAL AND ORDINAL APPROACHES – LAW OF DIMINISHING MARGINAL UTILITY – GRAPHICAL DERIVATION OF DEMAND CURVE

A sound understanding on the common terms related to consumption is essential before we get into the detailed study on consumption.

A.DEFINITIONS

i) Goods and Services

Any tangible commodity that satisfies human want is called a good or visible good or material good. These goods can be seen or felt, (E.g.) rice, book, etc. Any intangible thing that satisfies human want is called a service or invisible good or immaterial good. (E.g.) Services of an engineer or a teacher can be sold, but they cannot be seen or felt.

ii) Free Good and Economic Good

A good or service that has no price is called a free good. The air that we breathe satisfies us. But we do not pay any price for such goods. So, these goods are free goods and they are not scarce. Rice is a commodity, which commands a price. Such goods are called economic goods and these goods are scarce.

iii) Consumer Goods and Producer Goods

We use goods like rice, pen etc. to satisfy our wants directly. They are called consumer goods. On the other hand, we use goods like tractor, thrasher, cultivator, etc. to produce various other commodities, i.e., these goods do not satisfy our wants directly. Such goods are called producer goods or capital goods or investment goods.

iv) Perishable Goods and Durable Goods

Goods that decay or perish quickly are known as perishable goods, (E.g.) fruits, vegetables, fishes etc. Durable goods are those goods that last for a long period of time, (E.g.) tractor, thrasher etc.

v) Wealth and Income

In economics, by wealth we mean only economic goods. The production of goods and services creates income and wealth. Wealth is an economic good which is an easily transferable (material) good. Immaterial or non-transferable

(services) goods cannot form wealth. Remuneration paid to the different factors of production is called income. For example, a person leases out his house for rent. Then, the rent is his income. A labourer earns wages for the labour he renders in the production process. Thus, wealth is a fund and income is a flow from the wealth. When we refer to income, we say so much amount for a specific period of time. On the other hand, wealth is termed as the value of all tangible assets (land, building, money etc.) at a particular point of time.

vi) Real Income and Money Income

Income can be expressed in terms of either commodity or money. If income is expressed in terms of commodity, it is known as real income. If the income of an attached labourer or permanent labourer is 10 bags of paddy per year, then it is his real income. The standard of living depends on real income only. When income is expressed in terms of money, then it is called money income. For instance, when we say that the income of a manager is Rs. 2000 per month, then it is his money income.

B. THEORY OF CONSUMER BEHAVIOUR

An important problem to be tackled by the consumer in his daily life is the problem of choice. The choices may be economic as well as non-economic in nature. Economic choices are those which have an economic significance, or which affect the economic life of the community in a direct or in an indirect manner. For instance, if a person grows roses for commercial purpose instead of growing roses as a hobby, it is an economic choice. An economic choice or economic decision involves a choice between alternatives; the basic reason for this being the scarcity of means and multiplicity of ends. Thus, the theories of consumer behaviour relate to the decisions to be taken by the consumer for the purpose of satisfying his wants.

i) Consumption

Consumption, in its broadest sense, means the use of economic goods and personal services for satisfying human wants. It is also defined as the destruction of utilities contained in the goods. The destruction of utilities may be instantaneous as in the case of perishable good or gradual as in the case of durable goods like house, furniture etc.

ii) Wants

Consumption theories deal with the satisfaction of human wants. Any thing that we desire is a want. The process of satisfaction of these wants is called

consumption. The goods and services that satisfy human wants can be broadly divided into three categories, viz., a) necessaries, b) comforts and c) luxuries.

a) Types of Want

i) Necessaries: Necessaries are those goods and services that are essential for our existence and to maintain our efficiency. There are three kinds of necessaries, namely, 1) Necessaries for life, 2) necessaries for efficiency and 3) conventional necessaries.

1) Necessaries for existence or life: These commodities are absolutely essential for the very existence of human beings, (E.g.) food (rice).

2) Necessaries for efficiency: Goods and services which are essential for maintaining the working capacity at a higher level, (E.g.) nutritious food (Horlicks), cycle, etc.

3) Conventional necessaries: Although some goods are not absolutely necessary, many people use them out of habit or long established customs and conventions, (E.g.) coffee or cigarette.

ii) Comforts

Comforts are goods that lead to easy living and make our life pleasant. They also improve our working efficiency. However, there is one important difference between necessaries for efficiency and comforts. In case of necessaries for efficiency, the returns or benefits that we get from them are proportionately higher than the money spent on them. But in case of comforts, the additional benefit or satisfaction is not in proportion to the money spent on them, (E.g.) scooter.

iii) Luxuries

Luxuries are goods and services that are highly expensive and they do not in any way add to the efficiency of people. They are just meant for enhancing the prestige of a person, (E.g.) ornaments, bungalow, car, etc. However, it should be noted that necessaries, comforts and luxuries are all relative terms. They are subjected to vary according to different places, time periods, persons and social setting. For example, scooter is a luxury to a poor man, while it is a comfort to a rich man. Also, what is a comfort today may become a necessity tomorrow.

b) Characteristics of Want: The characteristics of human wants are discussed below:

1) Wants are unlimited in number and variety: As soon as one want is satisfied, another want arises. Thus, there is no end to human desire.

2) Particular want is satiable: The quantity of a commodity that a man can enjoy at a particular time is limited by his physical and mental powers. If a person is hungry, he can satisfy his want fully by consuming sufficient quantity of food at a particular point of time.

3) Wants are recurrent: Wants recur. People want many things again and again, (E.g.) food and clothes. The frequency of consumption of goods and services depends upon the durability and necessity of the commodities.

4) Wants are competitive: Some wants are to be satisfied more urgently than others. A consumer should choose the most urgent want for satisfaction, as the means are always limited. For a hungry man, want for food is more urgent than anything else.

5) Wants are alternative: We have many alternatives to satisfy a particular want. E.g. If tea is not available, a person can drink coffee.

6) Wants are complementary: In order to satisfy a single want, we may require several goods together, (E.g.) betel-leaf and areca nut, pen, ink and paper, etc.

7) Wants tend to become habit: If we satisfy a want in particular way for quite sometime, it becomes a habit. (E.g.) Taking coffee after breakfast.

iii) Standard of Living

The amount of necessaries, comforts and luxuries with which we are generally accustomed is said to constitute our standard of living. Kirkpatrick defined standard of living as “the measure or the evaluated amounts of different kinds and qualities of economic goods involved in meeting the physical and psychic needs and wants of the different individuals composing the family”.

a) Determinants of Standard of Living

1. Standard of living depends on real income and not on money income of the family.

2. It depends on number of members in the family and also on their wants.

3. It depends on price variations of commodities. Lower the prices, the higher is the standard of living and vice versa.

iv) Utility

Utility may be defined as the power of a commodity or service to satisfy a human want. The term 'utility' should be differentiated from 'satisfaction'. Utility implies 'expected satisfaction' whereas satisfaction stands for 'realized satisfaction'. A consumer thinks of 'utility' when he is contemplating the purchase of a commodity, but he secures the 'satisfaction' only after having consumed the commodity.

a) Utility and Value: The term 'utility' differs from 'value' of a commodity.

1) Utility is the want-satisfying power of a commodity, while the term 'value' would mean the power of a commodity to exchange for another commodity.

2) Utility is subjective, whereas the value is an objective term.

3) Both economic and free goods have utility. But only economic goods have value.

b) Characteristic Features of Utility

1) Utility is relative: The same commodity may have different degrees or magnitude of utility for different persons.

2) Utility cannot be equated with usefulness: A commodity may not be useful, yet it may have utility for a particular person. For example, liquor is considered to be harmful to health, yet it may have a high degree of utility for an alcoholic. Hence, utility carries no moral or ethical significance.

3) Utilities are independent: Utility of one commodity does not in way affect that of another.

c) Kinds of Utility: Utility of a commodity may increase due to several reasons.

1) Form Utility: If the physical form of a commodity is changed, its utility may increase. For instance, the utility of cotton increases, if it is converted into clothes.

2) Place Utility: If a commodity is transported from one place to another, its utility may increase. For instance, if rice is transported from Tamil Nadu to Kerala, its utility will be more.

3) Time utility: If the commodity is stored up for future usage, its utility may increase. During rainy season, water is stored up in reservoirs and it is used at a later time. This increases the utility of that stored water.

d) Cardinal Utility and Ordinal Utility

According to cardinal utility concept, it is possible to measure and compare the utilities of two commodities. For example, an apple may yield to a consumer a utility of 20 units whereas an orange yields him a utility of 10 units. Therefore, it is clear that the consumer gets twice as much utility from an apple as that from an orange.

On the other hand, according to the concept of ordinal utility, the utility cannot be measured; it can only be compared. A person can only compare the utility he gets from the first unit of orange with the utility he gets from the second unit. Marshall advocated the cardinal approach to measure utility whereas modern economists like Allen and Hicks have supported the ordinary approach and replaced the utility analysis by the indifference curve analysis.

e) Total Utility and Marginal Utility

Total utility is the amount of utility derived from the consumption of all the units of a commodity at the disposal of the consumer. Economists measure utility in imaginary units called **utils. Marginal utility** is the change in the total utility resulting from one unit change in the consumption of a commodity.

$$\text{Marginal Utility} = \frac{\text{Change in Total Utility}}{\text{Change in Quantity Consumed}} = MUx = \frac{\Delta TUx}{\Delta Qx}$$

f) Law of Diminishing Marginal Utility

This law indicates the familiar behaviour of marginal utility, i.e., as a consumer takes more and more units of a good, the additional satisfaction that he derives from an extra unit of the good goes on falling. Marshall 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".

Let us suppose that a consumer takes 9 units of mango one after another. The utility he gets from the second unit of mango will be lesser than the utility he gets from the first unit. Thus, the marginal utility from successive units of mango will tend to decline. It could be observed from Table 2.1 that the total

utility increases at diminishing rate. When the marginal utility becomes negative, the total utility starts decreasing. This is illustrated in Figure 2.1.

Table 2.1 Total and Marginal Utility

Units of Mango	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	41	0
8	39	-2
9	34	-5

This law is based on two facts. Firstly, while the total number of wants of a man is unlimited, each single want is satiable. Therefore, as an individual consumes more and more units of a good, the 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. Secondly, the different goods are not perfect substitutes for each other. 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, then the marginal utility of the good would not have diminished.

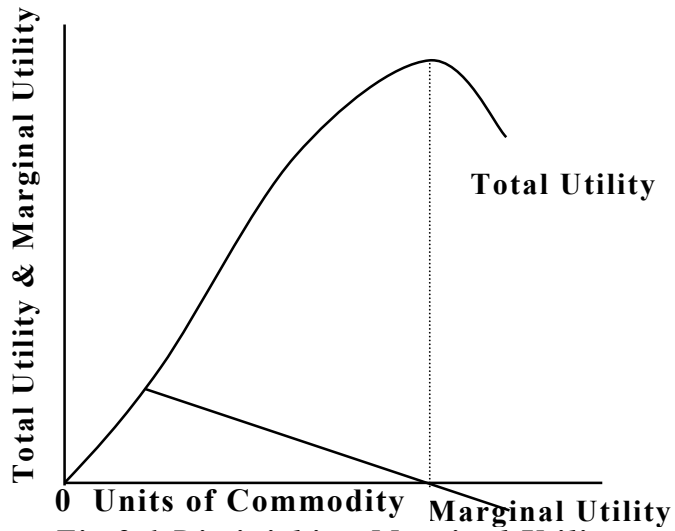


Fig.2.1 Diminishing Marginal Utility

i)Equilibrium Condition

The aim of the consumer is assumed that he should get as much higher satisfaction as possible from his purchases. Thus, the **rational behaviour** of the consumer is to get maximum total utility. If the marginal utility from the commodity is greater than the price he has to pay, he will buy more of the commodity. If the marginal utility of the commodity is equal to the price of the commodity, i.e., MUx = Px, he will stop his purchase of the commodity. Here, the marginal utility

is measured in terms of money. If the price of mango is Re.1 per unit, he will purchase 6 units of mango. At this point, he is said to be in equilibrium i.e., he attains maximum satisfaction.

ii) Assumptions of the Law

1) Utility can be absolutely or cardinally measured.

2) The tastes of the consumers remain unchanged during the process of consumption.

3) Money income of the consumer remains the same. Any rise in the money income of the consumer may influence the taste and preference of the consumer towards the particular commodity.

4) The units of the commodity are homogeneous, i.e., they are alike in size and quality.

5) There is no time gap between consumption of the two units of the commodity. In other words, the process of consumption should be continuous without any time interval.

6) Marginal utility of money remains constant. This assumption becomes necessary, because the marginal utility of a commodity is measured in terms of money and it is desirable that the measure itself should not keep changing. When a person purchases more of a good, the amount of money with him diminishes and therefore, the marginal utility of money increases. But, this variation in marginal utility of money is ignored and it is assumed to remain constant throughout the process of consumption.

7) Price of substitute goods remains constant. For example, apple and orange are substitute goods to each other. When the consumer purchases apple, the price of its substitute, orange, should remain constant. This assumption is necessary because of the fact that the marginal utility of apple decreases, when the quantity of the substitute (orange) to be consumed by the consumer increases. The demand for consumption of orange will rise when its price comes down. Hence, it is assumed that the prices of substitutes remain unchanged throughout the process of consumption.

iii) Limitations

1) There are certain commodities for which the marginal utility does not diminish with every increase in the stock of them, E.g. collection of stamps and

ancient coins, consumption of liquor and so on.

2) The utility of a commodity to a person depends on the quantity of that commodity possessed by others. Suppose in a particular locality, a person has two cars and his rival has only one car. Then the latter's desire for the second car will be higher than that of the first car.

3) The law will not hold good in case of misers. The more money he gets, the greater will be his desire for the additional units of money that he gets.

However, a careful consideration will show that after a certain stage even the marginal utility of liquor, collection of same type of stamps and coins, cars, money, etc will start declining and ultimately become negative. Thus, in reality, there is no exception to this law as it has universal application in all cases of consumption.

iv) Importance of the Law

1) This law enables us to derive the law of demand. The law of demand states that larger quantities of a commodity would be bought at a lower price than at a higher price. The reason is that as more and more units of a commodity is purchased, its marginal utility to the consumer becomes less and less, and he progressively gives lesser importance to additional units of the commodity. He will, therefore, buy additional units of the commodity only at a lower price. The law of demand is, thus, derived from the law of diminishing marginal utility.

2) This law is useful to regulate that consumption expenditure. If the marginal utility of the commodity is equated to its price, then the consumer attains maximum satisfaction.

3) The marginal utility of money to rich people will be smaller than the marginal utility of money to poor people. So, incomes of rich people are taxed at progressive rate for which the law of diminishing marginal utility offers the basis.

4) With the help of marginal utility concept we can explain the difference between value-in-use and value-in-exchange. This can be explained by **diamond - water paradox**. The price of a commodity is governed by its marginal, not total utility. The total utility of water may be infinite on account of its relative abundance, but its marginal utility is zero. Hence, water commands a lower price. On the contrary, the total utility of diamond may be low, but its marginal utility is very high on account of its relative scarcity. Hence, a diamond commands a higher price.

g) Marginal Utilities of Related Goods

Goods may be substitutes or complementary in nature. The substitutes are capable of satisfying the same want, (E.g.) tea and coffee. If they are perfect substitutes, they may be treated as one commodity for all practical purposes. But most goods are imperfect substitutes. In case of such goods, other things being equal, the marginal utility of any such good (mango) decreases, as the quantity of its substitute (orange) with the consumer increases.

Complementary goods are such goods that are wanted together for the satisfaction of a want, (E.g.) bread and butter. In such cases, other things remaining the same, marginal utility of one good increases, as the quantities of its complementary good with the consumer increases. If, for instance, a consumer wants to take more bread, the marginal utility of butter goes up.

h) Law of Equi - Marginal Utility or Law of Substitution or Law of Maximum Satisfaction

If a consumer purchases more than one commodity with a give income level, he applies the law of equi-marginal utility to attain maximum satisfaction. Marshall stated this law as follows:

"If a person has a thing which can be put to several uses, he will distribute it among these uses in such a way that it has the same marginal utility in all".

According to this law, a consumer distributes a given quantity of any commodity among its various uses in such a manner that its marginal utility in all uses is equal. Such a distribution of the commodity will secure the consumer the maximum satisfaction.

Suppose, the consumer is buying only two commodities, orange (X) and mango (Y), by spending a given income. In order to attain equilibrium position, i.e., a position of maximum satisfaction, the consumer has to consider two factors. Firstly, the marginal utilities of the goods and secondly, the prices of such goods. Suppose, the prices of the goods are informed to the consumer. The law states that the consumer will distribute his money income between the goods in such a way that the utility derived from the last rupee 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 (MUEx) is equal to the marginal utility of a good (MUx) divided by the price of the good (Px).

In symbols, $MU_E = \frac{MUx}{Px}$.

The consumer is in equilibrium, in respect of the two goods, X and Y, when

$$\frac{MUx}{MUy} = \frac{}{}$$

Now, if $\frac{MUx}{Px}$ is greater than $\frac{MUy}{Py}$, the consumer will substitute good X for good Y. As a result of 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, till $\frac{MUx}{Px}$ becomes equal to $\frac{MUy}{Py}$. But the equality of $\frac{MUx}{Px}$ with $\frac{MUy}{Py}$ can be achieved not only at one level but at different levels of expenditure. The question is how far does consumer go on purchasing the goods that he wants. This is determined by the size of his money income. With a given income, a rupee has a certain utility for him; this utility is the marginal utility of money (MUm) to him. Since the law of diminishing marginal utility applies to money income also, the greater the size of his money income, the lesser the marginal utility of money to him and vice versa. Now, the consumer will go on purchasing goods till 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: $\frac{MUx}{Px} = \frac{MUy}{Py} = MUm$

Let us illustrate the law of equi-marginal utility with the help of a table given below: With a given income (Rs.19) of the consumer, suppose, his marginal utility of money is constant at Re.1 = 6 utils. By looking at Table 2.3, it is clear that, $\frac{MUx}{Px}$ is equal to 6 utils when the consumer buys 5 units of orange (X) ; and $\frac{MUy}{Py}$ is equal to6 utils when he purchases 3 units of mango (Y). Thus, the

Table 2.2 Marginal Utilities of Goods X and Y

Units	Orange (X)		Mango (Y)	
	Total Utility (TUx)	Marginal Utility	Total Utility (TUx)	Marginal Utility (MUx)
1	20	20	24	24
2	38	18	45	21
3	54	16	63	18
4	68	14	78	15
5	80	12	87	9
6	90	10	93	6

consumer will be in equilibrium when he is buying 5 units of orange and 3 units

of mango and will be spending (Rs.2 x 5) + (Rs.3 x 3) = Rs.19 on them.

Table 2.3 Marginal Utilities of Money Expenditure of Goods X and Y

Units	$\frac{MUx}{Px}$	$\frac{MUy}{Py}$
1	10	8
2	9	7
3	8	6
4	7	5
5	6	3
6	5	2

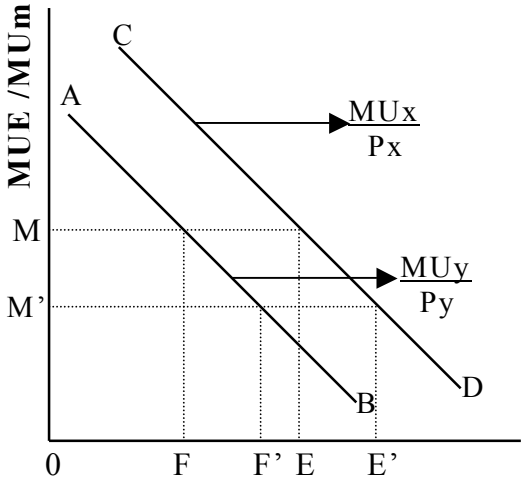


Fig 2.2 Equilibrium under Law of Equi-Marginal Utility

Consumer's equilibrium is graphically given in Fig 2.2. Since marginal utility curves of goods slope downward, curves depicting $\frac{MUx}{Px}$ and $\frac{MUy}{Py}$ will also slope downward. Taking the income of the consumer as given, let his marginal utility of money be constant at OM units $\frac{MUx}{Px}$ is equal to OM (the marginal utility of money) when OE (5) units of orange (X) are purchased. $\frac{MUy}{Py}$ is equal to OM, when OF (3) units of mango (Y) are purchased. Thus, when the consumer is buying OE of X and OF of Y, $\frac{MUx}{Px} = \frac{MUy}{Py}$ No other allocation of money expenditure will yield greater utility than what he is buying, i.e., OE of X and OF of Y. If, now, the money income of the consumer increases, his marginal utility of money is equal to OM', then the consumer will increase the purchase of good X and Y to OE' and OF' respectively.

i) Limitations of Law of Equi-Marginal Utility

1) For applying this law, a consumer has to calculate and compare the marginal utilities obtained from different commodities. But, consumers are generally governed by their habits and customs and they spend on different commodities regardless of whether the particular allocation maximizes their satisfaction or not.

2) The law assumes that all commodities are divisible into very small parts. But, there are goods like car, dairy animal etc., which are indivisible. In such cases, the law cannot be applied.

3) This law is based on the unrealistic assumptions such as absolute measurement of utility and constant marginal utility of money. Utility is a mental phenomenon and it is not absolutely measurable. Again, with every decrease in the stock of money with consumer, marginal utility of money will not remain constant but it will increase.

ii) Application of the Law of Equi-Marginal Utility

1) Consumption: The consumer gets maximum satisfaction through the substitution of a commodity of greater utility for the one that has lesser utility.

2) Production: This law helps the farmer in optimum allocation of resources. He will produce a commodity most economically by substituting one factor for another till their marginal productivities become equal. For instance, if the marginal productivity of human labour is greater than that of capital, the farmer will substitute the former for the latter.

3) Distribution of commodities: The law of equi-marginal utility helps to bring about the optimum distribution of commodities among the members of the community. When a commodity is so distributed among the members of the community that transfer of any unit of it from one person to another person will reduce the total satisfaction, then the distribution is said to be optimum.

4) Optimum allocation of general resources: The optimum allocation of resources is one in which there is nothing to be gained by shifting marginal units of resources from one use to another. In other words, the ideal distribution of resources is that which the marginal social utility in each use is the same.

04.Ordinal approach - Indifference curve – characteristics – budget line – equilibrium of consumer.

Indifference Curve Analysis

The utility analysis suffers from a defect of subjective nature of utility i.e., utility cannot be measured precisely in quantitative terms. In order to overcome this difficulty, the economists have evolved an alternative approach based on indifference curves. According to this indifference curve analysis, the utility cannot be measured precisely but the consumer can state which of the two combinations of goods he prefers without describing the magnitude of strength of his preference. This means that if the consumer is presented with a number of various combinations of goods, he can order or rank them in a 'scale of preferences'. If the various combinations are marked A, B, C, D, E etc., the consumer can tell whether he prefers A to B, or B to A or is indifferent between them. Similarly, he can indicate his preference or indifference between any other pairs or combinations. The concept of ordinal utility implies that the consumer cannot go beyond stating his preference or indifference. In other words, if a consumer prefers A to B, he can not tell by 'how much' he prefers A to B. The consumer cannot state the 'quantitative differences' between various levels of satisfaction; he can simply compare them 'qualitatively', that is, he can merely judge whether one level of satisfaction is higher than, lower than or equal to another.

The basic tool of Hicks - Allen ordinal analysis of demand is the indifference curve that represents all those combinations of goods that give same satisfaction to the consumer. In other words, all combinations of the goods lying on a consumer's indifference curve are equally preferred by him. Indifference curve is also called Iso-utility curve. Indifference schedule is the tabular statement that shows the different combinations of two commodities yielding the same level of satisfaction.

Table 2.4 Indifference schedule

Combination	Rice (X)	Wheat (Y)
I	1	12
II	2	8
III	3	5
IV	4	3
V	5	2

Now the consumer is asked to tell how much of wheat (Y) he will be willing to give up for the gain of an additional unit of rice (X) so that his level of satisfaction remains the same. If the gain of one unit of rice compensates him fully for the loss of 4 units of wheat, then the next combination of 2 units of rice and 8 units of wheat will give him as much satisfaction as that of initial or first combination. A set of indifference curves representing the scale of preference at different levels of satisfaction is known as indifference curve map (Fig 2.3). All combinations lying on indifference curve 3 (IC_3) provide the same satisfaction but the level of satisfaction on Indifference curve 3 (IC_3) will be greater than the level of satisfaction on indifference curve 2 (IC_2).

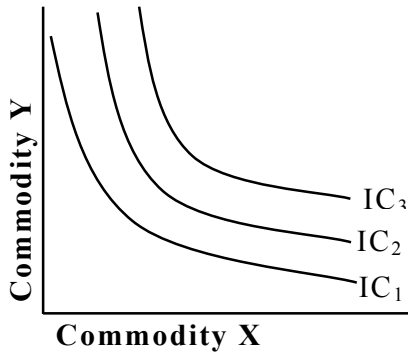


Fig 2.3 Indifference Curve Map

i) Properties of Indifference Curve

a) Downward sloping: Indifference curves slope downward from left to right. This means that when the quantity of one good in the combination is increased, the quantity of another good has to be necessarily reduced so that the total satisfaction remains constant. If the indifference curve is an horizontal straight line (parallel to x-axis) as could be seen in Fig. 2.4(a), that would mean as the amount of good X increases, while the amount of good Y remains constant, the consumer would remain indifferent between various combinations. This cannot be so, because the consumer always prefers larger amount of a good to smaller amount of that good. Likewise, indifference curve cannot be a vertical straight line (Fig.2.4 (b)). A vertical straight line would mean that while the amount of good Y in the combinations increases, the amount of good X remains constant. A third possibility for a curve is to slope upwards to the right (Fig. 2.4(c)). Upward

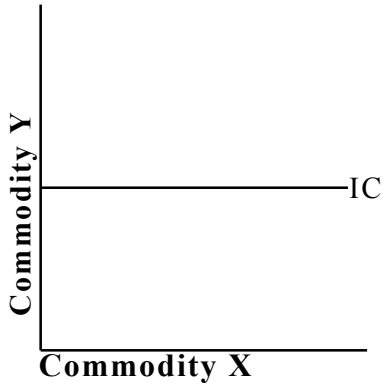


Fig.2.4 (a) Horizontal Indifference Curve

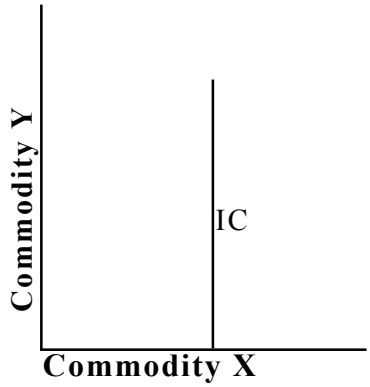


Fig.2.4 (b) Vertical Indifference Curve

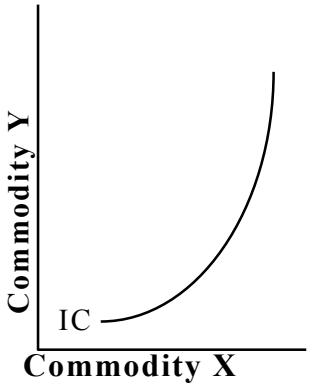


Fig.2.4(c) Upward Sloping Indifference Curve

sloping curve means that the combination, which contains more of both the goods, could give the same satisfaction to the consumer as the combination, which has smaller amounts of both the good. Therefore, it follows that indifference curve cannot slope upward to the right. The last possibility for the curve is to slope downward to the right and this is the shape, which the indifference curve can reasonably take.

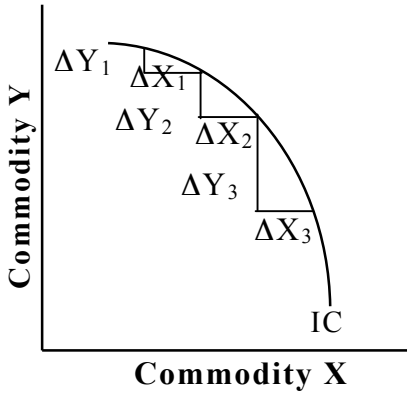


Fig 2.5 Concave Indifference Curve

level of satisfaction remains the same. Only a convex indifference curve can mean a diminishing marginal rate of substitution of X for Y. If the indifference curve is concave to the origin, as could be seen in the Figure 2.5, it would imply

Table 2.5 Marginal Rates of Substitution of X for Y

Combination	Rice (X)	Wheat (Y)	MRS xy
I	1	12	4
II	2	8	3
III	3	5	2
IV	4	3	1
V	5	2	

that the MRSxy increases as more and more of X is substituted for Y. As more and more of X are acquired, for each extra unit of X the consumer is willing to part with more and more of Y. This violates the fundamental assumption about the consumer behaviour, which states that MRSxy declines as consumer substitutes more and more of X for Y. As a consumer consumes more and more of one good (X), he shall be prepared to forego less and less of the other good (Y). This is due to the fact that the desire for the former (good X) becomes less and less intense with more and more of it.

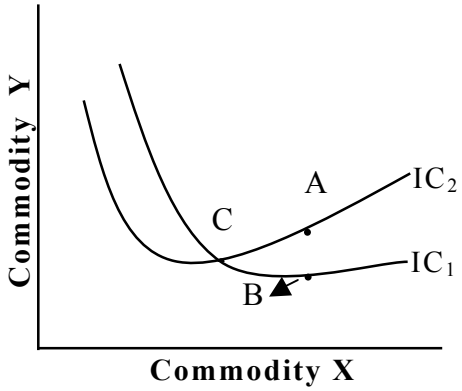


Fig 2.6 Indifference Curve-Intersecting each other

c) Non-intersecting: Indifference curves cannot intersect each other. Since

indifference curve represents those combinations of two goods, which give equal satisfaction to the consumer, the combinations represented by points A and C will give equal satisfaction as they lie on the same indifference curve (IC_2). Likewise, the combinations B and C will give equal satisfaction as they lie on IC_1. If combination A is equal to combination C and combination B is equal to combination C, it follows that the combination A will be equivalent to B in terms of satisfaction. But this is an absurd conclusion, as the consumer will definitely prefer A to B (This is because of the fact that A contains more of good y and it lies on IC_2). Hence, indifference curves cannot cut each other.

ii) Price Line or Budget Line: The price line shows all those combinations of two goods which the consumer can buy by spending his given money income on the two goods at their given prices. Suppose, a consumer has Rs.50 to spend on goods X and Y. Let the prices of goods X and Y be Rs.10 per unit and Rs. 5 per unit respectively. If he spends his whole income (Rs.50) on X, he would buy 5 units of X, and if he spends his whole income on Y, he would buy 10 units of Y. If a straight line joining 5 units of X and 10 units of Y is drawn, we get what is called the price line or budget line.

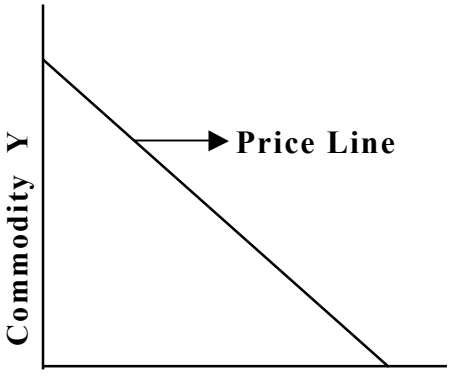
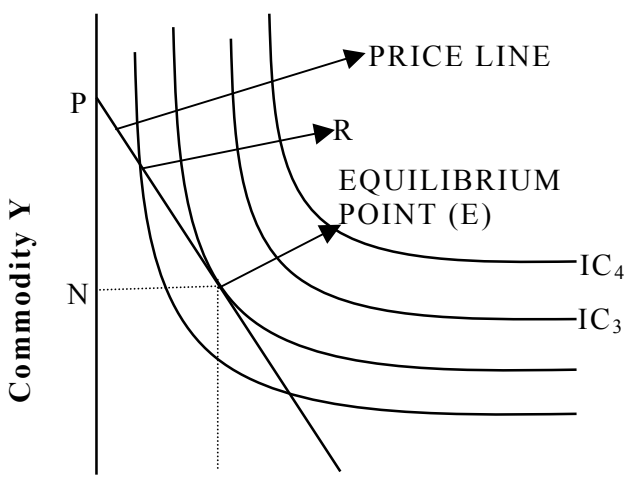


Fig. 2.7 Price Line or Budget Line

iii) Consumer's Equilibrium (Maximum Satisfaction): The consumer reaches equilibrium position i.e., attains maximum satisfaction at the point of tangency between the indifference curve and the price line. This indifference curve is of the highest order in the consumer's scale of preference within his reach. At equilibrium point (E), the slopes of the indifference curve and the price line are same. Slope of the indifference curve shows the marginal rate of substitution of X for Y (MRSxy), while the slope of the price line indicates the ratio between the prices of two goods, i.e., $\frac{Px}{Py}$ in Fig 2.8. Thus, at point E, consumers is in equilibrium, that is,

$$MRSxy = \frac{\text{Price of Good X}}{\text{Price of Good Y}}.$$

That is, $\frac{\Delta Y}{\Delta X} = \frac{Px}{Py}$



At the point R, the MRS_{xy} is greater than the given price ratio. Hence, the consumer will substitute good X for good Y and will come down along the price line PL. He will continue to do so till the MRS becomes equal to

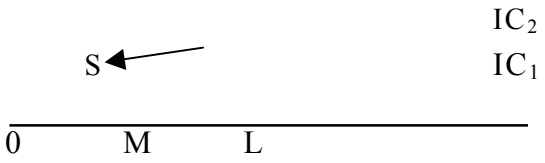


Fig. 2.8 Consumer's Equilibrium

indifference curve becomes tangent to the given price line, PL. At the point S, the MRS_{xy} is less than the given price ratio. Therefore, it will be to the advantages of the consumer to substitute Y for good X and accordingly move up along the price line (PL) till the MRS_{xy} rises so as to become equal to the given price ratio.

iv) Assumptions: In the indifference curve approach, the equilibrium position of the consumer is achieved under the following assumptions:

1) The consumer has a given indifference curve map exhibiting his scale of preferences for various combinations of two goods, X and Y.

2) The consumer has a fixed amount of money to be spent on two goods. He has to spend whole of his given money on the two goods.

3) Prices of goods are given and constant for him.

4) Goods are homogeneous and divisible.

5) Tastes and preferences of the consumer remain constant.

6) The consumer seeks maximum satisfaction.

v) Superiority of Indifference Curve Analysis over Marginal Utility Analysis

1) Indifference curve analysis adopts ordinal measure of utility in a more realistic way.

2) Indifference curve analysis uses the concept of marginal rate of substitution that is measurable. Moreover, in indifference curve analysis, demand can be analyzed without assuming constant marginal utility of money.

vi) Criticism on Indifference Curve Analysis

1) The indifference curve analysis has an unrealistic assumption that states that the consumer possesses complete knowledge of innumerable possible combinations of goods and their 'scale of preferences'.

2) Sometimes, the consumer has to know and compare the desirability of absurd combinations such as 8 pairs of shoes and one shirt, and 10 kgs of sugar and 1 kg of rice.

Chapter 2: Questions for Review:

1.Fill up the blanks with appropriate words given in the brackets:

a) A good with negative utility has _____ (use/no use).

b) Wants change _____ over time (change/do not change).

c) Free goods are _____ (scarce/not scarce).

d) Indifference curves are _____ to the origin (concave/convex).

e) Gold ornaments are _____ goods (luxurious/comforts).

f) The consumer attains equilibrium when marginal utility equals _____ of the commodity.

g) According to indifference curve analysis, the consumer ranks the combinations of commodities using his _____ .

2.Differentiate the following:

a) Perishable and durable goods.

b) Cardinal and ordinal measure of utility.

c) Income and wealth.

d) Consumer goods and producer goods.

e) Real income and money income.

f) Free good and economic good.

g) Utility and value.

h) Satisfaction and utility.

3.Answer the following:

a) What are the characteristics of human wants?

b) Explain the different types of wants.

b) State and explain the law of diminishing marginal utility.

c) Explain the assumptions of the law of diminishing marginal utility.

d) Explain the importance of the law of diminishing marginal utility.

e) Define the law of equi-marginal utility. How consumer gets maximum satisfaction?

f) Define the indifference curve. Explain the properties of indifference curves.

g) How the consumer gets maximum satisfaction with indifference curve analysis?

h) What are the defects of utility analysis? How indifference curve analysis can remove them?

05.Demand –individual demand – market demand – demand schedule – demand curve – Law of demand and factors affecting it.

The demand for a commodity is defined as a schedule of the quantities that buyers would be willing and able to purchase at various possible prices per unit of time. Unit of time refers to year, month, week and so on. It should also be understood that demand is not the same thing as desire or need. A 'desire' becomes 'demand' only when it is backed up by the ability and willingness to satisfy it.

A.i) Demand Schedule

An individual's demand schedule is a list of various quantities of a commodity, which an individual consumer purchases at different (alternative) prices in the market at a given time. The demand schedule, thus, states the relationship between the quantity demanded of a commodity and its price. In a market, there are a number of consumers each with his own demand schedule, showing the different quantities of the commodity that he will purchase at different prices. The market demand schedule can be obtained in two ways. First, by adding up the demand schedules of all the consumers in the market. Second, by taking the demand schedule of the representative consumer and multiplying it by the total number of consumers in the market.

Table 3.1 Demand Schedule for Rice in Tiruchirappalli Market

Price of rice (Rs/qt1)	Quantity of Rice Demanded (tonnes per month)
950	5000
900	5100
850	5200
800	5300
750	5400
700	5500

ii) Determinants of Demand: The demand is influenced by the following factors:

a) Tastes and Preferences of the Consumer: The changes in demand for various goods occur due to changes in fashion, and massive advertisement by the sellers.

b) Income of the People: The greater the incomes of the people, the greater will be their demand for goods and vice versa. Thus, there is a positive relationship between income and demand when all other factors are kept constant.

c) Price of the Commodity: Greater the price of the commodity, the lesser will be its demand and vice-versa. Thus, there is a negative relationship between the price and quantity demanded of a commodity, if all other factors remain constant.

d) Changes in the Prices of the Related Goods: When the price of a substitute for a good X falls, the demand for that good X will decline and when the price of the substitute rises, the demand for that good will increase. Tea and coffee are very close substitutes. Therefore, when the price of tea falls, the consumers substitute tea for coffee and as a result, the demand for coffee declines. For goods that are complementary with each other, the change in the price of any of them would affect the demand of the other. For instance, if the price of milk falls, its demand would rise. Along with the demand for milk, the demand for sugar would also rise, as milk and sugar are complementary goods. Likewise, when the price of car falls, the demand for them would increase which in turn will increase the demand for petrol.

e) Population: As population increases, the number of consumers would also increase and as a result, more of goods will be purchased.

f) Income Distribution: In a country with equitable distribution of income, there will be lesser demand for certain luxury goods, while in a country where the income is unequally divided among the very rich and very poor people, the demand for such luxury goods-will be more.

g) Expectations about Future Prices: If consumers expect that the price of a good to rise sharply in near future, they may buy more of that good now itself so as to avoid paying higher prices later.

iii) Law of Demand

The law of demand expresses the functional relationship between price and quantity of a commodity demanded. The law of demand may be stated as follows: other things being equal, if the price of a commodity falls, the quantity

demanded of it will rise and if price of the commodity rises, its quantity demanded will decline. Thus, according to the law of demand, there is an inverse relationship between price and quantity demanded, other things remaining the same. These other things which are assumed to be constant are a) tastes and preferences of the consumer, b) income of the consumer and c) prices of related goods (substitute and complementary goods). If these other factors, which determine demand, also undergo a change, then the inverse price-demand relationship may not be valid.

The law of demand can be illustrated through a demand curve (Fig.3.1). Suppose, the consumer purchases OQ_0 quantity of rice for OP_0. If price of rice rises from OP_0 to OP_1 the quantity demanded decreases from OQ_0 to OQ_1. Similarly, if the price falls from OP_0 to OP_2, the quantity demanded rises from OQ_0 to OQ_2. Thus, there is a negative relationship between the price and quantity demanded. In other words, the demand curve slopes downward from left to right. The law of demand can be expressed in the functional form as follows:

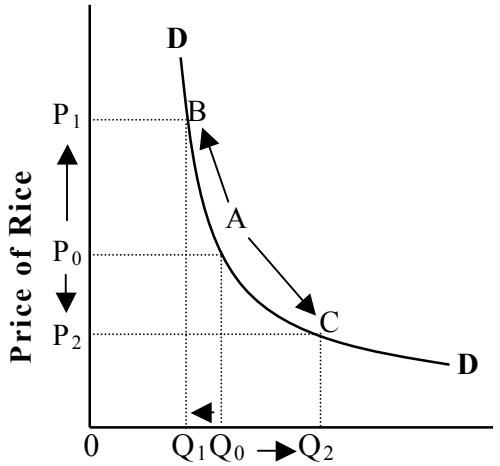


Fig.3.1 Law of Demand

Qd = f (P, I, PR/T)
Where,
Qd = Quantity demanded of a commodity
P = Price of the commodity
I = Income of the consumer
PR = Prices of the related goods
T = Tastes and preferences of the consumer

a) Why does the Law of Demand operate?

Now, an important question is: why the demand curve slopes downward, or in other words, how the law of demand describing inverse price-demand relationship is valid? There are three reasons for the operation of the law. Firstly, the law of demand is operated because the law of diminishing marginal utility comes into force when a consumer buys additional quantities of a particular commodity.

1.Derivation of Law of Demand from Law of Diminishing Marginal Utility and Law of Equi-Marginal Utility

The law of demand or the demand curve can be derived in two ways: firstly, with the aid of law of diminishing marginal utility, and secondly, with the help

of law of equi-marginal utility. The law of diminishing marginal utility states that as the quantity of a good with a consumer increases, marginal utility of the good to him expressed in terms of money falls. In other words, the marginal utility curve of a good is downward sloping. Now, a consumer will go on purchasing a good until the marginal utility of the good equals the market price. His satisfaction will be maximum only when marginal utility equals price. It, therefore, follows that the diminishing marginal utility curve implies the downward sloping demand curve, that is, as the price of the good falls, more of it will be purchased. In the figure 3.2, the diminishing marginal utility of the good is measured in terms of money. Suppose, the price of the good is OP_0 and a consumer will be in equilibrium if he purchased OQo, then the marginal utility is equal to the given price OP_0. Now, if the price falls to OP_1, the consumer would buy OQ_1 quantity of good and the equilibrium would be shifted from E_0 to E_1. In order to equate the marginal utility with the lower price OP_1, the consumer must buy more of the good. Thus, there is an inverse relationship between quantity demanded and price of the good.

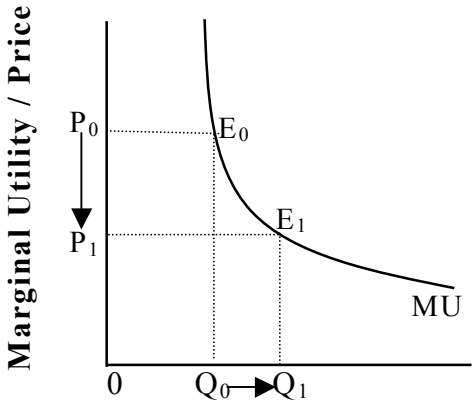


Fig.3.2 Derivation of Law of Demand from Law of Diminishing Marginal Utility

Now, we proceed to derive the law of demand from the law of equi-marginal utility. According to the law of equi-marginal utility, the consumer is in equilibrium in regard to his purchase of various goods when marginal utilities of the goods are proportional to their prices. Thus, the consumer is in equilibrium when he is buying the quantities of two goods in such a way that it satisfies the following proportionality rule:

$$\frac{MUx}{Px} = \frac{MUy}{Py} = MUm$$

In the figure 3.3, the marginal utility of money is OH. When the price of the good is Px_1, the consumer buys OQ_1 since at this quantity, the marginal utility of

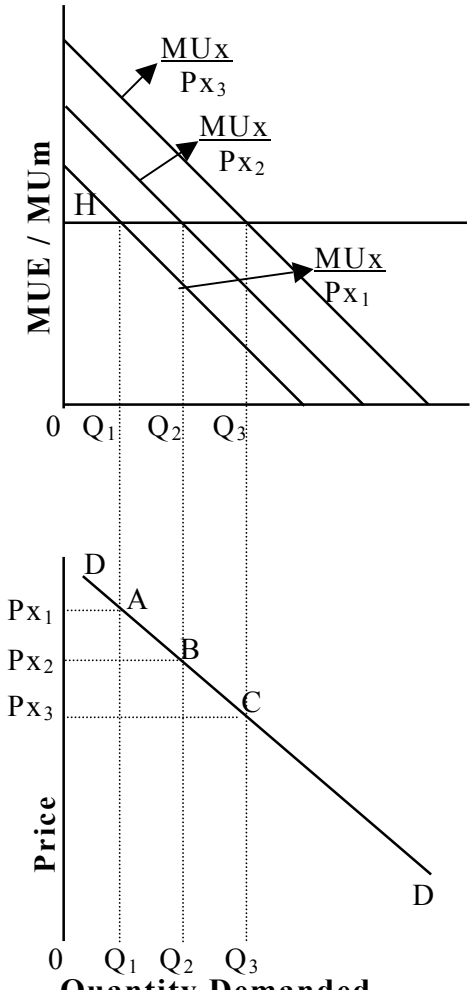


Fig.3.3 Derivation of Demand Curve from Law of Equi-Marginal Utility

money is equal to the ratio of the marginal utility divided by price, i.e., $\frac{MUx}{Px_1}$.

Now, suppose, the price of the good falls from Px_1 to Px_2, then, the demand will increase, i.e., the demand curve is shifted upwards. The quantity of demand must increase to OQ_2 because, only then the marginal utility of the money (OH) will be equal to the ratio of the marginal utility of the good and the price, i.e., $\frac{Mux}{Px_2}$.

Thus, we find that when price of a good falls, the demand curve (MUx / Px_2) shifts upwards and more of the good will be demanded. This is precisely the law of demand and therefore, it has been derived from the law of equi-marginal utility as explained above.

2) Income Effect

A fall in price of a commodity results in a rise in the consumer's real income. He can, therefore, purchase more of it. On the contrary, a rise in price of a commodity amounts to a fall in his real income. He is, therefore, forced to purchase less of it. Let us suppose that the price of sugar falls down. After having purchased his usual quantity, the consumer is still left with some money, a part of which he is likely to spend on buying additional quantity of sugar.

3) Substitution Effect

A fall in price of a commodity, while the prices of its substitutes remain constant, will make it cheaper and attractive to the consumers. Conversely, a rise in the price of the commodity, while the prices of its substitutes remain constant, will make it unattractive to the consumers who will demand less of it. Now, the consumers will buy more of the substitute than that of the commodity. Suppose, the prices of apple and orange are Re 1.00 and Re 0.50 respectively. Orange is taken as a substitute for apple. Now, the price of apple is twice costlier than that of an orange. If the price of orange (substitute) alone falls to Re 0.25, then apple is four times as costly as orange. A consumer will always buy low-priced commodity than high-price commodity. Hence, the consumer, in this case, will buy more of the substitute (orange) in the place of apple. This is due to substitution effect.

Normally, the income effect is weaker than the substitution effect. As stated above, a consumer ordinarily spends a very small part of his income on one

particular commodity. A fall in the price of the commodity will not, therefore, increase his real income in any substantial measure. The substitution effect, on the contrary, is stronger than the income effect, because the consumer will always substitute the inexpensive for the expensive commodity. Further more, the income effect is positive only in case of a superior commodity. A superior commodity is one, which is consumed, in increased quantities when income of the consumer rises. For example, rice is a superior commodity because people consume more of it when their incomes rise. This is due to the fact that the consumer's real income would increase, if price of such a commodity falls. On the other hand, the income effect is negative in case of an inferior commodity. An inferior commodity is one, which is consumed, in smaller quantities when the income of the consumer rises. Its consumption is a symbol of low status and therefore, if the price of such a commodity falls, the consumer's real income increases, but he buys less of inferior commodity. For example, jaggery is an inferior commodity because people consume less of it when their incomes rise.

b) Extension and Contraction of Demand: When the quantity demanded of a good rises due to the fall in price, it is called **extension of demand.** When the price falls from OP_0 to OP_2, the quantity demanded increases from OQ_0 to OQ_2. When the quantity demanded of a good decrease due to rise in the price, it is called **contraction of demand.** When the price rises from OP_0 to OP_1, the quantity demanded of the good decreases from OQ_0 to OQ_1. The extension and contraction of demand take place as a result of changes in the price alone when other determinants of demand such as tastes, income and prices of the related goods remain constant.

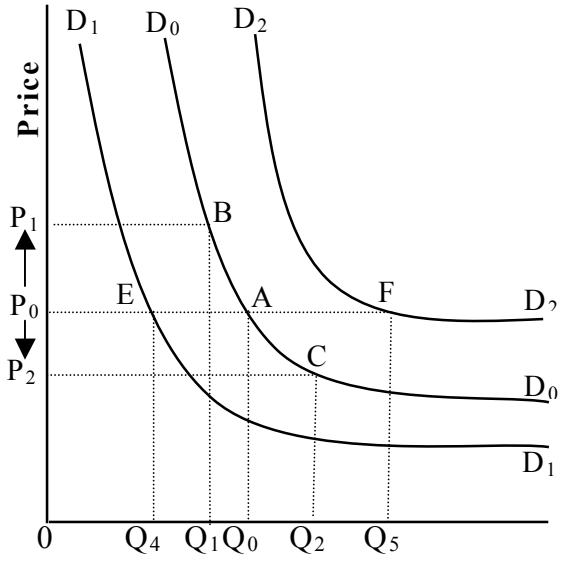


Fig.3.4 Law of Demand

OQ_0 - OQ_1-Contraction of demand

OQ_0 - OQ_2-Extension of demand

c) Increase and Decrease in Demand: Now, if the other things, that is, determinants of demand other than price such as consumer's tastes and preferences, income and prices of the related goods change, the whole demand curve will shift upward or downward. Increase in demand means that the consumer buys more of the good at various prices than before. For example, if the income of a consumer increases, or if the fashion

OQ_0 - OQ_4 -Decrease in demand

OQ_0 - OQ_5 -Increase in demand

improves, the consumer will buy greater quantities of the good than before at various given prices. The consumer will buy OQ_5 rather than OQ_0 due to upward shift or increase in demand (see Fig.3.4). Similarly, the consumer will buy OQ_4 instead of OQ_0 due to downward shift or decrease in demand. This increase and decrease in demand happen due to the changes in factors other than price of the commodity.

d) Exceptions to the Law of Demand

1.According to Thorstein Veblen, some consumers measure the utility of a commodity entirely based on its price i.e., for them, the greater the price of a commodity, the greater is its utility for them. For example, diamonds are considered as prestigious good in the society. However, the consumer will buy less of the diamonds, even if its price is low, because with the fall in price its prestige value will go down. Similarly, at higher price, quantity demanded of diamonds by a consumer will rise.

2) Another exception to the law of demand was pointed out by Sir Robert Giffen who observed that when the prices of bread/potatoes increased, the low-paid British workers, in the early 19th century, purchased more of bread/potatoes and not less of them. This is contrary to the law of demand. The reason for this is that these British workers consumed a diet of mainly bread/potatoes and when their prices went up they were compelled to spend more on given quantities of bread/potatoes. Therefore, they could not afford to purchase as much meat as before. Hence, after the name of Robert Giffen, such goods (bread/potatoes) are called Giffen goods.

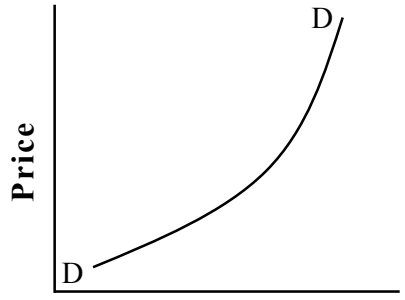


Fig.3.5 Exceptional Demand Curve

3) Some times, people expect that the prices of certain goods would still rise in the future and hence, they demand greater quantities of such goods, even if their prices are higher at present.

iv) Types of Demand: There are three different types of demand which are discussed below:

a) Price demand: Price demand refers to various quantities of a commodity that consumers demand per unit of time at different prices, assuming that their incomes, tastes and preferences and prices of related goods remain constant. The law of demand explains to price demand.

b) Income demand: Income demand refers to the different quantities of a commodity which consumers will buy at different levels of income, other things remaining the same. Other things, here, refer to price of the commodity, prices of related goods and tastes and preferences of the consumer. As income of the consumer increases, his demand for a normal or superior commodity also rises. Thus, there is a positive relationship between income and quantity demanded.

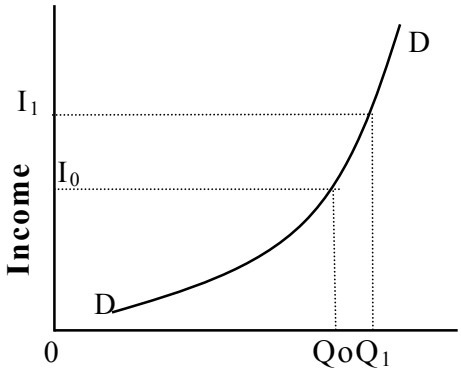


Fig. 3.6(a) Income Demand for a Normal or Superior Good

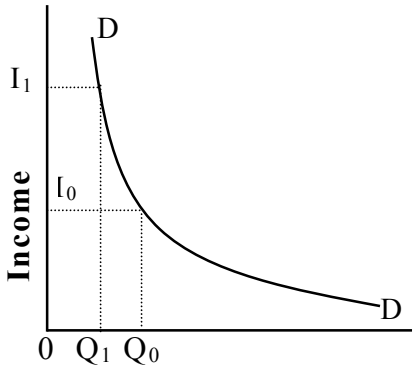
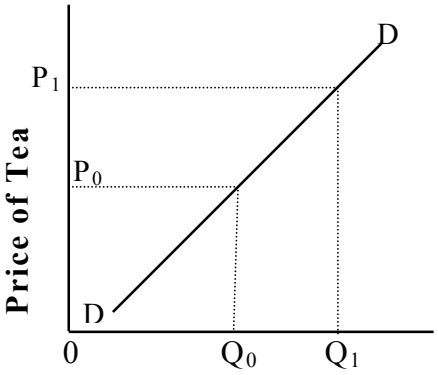


Fig. 3.6(a) Income Demand for an Inferior Good

The income demand curve slopes upward from left to right. For inferior goods, the quantity demanded will be more, if income of the consumer declines, while other determinants of demand remain constant and vice versa. Thus, the income demand curve slopes downward and it indicates that there is an inverse or negative relationship between income and quantity demanded.

c) Cross demand: It refers to the different quantities of a commodity that consumers purchase per unit of time at different prices of a related commodity, other things remaining the same. The other things, here, include consumer's income, his tastes and preferences and the price of the commodity itself. The related commodity may be either substitute or complementary good. For example, tea and coffee are substitutes.



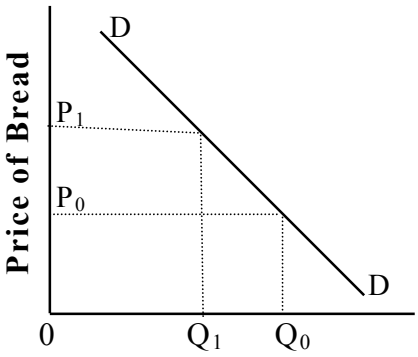


Fig.3.7 (a) Demand for Substitute Good.Fig.3.7 (b) Demand for Complementary Good

Substitutes satisfy the same want. If the price of tea rises, the consumer buys less of it. Instead, they may buy more of coffee. Thus, a rise in the price of tea increases the demand for coffee. The cross demand curve of coffee in relation to the price of tea will have a positive slope (or, slopes upward to the right). On the contrary, if both the commodities are jointly demanded to satisfy the same want they are called complementary goods. For example, bread and butter are complementary goods. A fall in the price of bread will increase the demand for butter and vice-versa. The cross demand curve of butter in relation to the price of bread will have a negative slope (or slopes downward to the right).

Complementary demand is also known as **Joint demand**. Joint demand takes place when two or more goods are jointly demanded for the satisfaction of a particular want. E.g. bread and butter, shoes and shoe-laces, cup and saucer, tea, milk and sugar, etc.

d) Derived demand is another types of demand. The demand for a factor of production that results from the demand for the final form of the commodity which it helps to produce. For example, a consumer buys bread. To bake the bread, bakers have to buy flour. Their derived demand for flour is met by flour mills. The flour mills in turn, buy wheat; their derived demand goes back to the farmers who grow the wheat. The farmers, in turn, have a derived demand for seeds, fertilizers, tractors etc. to cultivate wheat.

06.Elasticity of demand – price, income and cross elasticities – estimation – point and arc elasticity - Giffen Good – normal and inferior goods – substitutes and complementary goods

ELASTICITY OF DEMAND

Elasticity of demand refers to the sensitiveness or responsiveness of demand to changes in price. Price elasticity of demand is usually referred to as elasticity of demand. Also, there are income elasticity of demand and cross elasticity of demand.

i) Price Elasticity of Demand

It is the ratio of proportionate change in quantity demanded of a commodity to a given proportionate change in its price. Price elasticity of demand (E_P) is, thus, given by:

$$Ep = \frac{\textbf{Percentage Change in Quantity Demanded}}{\textbf{Percentage Change in Price}}$$

or in symbolic terms,

$$Ep = \frac{\left(\frac{\Delta Q}{Q} \times 100\right)}{\left(\frac{\Delta P}{P} \times 100\right)} = \frac{\left(\frac{\Delta Q}{Q}\right)}{\left(\frac{\Delta P}{P}\right)} = \frac{\Delta Q}{Q} \times \frac{P}{\Delta P} = \frac{\Delta \mathbf{Q}}{\Delta \mathbf{P}} \times \frac{\mathbf{P}}{\mathbf{Q}}$$

Where, Q = quantity demanded of a commodity; P= Price.

Let us suppose that a consumer demands 10 oranges when its unit price is Re. 1. If its price falls to 95 paise, he demands 12 oranges. Now, the price elasticity of demand can be estimated as follows:

$$Ep = \frac{2/10 \times 100}{-5/100 \times 100} = \frac{20}{-5} = -4$$

As the price falls by 5 per cent, the quantity demanded raises by 20 per cent. Now, the coefficient of elasticity of demand is minus 4. Thus, it could be concluded that there is a four per cent increase in the quantity demanded of orange due to one per cent decrease in its price.

a) Types of Elasticity of Demand: Price elasticity of demand is classified under the following five sub heads:

1. Perfectly elastic demand: It refers to the situation where the slightest rise in price causes the quantity demanded of a commodity to fall to zero and at the present level of price people demand infinitely large quantity of the commodity. The coefficient of elasticity of demand is infinite.

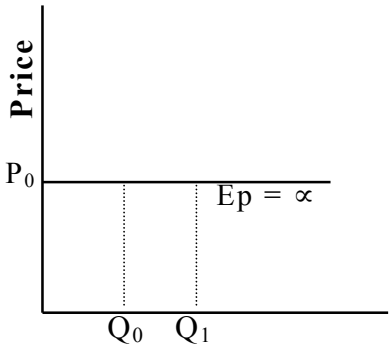


Fig. 3.8(a) Perfectly Elastic

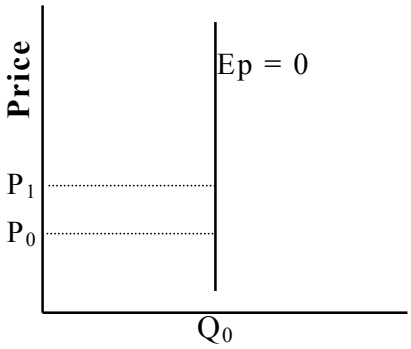


Fig. 3.8(b) Perfectly Inelastic

2. Perfectly inelastic demand: It refers to the situation where even substantial changes in price do not make any change in the quantity demanded, i.e., for any change in the price, the demand remains constant. The coefficient of elasticity of demand is zero.

3. Relatively elastic demand: Here, a small proportionate change in the price of a commodity results in a larger proportionate change in its quantity demanded. The coefficient of elasticity of demand is greater than unity.

4. Relatively Inelastic demand: A larger proportionate change in the price of a commodity results in a smaller proportionate change in its quantity demanded. The coefficient of elasticity of demand is greater than zero, but less than unity.

5. Unitary elastic demand: It refers to a situation where a given proportionate change in price is accompanied by an equally proportionate change in the quantity demanded. In other words, a given proportionate fall in the price is

followed by an equally proportionate increase in demand and vice versa. The

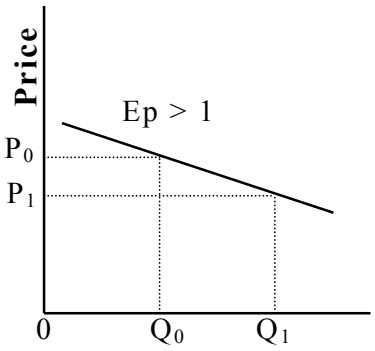


Fig.3.8(c) Relatively Elastic

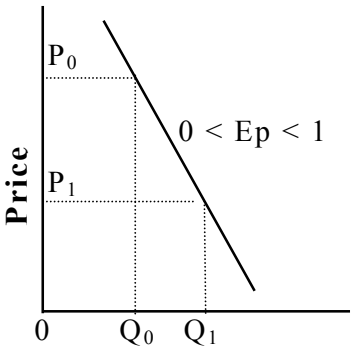


Fig.3.8 (d) Relatively Inelastic

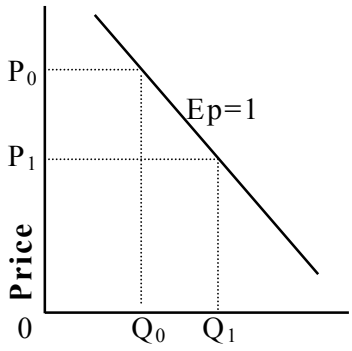


Fig.3.8 (e) Unitary Elastic

co efficient of elasticity of demand is unity.

b) Factors Influencing the Elasticity of Demand: The elastic or inelastic nature of the demand for a commodity is determined by the following factors.

1) Degree of necessity: Other things being equal, the demand for necessities is inelastic or less elastic than that for comforts and luxuries. The reason is simple. The necessities must be bought whatever be the price because no one can live without them. The demand for a necessity without a substitute is less elastic than the demand for a necessity with a substitute. For example, the demand for salt is less elastic than that for paddy.

2) Proportion of consumer's income spent on the commodity: The demand for a commodity on which the consumer spends only a small proportion of his income is less elastic. For instance, even if the price of salt or match-box rises by 100 per cent, the demand for them may not decline substantially.

3) Existence of substitutes: The demand for a commodity is more elastic, if it has a number of good substitutes. A small rise in the price of such a commodity will induce the consumers to go for its substitutes, assuming that their prices do not rise.

4) Several uses of the commodity: The demand for a commodity is said to be more elastic, if it can be put to a variety of uses. A fall in the price of electricity will result in the substantial increase in its demand.

5) Time: The elasticity of demand varies with the length of time. In general, demand is more elastic for longer period of time. For instance, if the price of kerosene rises, it may be difficult to substitute it with cooking gas within a very short time. But if sufficient time is given, people will make adjustments and use firewood or cooking gas instead of kerosene.

c) Measurement of Elasticity of Demand: Price elasticity of demand can be measured by three methods. They are:

1) Total Expenditure or Outlay Method
2) Measuring Elasticity at a Point
3) Arc Method

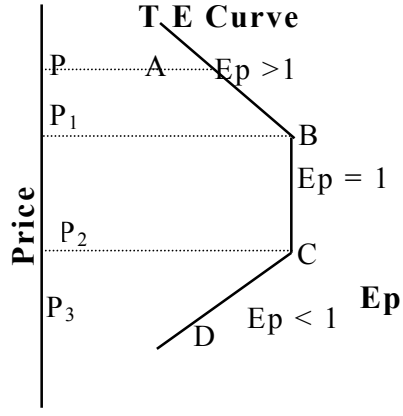
1) Total Expenditure or Outlay Method

In this method, the total expenditure on the quantity of a commodity demanded is used to find out whether the total expenditure has increased or decreased or constant, consequent on the changes in its price. In the first case, consequent on the fall in price from Rs.6 to Rs.5 and then to Rs.4, the quantities demanded have increased to 1500 and 2000 respectively. Due to fall in price, the total outlay has gone up. So, when the total outlay increases due to fall in price the demand is elastic. In the second case, total outlay remains constant irrespective of changes in prices and hence the demand is of unit elasticity. In the third case, total outlay decreases with the fall in price. So, it has inelastic

Table 3.2 Elasticity of Demand – Total Outlay Method

	Price (in Rs / Kg)	Quantity Demanded (in Quintals)	Total Expenditure or Outlay in Purchasing that Quantity (Rs)	Elasticity
I	6.00	1000	6000	Elastic Demand
	5.00	1500	7500	Ep >1
	4.00	2000	8000	
II	6.00	1000	6000	Unit Elasticity
	5.00	1200	6000	Ep = 1
	4.00	1500	6000	
III	6.00	1000	6000	Inalastic Demand
	5.00	1100	5500	Ep < 1
	4.00	1300	5200	

demand. In the figure 3.9, AB portion of total expenditure curve slopes downward showing, as the price falls, the total expenditure is increasing and vice versa. So, the demand at this price range is elastic and Ep is greater than 1. Over the price range from OP_2 to OP_3 the total expenditure curve shows that as the price falls, the expenditure decreases and as the price increases from OP_3 to OP_2, the total expenditure increases showing that the demand is inelastic and Ep is smaller than one. In the price range P_1 to P_2, the total expenditure does not change. Hence, the elasticity is unity and Ep = 1.



2) Measuring Elasticity at a Point: When the price falls from OP_0 to OP_1, the quantity demanded increases from OQ_0 to OQ_1. Using the formula, elasticity of demand is given by:

$$\mathbf{Ep} = \frac{\textbf{Proportionate Change in Quantity Demanded}}{\textbf{Proportionate Change in Price}}$$

Total Outlay

Fig. 3.9 Elasticity of Demand- Total Outlay or Expenditure Method

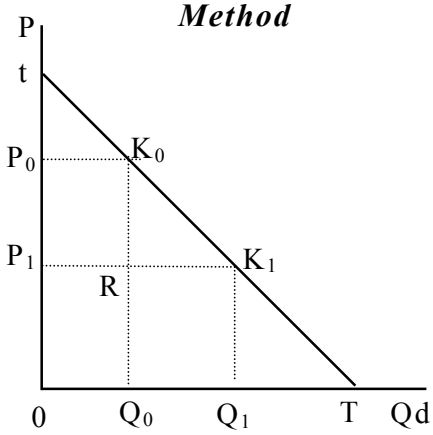


Fig.3.10 (a) Elasticity of Demand: Point Method

$$Ep = \frac{Q_0Q_1}{OQ_0} \div \frac{P_0P_1}{OP_0} = \frac{R\,K_1}{OQ_0} \div \frac{R\,K_0}{Q_0\,K_0} = \frac{RK_1}{OQ_0} \times \frac{Q_0\,K_0}{R\,K_0} = \frac{RK_1}{R\,K_0} \times \frac{Q_0\,K_0}{O\,Q_0}$$

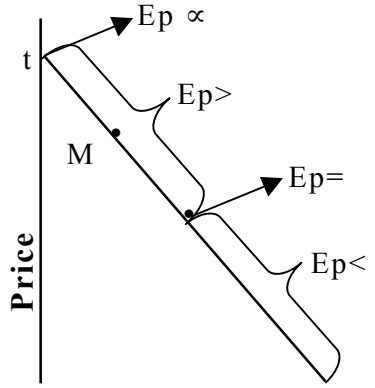
In the figure 3.10, the triangle K_0RK_1 is similar to triangle K_0Q_0T and, therefore, $\frac{RK_1}{RK_0}$ by $\frac{Q_0T}{Q_0K_0}$. Now, $Ep = \frac{Q_0T}{Q_0\,K_0} \times \frac{Q_0K_0}{OQ_0}$.

Cancelling $Q_0\,K_0$ on both sides, we get $Ep = Q_0\,T\,/O\,Q_0$. The assumption is that a very small change in price and quantities has been considered and so, points K_0 and K_1 on tT lie very close so as to almost coincide. If this be the assumption, then $Q_0\,K_0$ should coincide with $Q_1\,K_1$ and in right angled triangle tOT, the relation $Q_0T\,/\,OQ_0$ can be expressed as $TK_0\,/\,K_0t$. Since TK_0 is the lower sector of the demand curve at this point and K_0t is its upper sector, we can say that in a demand curve at any point,

$$\text{Elasticity} = \frac{\text{Lower sector}}{\text{Upper sector}}. \text{ That is, Elasticity at point } K_0 = \frac{K_0T}{K_0t}$$

At point K, in the Fig.3.10 (b), the lower and upper sectors are equal and hence, at K, the demand is unitary elastic. And point below K, say L, will show inelastic demand and any point above K, say M will show elastic demand. At the point where the demand curve touches the X-axis, the value of Ep = 0 (perfectly inelastic) and at the point where the demand curve touches the Y-axis the value of Ep is ∝ (infinite) (perfectly elastic)**.**

3) Arc Method: The Point Method of Elasticity of demand studied above refers to the condition where the price changes and in quantities demanded is very small so that we can find out the elasticity at a point. Since the changes are very little, we take the original price and quantity as the basis of measurement. Suppose, the change in price and quantity is very large, neither the initial nor final price and quantities can be taken.



Price (Rs/Kg)	**Quantity Demanded (Kgs/Day)**
30	200
20	400

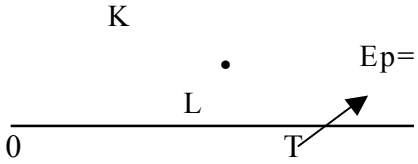


Fig.3.10 (b) Price Elasticity of Demand: Point Method

$E_P = \frac{200}{200} \times \frac{30}{10} = 3$. Instead, suppose we take final price and quantity demanded, then the elasticity is $E_P = \frac{200}{400} \times \frac{20}{10} = 1$

Now, there is a wide difference in elasticities, if we take initial or final prices. Hence, arc elasticity of demand is used to solve this problem. For this, the average of both initial and final prices and quantities are used.

$$\text{Elasticity of Demand} = \frac{\left\{\frac{\text{Original Quantity} - \text{New Quantity}}{\text{Original Quantity} + \text{New Quantity}}\right\}}{\left\{\frac{\text{Original Price} - \text{New Price}}{\text{Original Price} + \text{New Price}}\right\}} = \frac{\left\{\frac{200 - 400}{200 + 400}\right\}}{\left\{\frac{30 - 20}{30 + 20}\right\}}$$

$= 1.67$

The Elasticity 1.67 is neither 1 nor 3. In order to measure arc elasticity between points K and L on the demand curve DD, the formula will be:

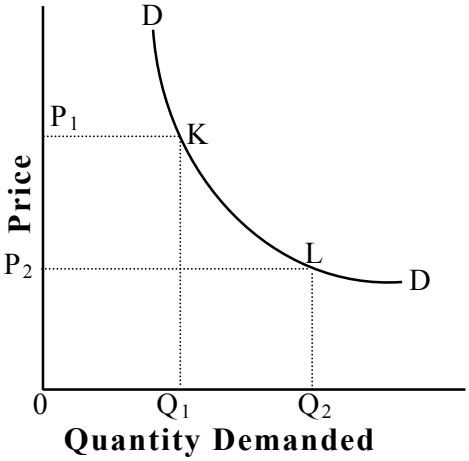


Fig.3.11 Elasticity of Demand-Arc Method

$$Ep = \frac{\Delta Q}{\left\{\frac{Q_1 + Q_2}{2}\right\}} \div \frac{\Delta P}{\left\{\frac{P_1 + P_2}{2}\right\}}$$

$$= \frac{\Delta Q}{\left\{\frac{Q_1 + Q_2}{2}\right\}} \times \frac{\left\{\frac{P_1 + P_2}{2}\right\}}{\Delta P}$$

$$= \frac{\Delta Q}{Q_1 + Q_2} \times \frac{P_1 + P_2}{\Delta P} = \frac{\Delta Q(P_1 + P_2)}{\Delta P(Q_1 + Q_2)}$$

d) Uses of Elasticity of Demand

1) The business firms take into account the elasticity of demand when they take decisions regarding pricing of goods.

2) The elasticity of demand concept is used by the government in economic policy regarding regulation of prices of farm products.

ii) Income Elasticity of Demand

It may be defined as the ratio of proportionate change in the quantity demanded of commodity to a given proportionate change in income of the consumer.

Income Elasticity, Ei = Percentage Change in Quantity Demanded / Percentage Change In Income

$$\text{Symbolically, } Ei = \frac{\frac{\Delta Q}{Q} \times 100}{\frac{\Delta Y}{Y} \times 100} = \frac{\Delta Q}{Q} \times \frac{Y}{\Delta Y} = \frac{\Delta Q}{\Delta Y} \times \frac{Y}{Q}$$

Where, Q = Quantity demanded; Y-income

If, for instance, consumer's income rises from Rs. 1000 to Rs. 1200, his purchase of the good X (say, rice) increases from 25 kgs per month to 28 kgs, then his income elasticity of demand for rice is:

$$Ei = \frac{3}{200} \times \frac{1000}{25} = 0.60$$

From this, we conclude that, the quantity demanded of rice rises by 0.60 per cent, if the income of the consumer rises by one per cent. Income elasticity of demand can be divided into following five sub-heads:

a) Types of Income Elasticity of Demand

1) Zero income elasticity: A given increase in the consumer's money income does not result in any increase in the quantity demanded of a commodity (Ei=0).

2) Negative income elasticity: A given increase in the consumer's money income is followed by an actual fall in the quantity demanded of a commodity. This happens in the case of economically inferior goods ($E_i < 0$).

3) Unitary income elasticity: A given proportionate rise in the consumer's money income is accompanied by an equally proportionate rise in the quantity demanded of a commodity and vice versa (Ei=1).

4) Income elasticity of demand greater than unity: For a given

proportionate rise in the consumer's money income, there is a greater proportionate rise in the quantity demanded of a commodity. Ei is greater than unity. This is in case of luxuries.

5) Income elasticity of demand less than unity: For a given proportionate rise in the consumer's money income, there is a smaller proportionate rise in the quantity demanded of a commodity. The income elasticity of demand is less than

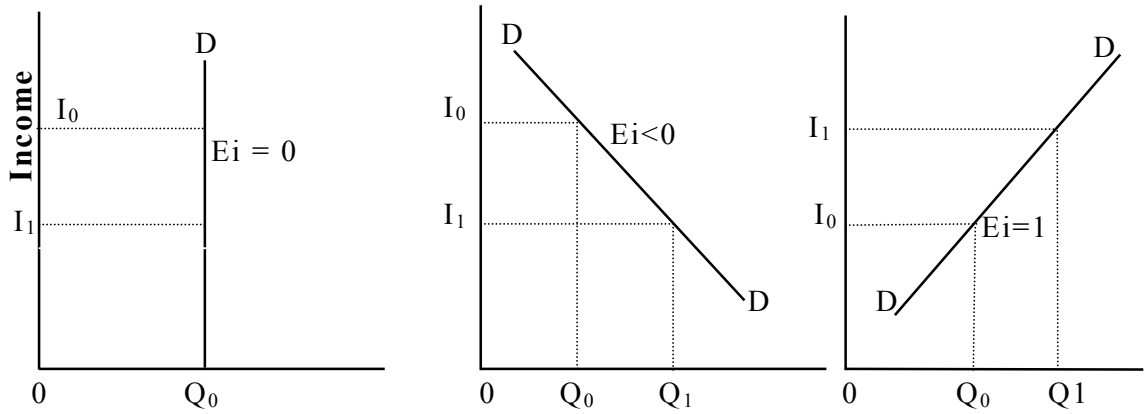


Fig.3.12 (a) Zero Income Elasticitv of Demand ***Fig.3.12 (b)Negative Income. Elasticitv of Demand*** ***Fig.3.12 (c)Unitary Income Elasticitv of Demand***

unity in case of necessaries i.e., the percentage expenditure on necessaries increases in a smaller proportion when the consumer's money income goes up (Ei < 1).

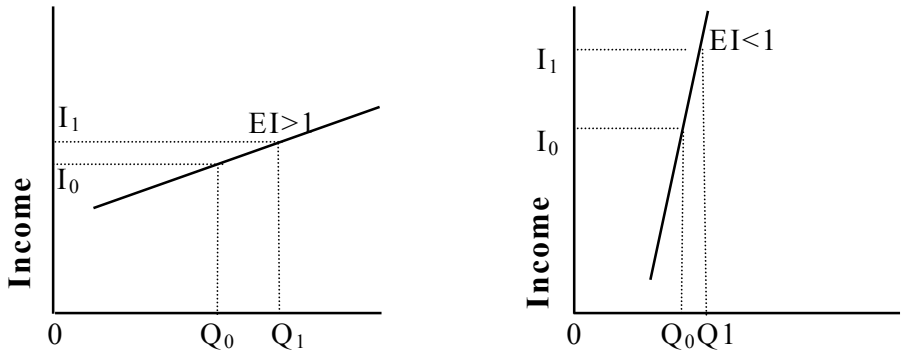


Fig.3.12 (d) Income Elasticity Greater than Unity **Fig. 3.12 (e) Income Elasticity Less than Unity**

07. Engel's Law of family expenditure and significance. - Consumer's surplus– estimation and applications.

Engel's Law on Family Expenditure

Every family has to spend money on necessaries of life, education, health, clothing, house rent, light and fuel, recreation and so on. A list containing expenditure by a family on each of these items is called 'Family Budget'. Earnest Engel (1857) made an investigation on family budgets. For that purpose, he studied three groups of people viz., poor, middle and rich. From his study, he derived the following conclusions, which are known as ' Engel's Law on Family Expenditure'.

1) As the family income increases, the percentage of income spent on food decreases, although the actual amount increases.

2) The percentage expenditure on clothing, house rent, light and fuel remains the same for any income level.

3) The percentage expenditure on education, health and recreation increases with every increase in the income of the family.

i) Implications of Engel's law

1) The poor class people may find it difficult to spend on health, education and recreation facilities, as they have to spend large amount on food and other necessaries.

2) As the poor class has to spend more on food, any rise in the price or tax levied on food would affect the poor more than the rich.

Table 3.3 Consumption Pattern in Different Sizes of Households

(Amount in Rs / Month)

Particulars	Small		Middle		Large	
	Amount	Percentage	Amount	Percentage	Amount	Percentage
Food	792	66	1392	58	1800	50
Clothing & House rent	120	10	240	10	360	10
Fuel and lighting	96	8	192	8	288	8
Education	12	1	72	3	180	5
Medical	36	3	120	5	252	7

Recreation	12	1	48	2	144	4
Social & Religious functions	36	3	96	4	180	5
Services	36	3	96	4	180	5
Others	60	5	144	6	216	6
Total	**1200**	**100**	**2400**	**100**	**3600**	**100**

ii) Importance of Family Budget

1) Family budget studies help us to find out the consumption pattern of people in different countries.

2) We are able to understand the trends in the cost of living of people.

3) The government can design its policies on prices, subsidies and taxes of various commodities considering the standard of living of people in the country.

iii) Cross Elasticity of Demand

The cross elasticity of demand may be defined as the ratio of proportionate change in the quantity demanded of commodity X to a given proportionate change in the price of the related commodity Y.

$$\textbf{Cross Elasticity of Demand } Ec = \frac{\textbf{Percentage Change in Quantity Demanded of X}}{\textbf{Percentage Change In Price of Y}}$$

$$Ec = \frac{\frac{\Delta Qx}{Qx} \times 100}{\frac{\Delta Py}{Py} \times 100} = \frac{\Delta Qx}{Qx} \times \frac{Py}{\Delta Py} = \frac{\Delta Qx}{\Delta Py} \times \frac{Py}{Qx}$$

Where, Qx = Quantity demanded of commodity X; Py= Price of Y.

If the price of coffee rises from Rs 4.50 to Rs 5 per hundred grams and as a result, the consumer's demand for tea increases from 60 hundred grams to 70 hundred grams, the cross elasticity of demand can be estimated as follows:

$$E_T = \frac{10}{1.50} \times \frac{450}{} = \frac{3}{} =$$

It could be concluded that the quantity demanded of a commodity (tea) increases by 1.5 per cent, if the price of its substitute (coffee) rises by one per cent. Therefore, the cross elasticity of demand between the two substitute goods is positive, that is, in response to the rise in price of one good, the demand for the other good rises. Substitute goods are also known as competing goods. On the other hand, when the two goods are complementary with each other, as in the case of bread and butter, the rise in price of one good brings about the decrease in demand for the other. Therefore, the cross elasticity of demand between the

two complementary goods is negative. For example, if the price of bread rises from Rs 6 to Rs. 7 per loaf, the quantity demanded of butter decreases from 3 kgs to 2 kgs per month. The cross elasticity of demand for butter is:

$$E_{Butter} = \frac{\Delta Q_{Butter}}{\Delta P_{Bread}} \times \frac{P_{Bread}}{Q_{Butter}} = \frac{-1}{1} \times \frac{6}{3} = -2$$

It could be concluded that the demand for butter decreases by two per cent for one per cent rise in the price of bread.

C. CONSUMER'S SURPLUS

The concept of consumer's surplus is important in economic policies such as taxation by the government and price policy pursued by the monopolist seller of a product. The essence of the concept of consumer surplus is that a consumer derives extra (or surplus) satisfaction from the purchases he daily makes than the price he actually pays for them. This extra satisfaction, which the consumer obtains from buying a good, has been called consumer's surplus by Marshall. Thus, Marshall defines the consumer's surplus in the following words: " **Excess of the price which a consumer would be willing to pay rather that go without a thing over that which he actually does pay, is the economic measure of surplus satisfaction.**

The amount of money which a person is prepared to pay for a good indicates the amount of utility he derives from that good; the greater the amount of money he is willing to pay, the greater the satisfaction or utility he will obtain from it. Therefore, the marginal utility of a unit of a good determines the price a consumer will be prepared to pay for that unit. The total utility which a person will get from a good will be given by the sum of marginal utilities (Σ MU) of the units of goods purchased, and the total price which he will actually pay is equal to the price per unit multiplied by the number of units purchased. Thus:

Consumer's surplus = What a consumer is prepared to pay minus What he actually pays

= Sum of marginal utility - (Price x No. of units purchased)

a) Measurement of Consumer's Surplus

The concept of consumer's surplus is derived from the law of diminishing marginal utility. The consumer attains equilibrium position when he purchases the number of units of a commodity at which marginal utility is equal to the price. This means that at the margin what a consumer will be prepared to pay (i.e., marginal utility) is equal to the price he actually pays. But for the previous

units, which he purchases, the marginal utility he gets were greater than the price he actually pays for them.

Table 3.4 Consumer's surplus

Units	Total Utility	Marginal Utility	Price(Rs/Unit)	Consumer's surplus
1	20	20	10	20-10 = 10
2	38	18	10	18-10 = 8
3	54	16	10	16-10 = 6
4	68	14	10	14-10 = 4
5	80	12	10	12-10 = 2
6	90	10	10	10-10 = 0
7	98	8	10	-
				Rs. 30

This is because the price is constant. In the table 3.4, the consumer is in equilibrium if he purchases 6 units of the commodity at which the marginal utility and price of the commodity are same. Then, the consumer's surplus is, Rs.30 i.e., the difference between what he actually pays and what he is prepared to pay, is equal to (90-60) = 30.

$$\text{Thus, Consumer's Surplus} = \text{Total Utility} - \left\{\begin{matrix}\text{Number of Units of a} \\ \text{Commodity Purchased}\end{matrix} \times \begin{matrix}\text{Price of the} \\ \text{Commodity}\end{matrix}\right\}$$

In the figure 3.13, total utility of OM units is equal to ODSM. But given the price OP, the consumer will actually pay for OM units of the good the sum equal to OPSM. It is thus, clear that the consumer derives extra satisfaction (utility) equal to (ODSM minus OPSM) DPS, which has been shaded in the figure.

b) Importance of Consumer's Surplus

1) Distinction between value- in-use and value-in-exchange: Value-in-use of a commodity signifies the utility or satisfaction it provides to the consumer, while value-in-exchange means the price paid by the consumer for the commodity. A commodity like salt has more utility but has only a small exchangeable value. In such cases, consumer's surplus will be more. A commodity like diamond has only a limited utility but has a great exchange value. In this case, the consumer's surplus will be less. Thus, the concept of consumer's surplus is used to distinguish

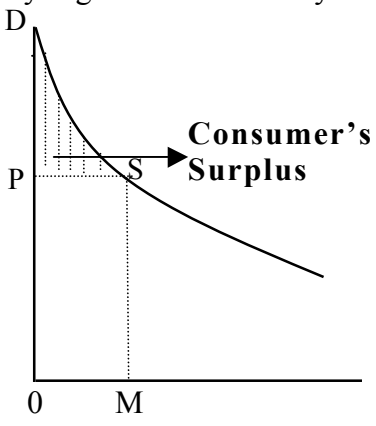


Fig.3.13 Consumer's Surplus

between value-in use and value in-exchange.

2) Helpful to monopolist in price fixation: Monopolist fixes price of a commodity in such a way that it bears at least a part of consumer's surplus. However, he cannot absorb the whole of the surplus, as there may be opposition from the consumers.

3) Helpful to policy makers: The policy makers can impose tax, if the consumer's surplus for a commodity is very high. Similarly, subsidy can be granted, if the consumer's surplus is low.

Chapter 3: Questions for Review:

1.Fill up the blanks

a) When price of a commodity increases, its quantity demanded ————.
b) The three kinds of demand are———— , ———— and ————.
c) When price of a commodity is constant, an increase in income results in————
d) The demand for common salt is———— .
e) As the demand for tea increases, it results in increase in demand for sugar. Therefore, the demand for tea and sugar is called———— .
f) The concept of consumer's surplus will be useful to———— the price.
g) The consumer is at equilibrium when he purchases six mangoes at the rate of Rs.2 per unit and the total utility is 20. Then, he derives———— worth of consumer's surplus.

2. Give examples to the following:

a) Joint demand
b) Elastic demand
c) Substitutes
d) Inelastic demand
e) Derived demand
f) Composite demand
g) Complementary goods
h) Inferior goods
i) Giffen goods

3. Differentiate the following:

a) Price demand and Income demand
b) Direct demand and Derived demand
c) Extension of demand and Increase in demand
d) Substitution effect and income effect
e) Perfectly elastic demand and Perfectly inelastic demand
f) Inferior good and Giffen good
g) Arc elasticity and Point elasticity

4. Write short notes

a) Cross demand
b) Law of demand
c) Demand schedule
d) Consumer's surplus

e) Income elasticity of demand
f) Cross elasticity of demand
g) Engel's law on family expenditure
h) Elasticity by Total Expenditure Method

5. Answer the following:

a) Write briefly about the price elasticity of demand.
b) Describe the factors affecting demand.
c) Explain in detail how the law of demand is derived?
d) Write in short the exceptional demand curve.
e) Describe in detail the measurement of elasticity of demand.
f) Explain the different types of price elasticity of demand.
g) Explain the factors influencing price elasticity of demand.
h) What are the uses of elasticity of demand?
i) Explain the different types of income elasticity of demand.
j) What are the implications of Engel's Law on Family Expenditure?
k) How the study of family budget will be useful to policy makers?
l) Briefly write on the importance of consumer's surplus.

08.PRODUCTION – FACTORS OF PRODUCTION – LAND & CHARACTERISTICS; LABOUR – QUANTITY AND QUALITY OF LABOUR- - DIVISION OF LABOUR – EFFICIENCY OF LABOUR - MALTHUSIAN

In the theory of production, it is assumed that the entrepreneur aims at maximizing his profits. A profit-maximizing entrepreneur will seek to minimize his cost for producing a given output, or to put it in another way; he will maximize his output for a given level of outlay.

A. FACTORS OF PRODUCTION

Productive resources used to produce a given produce are called factors of production. These productive resources may be raw materials, services of various categories of labourers, or capital supplied by capitalists or entrepreneurship of an entrepreneur who assembles the other factors of production. These factors or resources are also called inputs. Thus, the factors of production are traditionally classified as land, labour, capital and organization. Production, in economics, is understood as the transformation of inputs (or) factors into outputs.

i) Land

Land, as ordinarily understood, refers to earth's surface. But in economics, the term land is used in a very wider sense. Marshall defined land as "the materials and forces which nature gives freely for man's aid in land and water, in air and light and heat". Land refers to those natural resources that are useful and scarce. In other words, land stands for all natural resources, which yield an income or have an exchange value.

a) Characteristics Features of Land

Land as a factor of production has the following characteristic features:

1) Land is fixed in quantity. It is said that land has no supply price. That is, price of land prevailing in the market cannot affect its supply; the price may be high or low, its supply remains the same.

2) Land has original and indestructible properties.

3) Land lacks mobility in the geographical sense.

4) Land differs in fertility.

ii) Labour

Labour would mean any work, manual or mental, which is done for a reward. Marshall defined labour as "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". A person who is working in his rose-garden as a hobby is not a labourer. But, if he works in rose garden, which is cultivated for sales, then he is a labourer.

a) Characteristics of Labour

1) Labour cannot be separated from the labourer. Hence, a labourer has to sell his labour in person.

2) Labour is highly perishable. A labourer cannot preserve his labour and deliver it in the future. A day without work in a worker's life is lost forever.

3) Labourer has a weak bargaining power. As labour is perishable, it has no reserve price. Hence, labourers have to accept low wages rather than being idle or unemployed.

4) The supply of labour changes slowly. Supply of labour cannot be curtailed immediately, even if wages fall. This is due to the fact that labourers must earn their subsistence, somehow. Conversely, increase in labour supply depends on new births and a long period of training.

5) Labour is not so mobile as capital due to differences in language, environment, habits, etc in different localities.

b) The amount of labour available in a country depends on two factors:

1) Quality of labour and 2) Quantity of labour

1.a) Qualitative Aspect of Labour

Qualitative aspects of labour refer to the efficiency of labour. Efficiency of labour means the amount of work, which a labourer can do with minimum cost and minimum time. Efficiency of labourer refers to the work turned out by a labourer per unit cost and per unit time. The following are some of the important factors, which influence efficiency of labour:

i) Race: Hereditary and racial characters influence the efficiency of labour. The efficiency of Japanese is higher than that of other human races.

ii) Climate: Cool climate is more conducive for hard work than the hot climate.

iii) Education: A higher educated or technically trained man has more efficiency than an uneducated or untrained person.

iv) Personal Qualities: If a person has a strong physique, mental alertness and intelligence, his efficiency will be greater.

v) Organization and equipment: A well-organized labour combined with sophisticated equipments would improve labour efficiency.

vi) Environment: Good lighting, ventilation and recreation facilities would improve labour efficiency.

vii) Working hours: Long working hours without sufficient intervals will reduce the efficiency of labour.

viii) Fair and prompt payment: High and prompt payment to a labourer would increase his efficiency.

ix) Labour organization: If labourers are properly organized in the form of strong trade union, their efficiency will go up.

x) Welfare activities: Welfare activities like provision of housing, transport and educational facilities, insurance benefits, social security scheme etc. would increase labour efficiency.

b) Division of Labour

When the making of an article is split up into several processes and each process is entrusted to a separate set of workers, it is called division of labour. Division of labour is associated with the labour efficiency and it helps in large-scale production. For instance, making the number of chairs will be more, if the process is split up into different parts like making seat, back-rest, and legs and then assembling the parts instead of making the chairs individually.

1) Advantages of Division of Labour

i) Increases productivity: As the individual worker concentrates on only one process of the work, he is able to do it quickly and thus, the productivity of labour increases.

ii) Increases dexterity and skill: The worker becomes an expert due to repetitive performance of the same work (process).

iii) Large scale production: Division of labour improves production not only in terms of quantity but also in quality since goods are made by specialists.

iv) Right man in the right place: Under division of labour, workers are so distributed among various works that each worker is put according to his ability.

2. Disadvantages of Division of Labour

i) Monotony: As the worker repeats the same work for a long time, it becomes monotonous to the worker and soon he lacks interest in his work.

ii) Risk of unemployment: If a worker (specialist) happens to lose his present job, he may not be able to get similar job elsewhere immediately.

c) Mobility of Labour

Since the labour has to be delivered by labourer himself, he has to move from one place to another in order to get employment. There are different kinds of mobility of labour.

i) Geographical mobility: It is the movement of labourer from one place to another. This is also called migration. If labourers move out of the country (India), it is called emigration. If they enter in to the country (India), it is called immigration.

ii) Vertical mobility: This implies a change in occupation from a lower to a higher order. (E.g.) An Assistant Professor is promoted as Associate Professor.

iii) Horizontal mobility: This means mobility from one occupation to another without any change in the occupational status. (E.g.) A stenographer shifting from one department/firm to another without any promotion or change in his/her occupational status.

2) Quantitative Aspect of Labour

Quantitative aspect of labour refers to the size of working population in a country. There are certain theories of population, which explain why and how population increases and they also indicate the optimum size of population. Theories of population can be classified into two categories on the basis of (i) food supply (Malthusian theory) and (ii) per capita output (optimum theory).

i.a) Malthusian Theory of Population: Thomas Robert Malthus (1766-1834), an English clergyman, propounded this theory in his famous book entitled “An

Essay on the Principles of Population"(1798). He deplored the strange contrast between over-care in breeding animals and carelessness in breeding men. The fundamental propositions of the Malthusian theory are given below:

1) The size of population in a country is dependent on the production of food grains. If food supply is large, the country can support a large population. If food supply is small, the country can support only a small population. In other words, population is necessarily limited by the means of subsistence (food).

2) Population tends to grow in geometric progression, viz., 1,2,4,8,16 and so on. In short, population gets doubled every 25 years.

3) Food production tends to grow in arithmetic progression, viz., 1,2,3,4,5 and so on. In short, there will be a constant addition to food supply every 25 years. He thought that there is no limit to fertility of human beings. He said, " Men multiply like mice in the barn-yard". But the power of land to produce food is limited.

4) Population increases at a faster rate than food production. Population always increases when the means of subsistence increases, unless prevented by some powerful and obvious checks.

5) There are two types of checks, which can keep population at a level with the means of subsistence. They are the preventive and positive checks. Preventive checks would reduce the size of population by bringing down the birth rate. They are applied by man himself voluntarily. They include (a) celibacy, (b) late marriage and (c) self control in married life. Positive checks reduce the growth of population by increasing the death rate. If people do not adopt preventive checks, nature will tend to be furious and impose certain checks to arrest the growth rate of population and they are known as positive checks. The positive checks are famines, epidemics, wars, earthquakes, floods, etc. Malthus recommended the use of preventive checks, if mankind was to escape from the nature's positive checks i.e., misery.

b) Criticism of Malthusian Theory

1) In later editions of his book, Malthus dropped the expressions of geometric and arithmetic progressions but still maintained that the increase in population would exceed the growth in food supply. However, in many Western countries, through the use of more capital and technology, food grain production

was increased tremendously. In fact, the rate of increase of food production has been much greater than the rate of population growth in these countries.

2) Malthus said that the population would increase, if the means of subsistence increase. However, when the standard of living of people increases in a country, the size of family gets reduced.

3) Malthus compared population only with food production. He should have compared the growth of population with total production of all commodities. For example, Great Britain is able to export industrial products to other countries in exchange for food grains.

4) Along with the expansion of population, it is not only the demand, but also the supply of food grains, which increases with the increase in the labour power of the country. It is argued that a child, on being born, has not only a mouth to be fed, but also has two hands to work.

5) According to professor Seligman, the problem of population is not merely one of size, but of efficient production and equitable distribution. If with the expansion of population, production also increases and the increased production and national income are equitably distributed, then increase in population may do no harm to the country.

c) Does the Malthusian Theory Apply to India?

The Malthusian Theory is applicable to India to some extent. The population growth rate was 2.14 per cent per annum (1981-91) and the food grain production growth rate was 2.52 per cent (1949-50 to 1995-96). However, birth rate and death rate are very high in India. This is a symptom of over population. The average expectation of life is still very low. Standard of living in India is also very low. The country is being suffered by natural calamities like flood, drought, epidemics, and so on. Finally, there is a very heavy toll of human life due to communal clashes in India. Thus, except food grain production, all other development indicators are not favourable for the development of the country.

ii) Optimum Theory of Population

The optimum theory attempts to define what would economically be the ideal size of population for a particular country. According to the optimum theory, there is a particular size of population, which along with the existing natural resources and a given state of technology yields the highest income per capita in a country.

a) Under population: If population of a country is below the optimum size, the country is said to be under-populated. In under populated country, the natural and capital resources are not fully exploited (utilized).

b) Over population: If the population is in excess of optimum size, the country is said to be over populated. Following are some of the problems to be faced by over-populated country.

1) Average productivity will decrease.
2) Per capita income will be very low.
3) Standard of living will fall.

If the quantity of labour is small relative to the natural resources, then even the actually available resources remain under-utilized. If the population increases and more labourers become available to be combined with the given stock of the natural resources and capital equipments, out put per capita or per capita income will rise. As population continues to increase, a point will finally be reached when capital and natural resources are fully utilized and, therefore, output per capita is the highest. The level of population at which per capita output (income) is the maximum is called the optimum population. If population still goes on increasing, that is, crosses the optimum point, out put per capita will start declining. The country would then become over-populated. In the figure 4.1, at OM level of population, the output per capita (MP) is the highest. If the population increases beyond OM, output per capita falls. Therefore, OM is the optimum population. If the population of the country is less than OM, it will be under-populated and if the population is more than OM, it will be a case of over population. The per capita out put curve may change (M'P' and M" P") as a result of an increase in resources or progress in technology and their effects on optimum population are shown in the figure 4.2. That is, the size of optimum population also increases. Dalton has given a formula with which we can judge the extent to which the actual population of a country deviates from the optimum

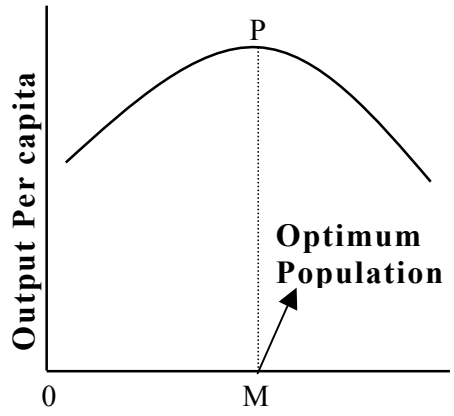


Fig.4.1 Optimum Population

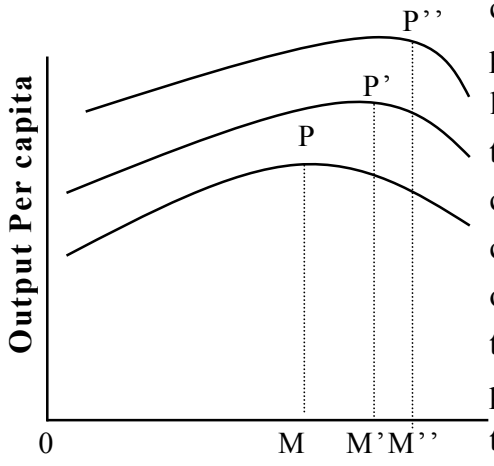


Fig.4.2 Shifts in Optimum Population

population. The extent of deviation is called mal-adjustment. The formula is M = A-O / O. Where M is maladjustment, A is actual population and O is optimum population. If M is negative, the country is under-populated. If M is zero, the country has optimum population and if M is positive, the country is over populated. For instance, if the actual population is 80 crores and the optimum population is 40 crores, then M=80-40 / 40 =1. This indicates that the country is over populated.

c) Criticism on Optimum Theory of Population

1) It is almost impossible to determine the optimum size of population, as it is very difficult to estimate the level of capital stock available in a country.

2) As the natural and capital resources continuously change, the size of optimum population is also subject to change.

d) Malthusian Theory and Optimum Theory of Population

1) Malthus focused his attention on food production, whereas the optimum theory takes into consideration of economic development in all its aspects.

2) Malthus seemed to be thinking of maximum number for a country, which, if exceeded, would bring misery. According to the optimum theory, there is no rigidly fixed maximum population.

3) According to Malthus, famine, war and disease were the indicators of over population. But the declining trend of per capita output would indicate the over population as per the optimum theory.

09.CAPITAL - CHARACTERISTICS - CAPITAL FORMATION; ORGANIZATION OF BUSINESS FIRMS – TYPES AND CHARACTERISTICS - CONCEPT OF SHARES &DEBENTURE.

Capital

Capital in a man-made material. Man produces capital equipments or goods to help him in the production of other goods and services. Capital is, therefore, defined as "the produced means of further production". The word 'capital' is often interchangeably used for concepts like money, wealth and land. Hence, the definition of capital is made clearer in the following section:

1.a) Capital and Money: Money can be used to buy consumer goods (rice) as well as capital goods (tractor). Money used to buy capital goods is also called capital, while money used to buy consumer goods is not capital.

b) Capital and Wealth: Wealth included both consumer goods and capital goods. Hence, all capital is wealth, but all wealth is not capital.

c) Capital and Land: Land is a free gift of nature but capital is man-made. Capital is perishable, i.e., it can be destroyed. But land is indestructible and permanent. Capital is mobile when compared with land. The quantity of capital can be changed depending upon its price. But the land area is fixed and limited in supply.

2) Characteristics of Capital

a) Capital is man-made (artificial)

b) It increases the productivity of resources

c) Supply of capital is elastic. It can be produced in large quantity when its requirement increases.

d) Capital is perishable as it can be destroyed.

e) Capital is highly mobile.

3) Types of Capital

a) Fixed capital and working capital: Fixed capital can be used many times in the production process. The level of fixed capital does not vary with the level

of production in a very short period, (E.g.) farm buildings, tractors, farm tools, etc. Working capital or variable capital or circulating capital can be used only once and they are not available for further use. The level of working capital increases (decreases) with the increase (decrease) in the level of production, (E.g.) raw cotton or lint used to spin yarn, fertilizer used to produce paddy, etc.

b) Sunk capital and floating capital: Sunk capital is meant only for a specific purpose, (E.g.) cane crusher, paddy thrasher etc. They cannot be used for any other purpose. Floating capital can be employed for any use, (E.g.) money.

c) Social capital and private capital: Private capital is owned by individuals and the income or benefit derived from these assets are available only to the individuals who own them (E.g.) tractors, private factories etc. Social capital is owned by the society as a whole and the benefits derived from these assets are shared among the members of the society, E.g. bridge, dam, government owned factories, etc.

4) **Capital Formation:** Capital formation or capital accumulation means the

increase in the stock of real capital in a country. In other words, capital formation involves making of more capital goods such as machines, tools, etc, which are all used for further production of goods. Also, capital formation creates employment at two stages. First, when the capital is produced, some workers have to be employed to make capital goods like machineries, tools, etc. Secondly, more labour has to be employed when capital has to be used for producing other goods.

a) Phases of capital formation: There are three phases in the process of capital formation or capital accumulation.

i) Creation of savings: In order to accumulate capital goods some current consumption has to be sacrificed. If people are willing to reduce their present consumption, they can devote more resources to build up capital goods for the use in future. The level of savings in a country depends upon the power to save and the will to save. The power to save depends upon the level of income of people. The higher the level of income, the greater will be the amount of saving. Apart from the power to save, the total amount of savings also depends upon the will to save. People save in order to provide financial security against their old age and unforeseen emergencies. People also save to start business or make

provision for their children's education, marriage, etc. Savings may be either voluntary or forced. Voluntary savings are those, which people do of their own free will. Voluntary savings depend upon the interest rate, power to save and will to save. On the other hand, taxes by the Government represent forced savings. Savings may be done not only by households but also by business enterprises and government. Government savings constitute the money collected as taxes and the profits of public undertakings. Foreign capital also forms another source of investment. Foreign capital can be of 1) direct private investment by foreigners, 2) loans or grants by foreign governments and 3) loans by international agencies like the World Bank, International Monetary Fund (IMF), etc.

ii) Mobilization of capital: The savings must be mobilized and transferred to businessmen or entrepreneurs who require them for making investment. In the capital market, funds are supplied by the individual investors (share holders), banks, investment trusts, insurance companies, government, etc.

iii) Investment of savings in real capital: Investment is done by entrepreneurs. The level of investment or capital accumulation is determined by the cost or supply price of capital (interest and other cost of acquiring capital), the expectations of profits and the size of market for goods to be produced.

iv) Enterprise or Organization

An entrepreneur is the co-coordinator of all other factors of production. He has to plan, organize and direct other factors of production, arrange for marketing the produce and take risks and uncertainties.

a) Functions of an Entrepreneur

1) Function of initiation: An entrepreneur makes proper assessment of markets (both input and output markets) and decides upon what, when and how with regard to production and marketing of a commodity.

2) Function of choice of location: He decides upon the particular place to locate the concern or unit where facilities regarding production and marketing are available.

3) Function of co-ordination: The entrepreneur has to co-ordinate, direct and supervise the functioning of other factors of production.

4) Function of innovation: The entrepreneur has to introduce new technologies, machineries and tools in order to increase the labour productivity and also to reduce the cost of production.

5) Function of bearing risk and uncertainty: Taking risks means accepting a probability that things will turn out badly. Under risk the occurrence of future events can be predicted fairly accurately by specifying the level of probability, E.g. prediction on monsoon rain, storm, etc. In the case of uncertainty, the future occurrences of an event cannot be predicted accurately. E.g. price fluctuation. In both cases, the entrepreneur may likely to incur losses. So, he has to anticipate risk and uncertainties and provide necessary alternatives to face them.

b) Forms of Business Organization

Business organization is a trading concern or producing unit. A business organization may be owned either by a single person or by many people. The primary aim of a business organization may be either earning profit or promotion of general welfare of the people. On the basis of the above two criteria, business organizations can be classified into five categories as follows:

a) Individual Entrepreneur (Individual Proprietary System)

A business organization owned by a single person is known as the individual proprietary system. In this case, personal attention on all consumers by the proprietor is possible. He himself takes the entire risks and hence, wastage of all kinds is eliminated. However, large-scale business is not possible, as the capital at the command of the sole proprietor is generally meagre. In the event of failure, not only the assets of business but also the other private assets and properties of the proprietor can be claimed against by creditors. E.g. Retail shops.

b) Partnership

In this case, two or more persons join together; contribute share capital and share profit or loss in agreed proportions. It establishes wider personal contacts and hence, large-scale production is possible. The existence of unlimited liability curbs the speculative or risky tendencies of the partners and prevents the starting of risky enterprises. However, unlimited liability makes the business unenterprising, because all partners are liable for the firm's debts irrespective of the amount of capital each has invested. Further, in actual practice, partners behave in a selfish manner, i.e., doing the minimum and trying to get the maximum out of the business. Any action taken by one partner is legally binding

on all other partners and this makes the business more complex. E.g. Small transport operators, textiles business firms, etc.

c) Joint - Stock Company

The joint-stock company is owned by a large number of share holders who contribute to the share capital. They are entitled to get the profits (dividends) of the company. The share holders elect a board of directors among themselves. The board appoints one of its members as the managing director. The board directs and supervises the affairs of the company. The joint stock company is based on the principle of limited liability. That is, each share holder is liable for the debts of the company only upto the value of the share he has bought from the company. His other properties cannot be attached by the creditors of the company. Hence, the word 'Limited' (Ltd) is written after the name of any joint stock company. (E.g.) Karur Vysya Bank Ltd. Shares are transferable from one person to another through stock exchanges. In general, there are two types of shares: 1) ordinary share and 2) preference share. There is no special privilege attached to the ordinary share and the ordinary share holder gets a dividend out of the net profits of the company. The preference shares are guaranteed by a certain fixed dividend, which is paid out of the net profits before dividends are paid on any other kind of shares. Joint stock companies are of two kinds, viz., private and public. A private company has to satisfy the following conditions: i) neither share holders nor debenture holders exceed fifty in number; ii) Shares are not offered for sales by public issue; iii) directors can disapprove any proposed transfer of shares; and iv) no body outside the company is in a position to control its policies.

Besides the shares, the companies usually raise funds by floating 'debentures'. Debentures or security bonds are not shares of the company but they are promissory notes on the basis of which the company raises additional funds in the form of loans. The debenture holders are the company's creditors and they must be paid the agreed rate of interest whether the company makes profit or not.

1) Advantages: i)As the company can raise a large sum of capital, large-scale production is possible.

ii) As the company is based on the principle of limited liability, the share holder's risk is reduced.

iii) It promotes research and development facilities in order to improve the quality of goods and to minimize the costs.

iv) Shares can easily be transferred through stock exchanges. A share holder can withdraw whenever be likes without disturbing the company.

2) Disadvantages: i) The directors are practically self appointed and the share holders do not have much influence in the decisions taken by the company.

ii) Share capital is owned by the share holders but risk is taken by the board of directors. Hence, some directors start risky enterprises and this results in inevitable losses to the company.

(iii) The liability being limited and the shares being transferable, the share holders take no interest in development of the company.

d) Co-operative Enterprises

Co-operation is a form of economic organization where people voluntarily work together for a business purpose on the basis of mutual benefit. It is a voluntary organization designed to promote economic interests of its members. Members have equal rights and responsibilities. The co-operative society has the motto of 'each for all and all for each'. Co-operation is supposed to teach virtues like self-sacrifice, discipline, honesty and fairness in dealings, mutual help and self-reliance. However, co-operative enterprise suffers from the following defects: i) There is a lack of incentive and initiative. ii) Business leadership is lacking in co-operatives. iii) In general, members do not have honesty. E.g. Primary Agricultural Co-operative Credit Society.

e) State Enterprises

A commercial undertaking owned by the government is public undertaking or state enterprise. Public undertakings have been started for the following reasons:

i) It brings about rapid economic development.

ii) It ensures that the benefits of development are shared by all the people.

iii) The state can raise huge capital, which could not be raised by the private sector.

iv) As a monopoly enterprise, it enjoys several advantages.

Disadvantages: (i) State enterprise when compared with private enterprise is not run and managed efficiently.

ii) Red-tapism and lack of initiative are prevalent.

iii) Inefficient management of the administrators results in loss of under utilization of resources. E.g. Tamil Nadu State Transport Corporation.

Chapter 4: Questions for Review:
Fill up the blanks:

1. According to Malthus, the food production increases in ——— ratio and population increases in ——— ratio.

2. Land is a nature's free gift, while capital is ——— .

3.Labour has a weak bargaining power, as it is highly——— .

4. Labour has relatively lesser mobility than ——— .

5. Late marriage is an example of ——— check.

6. Tamil Nadu State Transport Corporation is a ———.

7. The control of population due to famine is a ———check.

8. If the value of M is greater than zero, then the country is said to be ——— .

9. In partnership firms, ——— liability is followed, while in joint stock company, ——— liability is followed.

10. The debenture holders are the company's ——— and they must be paid the agreed rate of interest.

II Differentiate the following:

1. Positive and preventive checks.
2. Land and capital.
3. Labour and capital.
4. Capital and money.
5. Capital and wealth.
6. Social capital and private capital.
7. Will to save and power to save.
8. Private company and public company.
9. Fixed input and variable input.
10. Share and debenture.

III Answer the following:

1. What are the factors of production? Define them.
2. What are the characteristics of land?
3. Explain division of labour- its merits and demerits.
4. What are the characteristics of labour?
5. What are the factors that influence the quality of labour?
6. Describe mobility of labour.
7. Describe the Malthusian theory on population
8. Explain the Optimum theory on population
9. Explain the impact of technological progress on the size of optimum population.
10. Explain the criticism on population theories.
11. What is capital formation? What are the different ways of capital formation?
12. Explain the functions of an entrepreneur.
13. Explain the different forms of business organizations. Describe in detail the merits and demerits of different forms of business organizations.

10.SUPPLY-LAW OF DIMINISHING MARGINAL RETURN – ITS APPLICATION TO AGRICULTURE - COST CONCEPTS – SHORT RUN & LONG RUN COST CURVES - OPTIMUM LEVEL OF PRODUCTION.

Supply refers to the quantity or a commodity actually offered for sale at a particular price at a particular time. Supply schedule is the various quantities of a commodity that would be offered for sale at different prices.

Table 5.1 Supply schedule of Rice

Price of Rice (Rs/Kg)	Quantity of Rice Supplied (Tonnes)
6.50	100
7.00	125
7.50	150
8.00	175
8.50	200
9.00	250

The supply schedule for the whole market is called market supply. It is arrived at by adding the quantities supplied by all the sellers at varying prices.

A. LAW OF SUPPLY

Law of supply is stated as follows: Other thing remaining the same, as the price of a commodity raises its supply is extended, and as the price falls its supply is contracted. The quantity offered for sale varies directly with price i.e., higher the price the larger is the supply, and vice versa. Thus, there is a positive or direct relationship between price and quantity of a commodity supplied. The supply curve, as shown in the figure 5.1, slopes upward from left to right.

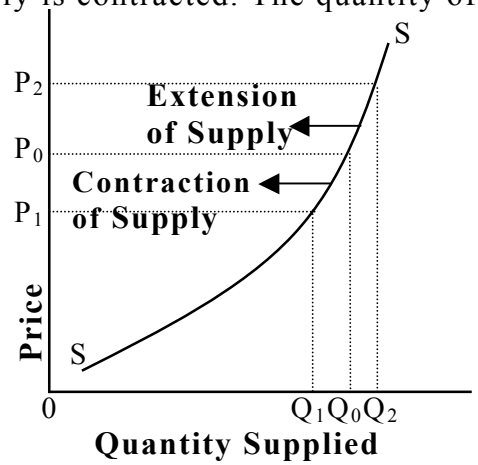


Fig.5.1 Extension and Contraction of Supply

i) Extension and Contraction of Supply: Other factors remaining constant, as the price increases, the quantity supplied increases. This is known as extension of supply, i.e., when prices increases from P_0 to P_2, the quantity supplied also increases from Q_0 and Q_2. As the price decreases, the quantity supplied also decreases. This is known as contraction of supply. In the figure, the quantity

supplied declines from Q_0 and Q_1, if price decreases from P_0 to P_1. The extension and contraction of supply take place in the same supply curve.

ii) Increase and Decrease in Supply

When there is a change in supply due to changes in any of the factors other than price, the supply curve is shifted upward or downward. (E.g.) when the technology improves, for the same price an increased quantity will be supplied. This is called increase-in-supply. If supply increases from Q_0 to Q_2, as shown in figure 5.2, then, it is increase in supply. Then, the supply curve, S_0S_0, shifts downward or away from origin, i.e., S_2S_2. Similarly, due to flood, fire etc. for the same price, the quantity supplied will be less resulting in decrease-in-supply. The quantity supplied decreases from Q_0 to Q_1 and the supply curve S_1S_1moves upward.

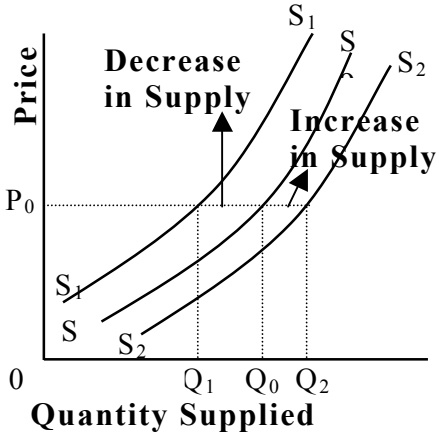


Fig. 5.2 Increase and Decrease in Supply

iii) Determinants of Supply

a) The cost of factors of production: When the costs of inputs increase, the cost of production will raise and the producers may have to fix higher price to cover the increased costs.

A fall in input price will reduce the costs and permit supply at a lower price.

b) State of Technology: Improvement in technology reduces the cost of production and increases the supply.

c) Factors outside the economic sphere like flood, drought etc. will decrease the supply.

d) Taxation and subsidy: Higher taxation will increase the price and as a result supply will come down. E.g. If additional tax is imposed on television, its supply will come down. Granting subsidies will increase supply. For instance, if more subsides are given for bio gas plants, fertilizer etc. more will be their supplies.

e) Price of the commodity: When the price of one commodity increases, its supply also increases.

f) Price of related goods: If the market price for soybean increases, all other conditions remaining the same, then the farmer would allot more land meant for other crops to soybean, and therefore, the supply of soybean would be increased.

11.Graphical derivation of supply from cost curve - - supply schedule – supply curve – Law of supply – elasticity of supply.

ELASTICITY OF SUPPLY

The elasticity of supply measures the degree of responsiveness of quantities supplied to the changes in the price of a commodity. Elasticity of supply is the ratio between percentage change in quantity supplied and percentage change in price.

$$E_S = \frac{\textbf{Percentage Change in Quantity Supplied}}{\textbf{Percentage Change in Price}}$$

$$= \frac{\frac{\Delta Qs}{Qs} \times 100}{\frac{\Delta P}{P} \times 100} = \frac{\Delta Qs}{\Delta P} \times \frac{P}{Qs}$$

Suppose the price of a mango rises from Re.1 to Rs.1.50 and as a result, the supply rises from 10 to 20 mangoes, then the elasticity of supply is estimated as follows: It could be inferred from the result that there is a two per cent increase in the quantity of mango supplied, if its price increases by one per cent.

$$Es = \frac{\frac{20-10}{10} \times 100}{\frac{150-100}{100} \times 100} = \frac{100}{50} = 2$$

i) Different Types of Elasticity of Supply

a) Perfectly inelastic supply: Here, price has no influence on quantity

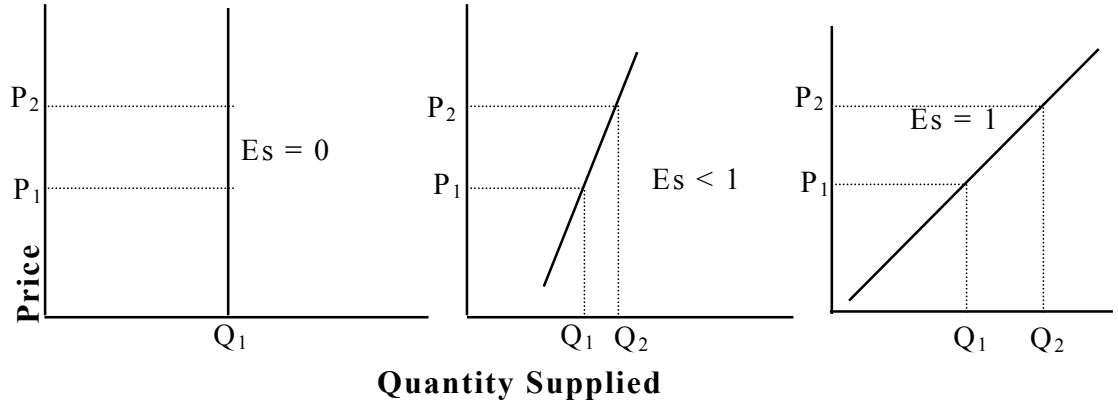


Fig.5.3 (a) Perfectly Inelastic. Fig.5.3 (b) Inelastic. Fig.5.3(c) Unitary Elastic

supplied. The supply is fixed at a given level irrespective of changes in the price Fig.5.3 (a). The value of elasticity of supply is zero.

b) Inelastic: If the elasticity is less than one, the good is said to have an inelastic supply. That is, supply of the good is relatively less responsive to changes in price (Fig.5.3 (b)).

c) Unit Elasticity: A supply elasticity equal to one refers to the situation where the percentage change in quantity supplied and percentage change in price are equal (Fig. 5.3(c)).

d) Elastic: If the elasticity of supply is greater than one, then the good has an elastic supply. Here the quantity supplied is relatively more responsive to changes in price. (Fig.5.3 (d)).

e) Perfectly Elastic: This is also known as infinitely elastic supply, as its value is infinite (∝). In this situation, any amount of a commodity will be supplied at

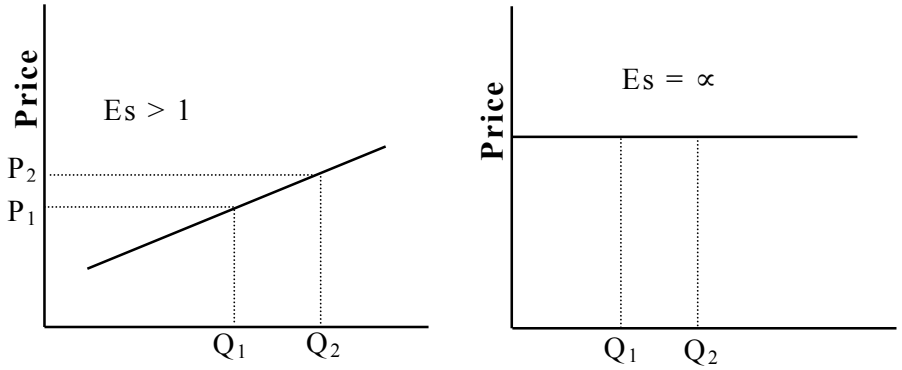


Fig.5.3 (d) Elastic *Fig.5.3(e)Perfectly Elastic*

the prevailing market price, but nothing will be supplied at a lower price. (Fig.5.3 (e)).

ii) Determinants of Elasticity of Supply

a) Time: A longer time period allows producers to make adjustment in quantity in response to price changes. Hence, a longer period gives a higher elasticity.

b) Cost and Feasibility of storage: Goods that are costly to store will have a low elasticity of supply. Goods that will soon decay will be supplied within a short period (after the harvest) in the market irrespective of price levels; their elasticity of supply will be very low.

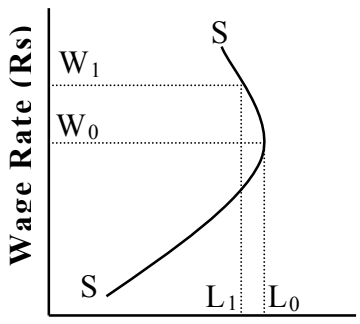


Fig.5.4 Backward Tending Labour Supply Curve

iii) Exceptional Supply Curve or Backward Tending Labour Supply Curve: As per the law of supply, when price increases, the supply also increases and vice versa. But for certain commodities as price increases the supply decreases. For example, after a certain level of wage rate, the increase in wage rate will not increase labour supply as people prefer leisure over work and those who are already working at lower wage rate may stop going for work.

INTERACTION OF DEMAND AND SUPPLY

The analysis on interaction of demand and supply is useful to determine the equilibrium market price and quantity. When the price is rs.9 per kg of rice, the difference between market demand and market supply is 900 tonnes and this unsold stock would put a downward pressure on price and hence the sellers will reduce it to rs.8.50per kg. Now, the demand would rise to 300 tonnes and supply would reduce to 800 tonnes. Still there is an excess supply over demand and this would again reduce the price. The process continues till the price settles at Rs.7.50 per kg, which is the equilibrium price. At equilibrium price, the forces of demand and supply are balanced (at 500 tonnes per day) i.e., the market demand is equal to market supply and buyers and sellers are satisfied.

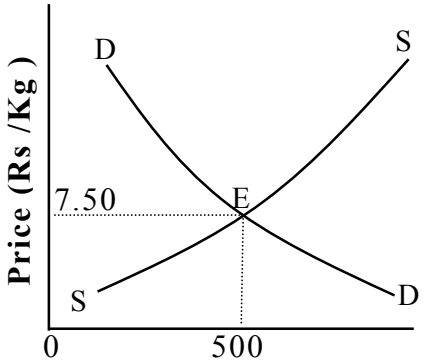


Fig 5.4 Market Equilibrium

Table 5.2 Market Demand and Supply Schedules for Rice

Price (Rs./kg)	Market demand (Tonnes/day)	Market supply(Tonnes/day)
9.00	100	1000
8.50	300	800
8.00	400	600
7.50	500	500
7.00	700	400
6.50	1000	200

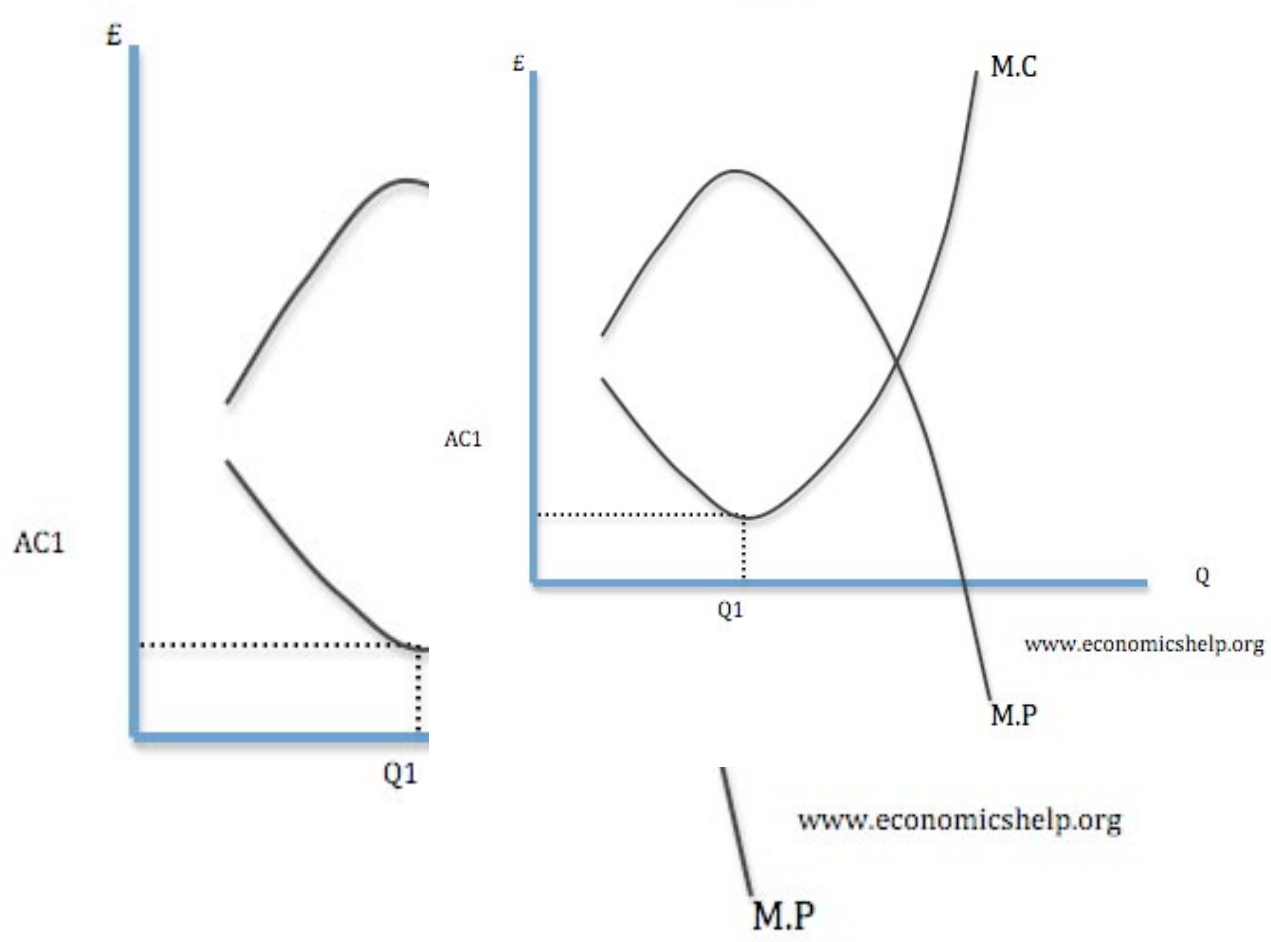
Law of Diminishing Marginal Returns

· Diminishing Returns occurs in the short run when one factor is fixed (e.g. Capital)

· If the variable factor of production (e.g. labour) is increased, there will come a point where extra workers become less productive than previous workers. Therefore, these extra workers will have a lower marginal product.

Why does diminishing returns occur?

This is because, if capital is fixed, extra workers will eventually get in each other's way as they attempt to increase production. E.g. think about the effectiveness of



Chapter 5: Questions for Review:

i) Please match column A with column B:

Column A	**Column B**
1. Price increase	a) Perfectly inelastic supply
1. Change in production techniques	b) Perfectly elastic supply
2. When supply elasticity is zero	c) Exceptional supply curve
3. When supply elasticity is infinite	d) Increase in quantity supplied
5. Labour supply curve	e) Shift in supply

Answer the following:

1. Explain the law of supply with an example and state the factors determining supply.

2. Define elasticity of supply. Explain the different kinds of elasticity of supply with diagrams. What are the determinants of elasticity of supply?
3. What is elasticity? Why supply may not be equal to production? Write about the practical uses of elasticity of supply.
4. Explain how the equilibrium price and quantity are determined?

12.MARKET, MARKET STRUCTURE AND PRICE DETERMINATION

Meaning of Market

In the words of Cournot a French economist, "**Economists understand by the term market not any particular market place in which things are bought and sold but the whole of any region in which buyers and sellers are in such free intercourse with one another that the price of the same goods tends to equality easily and quickly.**"

Thus, the essentials of a market are: (a) a commodity which is dealt with; (b) the existence of buyers and sellers; (c) a place, be it a certain region, a country or the entire world; and (d) such intercourse between buyers and sellers that only one price should prevail for the same commodity at the same time.

Market structure

The term structure refers to something that has organization and dimension – shape, size and design; and which is evolved for the purpose of performing a function.

Perfect Markets:

On the basis of competition, markets may be classified into the following categories A perfect market is one in which the following conditions hold good:

a. There is a large number of buyers and sellers:
b. All the buyers and sellers in the market have perfect knowledge of demand, supply and prices:
c. Prices at any one time are uniform over a geographical area, plus or minus the cost of getting supplies from surplus to deficit areas:
d. The prices are uniform at any one place
e. The pries of different forms of a product are uniform, plus or minus the cost of converting the product from one form to another.

Imperfect Markets: The markets in which the conditions of perfect competition are lacking are characterized as imperfect markets. The are the different types of imperfect markets.

a. *Monopoly Market:* Monopoly is a market situation in which there is only one seller of a commodity. He exercises sole control over the quantity or price of

the commodity. In this market, the price of a commodity is generally higher than in other markets. Indian farmers operate in monopoly market when purchasing electricity for irrigation. When there is only on buyer of a product the market is termed as a monopsony market.

b. *Duopoly Market:* A duopoly market is one which has only two sellers of a commodity. They may mutually agree to charge a common price which is higher than the hypothetical price in a common market. The market situation in which there are only two buyers of a commodity is known as the duopsony market.

c. *Oligopoly Market:* A market in which there are more than two but still a few sellers of a commodity is termed as an oligopoly market. A market having a few (more than two) buyers is known as oligopoly market.

d. *Monopolistic Competition:* When a large number of sellers deal in heterogeneous and differentiated form of a commodity, the situation is called monopolistic competition. The different is made conspicuous by different trade marks on the product. Different prices prevail for the same basic product. Examples of monopolistic competition faced by farmers may be drawn from the input markets. For example, they have to chose between various makes of insecticides, pumpsets, fertilizers and equipments.

Price Determination Under Perfect Competition

Price is determined b the interaction of the forces of demand and supply. Equilibrium price is established at the level at which demand curve intersects the supply curve, or at which the quantity demanded is equal to the quantity supplied. At any price higher than the equilibrium price, the quantity supplied will exceed the quantity demanded; competition between sellers will force the price down to the equilibrium level. Similarly, at any price lower than the equilibrium one, the quantity demanded will be greater buyers will push the price up to the equilibrium level.

13.Factor pricing ; rent - Ricardian rent-economic rent – Quasi – rent; Wage– marginal productivity theory of wage; Interest - Liquidity preference theory; Profit –Risk-bearing theory of profit.

DISTRIBUTION

The theory of distribution or the theory of factor pricing deals with the determination of factor prices, such as wages, rents, interest and profit.

i) Marginal Productivity Theory of Distribution

According to this theory, the price of a factor of production depends upon its marginal productivity. A factor of production should get its reward according to the contribution it makes to the total output, i.e., its marginal productivity. Change in the revenue resulting from the employment of an extra unit of the factor is called Marginal Revenue Product (MRP) or Value of Marginal Product (VMP) and the change in total cost brought about by using an extra unit of the factor is called Marginal Factor Cost (MFC).

$$\text{VMP} = \text{MRP} = \frac{\text{Change in Total Revenue}}{\text{Change in Input}} = \frac{\Delta \text{ TR}}{\Delta \text{ X}}$$

$$\text{MFC} = \frac{\text{Change in Total Cost}}{\text{Change in Input}} = \frac{\Delta \text{ TC}}{\Delta \text{ X}}$$

In factor market, a firm's equilibrium occurs when MRP=MFC. In product market, a firm's equilibrium will be at MR = MC (MR is the Marginal Revenue and MC is the Marginal Cost).

The **marginal productivity theory** is defective because it indicates how many units of a factor (input) a firm will use at a given price in order to maximize its profit. For example, it tells us how many workers a firm will employ at a given wage rate to maximize its profit. But it does not tell us how the wage itself is determined. Further marginal productivity theory deals only with demand side of the factor pricing and it completely ignores the supply side of the factor pricing.

The **modern theory of distribution** (also known as the supply and demand theory of distribution), on the contrary, provides a more satisfactory explanation of factor pricing than the marginal productivity theory. According to this theory,

the price of the factor is determined by the interaction of the forces of demand and supply of the concerned factor.

ii) Rent

David Ricardo defined rent as "that portion of the produce of the earth which is paid to the land lord for the use of original and indestructible powers of the soil". Thus, rent is only a payment for the use of land. The following are the theories of rent: (i) Ricardian Theory of Rent, and (ii) Modern Theory of Rent.

a) Ricardian Theory of Rent

According to Ricardo, rent is the payment for the use of only land and is different from contractual rent which includes the returns on capital investment made by the landlord in the form of wells, irrigation structures etc. besides the payment for the use of land. Ricardian rent is also known as pure rent. The true economic rent is only a payment for the use of land. It excludes interest on landlord's investment. The Ricardian theory of rent is based on the following assumptions:

i) Land differs in fertility.

ii) The most fertile lands are limited in supply.

Let us assume that there are four types of land, classified based on its fertility, viz., A, B, C and D. A is the most fertile land and D is the least fertile land. People from the neighbouring place come in batches to settle on the land. The first batch of people will naturally cultivate the most fertile land, i.e., A grade land. Let us assume that one dose of labour and capital on 'A' quality land yields 20 quintals of paddy per acre. Then, the second batch of settlers has two alternatives - either to cultivate B quality land, which is free, or to take 'A' quality land on rent from the first batch. It is obvious that the rent payable on the 'A' quality land would be equal to the differences in the fertilities of A and B quality lands. Let us assume that one dose of labour and capital applied to 'B' quality land yields 18 quintals of paddy. Now the rent is equal to 2 quintals, i.e., 20-18 quintals of paddy, because this represents the difference between the fertilities of the two types of lands.

Table 6.1 Returns from Different Qualities of Land

Doses of Labour and Capital	**Returns (in quintals of Paddy per acre)**			
	A	**B**	**C**	**D**
1st	20	18	16	14

2nd	18	16	14	12
3rd	16	14	12	10
4th	14	12	10	8

Even if the second batch decides not to take up A quality land on rent, rent would still arise on 'A' quality land. Since the market price of paddy will be equal to the cost of production at 'B' quality land, 'A' quality land will have a surplus over 'B' quality land. The surplus return for A quality land arises due to its superior fertility in comparison with the 'B' quality land. Suppose, if 10 doses of labour and capital are available, rent from various qualities of land will be: Rent of A grade land = Total quantity of produce - Total cost

= 68 – 56 = 12 quintals

Rent of B grade = 48 - 42 = 6 quintals

Rent of C grade = 30 - 28 = 2 quintals

Rent of D grade = 14 - 14 = 0 (no rent)

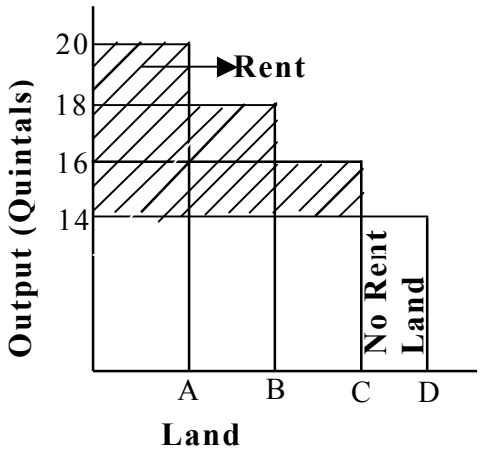


Fig.6.1 (a) Ricardian Rent

In this example, D quality land is the marginal or no-rent land, because it earns no rent. Thus, rent arises on account of natural differential advantages of a piece of land over the marginal land. The natural differential advantages may be due to either superior quality of land or its better situation. In A quality land, OP is the price andOJ is the cost and JPEK represents the rent. The D grade land will be cultivated only when the price of the output and average cost of production are equal, i.e., no rent is obtained in D quality land. Thus, rent does not form a part of the cost of production. Rent is the earnings over and above the cost of production of the marginal land, but the marginal land has no rent. Therefore, rent is not price determining; it is price determined. To quote Ricardo, **"Corn is not high because rent is paid, but rent is paid because corn is high"**

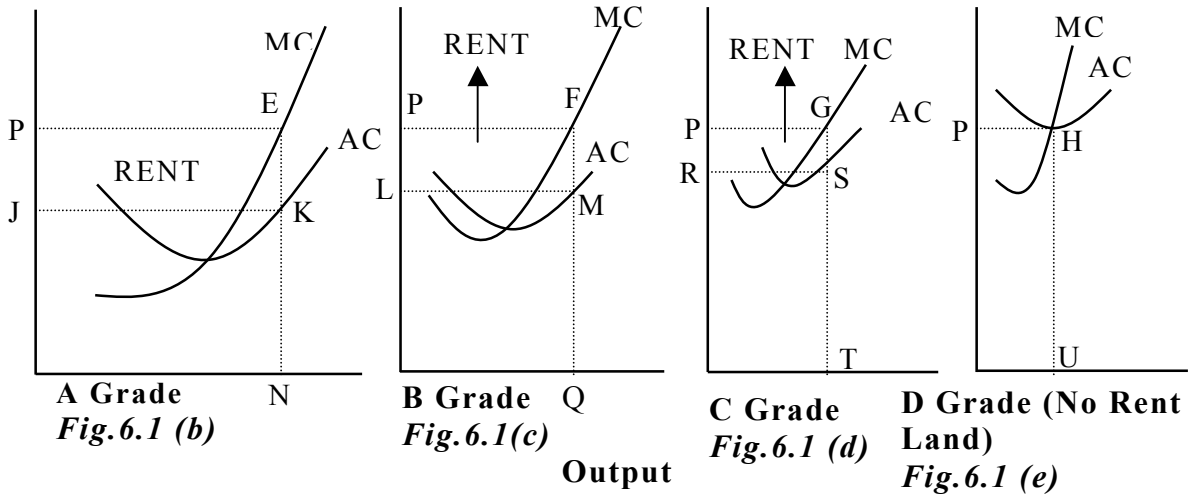


Fig.6.1 (b) *Fig.6.1(c)* *Fig.6.1 (d)*

C Grade **D Grade (No Rent Land)**

Fig.6.1 (e)

i) Criticisms of the Ricardian Theory of Rent

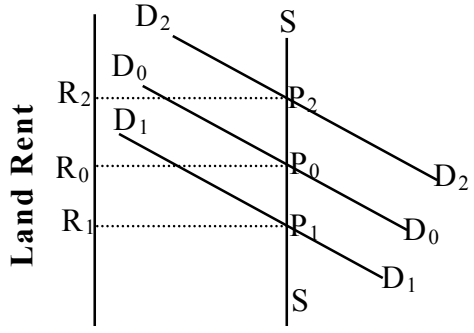
1) According to Ricardo, rent is due to the original and indestructible powers of the soil. But the fertility of the soil can be increased through manuring. Likewise, fertility of the soil can be destroyed through continuous cultivation without manuring.

(2) In a thickly populated country, even the most inferior land yields rent and there is no marginal land in those countries. Thus, rent is not due to fertility, but to the scarcity of land.

b) Modern Theory of Rent

According to the modern theory of rent, the rent of a factor, from the point of view of any industry, is the difference between its actual earnings and transfer earnings (Rent = Present Earnings minus Transfer Earnings). Transfer earning refers to the amount of money, which a factor of production could earn in its next best-paid use (opportunity cost). Suppose, an hectare of land under cotton cultivation yields an income of Rs.15,000. If the same area is put into its next best use, namely, paddy cultivation, it earns an income of Rs.12,000, then it is its transfer earning(opportunity cost). Then, the rent of that hectare of land is Rs.3,000 (Rs.15,000-12,000). According to the modern theory, rent, in the sense of surplus, arises when the supply of land is less than perfectly elastic. From the point of view of elasticity of supply, there are three possibilities.

1. The supply of land may be perfectly inelastic, i.e., it is represented by a vertical line (Fig.6.2). The demand for land is a derived demand of the products of land. If the population of the country increases, the demand for food will increases, resulting in increased demand for land and a rise in its rent, and vice versa. It is known that the demand for a factor depends upon its marginal productivity, which is subject to the Law of diminishing marginal returns. Therefore, the demand curve of land slopes downward from left to right as shown in the figure 6.2. The supply of land, on the other hand, is fixed so far as the community is concerned, although individuals can increase their land area by acquiring more land from others or reduce it by parting with it. Therefore, the supply of land is perfectly inelastic. The interaction of demand and supply of land determines its rent. If demand for land increases from D_0 to D_2, Then, the rent also increases from R_0 to R_2. Similarly, if the demand for land decreases from D_0 to D_1, then, the rent decreases to R_1. Here, the transfer earnings will be zero, because the land cannot be transferred to any other use; the supply of total land area is also



O Hectares of Land

Fig. 6.2 Perfectly Inelastic Supply of Land

fixed and it has only one use. In this case, the entire income from land is surplus and hence, it is called rent.

2. The supply of land may be perfectly elastic to an individual farmer. In that case, it will be represented by a horizontal straight line (Fig.6.3). If any factor has a perfectly elastic supply, it will earn no surplus or reward. Hence, in this

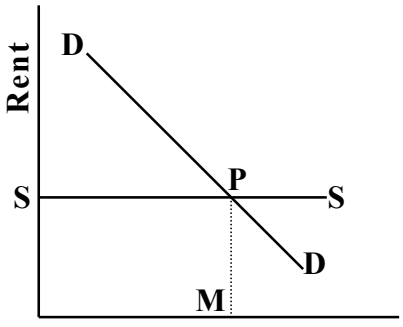


Fig 6.3 Perfectly Elastic Supply of Land

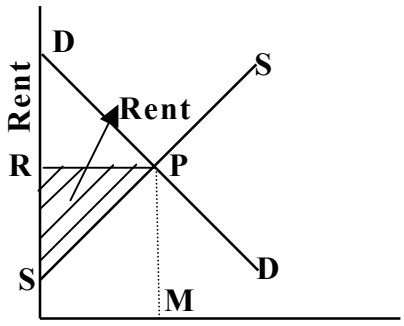


Fig 6.4 Relatively Elastic Supply of Land

case, the actual earnings and the transfer earnings would be the same and there would be no surplus (rent). However, in real life, no factor has a perfectly elastic supply.

3. The supply of land may fall between two extremes, i.e., it may be elastic, but not perfectly elastic (Fig.6.4). In this case, a part of income from land is rent (in the sense of surplus over transfer earnings), and remaining part is not rent. The total earnings are ORPM and transfer earnings are OSPM. Then, SRP (the shaded area in the figure) is the surplus or rent.

b) Quasi Rent: Quasi rent is the earning of capital equipments such as machineries, buildings etc., which are inelastic in supply, in short run. According to Marshall, the quasi rent is only a temporary surplus, which is enjoyed by the owner of the capital equipments in the short run. This is due to the increase in its demand and it will disappear in the long run, if supply of the capital equipment is increased in response to the increased demand. The quasi rent is also defined as the excess of total revenue earned in the short run over and above the total variable costs. Thus, Quasi Rent = Total Revenue Earned minus Total Variable Costs.

Ricardian rent is a payment made for the use of land whereas quasi-rent is a payment for man made factors such as buildings, machineries, etc. Ricardian rent

exists both in short run and long run because supply of land is fixed in long run. But quasi rent is only a temporary earning due to increased demand.

iii) Wage

Wage is defined as the price paid for the services rendered by the labourer in the production process. If wages are paid according to the amount or quantum of work done, it is called piece-wage. E.g. wage for weeding in one acre of paddy field. If wages are paid to a labourer who works for a fixed period of time, it is known as time wage. E.g. wage for weeding per labourer per day.

When payment is made in terms of cash or money, it is known as money wage or nominal wage. Real wage refers to the income of a worker in terms of real benefit. It refers to the amount of necessaries, comforts, and luxuries that a labourer can obtain in return for his services. Real wage refers to the purchasing power of money earned by the labourer or wages paid in terms of quantity of commodities. The standard of living of a labourer depends on his real wage. The following are the theories of wages: (i) Subsistence theory of wages, (ii) Wages Fund Theory, (iii) Marginal Productivity Theory of Wages, and (iv) Demand-Supply Theory of Wages.

a) Wage-Fund Theory

The wage-fund theory was propounded by J.S.Mill. According to this theory, wages depend upon the proportion between population and capital. At any time, only a fixed amount of capital is allotted for payment of wages to labour. This is called wage-fund. It is influenced by the demand for labour. Further, at any time, there will be fixed number of workers who are willing to work, which represents the supply of labour. Thus, wages at any time are determined by the ratio between the amount of wage fund and the total supply of labour. In other words, the wage rate is calculated by dividing the wage fund by the number of workers.

$$\textbf{Rate of Wages} = \frac{\textbf{Wage Fund}}{\textbf{Number of Workers}}$$

The wage fund remaining the same, if there is an increase in the supply of labour, the wage will fall. Since the wage fund is fixed, there can be a rise in wages in one industry only at the expense of wages in other industries. Increase in the general level of wages is possible only: i) with an increase in the wage fund or ii) a reduction of labour force.

Criticism: The wage-fund theory is criticised on several aspects:

1) In reality, there is no fixed wage fund in any country and it is possible to increase the wages.
2) It fails to explain how labourers are able to increase their wages by trade union action, i.e., labour strike.
3) It ignores the demand side of labour. The demand for labour is determined by the demand for goods and services and not by the wage fund.
4) The theory does not explain the inequality of wages in different occupations.

b) Marginal Productivity Theory of Wages

According to the Marginal Productivity Theory, wages will be equal to the value of marginal productivity of labour. The marginal productivity theory is based on the following assumptions:

i) It assumes the existence of perfect competition.
ii) All labourers are homogenous in character.
iii) The theory is based on the law of diminishing marginal returns.
iv) It assumes that different factors can substitute each other.

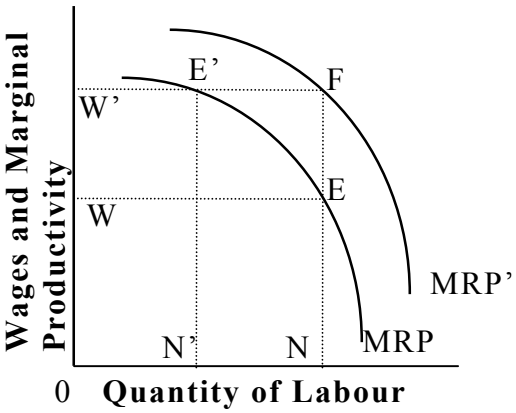


Fig. 6.5 Determination of Wages

According to this theory, wage is equal to the value of marginal product. If the marginal product is more than the wages, then it will be profitable to engage more number of labourers. This is because the total revenue earned due to additional employment is more than the total cost of engaging them. But due to the operation of law of diminishing marginal return, the marginal value product will decline, if labour is engaged beyond a limit. When wages are higher than the marginal value product, then it will be unprofitable to engage more labourers and hence, their engagement will be reduced until wages are equal to the marginal value product.

In the figure 6.5, If ON is the available supply of labour, OW is the equilibrium wage rate. Now, if the wage rate is increased to OW' by a collective bargaining of trade unions, NN' number of workers become unemployed. Thus, trade unions cannot enhance wages without creating unemployment. But, if the rise in wage brings about a sufficient increase in efficiency and productivity so that the marginal productivity curve shifts upward (MRP'), then unemployment will not be created.

Criticism: 1) Labourers may not be uniform in quality.

1) This theory ignores supply side of the labourers.

2) The individual entrepreneur may operate without the knowledge on law of diminishing marginal return

c) Demand-Supply Theory of Wages

According to this theory, wages are determined by the forces of demand and supply of labour. When there is a perfect competition in labour market, wage rate is determined by the equilibrium between the demand for and supply of

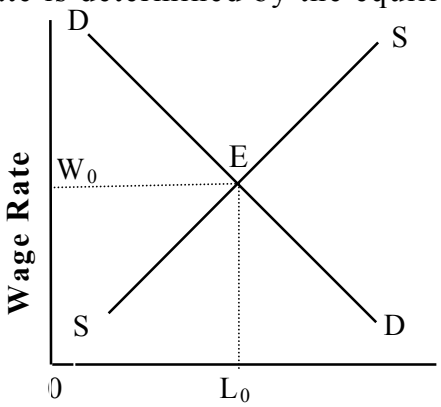


Fig.6.6 (a) Wage Determination in Industry

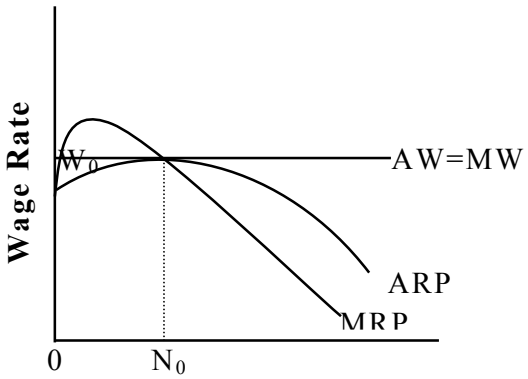


Fig.6.6 (b) Wage Determination in Firm

labour. The wage determination in the industry is depicted in the fig.6.6 (a). The producer will employ more units of labour at lower wage rates. Demand for labour is governed by the marginal revenue product of labour (MRP). Hence, the demand curve for labour slopes downward from left to right. However, there is a positive relationship between wage rate and supply of labour, i.e., higher the wage rate, more will be the supply of labour and vice-versa. At the point E, where demand for labour equals supply of labour, the wage rate (OW_O) gets determined. Thus, in equilibrium, OLo units of labour will be employed at the wage rate of OWo. In the long run, wage rate under perfect competition=MRP=ARP. Since marginal revenue product (MRP) and average revenue product (ARP) are equal only at the former's highest point, the equilibrium employment of labour by the firms in the long run will be corresponding to the highest point of the marginal productivity curve as shown in the figure 6.6 (b). In this, the firm has to accept the market wage OW_0 settled by the industry. Therefore, in this long run equilibrium situation, wage rate, OW=MRP=ARP.

d) Role of Government in Regulating Wages: The real wages affect the standard of living of labourers. Hence, every country fixes the minimum wages to be given to labourers in order to: i) avoid labour unrest, ii) improve standard of living, and iii) increase production capacity in the country.

e) Labour union and wages: The classical economists assumed that wages would not rise above marginal productivity of labour. They also said that labour unions could increase wages under the following situations: 1) When wages are less than that of marginal value product. 2) When the general price level increases, money wage will be increased. 3) The labour unions can increase their marginal value product and increase the wage rate. However, there is a limit to the bargaining power of labour unions to increase the wage rates because machinery can be substituted for labour.

iv) Interest

Interest is the price paid for the use of loanable funds (capital) used in the production process.

a) Pure Interest and Gross interest: Pure interest or net interest is the payment made only for the services of capital or for the services of money borrowed. Gross interest includes the following items besides pure interest.

1) Payment for risk: The lender has to face the risk of loss of capital due to trade risk and personal risk. Trade risk faced by the borrower arises from the uncertainty of profit in the business and therefore, he may not be able to repay the loan amount in time. Personal risk is due to dishonesty of the borrower.

2) Payment for inconvenience: After lending the money, the lender may urgently need the money for some other purpose. Sometimes, the borrower may return the money at the time when the lender may not be able to reinvest it in any other purpose. These are some of the inconveniences faced by the lender.

3) Payment for work and worry: The lender has to maintain proper accounts. He has to keep the securities (documents, jewels, etc.) safely. Some times, the lender sets legal proceedings against defaulters. All these cause worries to the lenders.

By way of compensating all these, the lender charges some thing over and above the pure interest and it is called gross interest.

b) Differences in interest rates: In the money market, the interest on borrowed money varies due to following reasons:

(1) Interest rate is low, if the offered securities are easily realizable (E.g. Gold). If securities are difficult to realize quickly, the interest will be high (E.g. Land).

(2) Interest for long-term loan will higher than that of short-term loan. This is because of the fact that the lender loses his command over his money for a long

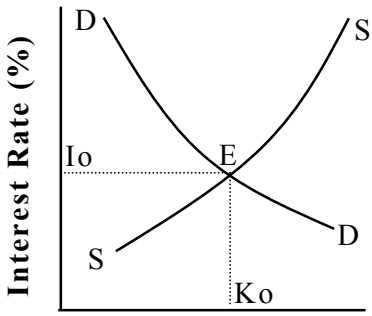
period of time in the case of long-term loan. So he expects higher interest rate for such loans.

(3) Interest rates vary according to purpose for which loan is obtained. Nationalized banks charge lower interest for agricultural loans when compared to consumption loan.

c) Theories of Interest: The following are the theories of interest: (1) Loanable Fund Theory of Interest, (2) Keynes 'Liquidity Preference Theory of Interest and (3) Modern Theory of Interest or Neo-Keynesian Theory of Interest.

1) Loanable Funds Theory of Interest

According to this theory, rate of interest is determined by demand and supply of loanable funds. The supply of loanable funds consists of (i) savings of people out of their disposable income, (ii) dishoarding by people from past savings, (iii) disinvestments and (iv) bank credit. The supply of loanable fund is positively related to the rate of interest and hence, the supply curve of loanable funds is upward sloping. In other words, larger amount of loanable funds will be available at higher rates of interest and vice-versa.



Demand and Supply of Loanable Funds

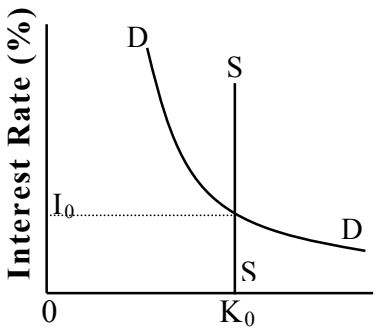
Fig.6.7 Determination of Interest

Loanable funds are demanded for the following three purposes: (i) for making investment by entrepreneurs, (ii) for hoarding money, (iii) for consumption purposes. The demand for loanable funds is inversely related to rate of interest. So the demand curve of loanable funds is inversely related to rate of interest and it is a downward sloping curve from left to right. The equilibrium interest rate gets determined at the point (E) where supply of loanable funds equals demand for loanable funds, i.e., at equilibrium point the demand and supply curves cut each other. Thus, this theory states that savings of people depend upon the interest rate. But Keynes has shown that savings of people depend upon money income and their preference to keep liquid cash.

2) Liquidity Preference Theory of Interest or Keynesian Theory of Interest

People demand money to keep it as liquid (cash). Keynes calls this demand or preference for money or liquidity preference. Lending involves a decline in the stock of money held as liquid (cash). In other words, lending involves surrender of liquidity by the lender. Interest is the payment made to induce people to surrender their liquidity. In the words of Keynes, "rate of interest is

the reward for parting with liquidity for a specific period". Keynes has given three reasons for the liquidity preference of people. They are (i) transaction motive (ii) pre-cautionary motive and (iii) speculative motive. There is a gap between receipt of income and spending. In order to bridge this gap, people keep liquid money (cash) and this is known as transaction motive. People keep liquid money (cash) to spend during unforeseen or unexpected events. This is known as precautionary motive. People may keep cash on hand to make profit out of anticipated changes in the prices of bonds and shares. This is called speculative motive. When the rate of interest falls, the demand for money will increase and when the rate of interest rises, the demand for money will decrease. Thus, the demand for money is negatively related to the interest rate and the demand curve for money will slope downward from left to right. Supply of money is from two sources namely, (i) government and (ii) the banking system. Money put into circulation by the government is called legal tender money. The depositors can withdraw their money from the bank and the deposited money is called bank



Demand and Supply of Money

Fig.6.8 Determination of Interest

(3) Modern Theory of Interest or Neo-Keynesian Theory of Interest

According to the modern theory, the four determinants, namely, saving, investment, liquidity preference and the supply of money are integrated along with income and determine the rate of interest. In order to achieve this, the modern theory has evolved two curves- the IS curve and LM curve- the former shows the equilibrium in the real sector or product market, while the latter indicates the equilibrium in monetary sector or money market. IS curve indicates the various rates of interest which equalize saving and investment at the corresponding levels of income. Higher the level of income, greater is the volume of saving. Greater the volume of saving, lower will be the rate of interest. Thus, as the level of income rises, the rate of interest falls down. Hence, the IS curve slopes downward from left to right (Fig.6.9). The LM curve shows

the various rates of interest, which equalize the demand for cash (liquidity preference) of the people with the supply of cash at various levels of income. As the level of income increases, the liquidity preference (or the demand for cash) of the people increases and consequently the interest rate also increases. On

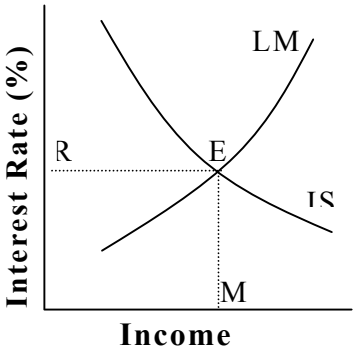


Fig.6.9 Determination of Interest

v) Profit

Profit is the reward to an entrepreneur for the functions he renders in productive activity. Out of the income earned by the farm, land owner is paid rent, labourer is paid wage and capitalist is paid interest. Whatever is left over goes to the entrepreneur as profit. Hence, profit is also called a residual income.

a) Net profit and Gross profit: Gross profit is the total amount of money that the entrepreneur gets. Gross profit consists of the following components: (1) rent for land that belongs to the entrepreneur, (2) interest for capital owned by the entrepreneur, (3) wage for managerial functions performed by the entrepreneur, (4) monopoly or semi-monopoly gains (if the entrepreneur happens to be a monopolist he may get some profit), (5) wind-fall gains (these are due to favourable circumstances or pure luck), (6) money earned through the introduction of new innovations and (7) money earned by bearing risks and uncertainties.

The net profit or the pure profit is the reward for the following three functions performed by the entrepreneur: (1) reward for organization and coordination of various factors of production. (2) reward for bearing risk and uncertainties and (3) reward for introducing new innovations in the business.

ii) Profit Theories: The following are the important theories of profit (i) Rent theory of profit, (ii) Wage theory of profit (iii) Dynamic theory of profit, (iv) Risk theory of profit, (v) Uncertainty theory of profit, (vi) Innovation theory of profit and (vii) Marginal Productivity theory of profit.

1. Marginal Productivity Theory of Profit: It is possible to measure marginal productivity of entrepreneurs engaged in an industry. Let us assume that there is no much difference between entrepreneurs engaged in an industry. It is further assumed that the marginal productivity of entrepreneurs can be measured. The marginal productivity curve represents the demand for entrepreneurs of an industry. Then the profit is determined by the marginal productivity of entrepreneurs and it is shown in the Figure 6.10. MRP curve shows the marginal revenue product of entrepreneurs and it slopes downward from left to right. The reason for this is, as the number of entrepreneurs increases, the profit available to an individual entrepreneur decreases. The SS curve represents the supply of entrepreneurs to the industry. It is an horizontal line, as it has already been assumed that there is no much difference between the entrepreneurs. OS profit represents the transfer earnings of entrepreneurs. When the profit decreases less than OS, the entrepreneurs shift from the present industry to another industry. This is because the entrepreneurs can earn OS profit in any other industry. The demand for entrepreneurs (MRP) and the supply curve (SS) intersect at a point P. Hence, PN (=OS) is the average profit in the industry. In the long run, all the entrepreneurs will realise this normal profit (OS). However, in the short run, the supply of entrepreneurs is OM and the profit will be OQ. Hence, QS will be the abnormal profit that will vanish in the long run. The main criticism against this theory is that it does not explain the monopoly profit and windfall gain.

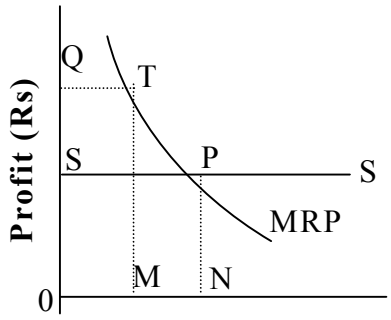


Fig.6.10 Determination of Profit

2. Risk Bearing Theory of Profit

According to Professor Hawley, profits are the rewards for risk taking, which is an important function of an entrepreneur. Production is carried on in anticipation of demand. However, the risks due to theft, accidental damages, price changes (which may again be due to change in fashion, tastes, preferences, etc), labour strike and so on may cause losses. Hence, the entrepreneur has to reduce these risks wherever it is possible. The risk taking is an unpleasant work, though an essential job, for which the entrepreneur has to be suitably rewarded. That reward is called profit. However, there are certain risks for which the consequences are not known well in advance and such risks cannot be insured against. The remuneration for known risks is not profit. Profit arises on account of assumption of unknown risks and it is explained by the uncertainty theory.

3. Uncertainty-Bearing Theory of Profit

This theory was propounded by F.H. Knight. Knight divided risks into (i) foreseeable risk-a risk that can be foreseen by the entrepreneur and (ii) unforeseeable risk-a risk, which cannot be foreseen by the entrepreneur. Knight calls this unforeseeable risk as uncertainty. According to Knight, profit does not arise on account of foreseeable risk, since such risks can be insured. Hence, risk taking is not the function of the entrepreneur, but of the insurance companies. Profit, according to Professor knight, is due to non-insurable risk (or, unforeseeable risk). A loss due to fire accident in a factory is an insurable risk. A few cases of non-insurable risks are: (i) Loss due to labour strike, (ii) loss due to heavy competition from rival companies, (iii) Loss due to changes in tastes and preferences of the consumer which in turn would result in low demand for the product. It is the primary function of the entrepreneur to anticipate and provide alternative arrangements to tackle non-insurable risks or uncertainties. Thus, profit is paid to the entrepreneur for his ability to bear uncertainty and not for risk-taking.

Chapter 6: Questions for Review:

1. Define the following:

i) Perfect competition.

ii) Monopoly.

iii) Duopoly.

iv) Oligopoly.

v) Monopolistic competition.

vi) Monopsony.

vii) Oligopsony.

viii) Duopsony.

x) Monopsonistic competition.

2. Differentiate the following:

i) Ricardian rent and Economic rent.

ii) Ricardian Rent and Quasi rent.

iii) Real wage and Money wage.

iv) Gross interest and Net interest.

v) Transaction and Pre-cautionary demand for money.

vi) Gross profit and Net profit.

vii) Risk and Uncertainty.

3. Write short notes

i) Marginal Value Productivity of Factor.

ii) Wage fund theory.

iii)Impact of labour trade union and policies of the government on wages.

iv)Marginal Productivity Theory of Profit.

v) Uncertainty-Bearing theory of profit.

4. Answer the following:

i) Show how economic rent theory is superior to Ricardo's rent theory.

ii) Define wage. Mention the theories that explain the determination of wages. Explain briefly any two important theories of them.

iii) What is interest? State the theories that explain the determination of interest. Describe in detail the liquidity preference theory of interest and Modern theory of interest.

iv) What is net profit? State the theories that explain the determination of profit. Briefly explain risk bearing theory and uncertainty bearing theory of profit.

14.MACRO ECONOMICS – CONCEPTS OF - GROSS NATIONAL PRODUCT (GNP) - GROSS DOMESTIC PRODUCT (GDP) - NET NATIONAL PRODUCT (NNP) - PERCAPITA INCOME.

In the first chapter, we have learnt that the subject matter of economics can be broadly categorised into microeconomics and macroeconomics. In the last six chapters, we have discussed about the microeconomics. In this chapter, we shall discuss some important topics of macroeconomics.

A. NATIONAL INCOME

Macroeconomics approaches the economic problems in terms of aggregates like national income, general employment level, aggregate demand, aggregate production and so on. The important among the above is national income. The one common thing to all products is value. Therefore, measurement of national income must be in money terms.

i) Measurement of National Income

National Income (NI) is the total money value of incomes received by persons and enterprises in the country during the year. It is the sum of all incomes derived from providing the factors of production, i.e., the return to all factors of production owned by the residents of a nation. It included wages and salaries, rents, interests and profits. National Product or the National Income is, thus, the aggregate money value of all-final goods and services produced in a country during a year. The national income can be measured in three ways. They are:

a) Income method: Sum of all incomes, in cash and kind, derived from providing all factors of production in a given time period.

b) Production method: Sum of value of all the outputs (goods and services) arising in several sectors of the nation's production during a given year.

c) Expenditure method: Sum of consumers' expenditure, government expenditure of goods and services and net expenditure on capital goods. If properly calculated, all these three measures of national income would give the same result.

ii) Concepts of National Income: A clear understanding of the concept of national income would give us an idea about the various components of national income.

a) Gross Domestic Product (GDP): It is the money value of the final products of all resources located within the country irrespective of whether the owners of various resources live there or abroad.

b) Gross National Product (GNP): it refers to the aggregate money value of all-final goods and services produced in a year (in a country). GNP is the personal consumption expenditures (C) plus Government purchases of goods and services (G) plus gross private domestic investment (Ig) plus exports of goods and services (X) less imports of goods and services. In symbols, it is written as:

GNP = C + Ig + G + (X-M)

c) Net National Product (NNP): As production is carried on over time, a certain amount of fixed capital is used up. Part of it may be worn out or some may become obsolete and some may be destroyed by accident. Businessmen consider this used up capital as the cost of production and call this depreciation or capital consumption. The Net National product is given by NNP = C+ In + G + (X-M). It follows that NNP = GNP - Depreciation. Thus, NNP takes into account the wear and tear of machinery or asset during the year.

d) Gross private domestic investment (Ig): It is equal to the expenditure for new plant and equipment plus the change in inventories. Inventories include stocks of raw materials, intermediate products, and finished goods held by producers or marketing institutions.

e) Net private domestic investment (In): It is equal to gross private domestic investment **less** depreciation. That is In = Ig-Depreciation. Depreciation is the loss in the value of physical capital due to wear and tear and obsolescence.

f) Personal Income (PI): It is the total amount of money income actually received by individuals from all resources during a particular year. It excludes undistributed profits of business concerns, income tax paid at source, contributions to social insurance and provident fund. On the other hand, it includes other items of income received by individuals, which are not currently earned like old age pension, unemployment dole, etc. These are called transfer payments.

Personal Income = National Income – Corporate Income Taxes – Undistributed Corporate Profits – Social Security Contributions + Transfer Payments.

g) Disposable Income: Disposable income is the personal income minus income tax. The major portion of the disposable income is spent by individual on consumption and the rest is saved.

h) Per Capita Income: The national income divided by population of the country is called the per capita income or the average income per head. The per capita income is a rough index of the standard of living of the people in a country. GNP is one of the most frequently used measures of economic performance in the country. Any major changes in GNP would reflect the severe problems and impressive gains in the economy.

i) Aggregate Demand: It is the total expenditure on consumer goods and services, Government goods and services, (desired) investment, and net exports (that is, exports minus imports). Aggregate Demand (AD) = Consumption Expenditure (c) + investment demand (I) + Government purchases of goods and services (G) + net exports (X-M). Symbolically, AD = C + I + G + (X-M).

j) Aggregate Supply: Aggregate supply refers to aggregate output or real national product produced in a country. Aggregate supply function shows the different possible aggregate outputs supplied at different price levels.

iii) Components of National Income

The national income includes all those different sources of income to the people of a country. These sources can be broadly categorized into agriculture, industry and services.

Table 7.1 National Income of India During 1994-95

Particulars	At 1994-95 Prices	At constant price of 1980-81 (Rupees in Crores)
1.GNP	883,294	249,903
2.NNP	742,632	221,405
3.GDP	864,169	256,095
4.Per capita Income (Rs)	8,282	2,449

iv) Sectors of Economy

a) Agriculture and Allied Activities: This includes farming, animal husbandry, forestry and fisheries.

b) Industry: This includes mining, quarrying, construction, electricity, natural gas, heavy and small-scale industries.

c) Services: Transport and communication, commerce, banking, insurance, profession and government services are included in it.

The contribution of the above three sectors of the economy to national income of India for the year 1994-95 is given in the Table 7.2.

Table 7.2 Contributions of Different Sectors to National Income

(Rupees in Crores)

Sectors	At 1994-95 Prices	At 1980-81 Prices	Percentages
1. Agriculture and Allied Activities	265,201	78,590	30.69
2. Industry	241,839	71,667	27.98
3. Services	357,149	105,838	41.33
4.Gross Domestic Product	864,189	256,095	100.00

v) Difficulties in the Measurement of National Income: There are certain practical difficulties in the calculation of national income. They are:

a) There are many goods and services, which do not have accurate market prices.

b) Inadequate information about production, price, etc.

c) The degree of double counting like stock value appreciation due to inflation.

vi) Uses of National Income

a) National income shows how the income is earned and spent. It shows the distribution of income among rent, wage, interest and profit.

b) Per capita income would indicate whether the country is making any economic progress or not.

c) It is an important instrument of economic planning.

d) It is also important in assessing the taxable capacity of the people

e) It is useful to compare the material standard s of living of the people in two countries by comparing their national incomes.

15.Money – Definition & functions of money; inflation – consequences & control.

MONEY

Money has made rapid economic progress possible in this modern age. In the early stages, exchange took the form of barter. Barter is the direct exchange of one good for another. For instance, the farmer gave paddy to the potter to get pots for cooking. As the number of goods to be exchanged increased, barter posed many difficulties. So precious metals like gold and silver were used as money. Then the paper currencies were used as legal money, i.e., an instrument of exchange, by the governments.

j) Definition of Money

Money is defined as anything that the public readily accepts in payment for goods and services and other assets and in the discharge of debt. Robertson defined money, " as anything that is acceptable in discharge of obligations". According to Crowther, "Money is anything that is generally acceptable as a means of exchange". The most commonly accepted view is that "all media of exchange and payment, whose acceptance the law requires in discharge of debts", may be called money. Bank notes (Coins, currency and cheques) are generally accepted and are, therefore, money.

ii) Functions of Money: Money performs five important functions. They are:

a) It serves as a medium of exchange: On account of its general acceptability as a medium of payment, money has ready purchasing power and becomes circulating medium. Being generally acceptable medium of exchange, money facilitates the multiple exchanges of goods and services with minimum effort and time.

b) It is a store of value: Since money is a medium of exchange, it commands goods and services in the present as well as in future.

c) Money is a standard measure of value: Money acts as a unit of account. With money, it is easy to compare the relative values of commodities and services that are different from one another. E.g. the rupee is a unit of account in India while the dollar ($) is the unit of account in U.S.A.

d) Money serves as a standard of deferred payments: It is a unit in terms of which debts and future transactions can be very easily settled. The rupee or unit of account is the standard of deferred payment or future payment. Thus, loans are advanced and future contracts are settled in terms of money.

e) It transfers value: One can sell out his immovable belongings (say, buildings) at one place and buy them elsewhere.

iii) The Quantity Theory of Money

The quantity theory of money was put forward by David Hume in 1852. Money does not retain a constant value over a period of time, i.e., value of money increases or decreases over a period of time. Value of money means the purchasing power of money. Value of money is dependent on the general price level. A rise in the general price level means a fall in the value of money. On the other hand, a fall in the general price level means a rise in the value of money.

a) Price level dependent on quantity of Money: The quantity theory of money gives reasons for changes in the general price level. According to this theory, an increase in the quantity of money in country will lead to a rise in the price level. On the other hand, a decrease in the quantity of money in the country will lead to a fall in the price level. It is also asserted that, other things remaining the same, the value of money falls proportionately with a given increase in the quantity of money. Conversely, the value of money rises proportionately with a given decrease in the quantity of money. In other words, changes in the general price level, other things remaining the same, are directly proportional to changes in money supply.

Irving Fisher, an American Economist, has refined this theory by adding the velocity of circulation of money or the rate at which it is exchanged as a factor. According to Fisher, the general price level is dependent on supply of and demand for money.

b) Supply of Money: On any day, the supply of money is equal to the total amount of money in circulation in the country. Money in circulation in the county consists of (1) legal tender money and (2) bank money. Over a period of time, money changes from hand to hand. The number of times it is passed on from one person to another is called the velocity of circulation of money. Thus, to find out total money supply during a period of, say, one year, we have to take into account, (1) the amount of legal tender money and bank money and (2) the velocity of money circulation. The supply of money is given by: Supply of

Money = MV + M'V', where, M = legal tender money, V = Velocity of circulation of M, M' =bank money and V' = Velocity of circulation of M'.

c) Demand for Money: In order to find out the money demanded by people during one year period, we consider, (1) the total amount of goods purchased by people, that is, the total volume of transactions in the country (T) and (ii) the general price level (P). Therefore, the demand for money = PT.

Fisher says that demand for money will equal its supply, i.e., PT = MV + M'V'.

$$P = \frac{MV + M'V'}{T}$$

Fisher assumes V' V and T to remain unchanged. He also assumes that the ratio between M and M' will remain unchanged. Hence, he concluded that wherever there is a change in money (M), there would be a change in price level (P). Thus, P (Price level) is dependent on money supply (M). Thus, Fisher's equation of demand and supply of money leads us to the conclusion that with every increase in the quantity of money, the price level will increase and the value of money will fall.

C. INFLATION

Inflation is defined as an increase in the average level of prices. When the supply of output is less, the rise in prices is described as inflationary. In Goulborn's words, it is a case of "too much money chasing too few goods". H.G. Johnson defines inflation as "a sustained rise in prices". Inflation is generally associated with an abnormal increase in the quantity of money resulting in abnormal rise in prices. Inflation thus, represents a situation whereby the pressure of aggregate demand for goods and services exceeds the available supply of output.

i) Causes of Inflation

a) Increase in demand and decrease in supply of goods cause inflation. Increase in demand is caused by increase in aggregate spending on consumption and investment goods. Decrease in output is due to deficiency of capital equipment, scarcity of factors of production and natural calamities like drought, flood, etc.

b) Inflation occurs during the war when the government creates additional money and circulates the same into the economy to meet war expenditures.

c) Also, when government resorts to deficit financing, inflation takes place.

d) Planning for rapid economic development is another cause of inflation. Huge investments are made which would yield results only after a period of five to ten years. This very long time lag between input and output results in inflation.

e) The activities of hoarders and speculators reduce the supply of goods to the market and push up prices.

f) The prevalence of black money or unaccounted money and also the existence of counterfeit money lead to inflation.

g) Demand-pull inflation: It refers to that rise in the price level, which takes place because consumers and investors with their rising income compete with each other for a relatively limited supply of available goods.

h) Cost-push Inflation: It refers to that rise in the price level, which takes place because wages increase to a greater extent than labour productivity. These costs (wages) are passed on to the consumers in the form of higher prices.

ii) Types of Inflation: The classification of inflation is based on the speed with which the price increases in the economy.

a) Creeping inflation: It is the mildest type of inflation, under which prices rise slowly, say, one per cent per annum.

b) Walking inflation: When the rise in prices is more pronounced as compared to a creeping inflation, it is called walking inflation. Roughly, the prices rise five per cent annually under this situation.

c) When the movement of price accelerates rapidly, **"Running inflation"** emerges. Under this, prices rise by more than ten per cent per annum.

d) Hyperinflation: This is an alternative term for run away or galloping inflation. There is such a tremendous expansion in the supply of money and eventually it becomes worthless. Hyperinflation results in a steep rise in prices (sometimes, the rise in prices is 100 per cent or more) and it disrupts normal economic relations.

iii) Deflation: It is the opposite of inflation. It means a fall in the general price level associated with a contraction of the supply of money and credit.

iv) Effects of Inflation: The effects of inflation are felt unevenly by different groups of individuals within the economy. Generally, inflation inflicts more harm on low and fixed income groups than high-income group of people. Some of the important effects of inflation are given below:

a) Debtors gain and creditors stand to lose by inflation
b) When prices rise, producers, speculators and entrepreneurs gain because prices rise at a faster rate than the cost of production.
c) Property owners are benefited on account of increasing property value.
d) The hardest hit are those who earn fixed income. Persons who live on post office savings, fixed interest and rent, pensioners, government employees and so on suffer because their incomes do not rise in proportion to rise in prices.
e) Distortion in production and allocation of resources take place since producers prefer to produce goods consumed by the rich people.
f) Inflation results redistribution of wealth favouring businessmen and hurting consumers, creditors, small investors and fixed income earners.

v) Control of Inflation: The following are the anti-inflationary measures:

(a) Monetary measures

1) The central bank i.e., the Reserve Bank of India can increase the market rate of interest that will reduce the aggregate spending.
2) If the RBI can reduce the cash available to the banking system, the capacity of the banks to lend money to the borrowers will be reduced.

3) The RBI can sell the Government securities to the banks or to the public so that cash available with bank or public can be reduced.

4) Consumer credit control can reduce money supply.

b) Fiscal measures

1) Reduction of government spending
2) Imposition of new taxes
3) Encouragement of savings or introducing compulsory saving schemes

c) Physical or Non-monetary measures

1) Increasing output, increasing imports and decreasing exports so as to increase the availability of goods which are in short supply.

2) Controlling money wages to keep down costs.

3) Price control and rationing.

4) Control over speculation, hoarding and black-marketing.

5) Import of essential commodities and distribution of such goods through fair price shops.

The monetary and fiscal measures will reduce the money supply in the country, whereas the physical and non-monetary measures will increase output and control prices of goods. Thus, inflation can be gradually controlled.

16.Public finance - public revenue - public expenditure; taxation - principles of taxation.

PUBLIC FINANCE

Public finance deals with the rising up of revenue and incurring expenditure by the public authorities. Dalton defines public finance as the science that is concerned with the income and expenditure of public authorities and the adjustment of one to the other. The basic role of public authorities is to mobilize resources through taxes, loans, etc. and utilize these resources for accelerating economic growth and also for bringing about the desired redistribution of income and wealth in the country.

i) Public Revenue

Public revenue is the income of the Government (central Government, state Government and local bodies). Government revenue can be classified into (a) tax revenue, and (b) non-tax revenue.

a) Tax Revenue: Taxes are compulsory contribution levied by the state for meeting expenses in the common interests of all citizens. Tax revenue can be classified into: (1) direct taxes and (2) indirect taxes.

1. Direct Taxes: A tax is said to be direct, if the tax payer bears the burden of the tax. He cannot shift the burden to any other person. E.g. income tax, wealth tax and gift tax.

Advantages: i) It varies according to the ability to pay and

ii) Cost of tax collection is low.

Disadvantages: i) Tax rates are fixed arbitrarily by the government and

ii) There is a possibility of tax evasion.

2. Indirect Taxes: Indirect tax is shifted by the payer to others. If sales tax is imposed on sugar, the producer or dealer who pays it passes it on to the next buyer and ultimately the burden is borne by the consumer. E.g. Sales tax

Advantages: i) It is more convenient, i.e., those who consume the commodity alone need to pay the tax.

ii) No tax evasion is possible.

Disadvantages: i) Every consumer, rich or poor, pays the tax at the same rate.

ii) Cost of tax collection is very high.

3. Customs duties: This refers to imposing of import or export duties on goods coming into or going out of the country respectively. The importers or exporters who pay such duties would shift the burden of the tax on the consumers. A duty is said to be **Specific** when it is imposed according to a standard of weight or measurement, E.g. 50 paise per metre of cloth or one rupee per 40 kg of wheat etc. The duty is called ***ad valorem***, when it is imposed according to value of the commodity. E.g. 100 per cent on the value of motor cars or television sets.

b) Non-Tax Revenue

It includes receipts such as fees for education and public health, fines, profits from public sector undertakings, income from public lands, forest, mines, etc. The central government also receives interest on loans from state governments.

1.Fee: It is a compulsory contribution made by those who obtain a definite service in return, E.g. Tuition fee, court fee, etc. In short, fee is charged for a specific service that is rendered primarily in public interest.

2. A license fee, however, is much more than the cost of service and there is not much of a positive service in return.

3. Fine: The court can impose fines for any default or irregularity or violation of law.

4 Price: A price is paid by an individual for a specific service rendered to him by the state. Many public sector undertakings realize revenue from the sale of their goods and services, E.g. Sale of petrol, traveling charges in railways, etc. The main characteristic of price is that it is a payment made by those who want to use that particular service. A fee is collected in the public interest where as a price is the payment for a service of business character. A tax is paid for a common benefit whereas fees and prices are paid for specific benefits.

5.Grant: They are given by a higher-level institution to a lower level institution. E.g. Central Government provides grants to state Government.

6.Gift: They are received from either government or private institutions or individuals. Gifts are also received from foreign governments.

c) Social and Economic Objectives of taxation are:

i) Reduction of inequalities in income and wealth.

ii) Increasing economic growth.

iii) Stabilization of prices.

d) Methods of Taxation: Taxes may be proportional, progressive, regressive and digressive.

1) Proportional Taxation: Whatever be the size of income, same rate or same percentage of tax is charged. The tax rate remains same, but the tax amount increases as the person's income increases. If the tax is levied at 10 per cent on income, a person who earns Rs.1,00,00 a year, will pay Rs.10,000 as tax, while a person who gets Rs.50,000 per year will pay Rs.5,000 as tax.

2) Progressive Taxation: In this case, the rate of tax increases with the increase in income. If a person earns Rs.50,000 per annum, he will pay a tax of 10 percent, i.e., Rs.5,000, while a person whose income is Rs.1,00,000 per year will pay a tax of 15 per cent. i.e. Rs.15,000.

3) Regressive Taxation: It is quite opposite of the progressive taxation. It implies higher rates of tax for lower income groups and lower rates of tax for higher income groups.

4) Digressive Taxation: A tax may be at a progressive rate upto a certain limit or level of income, beyond which a uniform rate is charged.

e) Canons of Taxation

The characteristics or qualities, which a good taxation should possess, are described as canons of taxation. Adam Smith has given the following four canons of taxation:

1) Canon of equality: The amount of tax must be in proportion to the ability of the tax payer, i.e., progressive taxation should be followed.

2) Canon of certainty: The time of payment, the manner of payment, and the quantity to be paid should be made clear to the tax payer well in advance and arbitrary fixation of taxes should not be there.

3) Canon of convenience: Tax payment should be made convenient to the tax payer. The time of payment and the manner of payment should be made convenient to the tax payer. Land revenue can be paid in installments after the harvest of crops.

4) Canon of Economy: Cost of tax collection should be very low. Cost of tax collection should be a small portion of the actual amount of tax collected.

f) Other canons of Taxation:

5) Canon of Productivity: A few taxes, which bring larger revenue, are better than many taxes which bring a very small revenue.

6) Canon of Elasticity: As needs of the state increase, the revenue should also increase. Some of the taxes should be capable of yielding more revenue when financial resources are needed very urgently to the Government, E.g. Income tax.

7) Canon of Simplicity and Flexibility: Tax system should be very easy to understand and it should be adjusted to new economic conditions.

ii) Public Expenditure

The expenditure incurred by public authorities is called public expenditure. Public expenditure has to provide not only social welfare but it has also to ensure economic stability and economic growth.

a) Canons of Public Expenditure: The following are the rules or canons that should guide the public authorities in the administration of public expenditure.

1) Canon of Maximum Benefit: Public expenditure should promote the maximum welfare of the society as a whole.

2) Canon of Economy: Unnecessary expenditure and wastage of financial resources should be avoided.

3) Canon of Sanction: The public expenditure has to be sanctioned by a competent authority before it is actually incurred.

4) Canon of Elasticity: It should be possible to the government to vary the expenditure according to the need or circumstances.

5) Canon of Surplus: Public expenditure should be always kept well within the revenue of the state so that a surplus is left at the end of the year. Government should avoid deficit budget in which public revenue is less than the public expenditure.

6) Promotion of Economic Growth and Stability: Public expenditure should promote economic development and economic stability directly and indirectly.

E. INTERNATIONAL TRADE

International Trade arises simply because countries differ in their demand for goods and in their ability to produce them. On the demand side a country may be able to produce a particular good but not in the quantity it requires. For example the crude oil production in India is less than the demand. In contrast, in gulf countries crude oil production is more than their demand. On the supply side, resources are not evenly distributed throughout the world. One country may have an abundance of land; another may have skilled labour force. These

factors cannot be transferred easily from one country to another. Because these factors are difficult to shift, the alternative, i.e., moving goods made by those factors is adopted. If the terms of trade are appropriate, a country can specialize in producing those goods in which they have the greatest comparative advantage, exchange them for the goods they require from other countries. Thus, international trade arises. International Trade enables countries to obtain the benefits of specialization of other countries and improves the standard of living for all. It is obvious that, without international trade, many countries would have to go without certain products. By expanding the market, international trade enables many countries to go in for large-scale production. International trade increases competition and thereby promotes efficiency in production.

i) Balance of Payment: The Balance of Payment (BOP) is a comprehensive record of economic transactions of the residents of a country with the rest of the world during a given period of time. The aim is to present an account of all receipts from goods exported, services rendered and capital received by residents of a country, and payments for goods imported, services received and capital transferred by residents of the country.

ii) Balance of Trade (BOT)

The difference between the value of commodities exported and value of commodities imported is known as the balance of trade. The main purpose of keeping these records (balance of payments and balance of trade) is to inform Government of the international economic position of the country and to help it in reaching decisions on the monetary and fiscal policies on the one hand, and trade and payment related matters on the other.

Chapter: 7 Questions for Review:

1.Choose correct answer from within brackets:

i) National income is a _____ (flow/fixed) variable.

ii) Share of agriculture and allied activities in national income if India is _____ (31, 41, 51) per cent.

iii) There is _____ (direct/indirect) relationship between value of money and price level.

iv) Inflation is _____ (sustained/sporadic) rise in prices over a long period of time.

v) _____ (Wealth tax/Sales tax) is an example of direct tax.

vi) Income tax is imposed based on the principle of _____ (progressive/regressive taxation.

II. Differentiate the following:

i) Gross National Product and Gross Domestic Product.
ii) Per capita income/personal income.
iii) Demand-pull and cost push inflation.
iv) Walking inflation and galloping inflation.
v) Monetary measures and fiscal measures of inflation control.
vi) Direct taxes and indirect taxes.
vii) Progressive taxation and regressive taxation.
viii) Balance of trade and balance of payment.

III Write short notes:

i) Measurement of national income.
ii) Difficulties in the measurement of national income.
iii) Functions of money.
iv) Quantity theory of money.
v) Different types of inflation.
vi) Canons of taxation.
vii) Causes, consequences and control measures of inflation.
viii) Public finance.
ix) Canons of public expenditure.

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