

## Study Material

Course No: Ag Econ. 111  
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**Unit-I**  
**Lecture No. 1**  
**Economics- Meaning, Definitions and Subject Matter**

**The Economic problem:** Economic theory deals with the law and principles which govern the functioning of an economy and its various parts. An economy exists because of two basic facts. Firstly human wants for goods and services are unlimited and secondly productive resources with which to produce goods and services are scarce.

In other words, we have the problem of allocating scarce resource so as to achieve the greatest possible satisfaction of wants. This is the economic problem. It is also called economizing problem. The economic problem arises from the two basic inter related facts:

- Man's unlimited desire for the goods in the aggregate, and
- The limited capital, natural and human resource available to a society for the production of goods in aggregate.

**The content of economic theory:** There has been a lot of controversy among economists about the true content of economic theory or its subject matter. The subject matter of economics or economic theory has been variously defined.

According to Adam Smith economics enquires into the nature and causes of the wealth of nations.

According to Ricardo, economics studies, " how the produce of the earth is distributed." That is, economics deals with the distribution of income and wealth.

According to Marshall, economics is a study of mankind in the ordinary business of life and it examines that part of individual and social action which is connected with material requisites of well being.

According to Pigou, economics studies that part of social welfare which can be brought directly or indirectly into relationship with the measuring rod of money.

Professor Lionel Robbins defines economics as a study of the allocation of scarce resources among competing ends or uses.

Each definition of economics given above is incomplete and inadequate since they do not indicate the true scope and subject matter of economics. The following are the main questions which have been raised by the economists from time to time. It is worth remembering that all these fundamental questions arise because of the basic problem of scarcity confronting an economy.

- According all of the available productive resources being fully utilized by the economy, or are some of them lying unemployed and unutilized?
- What goods are produced and in what qualities by the productive resources which are employed?
- How are the different goods produced that is what production method are employed for the production of various goods?
- How is the total output of goods and services distributed among the member of the society?

- Are the productive resources being used efficiently?
- Is the economy's productive capacity increasing, declining or remaining static overtime?

The six questions listed above have been the concern of economic theory from time to time. All of them arise from the fundamental problem of scarcity.

### **Meaning and definitions of economics**

In our opinion, it is very essential for a student to have some definitions in mind as a working basis. Besides, the discussion leading to a definition is very useful in giving a clear understanding of the subject. The following are some of the definitions put forward from time to time.

#### **Early Definitions: Science of Wealth**

In the 18<sup>th</sup> century, Adam Smith, The Father of Classical Economics defined economics in his well known book "Wealth of Nations" as "An Enquiry into the Nature and Causes of the Wealth of Nations". So, according to Adam Smith, economics was concerned with an enquiry in the nature and causes of wealth of nations. Thereby economists called economics, the Science of Wealth.

According to French economist J. B. Says, economics is the science which treats of wealth.

The American economist F.A. Walker says that economics is that body of knowledge which relates to wealth.

Prof. Walker defines economic as the body of knowledge which relates to wealth.

Thus, in these definitions a key position was assigned to wealth in the study of economics.

Adam Smith and his associates treat economics as nothing more than a "Science of Wealth."

Thus in these definitions a key position was assigned to wealth in the study of economics.

#### **Marshallian Definition: Science of Material Welfare**

"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

- Marshall

Thus, Dr Marshall defined economics as the study of man's action in the ordinary business of life; it enquires how he gets his income and how he uses it. Thus, it is on the one hand a study of wealth, and on the other hand, which is more important; a part of the study of man.

"Economics is the study of the general methods by which men cooperate to meet their material needs.

- Beveridge

According to these economists, the aim of economics is to study human activities which are conducive to human welfare in its material aspect.

#### **Robbins' Definition: Science of Scarcity or Science of Choice**

Prof L. Robbins put forth his definition in 1932 in his famous book "The Nature and Significance of Economic Science" He defined economics as "The Science which studies human behavior as a relationship between ends and scarce mean which have alternative uses. This definition mean:

- Our wants are unlimited.
- Means to satisfy these wants are strictly limited.
- Hence a man has to make choice.

In other words, economics is a study of the allocation of scarce means capable of alternative uses, among competing ends for the attainment of a maximum result in the achievement of these ends.

Modern Definition:

It is now considered that economics is much more than merely a theory of value or of resource allocation.

The credit for bringing about a revolution in economic thinking goes to the Lord J.M. Keynes. According to him, economics studies how the levels of income and employment in a community are determined. Thus, in Keynesian term, economics is defined as the study of the administration of scarce resources and of the determinants of income and employment.

In Benham's words, economics is a study of the factors affecting the size, distribution and stability of a country's national income.

Thus, a study of economic growth and of economic stability forms an integral and important part of the study of economics. A good and adequate definition of economics must cover them.

#### **Major economic problems:**

In view of the scarcity of means at our disposal and the multiplicity of ends we seek to achieve, the economic problem lies in making the best possible use of our resources so as to get the maximum satisfaction in the case of consumer and maximum output or profit for a producer. Economic problem consists in making decision regarding the ends to be pursued and goods to be produced and the means to be used for achievements of certain ends.

From the definition of economic problem we can derive the following fundamentals problems which an economy has to tackle.

- (1) **What to produce:** The first major decision relates to the quantity and the range of goods to be produced since the resources are limited we must choose between different alternative collections of goods and services that may be produced.  
It also implies the allocation of resources between the different types of goods e.g. consumer goods and capital goods.
- (2) **How to produce:** Having the decided quantity and type of goods to be produced we must next determine the techniques of production to be used e.g. labour intensive and capital intensive.
- (3) **For whom to produce:** This means how the national product is to be distributed, i.e. who should get how much. This is the problem of the sharing of the national product.
- (4) **Are the resources economically used? :** This is the problem of economic efficiency or welfare maximization. There is to be no waste or misuse of resources since they are limited.

- (5) **Problem of full employment:** Fullest possible use must be made of the available resources. In other words, an economy must endeavor to achieve full employment not only of labour but of all its resources.
- (6) **Problem of growth:** Another problem for an economy is to make sure that it keeps on expanding or developing so that it maintains conditions of stability. It is not to be static. Its productive capacity must continue to increase. If it is an under-developed economy. It must accelerate its process of growth.

## Lecture No.2

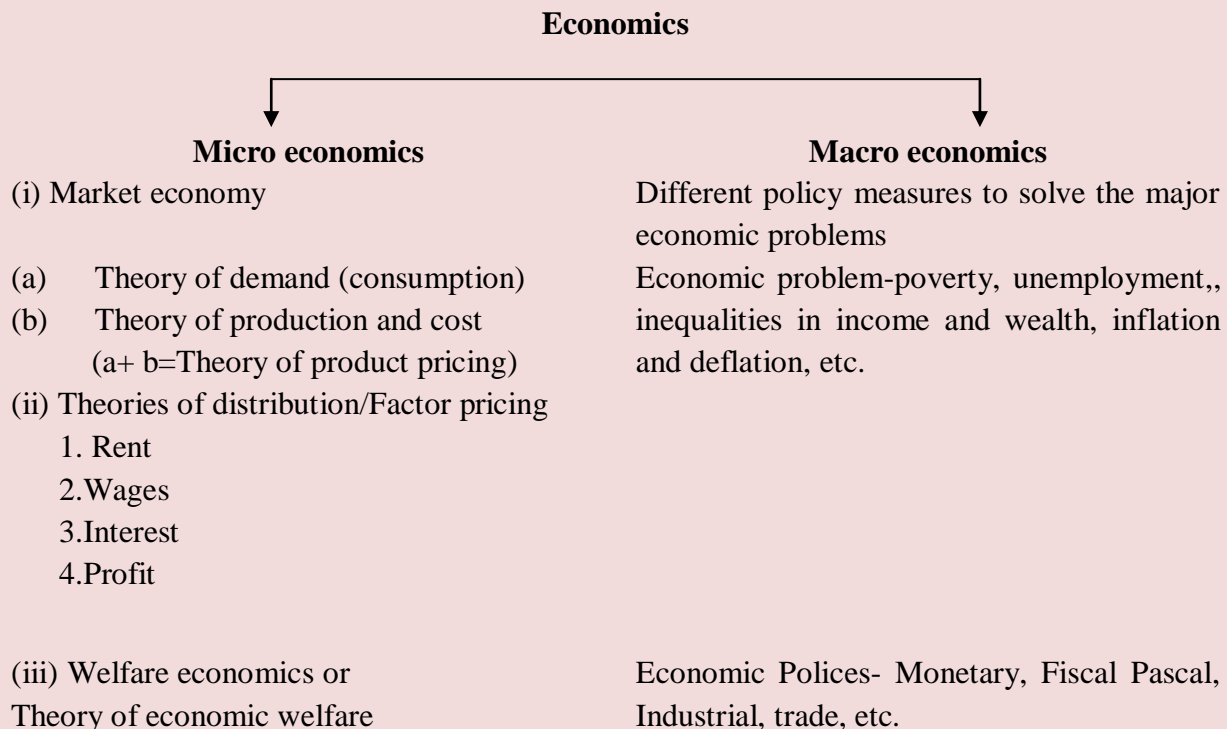
### Division of Economics – Microeconomics and Macroeconomics, its Subject Matter, Scope and Importance

#### Nature of economics: scope and method:

The subject matter or the study of economics has been divided by modern economists into two parts: Microeconomics and Macroeconomics. These two terms were first coined and used by Ragnar Frisch. The term microeconomics is derived from the Greek word mikros, meaning 'small' and the term macroeconomics are derived from the Greek word makros, meaning 'large'.

When we are analyzing the problem of the economy as a whole it is macroeconomic study while on analysis of the behaviors of any particular decision- making unit, such as a firm and industry, a consumer, constitutes micro economics.

Micro economics is also called Price Theory and Macro-economics is called Income theory/



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**Micro-economics:** Micro-economic theory studies the economic actions and behaviour of individual decision- making units and small group of individual units such as consumers, resource owners and business firms, various industries and markets. We discuss how the various cells of the economic organism, that is, the various units of the economy such as thousand of consumers, thousands of workers and resource suppliers in the economy do their

economic activities and reach the equilibrium states. When we speak of micro-economics, what we mean is that it is some small part or component of the whole economy that we are analyzing.

E.g. we may study an individual's consumer's behaviour, or that of an individual firm or what happens in any particular industry. In micro-economics, we study the price of a particular product or a particular factor of production and not the general price level in the country. Similarly it is demand of an individual or that of an industry that is studied and not the aggregate demand of the entire community. Likewise, income and employment, etc. are studied.

A noteworthy feature of micro- approach is that, while conducting economic analysis on a micro basis, generally an assumption of full employment in the economy as a whole is made. On that assumption, the economic problem is mainly that of resource allocation or of theory of price.

The four out of six basic questions earlier listed fall within the domain of micro-economics

Importance and uses of micro-economics:

Micro- economics occupies a vital place in economics and it has both theoretical and practical importance. From the theoretical point of view,

- It explains the functioning of a free enterprise economy.
- It tells us how millions of consumers and producers in an economy take decisions about the allocation of production resources among millions of goods and services.
- It explains how through market mechanism goods and services produced in the community are distributed.
- It also explains the determination of relative prices of the various products and productive resources.
- It also explains the conditions of efficiency both in consumption and production and departure from the optimum.

As for practical importance, micro-economics helps in the formulation of economic policies that will promote the welfare of the masses.

- Micro-economic analysis is also usefully applied to the various applied branches of economics such as Public Finance, International Economics.

Limitations of micro-economics:

Micro- economic analysis suffers from certain limitations.

- (a) It cannot give an idea of the functioning of the economy as a whole. An industry may be flourishing, where as the economy as a whole may be languishing.
- (b) It assumes full employment which is a rare phenomenon at any rate in the capitalist world.

**Macro-economics:** Macro-economics is concerned with aggregate and averages of the entire economy, such as national income, aggregate output, total employment, total consumption, saving and investment, aggregate demand, aggregate supply general level of prices, etc. we study how these aggregate and averages of the economy as a whole are determined and what causes fluctuation in them.

Macroeconomic deals also with how an economy grows. It analyses the chief determinants of the economic development and the various stages and processes of economic growth.

Utility of macro-economics:

The macro-approach is useful in several ways.

1. It is helpful in understanding the functioning of a complicated economic system.
2. It gives a bird's eye view of the economic world.
3. It is of the utmost significance for the formulation of useful economic policies for the nation.
4. It also occupies an important place in economic theory in its pursuit of the solution of urgent economic problems.

Thus, we are able to study the economy in its dynamic aspect.

Limitations of macro-economics:

Macro-analysis has limitations of its own.

- Individual is ignored altogether; it is the individual welfare which is the main aim of economics.
- It overlooks individual differences. E.g. general price level may be stable, but the prices of food grains may have gone spelling ruin to the poor.  
Thus, according to the views of the economist today, the subject matter of economics includes.
- Price theory (or micro-economics)
- Income and employment theory (or macro-economics) and
- Growth theory

Hence, broadly speaking, economics may be described as a study of the economic system under which men work and live. It deals with decisions regarding the commodities to be produced and services to be rendered in the economy, how to produce them most economically, distribute them properly and to provide for the growth of the economy.

**Scope of economics:** Scope mean sphere of study. We have to consider what economics studies and what lies beyond it. The scope can be studies through 4 important parts.

- (a) Subject matter of economics.
  - (b) Whether economics is a social science?
  - (c) Whether economics is a science or an art?
  - (d) If economics is science, whether it is positive science or normative science.
- (a) Subject matter of economics:

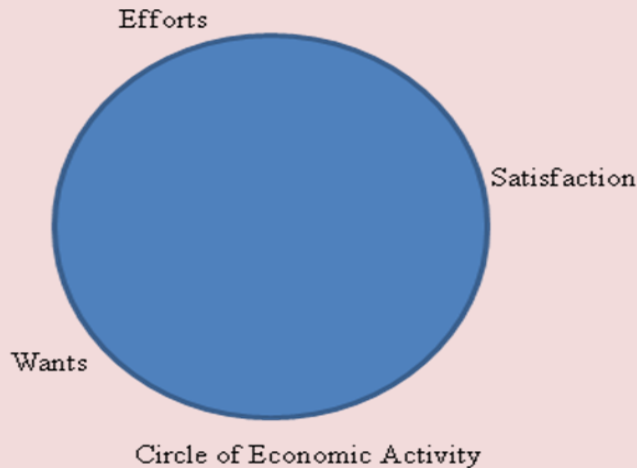
Economics has subject matter of its own. Economics studies, only one aspect of man's life and work. It only tells us how a man utilizes his limited resources for the satisfaction of unlimited wants. He must spend the money and time to derive maximum satisfaction. This is subject matter of economics.

Economic activities- It we look around we see that farmers, doctors, traders, teachers, etc. do their work. They are all engaged in what is called an economic activity. We may say that when man is engaged in economic activity, he is busy in earning money. He needs



money to satisfy his wants. A man wants food, clothes and shelter. To get these things he must have money. To get money he must work or make an effort. Efforts lead to satisfaction.

Thus wants, effort, satisfaction sum up the subject matter of economics. When one want is satisfied another one crop up or some wants occur after some period of time and again man has to satisfy that want he has to make some effort.



Thus, we can say that subject matter of economics is:

Consumption – Satisfaction of wants

Production – Producing the things or creating utility.

Exchange – Various markets, forms, buying and selling and how prices are determined i.e. money credit, banking, etc.

Distribution – sharing of all that is produced or share of profit among all factors i.e. workers, land lords, businessman, capitalist, etc.

(b) Is economics a science?

Economics is not only a science but also an art. It is a science in its methodology and an art in its application. It has a theoretical aspect and is also an applied science in its practical aspects. Science is a systematized body of Knowledge. A branch of knowledge becomes systematized when facts are collocated and analyzed to find out a relation between cause and effect. It lays down general principles which help to explain things and guide us. It is to be called science. E.g. Nitrogenous fertilizer increases rice field.

Economics is also an art which is also a systematized body of knowledge. An art lays down percepts or formulae to guide people who wants to achieve a certain aim e.g. removal of poverty, increase in rice production. It is also both an art and a science. Thus scope of economics is very wide indeed.

It is now agreed that economics is a fully fledged science. In fact, it is in no way less than other sciences.

(c) Economics is a social science:

Economic is primarily a study of man and not of wealth but it does not study man who has renounced the world. It studies human being but it does not study them as isolated individuals

living in forests or in mountain caves. It studies man living in organized society, who live in society affecting society from their action and themselves exposed to social influences economics has their to study social behavior, i.e., behavior of men in groups. Exchanging his goods for those of others, influencing them by his action and being influenced by them in turn. Thus, he depends on them and they depend on him. Economics thus a social since as it is concerned with the behavior of an individual living in a group.

(d) Positive science or normative science:

In discussing the scope of economics, we have also to consider whether economics is a positive or a normative science.

Positive science explains why and wherefore of things that means their causes and effect. A normative science discusses the rightness or wrongness of the thing. Economics is both a positive and a normative science, e.g. per capita income of a country is less and poor persons are becoming poorer and rich persons becoming riches. Whether it is a good sign or bad? If it is bad then what should be done, etc. So economics is positive as well as normative science (what is and what ought to be)

A positive science only explains What is and normative science tells us what ought to be, i.e., right and wrong of a thing positive science describes, while normative science evaluates, when we say, for instance, that the businessmen, while making decisions, use profit maximization as the criterion it is positive economics, but, when we ask “ought they use this criterion “, we enter the field of normative economics.

We have to consider whether economics can pass moral judgment (normative science) or simply explain “why” of things (positive science) Economics is, therefore, both a positive and a normative science.

## Lecture No. 3 &4

### Methods of Economics – Deductive, Inductive, Economic Statics and Dynamics, Meaning and Types of Equilibrium and Economy

#### Meaning of equilibrium:

The term 'equilibrium' has often to be used in economic analysis. In fact, Modern Economics is sometimes called equilibrium analysis. Equilibrium means a state of balance. When forces acting in opposite directions are exactly equal, the object on which they are acting is said to be in a state of equilibrium. Tie a cord to a piece of stone and dangle it in the air. After oscillating from side to side, the stone will come to rest, if no disturbance is caused. The stone is then in a state of equilibrium.

#### Types of equilibrium:

**Stable equilibrium:** There is stable equilibrium, when the object concerned, after having disturbed, tends to resume its original position. Thus, in the case of a stable equilibrium, there is a tendency for the object to revert to the old position.

**Unstable equilibrium:** On the other hand, the equilibrium is unstable when a slight disturbance evokes further disturbance, so that the original position is never restored. In this case, there is a tendency for the object to assume newer and newer positions once there is departure from the original position.

**Neutral equilibrium:** It is neutral equilibrium when the disturbing forces neither bring it back to the original position nor do they drive it further away from it. It rests where it has been moved. Thus in the case of a neutral equilibrium, the object assumes once-for-all a new position after the original position is disturbed.

#### Methods of economics:

Two methods are generally used in formulating economic generalizations or laws, viz., Deductive method and the Inductive method

#### Deductive method

In the deductive method, we start with a few indisputable facts about human nature or general principles and draw inferences about individual or particular cases. For instance, we assume that self-interest alone governs human behavior and we explain or predict about the behavior of a particular individual on this assumption.

Merits of deductive method: several advantages are claimed for the Deductive method

- a) It is a simple method and helps in explaining complex economic phenomena
- b) It is certain. If the assumptions are correct, the result must follow.
- c) It is easy to apply this method. Elaborate Statistical information is not required for its application.
- d) Since observation and experimentation are not possible where human behavior is concerned, we have to rely on the deductive method.

Limitations:

- a) The underlying assumptions may turn out to be untrue thus vitiating the inference drawn.
- b) The deductive method makes Economics dogmatic, because there is a tendency to regard assumptions as always valid.
- c) This method is dangerous when practical policies are formulated on imperfect assumptions.

**Inductive method:**

In the inductive method, we first collect relevant facts and on their basis draw conclusions. That is, we go up from ‘particulars’ to ‘generals’ whereas in the deductive method, we come down from generals to particulars. In the inductive method, we rely on observation and experimentation for collecting facts. Hence, this method has a sound basis. But, the danger is that hurried conclusions may be drawn from insufficient, incorrect or partially correct facts.

History provides experiments in the form of measures adopted. Large numbers of statistical publications are brought out in every country. These and other materials facilitate the application of the inductive method in modern terms.

**Conclusions: integration of the two methods:**

We find that both deductive and inductive methods suffer from certain shortcomings. Hence, the solution lies in the application of both so that one supplements the other. It is remarked that both methods are needed in economic theorizing as right and left foot are both needed for walking.

Thus, true solution of the contest about method is not to be found in the selection of deduction or induction but in the acceptance of deduction and induction”(Wagner).

Which of the two methods is to be used in a particular situation depends on the nature of the inquiry, the material in hand and the stage which the inquiry has reached.

In short, the true scientific method thus consists of three different stages, viz.,

- I. Construction of theories.
- II. The deduction of conclusions or predictions from the theories.
- III. The testing of theories.

**Different types of economy:**

The economy may be classified in a number of ways. A layman, for instance, may classify economies as rich and poor. In a rich economy, the per capita income and the standard of living are very high, whereas in a poor economy like that of India, the per capita income is extremely low and the average citizen hardly gets two square meals a day.

**Simple or complex economy:**

The economies can also be classified as simple or complex. A simple economy like that of an isolated Indian village is a self-sufficient economy. All the needs of all the villagers are fully satisfied in the village itself. It has no trade with the outside world. The requirements of the people must be very few. Each family in the village may be carrying on what is called

subsistence economy, i.e., producing enough of all goods to satisfy its own wants. For a long time, the Indian farmers carried in subsistence farming, i.e., producing for the family and not for market.

The economy of the modern town or city is an example of a very complex economy. Millions of people are crowded together in a small area and there are hundreds and thousands of occupations. There is extreme degree of specialization of products and businesses, and no person can even dream of self sufficiency. To be self-sufficient is considered neither desirable nor feasible. For the satisfaction of the want of the people millions of workers producers and business man must co-operate goods have to come sometime from the farthest and of the world, just think how many hundreds of people – producers of raw materials for paper industry, paper manufactures, printers and the workers, the authors and the writers of hundreds of books that may have consulted, publishers, representatives long chain of middle men and retail book-seller – must have cooperated to place this book in your hands. Specification and operations that it necessitates in the form, of mutual exchange are the dominant characteristics of a modern economy.

#### **Agricultural and industrial:**

The economics can further be classified as agricultural and industrial. In an agricultural economy, agriculture is the main occupation of the mass of the people, the economy largely produces agricultural products, raw materials and food grains. They export these commodities and import manufactured goods. Such economies are generally backwards and poor. On the other hand, industrial economies are rich and advanced. The towns and cities represent industrial economy. A country where the bulk of the population resides in the rural areas is an agricultural economy; whereas a country with predominantly urban population is an example of an industrial economy.

#### **Socialist economy:**

There is still another classification, socialist economy and capitalist economy, in the socialist economy, as that of the U.S.S.R, and China all means of production, firms and factories, etc., are socialized. That is, they belong to the state. There is no private sector; it is all public sector enterprises, the instruments of production are owned and managed by the state in the interest of general welfare. All profit goes to the state to be ploughed back in further economic development or to be spending on the welfare of the people. There may not be absolute economic equality but equality of opportunity is guaranteed. Employment is guaranteed. The resources are located not according to demand or wishes of the people but by a central authority with a view to the overall interest of the State.

#### **Capitalist economy:**

Such an economy prevails in the U.S.A., the U.K., Western Europe and most other countries of the world. In this economy, economic decisions regarding productions are taken by private entrepreneurs who are solely guided by the expected rate of profit based on consumer's preferences, actual or anticipated. Thus profit motive is the main springs of all economic

activity. The institutions of private property, dominant role of the entrepreneur, uncoordinated nature of the economic activity, competitions as well as cooperation and class-conflicts are some of the important features of a capitalist economy.

However, the more important classifications are, whether an economy is

- a) Developed or under-developed, or
- b) Free – enterprise, unplanned or controlled and planned economy.

### **Under-developed and developed economies:**

Under-development refers to low level of economic and technical achievement. The people are generally poor and their productivity is low. The Indian Planning Commission defines an under-developed country as one “ which is characterized by co-existence, in greater or less degree, of unutilized or under-utilized man-power, on the one hand and of unexploited natural resources on the other.”

The main characteristics of under-developed economies are; excessive reliance on agriculture, a rapidly increasing population, capital deficiency, under-utilization of human and natural resources, low per capita income, low standard of living, uneconomic social structure. Under-develop infrastructure, and so on.

On the contrary, a developed economy shows opposite characteristics, viz., high rate of capital formations, proper balance between agriculture and industry and between rural and urban population, high per capita income and high standard of living, advanced techniques of production, restricted population growth, full employment and optimum utilization of human and material resources, a fully developed infrastructure and so on.

The U.S.A., Canada, the U.K. and Western Europe are examples of developed economies and most of the Asian countries fall in the category of under-developed economies. India may, however, be described now as a developing economy. That is, from an under-develop stage, it is moving toward a developed stage.

### **Free – enterprise economy:**

In a free enterprise or unplanned economy, economic decisions regarding production are taken by innumerable independent entrepreneurs. Similarly, the decisions regarding consumptions are taken independently by millions of consumers. There is no central authority to co-ordinate, guide or direct economic activities. It is a full-fledged economic democracy. Entrepreneurs may take up any business that he thinks profitable. There are no checks, no restraints and no control of any type. A customer may spend his income in any manner that he thinks best to give him maximum satisfaction. There is, no rationing and no price control. In other words, there is full economic freedom.

The main features of a free – enterprise economy (as in the case of a capitalist economy) are:-

The existence of the institutions of private property under which the state protects the private property of citizen and guarantees its use by them for their own benefit. Every citizen has a right to own property in any form he likes and pass it on to his heirs and successors.

There is freedom of enterprise under which every citizen is free to take up any profession or start any business he likes.

Profit motive is the main guiding factors for all economic undertakings.

There is consumer's sovereignty giving the costumer a free choose in spending their income or assets in order to derive maximum satisfactions for themselves.

Price- mechanism plays vital role guiding both producers and consumers. It determines the locations of the productive resource of the community.

There is keen competition between producers and producers on the one hand consumers and consumers on the other as well as bargaining between producer and consumers.

Inequalities of incomes and wealth as well as opportunities are other silent feature of a free enterprise economy.

### **Planned economy:**

In the planned economy, however, there is a central authority which chalks out the entire plan for the economy. It is immaterial whether the economy is capitalist or socialist, a central planning authority is essential. In the field of production, all enterprise must fit in the overall plan. It is not the market which guides the production but what the planning authority think most desirable to secure optimum utilization of resources and the maximum rate of economic growth. Naturally, there are extensive controls both on production and on consumption, e.g., licenses for sitting up industrial undertakings, control over capital issues, import controls, export controls, exchange control, price control and rationing. There is a details plan regarding investment and production all sectors of economic activity: agriculture, industry, trade, transport and communications, even for social services like education and public health. There are set objectives to be achieved.

(The main features a planned economy are discussed in a letter chapters on economic planning.)

### **Mixed economy:**

What may be called a new type of economy seems to be shaping itself. In Britain, which may be regarded as the home of capitalism and free enterprise, certain important industries have been nationalized. India is also following her example. Britain nationalized the bank of England and the steel industry (steel industry was later denationalized by the Conservative Government). India has nationalized the Reserve Bank of India, the life insurance business and 14 major commercial banks. If the Government of India had not been handicapped by the lack of funds and trained personal and if it had not been engrossed in more urgent problems, India would have also nationalized certain industries. The Government of India declared in 1948 that for ten years would be no nationalization, which meant that when 10years were over, steps towards nationalization might be taken.

According to the industrial policy the Government of India announced in 1948 the later in 1956, some industries have been put under State control. These industries are owned by the Government. Such industries may be considered to constitute the socialized or public sector. In a mixed economy, the private sector (capitalism) and public sector (socialism) exist side by side. There are industries which are owned by private capitalists; there are industries which are owned exclusively by the state; and there are industries in which the state and the private



capitalists from partnerships. It seems very likely that mixed economy will make a rapid headway in the capitalistic countries. In fact, today all capitalist countries including the U.S.A. and the U.K. may be better called mixed economies, because of the emergence of a considerable public sector in them.

In India, under the Five Years Plans, the scope of State Operation, State- control and State interference has been very much enlarged. The private sector operates according to wider policies laid down by the Government. Our mixed economy tends to assume the shape of democratic socialism ultimately. Under it both private and public sectors shall operate, but the private sector will work under the overall general control of the Government. India has decided to establish a socialistic pattern of society. For this purpose public sector is being expanded. Taxation of the rich and beneficent State activities for the poor and measures of social security and social welfare are some of the steps taken in this direction.

### **Statics, dynamics and comparative statics:**

A student of modern economic analysis frequently comes across the term economic statics and economic dynamics

### **Statics meaning:**

In common usage the term statics connotes position of rest or absence of movement. However, economic static does not imply absence of movement, rather it denotes a state in which there is a continuous, regular certain and constant movement without change. It is a state where in economic activity goes on regularly and certainly on an even level.

According to Hicks, statics studies stationary situations which are devoid of any change and which do not require any relation to the past or future

Thus, it is a method of dealing with economic phenomena that has to establish relation between elements of the economic system- price and quantities of commodities-all of which have the same point of time.

### **Economic dynamics:**

In economics, dynamic refers to the study of economic change. It is thus a process of change through time. In dynamic economic analysis we investigate the behavior of system which results from the passage of time.

The main purpose is to know as to how a complex of current events will shape themselves in the future. To do so, it is necessary to visualize the way it has arisen out of the past events. In this view, the economics essentially assumes a dynamic character. The movements we talk of reference of events, the element of time creeps into our analysis. It is this time element and its passage that impact a dynamic color to our economic problems.

### **Comparative statics:**

An analysis in which we start with a system in equilibrium, then introduce a change and study the ultimate effect of the change. This is the method of comparative statics. we compare one equilibrium position with another and ignore the time element.



It is a method whereby we can ignore time as a variable and still make a purpose full study of the economic system.

## **Lecture No. 5&6**

### **Agricultural Economics – Definitions, Meaning, Importance and Scope of Agricultural Economics**

#### **Agricultural Economics:**

The word "agriculture" comes from Latin words "ager" referring to the soil and "cultura" to its cultivation.

Agriculture in its widest sense can be defined as the cultivation and/or production of crop plants or livestock products. It is synonymous with farming the field dependent production of food, fodder or industrial organic materials.

#### **Definitions of Agricultural Economics:**

Agricultural Economics is an applied field of economics in which principles of choice are applied in the use of scarce resources such as land, labour, capital and management in farming and allied activities. It deals with the principles that help the farmer to use land, labour and capital. Its role is evident in offering practicable solutions in using scarce resources of the farmers for maximization of income.

The science in which the principles and methods of economic are applied to special conditions of agricultural industry.

**Prof Gray**

The study of the relationship arising from the wealth- getting and wealth-using activity of man in agriculture.

**Prof Hibbard**

Agricultural economics is a social science which is concerned with human behaviour during the process of producing, processing, distributing and consuming the products on farms and ranches.

**Goodwin**

#### **Importance of Agricultural Economics:**

The field of agricultural economics finds to seek relevance between cause and effect using most advanced method viz., production functions and programming models. It uses theoretical concepts of economics to provide answers to the problems of agriculture and agribusiness. Initially earnest efforts were made by economists to use the economic theory to agricultural problems. Now, the subject of agricultural economics is enriched in many directions.

#### **Utility of Agricultural Economics:**

Due to commercialisation of agriculture, the importance of Agriculture Economics has increased. The study of Agriculture Economics is helpful in many ways.

1. It is helpful in developing the logical efficiency and faculty of observations.
2. It provides knowledge about production, consumption, exchange, distribution and public finance.
3. By the study of Agriculture Economics, the householders can get maximum return out of their expenditure.
4. It provides wisdom for keeping proper family budgets.
5. Study of Agricultural Economics helps in getting more income with minimum cost.
6. The knowledge of Agricultural Economics increases the marketing efficiency

7. It provides knowledge about division of labour and increases the efficiency of labour.
8. It shows the relationship with other social sciences.

### **Scope of Agricultural Economics:**

The scope of Agricultural Economics is to include the questions- what to distribute, among whom to distribute and on what basis to distribute, what to consume and how to consume.

Agricultural economics also includes the participation and functioning of government in agriculture. The role of government cannot be neglected as a process of production, distribution and consumption and overall upliftment of the rural masses. It provides technical knowhow, aid and assistance, infrastructure on one hand and regulate input and output prices in the interest of the consumer and the producer on the other. Therefore, government participation is a relevant part of the study of agricultural economics.

Agricultural economics deals with the principles which underline the farmer's problem of what to produce and how to produce, what to sell and how to sell in order to secure the largest profit for him, consistent with the interest of society as a whole. More specifically, it deals with the selection of land, labour and equipment for a farm, the choice of crops to be grown, the selection of livestock, enterprises to be carried on and the whole question of the proportions in which all these agencies should be combined. Consumption production and distribution economics is as important for farm people as it is important for them to understand the economics of their farm production.

In short the scope of Agricultural Economics includes production, distribution, consumption and government activities in relation to agriculture and farm enterprises.

### **Importance of Agriculture in Indian Economy:**

Agriculture sector forms the backbone of the Indian economy. India is agricultural country, endowed with abundant natural resources. So prosperity of the nation is largely dependent on agriculture. The role of agriculture in national economy is of vital importance.

- 1) **Share of agriculture in the national income:** Between 1950-51 to 1960-61 the share of agriculture was greater than 50 percent of total GDP. The share of agriculture is decreasing continuously and it has declined to 14 percent in 2011-12. However, the share of manufacturing services and service sectors are increasing. The agriculture plays an important role in the nation's economy which is still dependent on agriculture.
- 2) **Agriculture as a source of livelihood:** Agriculture provides employment to around 52 percent of total work force in the country. Agriculture dominates the economy to such an extent that a very high proportion of working population in India is engaged in agriculture.
- 3) **Importance of agriculture for industrial development:** Indian agriculture has been the source of supply of raw material to leading industries such as cotton, jute and sugar etc. There are many industries which depend on agriculture in an indirect manner like handloom weaving, oil crushing, rice husking etc. Since ninth five year plan onwards the importance of food processing industries is being increasingly recognized and given due weightage in economic development.

- 4) **Role of agriculture in the field of international trade:** Importance of agriculture also arises from the role it plays in India's trade. Agriculture products such as tea, sugar, oilseed, tobacco, constitute the main items of exports.
- 5) **Support of transport and trade:** Agriculture provides the main support for India's transport system since railways and roadways secure bulk of business from the movement of agriculture products. Internal trade is mostly in agricultural products. Thus agricultural trade provides more opportunities to service sector.
- 6) **Prosperity of farmers is prosperity of industry:** Good crops and high products enhance the purchasing power of farmers thereby increasing the demand for other manufactured goods. It will help to stimulate the growth of the non-agricultural sector and also help to reduce and strain on foreign to exchange earnings.

Agriculture growth has direct impact on poverty eradication. Agriculture growth is an important factor influencing inflation, agricultural wages and employment generation. It is clear that agriculture is the backbone of Indian economy and prosperity in agriculture can influence the prosperity of Indian economy.

## Unit-II

### Lecture No. 7,8 & 9

## Basic Terms and Concepts in Economics – Goods & Services, Wants, Wealth and Utility, Value – Definition – Characteristics, Price – Meaning, Wealth – Meaning Attributes of Wealth, Types of Wealth, Distinction between Wealth and Money

### Basic terms and concepts:

**Goods:** Human wants are the starting point of all economic activities. Man needs to satisfy various wants. There are two things with which he can satisfy these wants: Goods and services. Goods means the commodities that we use. Goods or commodities are almost always concrete, material and tangible, e.g., land, houses, furniture etc. Anything that satisfies a human want is called 'good' in economics.

Services refer to work that a person may do. Services are not tangible or concrete.

### Kind of goods:

**Free goods-** Those goods which exist in plenty and we can consume as much of them as we like without any payment. E.g. air, sunshine etc. We do not have to pay for using them.

**Economic goods-** Those goods which are scarce and can be had only on payment. They are limited, manmade and payment has to be made in order to get them. In economics we are concerned only with the economic goods because only in their case the question of valuation or payment arises.

The distinction between economic goods and free good is not permanent.

**Consumption goods-** Those goods which directly give satisfaction, they are used by consumers to satisfy their wants directly. They are also called the goods of the first order or the final goods e.g. food, clothing, pen, ink, etc. Consumer's goods are the end of whole process.

**Capital goods-** are those which help us to produce other goods, e.g. tools, machines, etc. They are called produces goods, or goods of the second order. They satisfy our wants indirectly, because they produce those goods which then satisfy our wants.

**Intermediate goods-** These goods are in between consumption goods and capital goods. They are the raw materials used in the production of consumer goods.

**Material and Non-material goods-** Material goods are land, building, furniture etc. Non material goods are not tangible. Various kinds of services fall under this category. But, some of the non-material goods are scarce and transferable e.g. goodwill of business. It can be bought and sold.

Transferable and Non-transferable goods- Transferable goods are those goods which can change their ownership.

Non-transferable goods are like skill, ability, intelligence etc, which are personal qualities and which cannot be utilized by others.

Personal and Impersonal goods- Personal goods are extension of the transferable goods, they are the personal qualities of the person e.g. his ability and skill. They are non material and exist inside; therefore, they are called internal goods. Impersonal goods are external and lie outside a person. They are therefore also called external goods. The personal goods are what he is and what he has?

Public and Private goods:

Public goods are common to all and owned by the society collectively e.g., town hall, college, hospital etc.

Private good are the property of private individuals e.g. land, building, house, livestock owned by him exclusively and not shared with others.

**Wants:**

Wants: A want is a lack of satisfaction. A want, a need and a desire are synonymous in that each indicates a lack of satisfaction.

Needs: There are numerous half-instinctive feeling which may be called the primary need such as hunger and thirst. e.g. we need food.

Wants: There are other feelings concerned with less vital matters which are common to man; they may be designated as wants. e.g. we want footwear.

Desires: Wants, felt in relation to particular things may be called desires. Thus we desire a particular kind of footwear, say-shoes.

**Characteristics of human wants:**

Man wants is a bundle of desires, his wants are varied and infinite in number. Food, clothes and shelter are the basic needs of man; a civilized man is not satisfied with these bare necessities of life. The modern man is the product of a long process of evolution which is reflected in his endless and ever- growing wants.

- Some wants are alternative. It is enough to satisfy only one of them. e.g. tea and coffee.
- Some wants are complementary. Both tend to be satisfied together. One is a complement of the other. The two are jointly demanded e.g. a motor car and petrol.
- All wants are competitive. The means to satisfy them being limited, all of them cannot be satisfied by a consumer.
- Each want rival with other in being chosen and satisfied. In this the wants are said to be substitutable.

1. **Human wants are unlimited-** Human wants are unlimited and unending, when one want is satisfied another one crops up and takes its place. Man's mind is so made that he is never completely satisfied, he always bankers after more goods and services. The cycle of wants is never ending.
2. **Any particular want is satiable-** Although the wants are unlimited, it is possible to satisfy a particular want if one has enough money. If a man wants food he can purchase and be satisfied. So any particular want is satiable.
3. **Wants are complementary-** A commodity seldom satisfies a human want by itself. Usually, it calls for something else in addition. If we want to write a letter we must buy a pen as well as paper. The pen alone is not enough. It is common experience that we want things in groups. A single article by itself cannot satisfy our wants. It needs other things to complete it.
4. **Wants are competitive-** Not only are wants complementary they are competitive as well. One commodity competes with another. We all have limited amount
5. **Wants are both complementary and competitive-** Machinery competes with labour. A manufacturer to some extent can substitute one for the other. But they also go together because both are used in production process. Thus human wants are complementary and competitive.
6. **Wants vary with time, place and person-** Wants are neither always the same nor the same with everyone. Different people want different things and also the same person wants different times at different places.
7. **Wants vary in urgency and intensity-** All wants are not equally urgent and intense, some are more urgent and intense than others. These wants are satisfied first while others are postponed.
8. **Wants multiply with civilization-** As civilization spreads, wants also increase. People living in urban areas have more wants than people living in village. This largely explains why wants of European countries are more than African countries. With the advance of civilization the demand for radio, cinema, television, motor cars and other modern amenities increases.
9. **Wants recur-** Most human wants are recurring in nature, some wants arise again & and clamour for satisfaction. e.g. food.
10. **Wants change to habits-** If a particular want is satisfied regularly a person becomes used to it grows into a habit. He must then satisfy these particular wants regularly and it becomes a habit.
11. **Wants are influenced by income, salesmanship and advertisement-** The increase in income also increases the number of wants a poor man cannot afford to have so many wants. We do not always buy the things we need but are often induced into buying particular brands by persuasive salesmen or never advertisement even though better alternatives may be available.
12. **Wants are a result of custom and convention-** we often spend money on social ceremonies. Most of our wants are determined by custom and they are conventional.

These wants are dictated by the society. These wants change according to religion customs and traditions.

**13. Present wants are more important than future wants-** Man is more concerned about present wants rather than being worried about his future wants. It is human to regard the present wants as more important than the future wants.

**14. Wants are alternative** - Wants have alternatives. Same want may be satisfied by different commodities.

### **Classification of wants:**

The wants and services that we want are generally classified as necessities, comforts and luxuries.

1 Necessaries- Necessaries may be further sub-divided as

(a) Necessaries of existence

(b) Necessaries of efficiency

(c) Conventional necessities.

(a) Necessaries of existence- These are the things without which we cannot exist e.g. minimum food, clothing and shelter.

(b) Necessaries of efficiency - Some goods may not be necessary for enable us to live but necessary to make us efficient workers. A table and chair are necessities for efficiency of a student, with the help of which he will be able to read and write better.

(c) Conventional necessities – These things are forced on us either by social custom or because people around us expect us to do so. It is clear that we cannot dress ourselves in a strange fashion.

2. Comforts – When our wants for the necessities of life are satisfied, we desire to have some comforts too. For a student, book is necessary, a table and chair are necessary for efficiency but a cushioned chair is a comfort. Comforts make life fuller. In order to distinguish between comfort and necessary of efficiency we may say that benefits from comfort are less than necessities for efficiency in relation to money spent on it. We may say that an electric fan in summer is a necessary for efficiency where as an air conditioner is a comfort.

3. Luxuries – Man does not stop at comfort he wants luxuries too. Luxury has been defined as a superfluous consumption, without which we can easily live. Costly furniture, luxuries car, shower baths, silk clothes, jewelry, etc. are all luxuries. Necessaries, comforts and luxuries are relative terms- Necessaries, comforts and luxuries are relative terms and we cannot attach permanent and fixed labels to commodities. The same thing may be necessary under one set of conditions and luxury in another. A car may be a luxury for a person living in small city but for a busy official or a doctor, it is necessary.

The luxuries of yesterday have become the necessities of today due to rising standard of living and growing prosperity.



**Economic and Non-economic needs:**

Economic needs: These are those needs which we can fulfill with wealth by spending money.

Non Economic needs: There are, however, wants which are cannot satisfy by spending many- these are called non-economic need. E.g. being kind, working of god, avidly since, desire to love.

**Economic and Non-economic activities:** Economic activity or material activities are these activities which are performed with a view to earning wealth or money.

Activity which are performed for the sake of pleasure only or the performance of which do not being wealth or money are called **non-economic or non-material activities**. E.g. mother looking after has child

It will be useful to understand that the difference between economic activities and non-economic activities lies not in the manner of doing these activities but in the motives with which these activities are performed.

**Utility:** means the power in goods to satisfy a human wants. The man satisfies his want with the help of goods and this quality in goods is called utility. Utility is a quality in a good, by virtue of which it gives satisfaction. We can't say mango has utility, but mango posses utility and it gives satisfaction. Utility is subjective- commodity does not possess utility itself, independent of consumer. It is consumer's mind which gives it utility. e.g. cigarette. Utility varies from individual to individual. Commodities may have different utility at different places.

**Kinds of utility:**

Form utility- change in the form of an article or a commodity can give a greater utility, e.g. transferring building material to a building, piece of wood to furniture, un-husked rice to polished rice, different processed products etc.

Place utility- utility can also be increased by transporting a good from one place to another e.g. utility of apple can be increased by transporting it from Himachal Pradesh to South India. Utility of tea and coffee is increased because of its export.

Time utility: The use of the commodity can be increased during scarcity period. The commodities can be stored when prices are low or supply is more and they can be sold in time of scarcity at higher rates. A warm suit has greater utility in winter season; raincoat has no utility in summer season.

Purpose utility: The utility of commodity can be changed by change in purpose or same commodity may have different utilities according to purpose. Water is used for washing, bathing, drinking, etc.

Utility according to person or ownership: The utility may change from person to person e.g. a blind man don't have utility of a picture whereas a rich man may be ready to give a lot of money to own that picture.

**Value:**

Value of a commodity means the value in exchange for other commodities, is purchasing power in terms of other commodities and services.

Attribute of value: Three essential qualities that make a particular commodity have value are

1. It must possess utility,
2. It must be scarce,
3. It must be transferable or marketable

Because, when the commodity possesses utility it satisfies human want and if it is scarce and transferable means it is an economic good and somebody can pay for it.

The value of commodity is relative, it cannot be absolute. Value represents an equation between two commodities. e.g. if we say 10 kg of rice is equal to, 6 kg of sugar means 1 kg of rice is equal to 600 gms of sugar or 1 kg of rice can fetch 600 gms of sugar in the market.

**Price:** when the value of goods is expressed in terms of money, it is called price. Price expresses the value in terms of money.

**Wealth:** Economic goods are called wealth. Anything which has value is called wealth in economics. Wealth may be better defined as anything that is exchangeable.

Wealth has the same three attributes as value, scarcity, transfer-ability and marketability.

We can find out whether a good is wealth or not, by asking our self these three questions.

1. Can it satisfy a human want or does it possess utility.
2. Is it scarce?
3. Is it transferable?

If the answer to all these three questions is affirmative we can say it is wealth.

**Representative wealth:** The documents of title like bills of exchange, bills of lading documents of property and insurance policies are also wealth. They are valuable because they represent titles to property.

**Money and wealth:** Money is wealth because it gives affirmative answer to all three questions that is scarcity, transferability and satisfaction of want. All money is, therefore, wealth.

Wealth consists of all forms of property. Therefore, we can say that all money is wealth but all wealth is not money.

**Economic and Non-economic activities:** Economic activities are those activities which are performed with a view to earning wealth or money (Material activities).

Non-economic activities are those activities which are performed for the sake of pleasure only or the performance of which do not bring wealth or money. e.g. Mother looking after her child (Non-material activities).

**Consumption and utility:** Satisfaction of wants by the use of scarce goods is called consumption in economics. Consumption in economics is thus only the consumption of utility.

**Total utility:** Utility which a consumer gets from a given amount of a good is called total utility of the good to that consumer.

**Marginal utility:** The utility of any unit of a given stock of a good is its marginal utility.

Units of good	Units of total utility	Units of marginal utility
1	10	10
2	18	8
3	24	6
4	28	4
5	30	2
6	30	0
7	30	0
8	28	-2
9	25	-3
10	22	-3

**Consumption:** Consumption means the satisfaction of our wants by the use of commodities and services. When we use a commodity we actually use the want satisfying quality or utility of a commodity. Hence, consumption means the using of utilities.

e.g. when we take a glass of water to quench our thirst, we say that we have consumed water when we are sick we call the doctor and we consume the services of a doctor. Hence, consumption deals with the satisfaction of wants. When we sit in a chair we consume the chair.

Consumption is also called destruction of utility provided that it satisfies human wants, so the emphasis is on the satisfaction of wants rather than on the destruction of utility. If no want has been satisfied, it is not consumption.

Consumption may be destruction of utility but destruction of utility may not be consumption. When a house catches fire, it gets destroyed and wants satisfying quality has gone but it is not consumption.

**Type of consumption:** Consumption is of two types, direct or final consumption and indirect consumption.

Direct consumption is when goods satisfy the human wants directly and immediately e.g. Wearing of a shirt is direct consumption, whereas the use of sewing machine is indirect consumption. It is called indirect or productive consumption because sewing machine is used to stitch the shirt which is then consumed directly.

## Lecture No. 10 & 11

### Law of Diminishing Marginal Utility: Basic Assumptions, Definition, Limitations and the Practical Importance

#### Marginal utility:

M.U. can be defined as the change in the total utility resulting from a one unit change in the consumption of a commodity per unit of time

Or

M.U. has been defined as the addition made to the total utility by the consumption of the last unit considered just worthwhile.

In other words, it may be defined as the change in total utility resulting from a unit change in the quantity of the commodity consumed.

The following formula may be used to measure it.

$$\text{Marginal utility (MU)} = \frac{\text{Change in total utility}}{\text{Change in quantity consumed}}$$

#### Marginal utility analysis:

There are different approaches known to the economists to the theory of demand and the oldest among them is the marginal utility. The marginal utility analysis explains the consumer's demand for a commodity and derives a law of demand which shows an inverse relationship between the quantity demanded and the price of the commodity. That is it states that as price falls, demand is extended, and vice-versa.

**Basic assumptions:** The following are the main assumptions on which M.U. analysis is based.

- (i) **Cardinal measurement of utility:** M.U. analysis assumes that utility can be measured and the exact measurement can be given by assigning definite numbers such as 1, 2, 3, etc. That is it is assumed that utility is a quantifiable entity. This means that a person can express the satisfaction derived from the consumption of a commodity in quantitative term.
- (ii) **Utilities are independent:** The utilities of different commodities are independent of one another. That is, the utility of one commodity does not on any way affect that of another. In other words, the satisfaction derived from the consumption of one good is the function of that good alone and is not affected by the consumption of another. Thus according to this assumption, the utility of various goods are additive i.e. separate utility of the various goods can be added to obtain the total sum of the utilities of all goods consumed.
- (iii) **Constant marginal utility of money:** Marginal utility of money remains constant even though the quantity of money with the consumer is diminished by the successive purchases made by him.
- (iv) **Introspection:** Marginal utility analysis also assumes that from one's own experience it is possible to draw inference about another person. This is self-observation applied to another person.

#### Law of diminishing marginal utility:

Satisfactions of human wants follow some very important law and one of them is the law of Diminishing Marginal Utility. The law refers to the common experience of every consumer.

Marshall states the law thus, “The additional benefit which a person derives from a given increase of his stock of a thing diminishes with every increase in stock that he already has.” In other words, the marginal utility varies inversely with the stock, although, not necessarily in the same proportion.

Two important reasons can be given, for diminishing marginal utility:

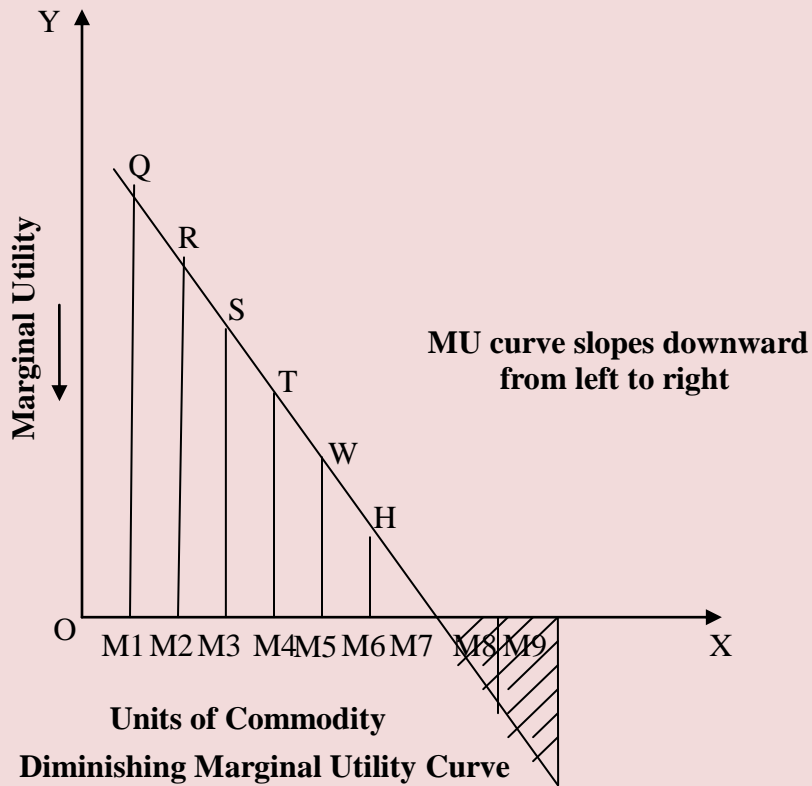
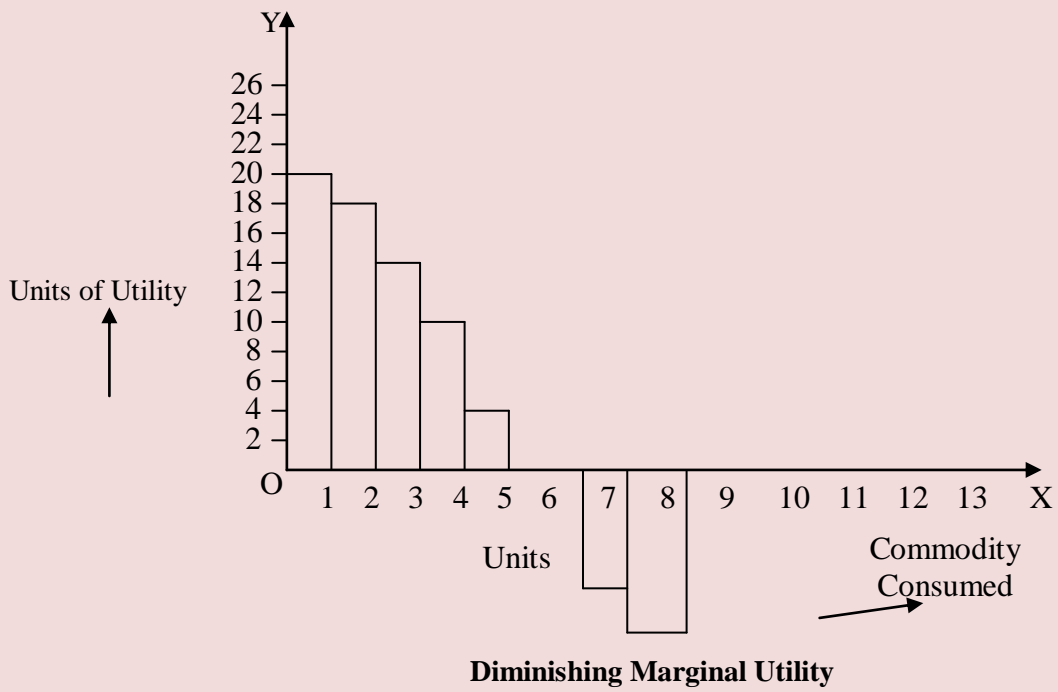
- (a) Each particular want is satiable, and
- (b) Goods are imperfect substitute for one another and they tend to be consumed in appropriate proportions.

The law will be clear from the following Table1.

**Table 1**

1 Units (Toasts)	2 Total Utility (Units of satisfaction)	3 Marginal Utility (Units of satisfaction)
1	20	20
2	38	18
3	53	15
4	64	11
5	70	6
6	70	0
7	62	-8
8	46	-16

When our hypothetical consumer goes on taking toasts, the extra satisfaction that he gets by the consumption of each successive toast goes on decreasing till it goes down zero at the 6<sup>th</sup>, and it becomes negative. The total utility, however, goes on increasing utility the consumption of the 5<sup>th</sup>; but it is worth noting that it increases at a diminishing rate. It will be seen from the table that the total utility of a quantity of a commodity is maximum (i.e.70) when the marginal utility is zero (i.e. at the 6<sup>th</sup> unit)



**Limitations:**

The law of DMU is based as certain assumptions.

- (i) **Suitable units:** It is assumed that commodity is taken in suitable units. Unless, therefore, the units are of a suitable size, the law will not hold good. The initial quantity should be greater than the critical minimum.
- (ii) **Suitable time:** It is further assumed that the commodity is taken within a certain time; otherwise the law will not apply.
- (iii) **No change in consumer's tastes:** Another assumption is that the character of the consumer's does not change. The consumer must not, for instance, have developed a craving. The law does not hold if the character of consumer has undergone a change.
- (iv) **Normal person:** This law applies to normal persons and not to eccentric or abnormal persons like misers. In case they behave in a queer and irrational manner, the law will not hold good. We assume rational behaviour on the part of individual.
- (v) **Constant income:** It is also essential that the income of the consumer remains the same. Any change in the income will falsify the law.
- (vi) **Rare collection:** In case of rare collections, the law does not hold good.
- (vii) **Change in other people's stock:** The law says that the marginal utility decreases when there is an increase in our stock. But, in some cases, the utility changes, not because of a change in what we have but because of a change in other people's stock.
- (viii) **Other possession:** Utility also depends on our other possessions, thus, change in our other possessions can also bring about a change in marginal utility. The law ignores the relation of complimentarily.
- (ix) **Fashion:** Utility depends on fashion too. The utility of our dress goes up when that dress comes in fashion.
- (x) **Not applicable in money:** The law does not apply to money as it is said that more money he has, the more he wants. But it does apply to money too.

**Conclusion:** The law of diminishing utility, like other economic laws, is merely a statement of a tendency. It depends upon so many conditions. If the conditions are not fulfilled, the law does not apply as in the many exceptional cases.

**Practical importance:**

**1) Taxation:** This law forms the basis of the theory and practice of taxation. Progressive system of taxation, imposing a heavier burden on the rich people, is a practical application of this principle in field of public finance.

**2) Price determination:** The law explains why with increase in its supply, the value of a commodity must fall. It thus forms a basis of the theory of value.

**3) Household expenditure:** The law of diminishing marginal utility governs our daily expenditure.

**4) Downward slapping demand curve:** It is this law which tells us why demand curves slopes downwards.

**5) Value –in- use and value- in- exchange:** It also explains the divergence between value-in- use and value-in-exchange.

**6) Socialism:** The socialists take stand on this law when they advocate the re-distribution of wealth in favour of the poor.

**7) Basis of some economic laws:** Some very important laws of economics are based on the law of DMU e.g. law of demand, the concept of consumer's surplus, the concept of elasticity of demand, the law of substitution, etc. These laws and concepts have ultimately been derived from the law of DMU.

**Marginal utility of money:** Does the law of DMU apply to money. It is said that more money a person has more he desires to obtain it. That is, the marginal utility of money goes on increasing with its increase. This is opposed to the law of DMU. But it is also true that the law of DMU certainly applies to money too. As the quantity of money, that a person possesses increase, its significance to him decreases. e.g. a rich person attaches much less importance to each unit of money than the poor. He spends it more freely and is much less worried incase he happens to lose a certain portion of it. Every increment in the amount of money that a man has brings him less and less extra pleasure. Hence, the law of DMU does apply to money also.

**Marginal utility and price:** Marginal utility and price are inter-related. The two coincide or price measure marginal utility. The consumer stops where the price and the marginal utility are equal. We can say that marginal utility determines price. It is marginal utility and not total utility that determines price, otherwise the price of water should have been high and that of gold low. Price and marginal utility thus move together up and down.

**Marginal utility and supply:** MU is function of supply, i.e. it varies with supply.

Price food → unlimited supply → MU zero  
Scarce good → limited supply → MU positive

MU increases as supply contracts.

MU decreases supply expands.

MU zero when supply is super abundant.

Hence, MU varies inversely with supply.

**Marginal utility of related good:** There are two main types of relationship between goods.

a) They may be substitutes or

b) They may be complementary

The substitutes are capable of satisfies the same want e.g. tea and coffee, air transport, rail transport and road transport. If they are perfect substitutes; they may be treated as ore commodity for all practical purposes. But most goods are only imperfect substitutes. In the case of such goods, other things being equal, the M.U. of any such goods decreases as the quantity of the substitute goods with the consumer increases.

The complementary goods are such goods which are wanted together for the satisfaction of a want. e.g. paper, pen, ink for writing. In such cases, other things remain the same, marginal utility increases as the quantities of the complementary goods with the consumer increases. If for instance a consumer acquires more paper, the M.U. of the bottle of ink goes up.



## Lecture No. 12, 13 &14

### **Demand – Meaning, Definition, Types of Demand - Income Demand, Price Demand, Cross Demand- Demand Schedule, Demand Curve, Law of Demand and its Derivation – Contraction and Extension, Increase and Decrease in demand**

**Meaning of demand:** When a person desiring is willing and able to pay for what he desires, the desire is changed in to demand.

Demand is always at a price." The demand for anything at a given price is the amount of it which will be bought per unit of time at that price."

To speak of demand without reference of price is meaningless.

Also, the demand is always per unit of time, per day, per week, per month, per year.

"By demand we mean the various quantities of a given commodity or service which consumers would buy in one market in a given period of time at various prices, or at various incomes, or at various price of related goods" (Bober).

**Types of demand:** Three kinds of demands may be distinguished.

- (a) Price Demand;
- (b) Income Demand; and
- (c) Cross Demand

**Price demand:** refers to the various quantities of a commodity or service that a consumer would purchase at a given time in a market at various hypothetical prices. It is assumed that other things, such as consumer's income, his tastes and the price of inter-related goods, remain unchanged.

**Income demand:** refers to the various quantities of goods and services which would be purchased by the consumers at various levels of income. Here we assume that the prices of commodity or service as well as the prices of inter-related goods and the tastes and preference and desires of consumers do not change.

**Cross demand:** means the quantities of good or service which will be purchased with reference to change in price not of this good but of other inter-related goods. These goods are either substitutes or complementary goods.

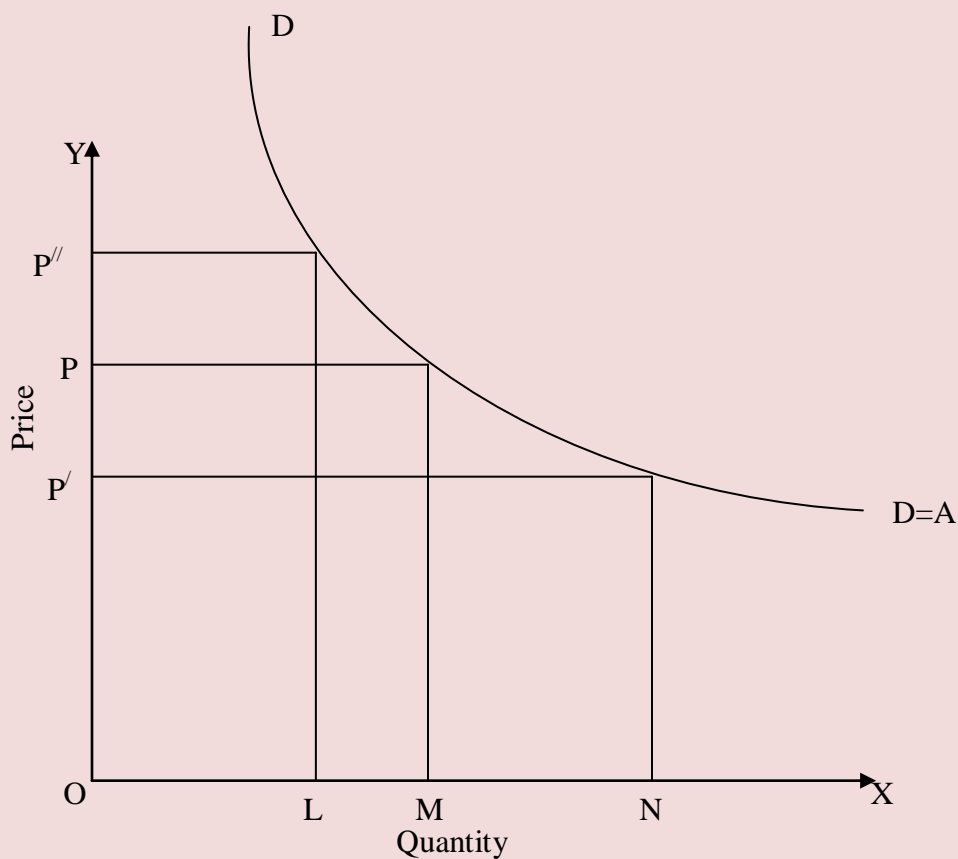
Of these types of demands, price demand is the most commonly spoken one.

**Demand Schedule:** shows the quantities of a commodity demanded by a consumer at different prices at a certain time.

A market schedule on the other hand, shows the demand of the market for a commodity at different prices at a certain time.

Wheat Individual Demand Schedule August 31,2013		Wheat Market Demand Schedule August 31, 2013	
Price per quintal	Demand (q)	Price per quintal	Demand (q)
1250	1.0	1250	100
1200	1.5	1200	150
1150	2.0	1150	200
1100	3.0	1100	300

**Demand curve:** simply shows how the quantity purchased varies with the variation in price.



**Downward Sloping Demand Curve**

- (1) It comes from upward to the downward and from left to right, because the forces behind the demand curve is utility and as we consume more and more of commodity, the utility goes on falling, that is the reason the demand curve slopes downward from left to right.

- (2) Another reason why demand curve slopes downwards from left is that with a fall in price of a commodity people who do not use it before will start demanding it and using it, the old consumers will be tempted to buy more because of the fall in its price. Hence demand will increase.

As the price falls, more is purchased, and vice-versa. The demand curve is also known as Average Revenue (AR) curve because the price paid by consumer is revenue per unit for the seller.

**Why demand curve slope downwards?** Generally, the demand curve slopes downward. This is in accordance with the law of diminishing marginal utility. When the price falls, new purchasers enter the market and old purchasers will probably purchase more.

There are three obvious reasons why people buy more when the price falls.

- (i) He is able and willing to buy more because the thing being cheaper, his real income increases. It is called income effect.
- (ii) When the commodity becomes cheaper, it tends to be substituted wholly or partly for other commodities. This is called substitution effect.
- (iii) A commodity tends to be put to more uses or less urgent uses when it becomes cheaper.

**Exceptional demand curves:** Sometimes the demand curve, instead of sloping downward, will rise upward. In other words, sometimes people will buy more when price rises. This can be represented only by a rising demand curve. Such cases are very rare, but we can imagine some. These were first investigated by Sir Robert Giffen. The Giffen Paradox holds that the demand is strengthened with a rise or weakened with a fall in price.

- (i) When a serious shortage is feared, people get panicky and buy more even though the price is rising.
- (ii) Sometimes people buy more at a higher price in sheer ignorance.
- (iii) In case the use of a commodity confers distinction, the wealthy people will buy more when the price rises, to be included among the few distinguished personages.
- (iv) If the price of a necessity of life goes up the consumer has to readjust his whole expenditure. He may cut down his expenses on other food articles and in order to make up, more may have to be spent on this particular good.

**Giffen Paradox:** Sir Robert Giffen was the first to discover this paradox so it is called Giffen's Paradox. It is said that when the price of Giffen goods or inferior goods, falls, the demand for such goods also falls and demand rises with a rise in their prices. It is just contrary to what the law of demand lays down.

### **Law of Demand:**

This law simply expresses the relation between quantity of commodity demanded and its price. The law states that demand varies inversely with price, not necessarily proportionally. If the price falls demand will extend and vice-versa. The law of demand indicates this inverse relationship between price and quantity demanded.

The law can also be stated as: A rise in the price of a commodity or service is followed by a reduction in demand, and a fall in price is followed by an increase in demand, if conditions of demand remain constant.

In Marshall's words, "The greater the amount to be sold the smaller must be the price at which it is offered in order that it may find purchasers; in other words, the amount demanded increases with a fall in price and diminishes with a rise in price.

Obviously the law of demand is based on the law of diminishing marginal utility. Demand thus is a function of price, i.e., it varies with price and can be expressed as  $D=F(P)$ . Here D is demand and P is price.

#### **Exceptions to the law of demand:**

- (a) **Scarcity:** In times of scarcity although prices are rising, yet people tend to buy more of the scarce good and keep them.
- (b) **Necessaries of life:** Certain commodities are essentials and people must consume them at all costs.
- (c) **Ignorance:** Sometimes consumer's buy more goods at high prices out of sheer ignorance.
- (d) **Self display:** Things which are used for self display, as in the case of certain commodities if the price rises demand for such commodities may increase instead of decreasing.
- (e) **Giffen's Paradox:** It is said that Giffen's paradox provides an important exception to the law of demand

**Limitations of the law:** There are, however, certain exceptions to the law of demand. The law will hold if the conditions of demand remain the same. The conditions relate to the consumer's tastes, his income, price of other goods, possibility of substitutes, expected price changes, etc. If these conditions change, the law will not hold good.

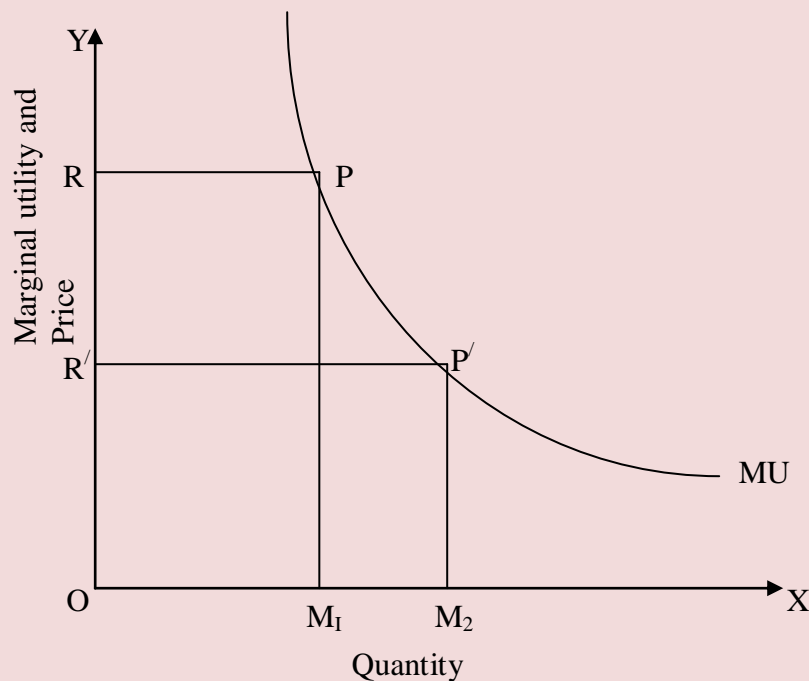
- (i) **Change in taste or fashion:** If consumer's taste goes under a change or if the commodity has gone out of fashion, more may not be demanded even if the price falls.
- (ii) **Change in income:** If the consumer's income has gone up, he may be willing to buy more in spite of rise in price.
- (iii) **Change in other prices:** If the prices of a commodity say tea, falls more tea will be demanded, but if the price of coffee falls even more heavily, more tea may not be purchased; instead more coffee may be purchased. This is in contravention of the law of demand.
- (iv) **Discovery of substitutes:** With the discovery of cheap substitutes more commodity may not be demanded even if the price of commodity falls.
- (v) **Anticipatory changes in price:** It is often seen that there is stockpiling of commodities and larger purchases even though the prices are rising.
- (vi) The law of demand does not hold good also when a commodity is such that its use confers distinction.

### Derivation of the D-curve and law of demand:

Marshall derived the demand curve of a good from its utility function, i.e., the variation of utility with the quantity purchased. We can derive the law of demand

(a) With the help of the law of diminishing marginal utility.

The marginal utility curve of a good is a downward sloping curve. A consumer is in equilibrium when the marginal utility of good equals its price. Now when the price of the good falls e.g. from OR to OR', the consumer must buy more than before i.e., OM<sub>2</sub> instead of OM<sub>1</sub> so that marginal utility P'M<sub>2</sub> equal price OR'. From this it follows that diminishing marginal utility curve leads us to a downward sloping demand curve which means that more of a good is purchased as its price falls. This can be seen in the given



At price OR the consumer is in equilibrium at the quantity of good OM<sub>1</sub> ( $PM_1=OR$ ) i.e. Marginal Utility = Price

If the price comes down from OR to OR', this equality between Mu and P is disturbed, because ( $PM_1 > OR'$ ) i.e.  $MU > Price$

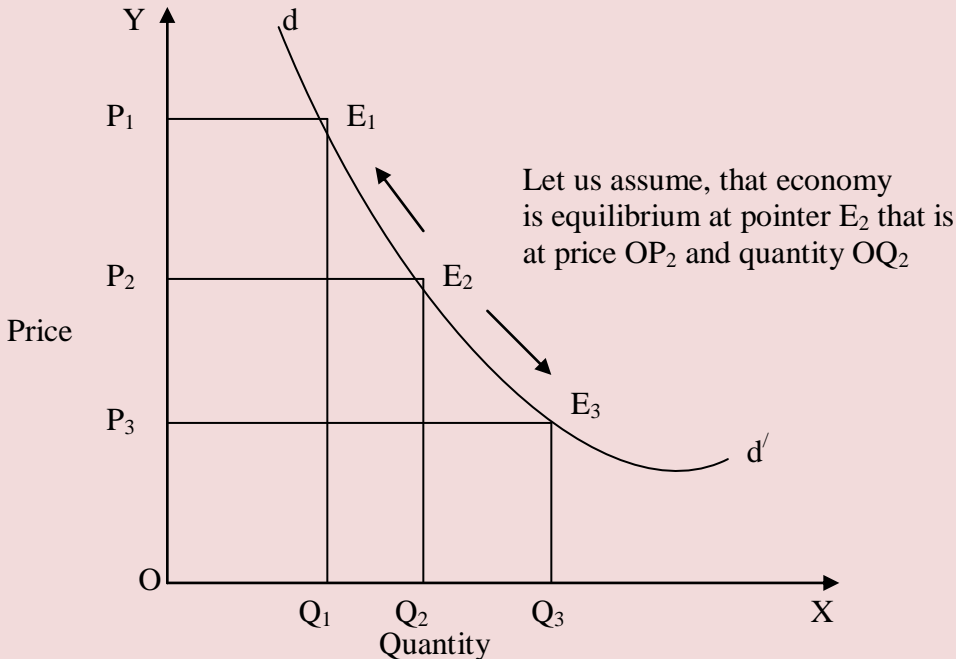
This quality is restored only, when consumer buys OM<sub>2</sub> instead of OM<sub>1</sub> ( $P'M_2=OR'$ )  $MU = Price$

This means buying more when price falls and this is precisely the law of demand and what the demand curve shows. This is the well known Marshallian law of demand and it is based on the law of diminishing marginal utility.

### Extension of demand and contraction of demand:

Whenever demand changes on account of changes in price, it is called extension and contraction in demand. They are caused by changes in price. The extension of demand curve

and contraction of demand curve is the movement on the same demand curve  $dd'$ . A downward movement indicating a fall in price and expansion of demand, and an upward movement indicating rise in price and contraction of demand.



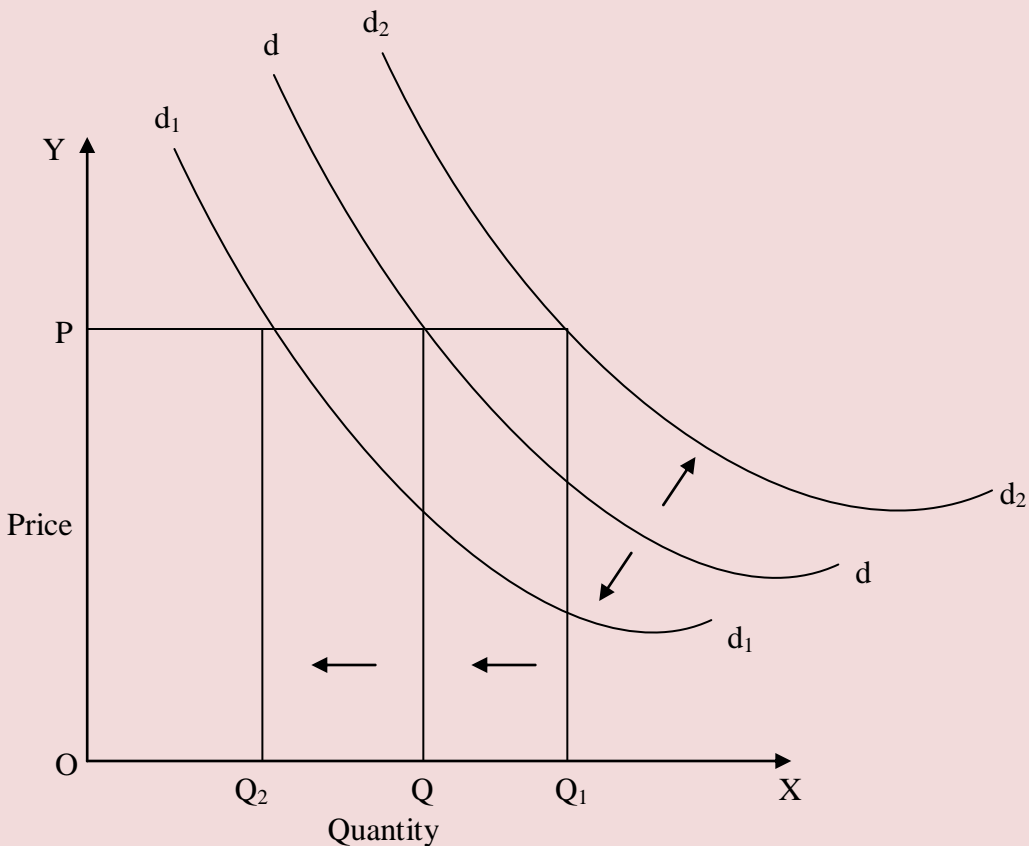
### Extension and contraction of demand

Contraction of demand: let us assume that the price increases from  $OP_2$  to  $OP_1$ , and the quantity demanded reduces from  $OQ_2$  to  $OQ_1$ . This behaviour is referred to as contraction of demand.

Extension of demand: In this case the price decreases from  $OP_2$  to  $OP_3$ , due to this the quantity demanded increases from  $OQ_2$  to  $OQ_3$ . This is nothing but the extension of demand. In the extension and contraction of demand we take into account *ceteris paribus* assumption.

### Increase in demanded and decrease in demand:

When the change in demand is owing to changes in other factors like income, fashion, population etc., we call it rise and fall in demand or increase and decrease in demand. Increase in demand is the complete shift of demand curve to the right  $d_2d_2$  and decrease in demand is shift of demand curve to left that is  $d_1d_1$ , where as the price remains same at  $OP$ . In this case other factor influences the demand curve. We take in account other factors, i.e. size of family, increase or decrease in income, change in fashion and style, the government policies etc.



**Increase and decrease in demand**

d is original demand curve.  $d_1$  is decrease in demand curve.  $d_2$  is increase in demand curve.

OP is original price, OQ original quantity

OP original price,  $OQ_1$  increase in demand

OP original price,  $OQ_2$  decrease in demand

**Factors affecting demand/ Causes of changes in demand:** The following causes bring about changes in demand and also explain how demand will be affected by the following factors.

- i) **Change in real income:** In times of technical progress, there is a large output of cheap goods. The purchasing power of money increases or, real income increases. The demand schedule has to be recast, because less money will be needed to purchase the same quantity of goods, and the savings so made will find outlet in the purchase of other commodities. Some goods may be eliminated from consumption and instead entirely new goods purchased; demand for some goods will decrease and that for others increase.

- ii) **Change in the level and distribution of income:** Through the instrument of public finance, e.g. by taxing the rich and spending the funds so obtained on the poor, wealth is redistributed. There is a transfer of spending power. This is bound to affect demand. Demand for those goods will increase which are purchased by a class whose spending power has increased, and vice-versa.
- iii) **Change in tastes preferences and fashion:** We see that increasing habit of taking tea has decreased the demand for milk. Change in the mode of dress means a change in the demand for dress materials. When some goods go out of fashion, they will be less in demand, even though they may become cheap.
- iv) **Climate or weather changes:** It is obvious that demand for a commodity must change with the change in season.
- v) **Changes in the size and composition of population:** If for instance, the common wealth countries and America allow a free entry to India. We can expect emigration from India. If India is stick to their own mode of living in food and dress in their new homes, demand for such things will be crated there.
- vi) **Changes in money supply:** When there is inflation, the additional money will add to the purchasing power of the community, the price will rise. People will have to readjust their expenditure, demand for certain things will be reduced and for other stimulated.
- vii) **Changes in the price of the commodity:** Obviously, demand is decisively affected by the change in the price of commodity concerned. There is inverse relation between price and the quantity demanded.
- viii) **Change in savings:** Demand for goods is affected by a change in consumer's propensity to save. Large saving means less money available for purchase of goods.
- ix) **Change in asset preferences:** It is quite obvious that if a consumer develops marked liquidity preference, his demand for goods will decrease, because he prefers to keep with him ready cash instead of buying things.
- x) **Conditions of trade:** Demand for everything is grater in a boom even though the prices are rising. On the other hand, in times of depression, there is a general slackening of the demand.
- xi) **Expectations or anticipation:** If prices are expected to rise in future, the demand for goods will increase now in the present. Similarly, expectations of rising incomes will restrain current purchase and postpone purchases to a future favorable situation.
- xii) **Price of related goods:**  
**Substitutes:** When a decline in price of one good results in a decline in the demand for another, they are substitute. e.g. tea and coffee, increase in the consumption of one will lead to a decrease in the demand for the other.



**Complements:** Two goods are complements if the price of one and the demand for other are inversely related. Increased demand for one will augment that for other e.g. Horse and carriage, if the price of carriage will falls, the demand for horses rises.

**Joint demand:** The increase in the demand for the ultimate object, e.g. the house will increase the demand for everything needed in building a house.

**Composite supply:** e.g. light obtained from electricity, gas or kerosene, choosing of any one of them will reduce the demand for the others.

**Composite demand:** e.g. water required for drinking, washing, bathing. Any extension or contraction of its used will correspondingly change the demand.

Thus, the demand for a commodity does not depend only on its own price but the prices of other goods too

## Unit-III

### Lecture No.15, 16&17

## Indifference Curve Analysis – Meaning, Assumption, Indifference Schedule Map, Principle of Marginal Rate of Substitution, Properties and Applications of Indifference Curve,

### Indifference Curve Analysis:

We can also state the law of demand by using the technique of indifference curves. The device of indifference curve is extremely important in modern economics. Indifference curve method was evolved to supersede the marginal utility analysis of demand. In view of the shortcoming of the utility analysis, modern economists have adopted a new technique – called the indifference curve technique – for the analysis of demand.

The fundamental approach of indifference curve analysis is that it has abandoned the concept of cardinal utility and instead has adopted the concept of ordinal utility.

The ordinal utility implies that the consumer is capable of simply comparing the different levels of satisfaction. The technique of indifference was first of all invented by Edgeworth. Fisher, also independently discovered the technique of indifference curve.

**Scale of preferences:** All desires of a consumer are not of equal urgency or importance. Since his resources are limited and he cannot fulfill all his desire, he must pick and choose more important and more urgent desires for satisfaction. Thus, some desires take precedence of others. This is how a consumer ranks his desires and builds up a scale of preferences. A consumer has in mind a definite scale of preference which guides him in his purchases (relative evaluation of the utilities of the commodity included in his purchase plan).

A prudent consumer seeks to maximize his satisfaction from the purchases he makes, i.e., reach an equilibrium position. But in order to do so, a consumer must build up a scale of preferences. The consumer scale of preference is independent of the prices ruling in the market. He builds up his scale of preferences from the commodity he consumes. On the basis of this scale of preferences, he know the one combination of goods yield him same satisfaction as another.

**Assumptions:** In the discussion of consumer preference, we have to make certain assumptions to enable us to reach valid conclusions.

- (i) **Completeness:** The consumer's scale of preference is so complete that he is able to choose any one of the two combinations of the commodities presented to him or is different between them.
- (ii) **Non- satiation:** A consumer prefers more to less.
- (iii) **Consistency or transitivity:** If a consumer regards Q better than R and R better than S, obviously he will prefer Q to S, if this choice is open Consumer's choice have to be consistent.
- (iv) **Continuity or substitutability:** Unless one combination can be substituted for another, the consumer's preference will not be possible.

- (v) **Convexity:** The indifference curve is convex to origin and shows the diminishing rate of marginal rate of substitution.

**Indifference curve:** An indifference curve represents satisfaction of a consumer from two commodities. If is drawn on the assumption that for all possible points (or combination of two commodities) on an indifference curve, the total satisfaction (or utility) remains the same. Hence, the consumer is indifferent as to the combinations lying on indifference curve. It is an ISO-utility curve.

This curve represents all those combinations of goods which give same satisfaction to the consumer. All the combinations of the goods lying on a consumer's indifference curve are equally desirable to or equally preferred by him.

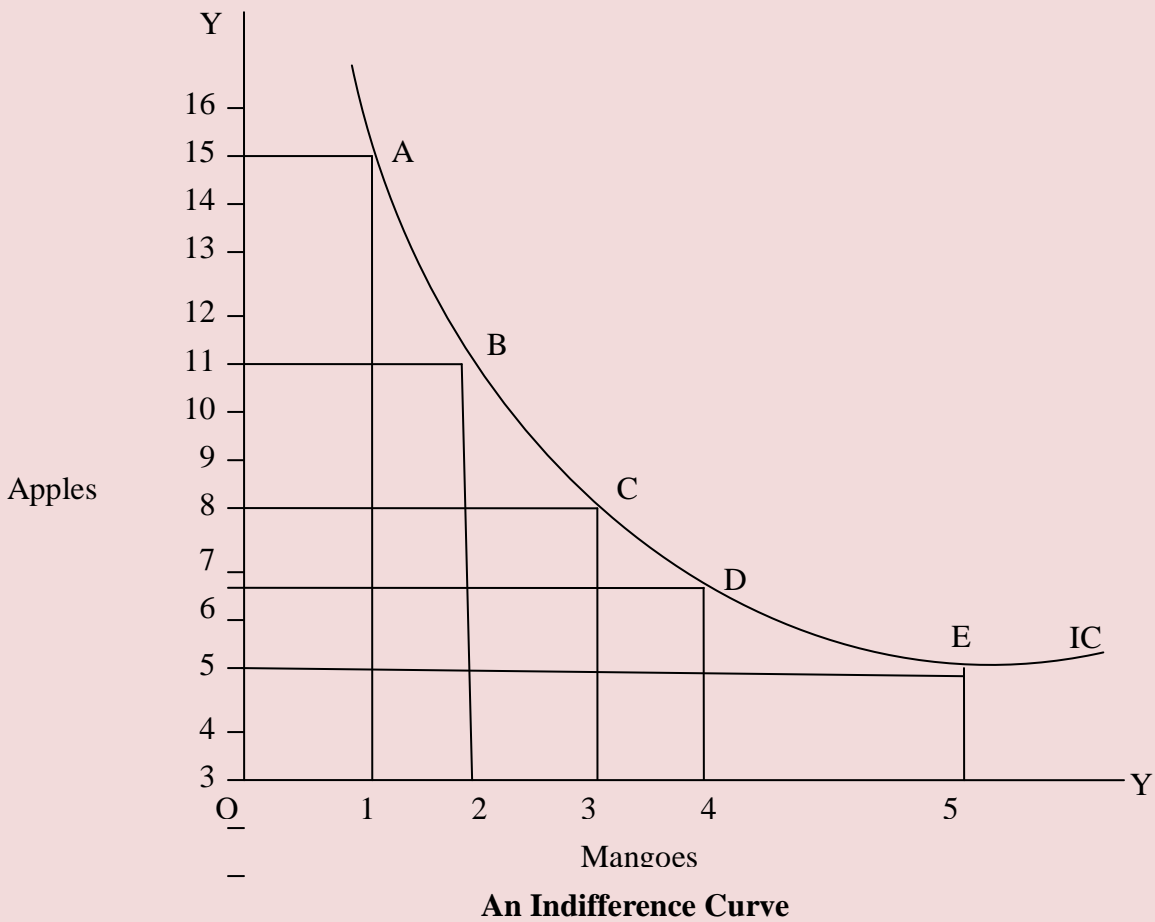
**Indifference schedule:** consider a consumer who wants to buy 2 commodities apples and mangoes. He does not make purchases of the amount of these two commodities arbitrarily. He knows it well that one combination of apples and mangoes gives him as much satisfaction (total utility) as another combination of less apples and more mangoes or another combination of more apples and less mangoes.

The consumer cannot tell how much satisfaction he secures from an apple on from a mango but he has got a scale of preference between these two commodities so as to be able to compare the satisfaction derived from one basket of these two commodities. Thus, our consumer has in his mind an indifferent schedule. This schedule has several combination of applies and mangoes from which he derives the same or equal total satisfaction or we can say that various combinations are equally preferred or desired by him,

**Table: Indifference Schedule**

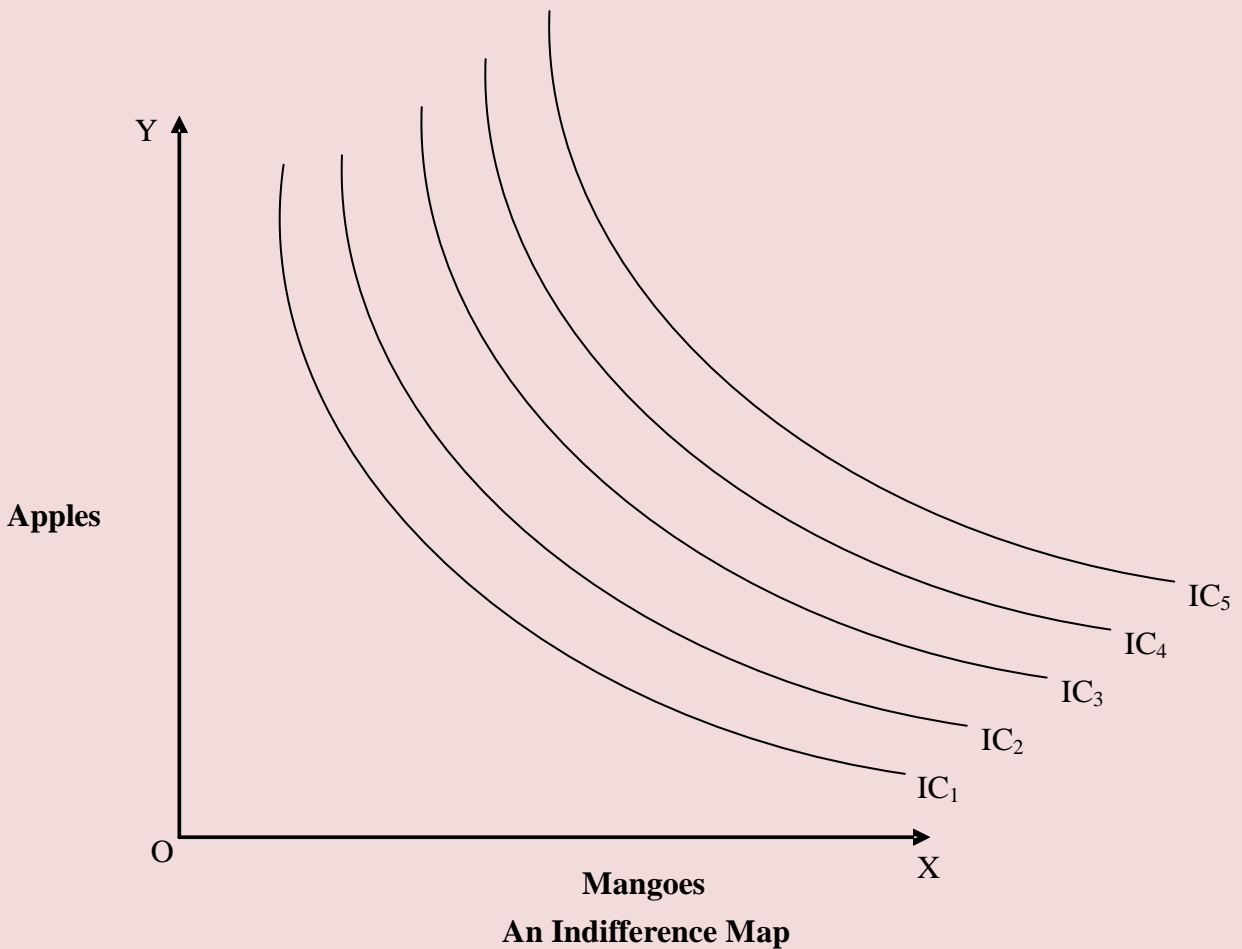
Combinations	Apples (X)	Mangoes (Y)
1	15	1
2	11	2
3	8	3
4	6	4
5	5	5

In this schedule, our consumer feels indifferent whether he gets the 1st combination (15A+1M) or the 2<sup>nd</sup>, 3<sup>rd</sup>, 4<sup>th</sup> of 5<sup>th</sup> combination. The total satisfaction is same in all these combinations. We can translate this schedule into a diagram me and thus get an indifference curve (IC).



If we join the point ABCDE, we get a continuous curve IC, each point on it shows equal satisfaction or the indifference of the consumer towards the various combinations. This is an indifference curve.

**Indifference Map:** a complete description of consumer's tastes and preferences can be represented by an indifference map. A set of indifference curves is called an indifference map. He can draw similar indifference curves knowing combinations of commodities which represent greater and lesser satisfaction than that shown on indifference curve(IC). All points on  $IC_5$  and  $IC_4$  are preferred to all the points on  $IC_1$ , or  $IC_2$  or  $IC_3$ . All the combinations on  $IC_2$  are equally preferred and are more preferred to all the combinations at various point on  $IC_1$ . In other words indifference curve  $IC_1$  represents a lower level of satisfaction as compared with the indifference curves  $IC_2$ ,  $IC_3$ ,  $IC_4$ , and  $IC_5$ .



**Marginal rate of substitution:** The concept of marginal rate of substitution is a tool of indifference curve technique and is parallel to the concept of marginal utility in the Marshallian analysis of demand. When we move from one combination of two commodities to another; we are in fact substituting some units of one commodity for some units of another. We can also work out the rate at which this substitution takes place. MRs shows how much of one commodity is substituted for how much of another or at what rate a consumer is willing to substitute one commodity for another in his consumption pattern.

Combination	Apples	Mangoes	MRS of Mangoes for Apples
1	15	1	-
2	11	2	4:1
3	8	3	3:1
4	6	4	2:1
5	5	5	1:1

The MRs may thus be defined as the amount of apples that is sacrificed for obtaining one mango or it may also be defined as the amount of apples that may be given to the consumer for the loss of one mango so that he may remain at the same level of satisfaction.

The rate at which the consumer is prepared to exchange good X and Y is known as MRs.

We may define the marginal rate of substitution of 'X' for 'Y' as the amount of 'Y' whose loss can just be compensated by a unit gain in 'X'

Or

The amount of Y, which the consumer has to give up for the gain of one additional unit of X, so that his level of satisfaction remains the same.

**Indifference Schedule**

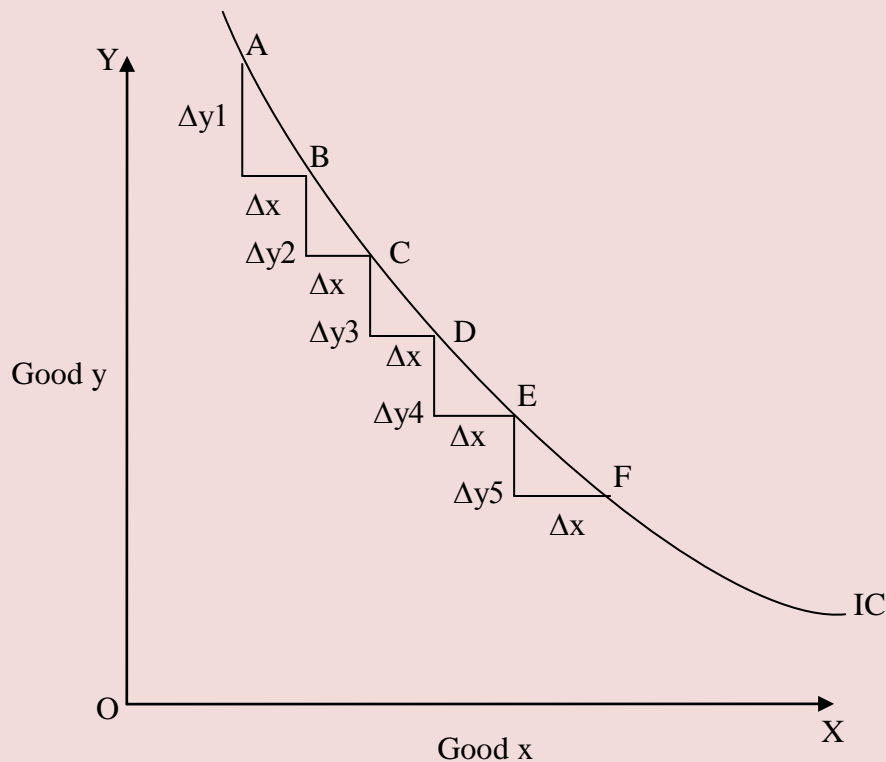
Combinations	Good X	Good Y	MRS <sub>xy</sub>
A	1	12	
B	2	8	4
C	3	5	3
D	4	3	2
E	5	2	1

In Hicks' words, "we may define marginal rate of substitution of X for Y as the quantity of X which would just compensate the consumer for the loss of the marginal unit of Y" Thus, the principle is that as X is substituted for Y so as to keep the consumer at the same level of satisfaction, the marginal rate of substitution of X for Y diminishes. This principle in indifference curve technique is termed as the Diminishing Marginal Rate of Substitution. The MRS is indicated by the slope of an indifference curve at a point. That is it represents movement along an indifference curve, but not a movement among the curves.

In technical language, it will be said that the MRs of good X for good Y will fall as we have more of X and less of Y. This is due to the fact that as the consumer has more and more of good X, he goes on losing interest there in and he is prepared to give up less and less of the other good Y for it. As the stock of X with the consumer increases and his stock of Y decrease he is willing to give up less and less of Y for a given increment of X. In other words, the MRs of X for Y falls as the consumer has more of X and less of Y.

**Principle of diminishing marginal rate of substitution:**

An important principle of consumer behavior emerges, Viz., as more and more of a good say X, is substituted for another good say Y, the MRs diminishes.



### Diminishing marginal rate of substitution

When the consumer slides down the curve IC from A to B, he foregoes  $y_1$  of good y to obtain X of good X. Hence in this case the marginal rate of substitution of X for Y (MRs<sub>xy</sub>) is equal to  $\frac{\Delta y}{\Delta x}$ .

As the consumer slides down further and further on the indifference curve,  $\Delta Y$  becomes shorter and shorter, while  $\Delta X$  remaining the same. As the consumer has more and more of X i.e., when moves from A to B, from B to C, from C to D and so on, he is prepared to forego less and less of Y for a unit of X.

#### Reasons for diminishing MRs:

Why is the consumer prepared to forego less and less of the other commodity Y for a given increment of a commodity X? The reasons are;

- (i) Since a particular want is satiable, the edge of a want for a good is blunted as the consumer has more and more of it. It is the diminishing intensity for a want that is responsible for the diminishing MRs i.e. offering less for a good whose stock is increasing. That is why, as the stock of X with the consumer increases, he will offer less and less of the other good Y for a unit increase in X.
- (ii) Another reason lies in the fact that goods are imperfect substitutes for one another. If X and Y for instance, were perfect substitutes for each other, they would be

regarded one commodity and decrease in that of other would make no difference. Hence the MRs will not diminish; it will remain the same, for one commodity is good as another.

- (iii) Also, the MRS of one good for another will not diminish if the wants satisfying power of the other good has increased at the same time. For instance, if with increase in the stock of the good X, the want satisfying power of the good Y has increased; the more and more of Y will have to be offered for a unit increase in X to keep the consumer's satisfaction at the same level.

### **Some applications of indifference curve technique:**

The indifference curve technique can be applied in consumption, production, index number, taxation and other economic matters.

**Application in consumption:** It can be used by the householder in setting his purchase plan. A consumer endeavors to reach an equilibrium position in which he derives maximum satisfaction from his scheme of purchases.

**Measurement of national income:** The indifference curve technique also tends itself for measuring national income.

**Rationing:** Rationing is another technique in which the indifference curve technique can be applied. Absence of rationing means leaving the people to buy according to their tastes and preferences.

**Cost of living index:** The cost of living depends on the collection of goods and services consumed by the households. The standard of living consists of the various combinations of goods yielding equal satisfaction. Such combinations can be represented by point on the same indifference curve. If the combinations of goods purchased in two successive years are plotted on the indifference curve, it can be shown whether the standard of living has risen or fallen as the most preferable combination is on a higher as lower indifference curve touching the price lines.

**Price discrimination:** It can be shown with the help of indifference curve that two individuals (representing separate group of consumers) will derive greater satisfaction from the purchase of two commodities on a single price system instead of under price discrimination (i.e. when different prices are charged from each). Price discrimination prevents them from reaching the point of equilibrium at a higher indifference curve.

**Taxation: Direct vs. Indirect taxes:** In the fields of taxation, too, the indifference curve technique can be usefully employed. It can help us to find out whether a direct tax like income tax will be better or not than indirect taxes like sales tax or excise duty.

**Effect of subsidy:** The answer of the question like whether the benefit of the subsidy to the consumer is as great as the cost of the subsidy to the Government can be given by the technique of indifference curve analysis.

**Effect of the taxation on willingness to work:** When a tax is imposed on a person, reduction in money income at his disposal will spur him on to put in more work to increase his income.

**Effect of increase in wages on supply of labour:** Income of poorly paid workers, any rise in the wage rate will not lead to a reduction in working time. It will only result in larger income



which will be utilized in producing more goods. But beyond a certain stage, the worker will work less and still enjoy more goods.

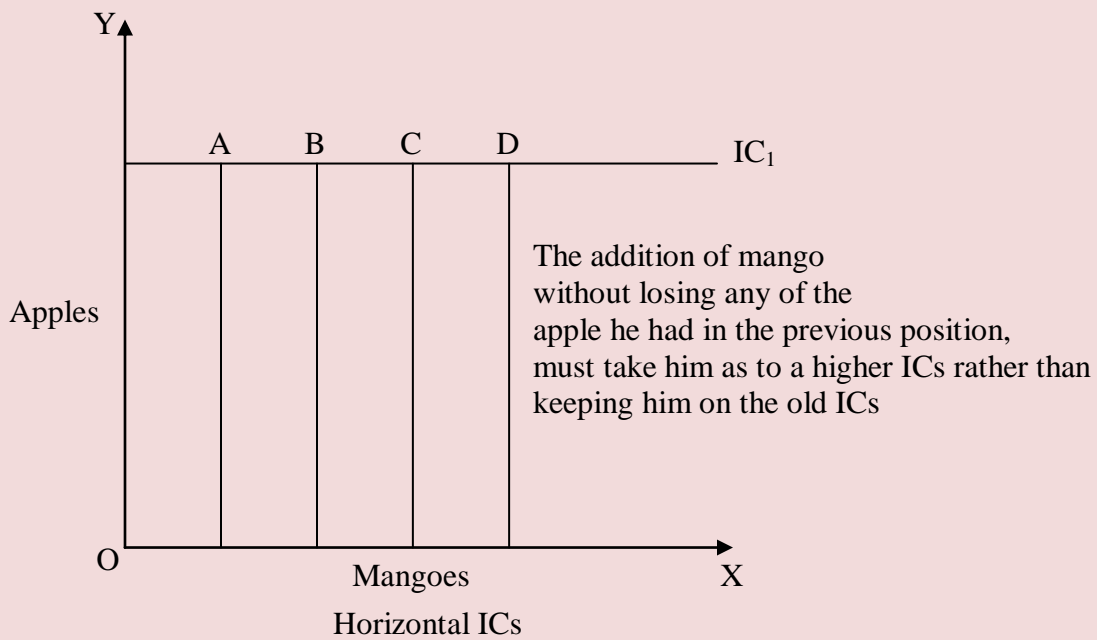
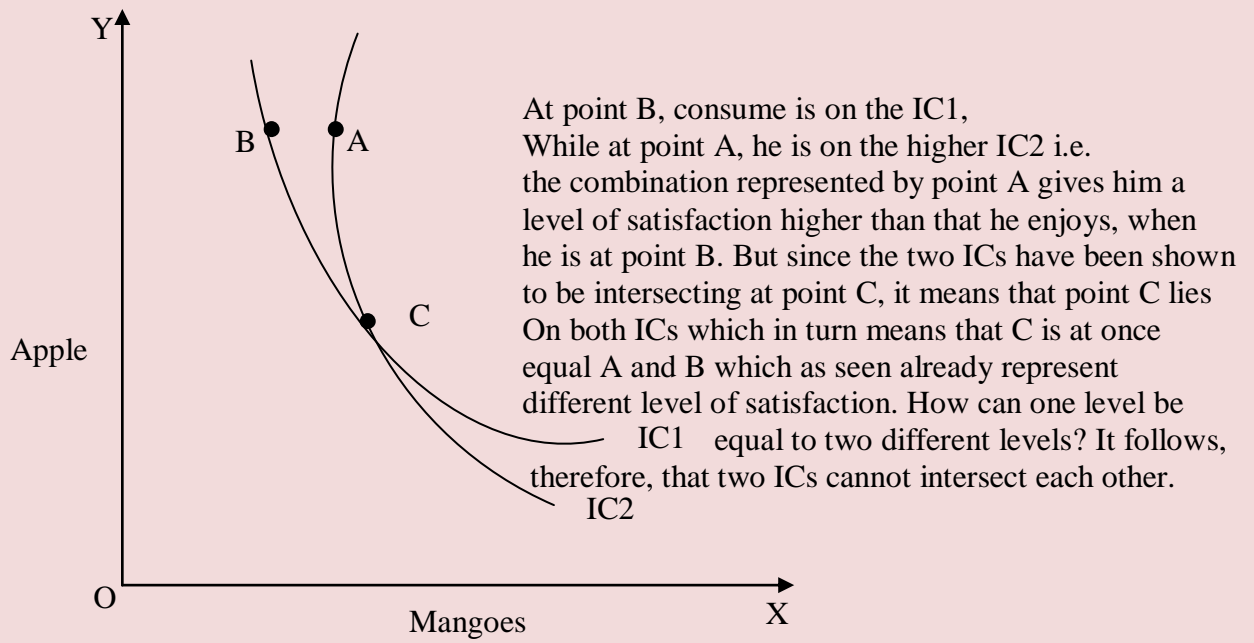
Other uses of indifference curve: Among other uses, a few uses here viz., measurement of consumer's surplus, in the welfare economics, in the theory of production, in international trade, in the determination of gains from international exchange of goods etc.

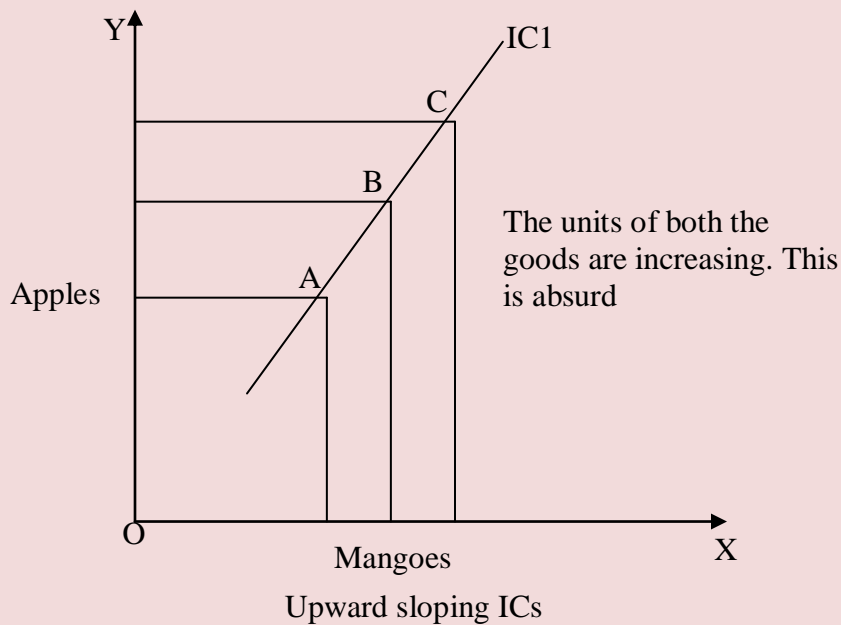
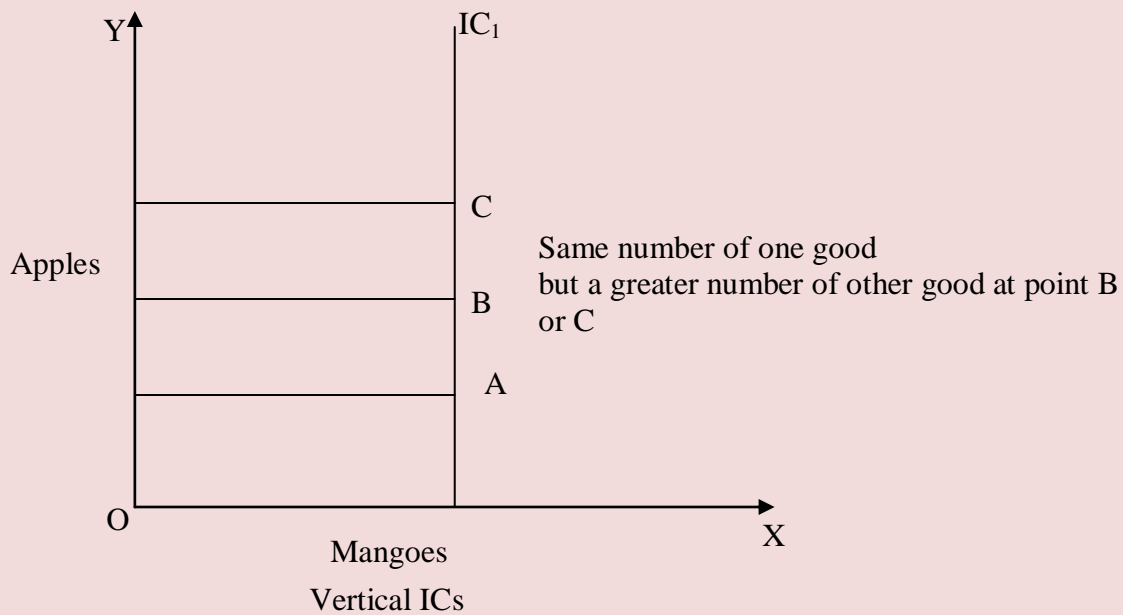
Some other applications of indifference curve techniques are:

- Objective of firm satisfaction maximization: With the help of indifference curve we can show how an entrepreneur is able to achieve a point which gives him satisfaction maximization in comparison with the profit maximization. Indifference curve are used as a relation between an entrepreneur's sale of preference between leisure and profits.
- Objective of a firm staff maximization: With the help of ICs one can show that how managers try to keep more staff than less staff even if the more staff concept gives them lesser profit.

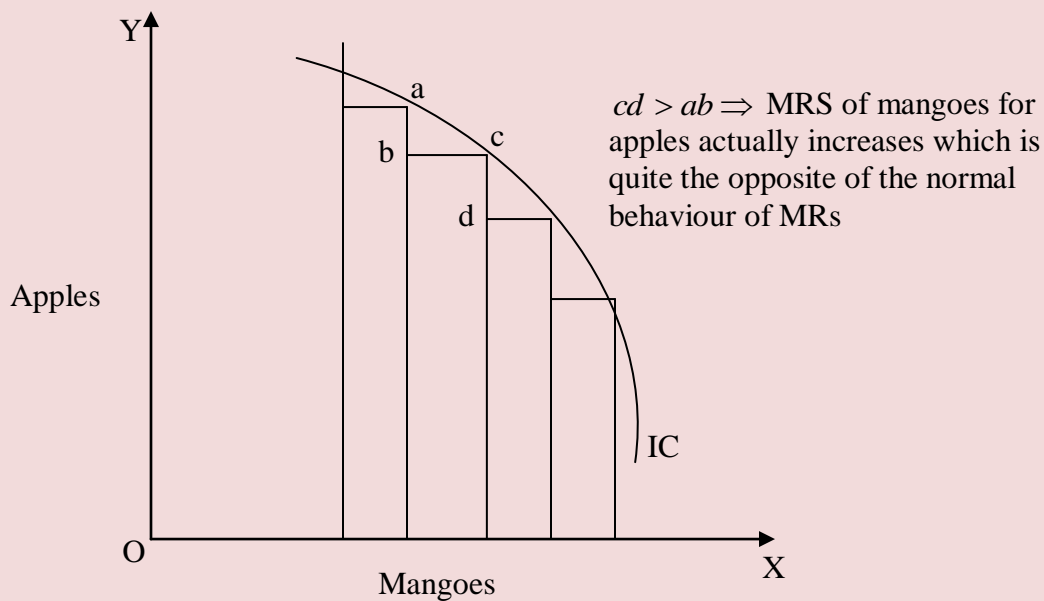
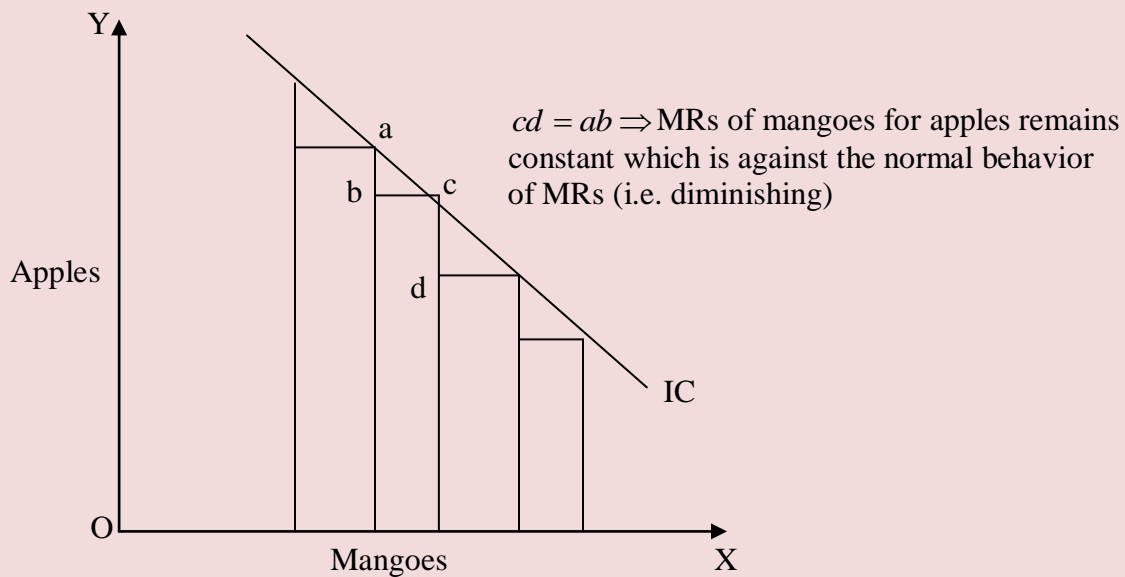
**Properties of indifference curve:** There are three characteristics of indifference curves.

- (i) Downward slopping to the right
  - (ii) Non-intersecting and
  - (iii) Convex to origin
  - (iv) Higher IC, higher the level satisfaction and vice-versa.
- (i) **Downward slopping or negatively slopped:** An indifference curve slopes downward from left to the right. An indifference curve cannot be a horizontal straight line, nor can it be vertical line or slopping upward. Hence, by process of elimination we come to the conclusion that an indifference curve must slope downward to the right. This is the first property
  - (ii) **Nor-intersecting:** The second property or characteristics of indifference curve is that no two such curves will ever cut each other. Only one indifference curve will pass through a point in the indifference map.





- (iii) **Convexity:** The third property of ICs is that they are normally convex to the origin. The implication of this convexity rule is that as we have more and more of good X and less and less of Y, the marginal rate of substitution of X for Y goes on falling. In other words, the normal shape of an IC would be convex to the origin. The other two shapes (i) straight line ICs (ii) concave ICs are unrealistic.



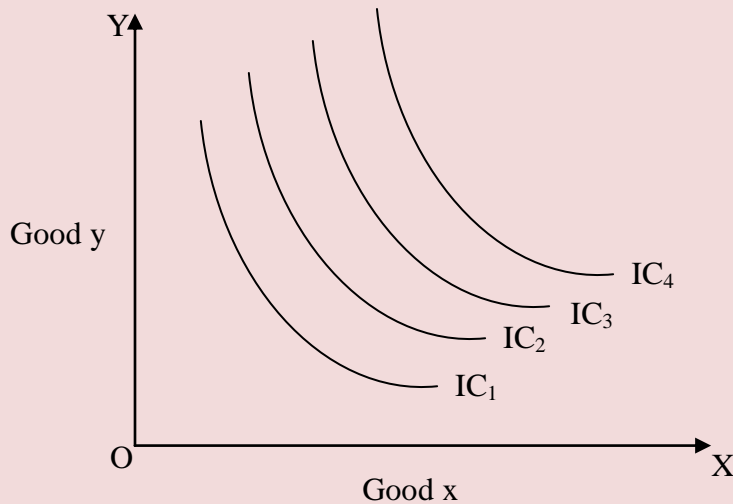
**Substitute relationship and convexity:** The curvature of the ICs reflects the degree of substitutability of commodities. That is, flatness or straightness of the curves shows to what extent commodities are substitutes for each other.

- i) Perfect substitutes – ICs are downward sloping straight lines.
- ii) The consumer will not be willing to substitute one commodity for another- ICs are either horizontal or vertical.
- iii) Goods which can be substituted somewhat (not perfect substitutes) - ICs are somewhat convex to origin.
- iv) Better substitutes- ICs are flat or less convex
- v) But greater the degree of convexity, the poorer is the substitutes.

vi) Lower the indifference curve, lower is the level of satisfaction and higher the indifference curve, higher is level of satisfaction. Satisfaction increases as we move on to higher level of IC curves.

Level of Satisfaction

$$IC_4 > IC_3 > IC_2 > IC_1$$

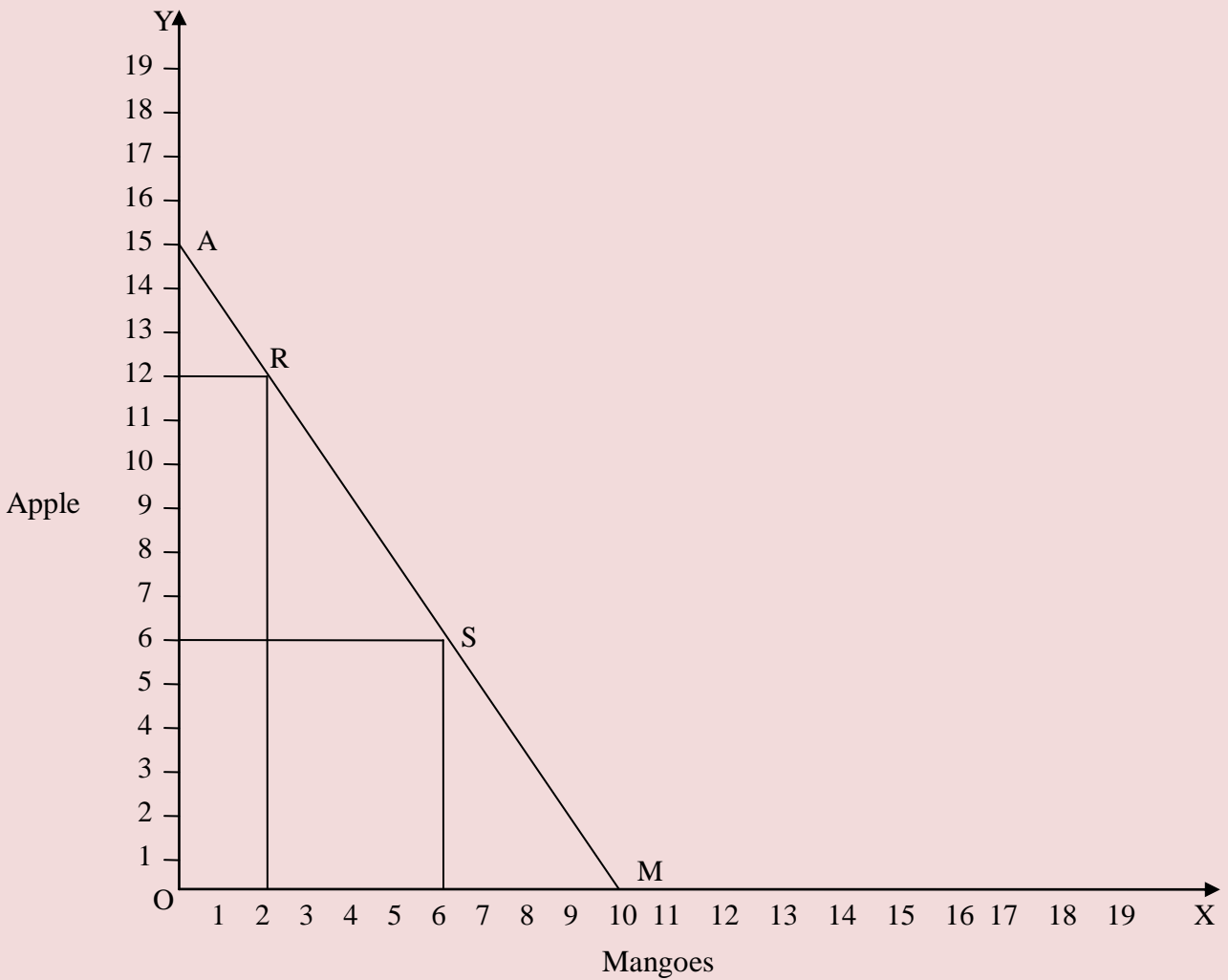


### **Indifference curve analysis of Demand:**

To undertake the study of the demand theory with the help of the indifference curve technique, we began with what is known as the price line.

**Price line or Budget line:** This line shows all possible combinations of two goods that the consumer can buy if he spends the whole of his given sum of money on his purchases at the given price.

Suppose our consumer has Rs 150 to spend on apples and mangoes. Further suppose that the price of mangoes in the market is Rs 15 per unit and the price of apples is Rs 10 per unit. With Rs 150 he can buy 10(=OM) mangoes and no apple or 15 apples (=OA) and no mangoes. By joining A and M, we get what is called Price line or Price opportunity line. It is also called price- income line or Budget line or Budget constraint line.



**A budget Line of the Consumer**

**Shifting the price line:** The shape and the position of the price line will depend on two factors.

- (i) the total amount of money a consumer has for purchasing goods; and
- (ii) Price ratio of goods in market.

The slope of price line is (the negative of) price ratio i.e. the ratio of price of X to the price of Y.

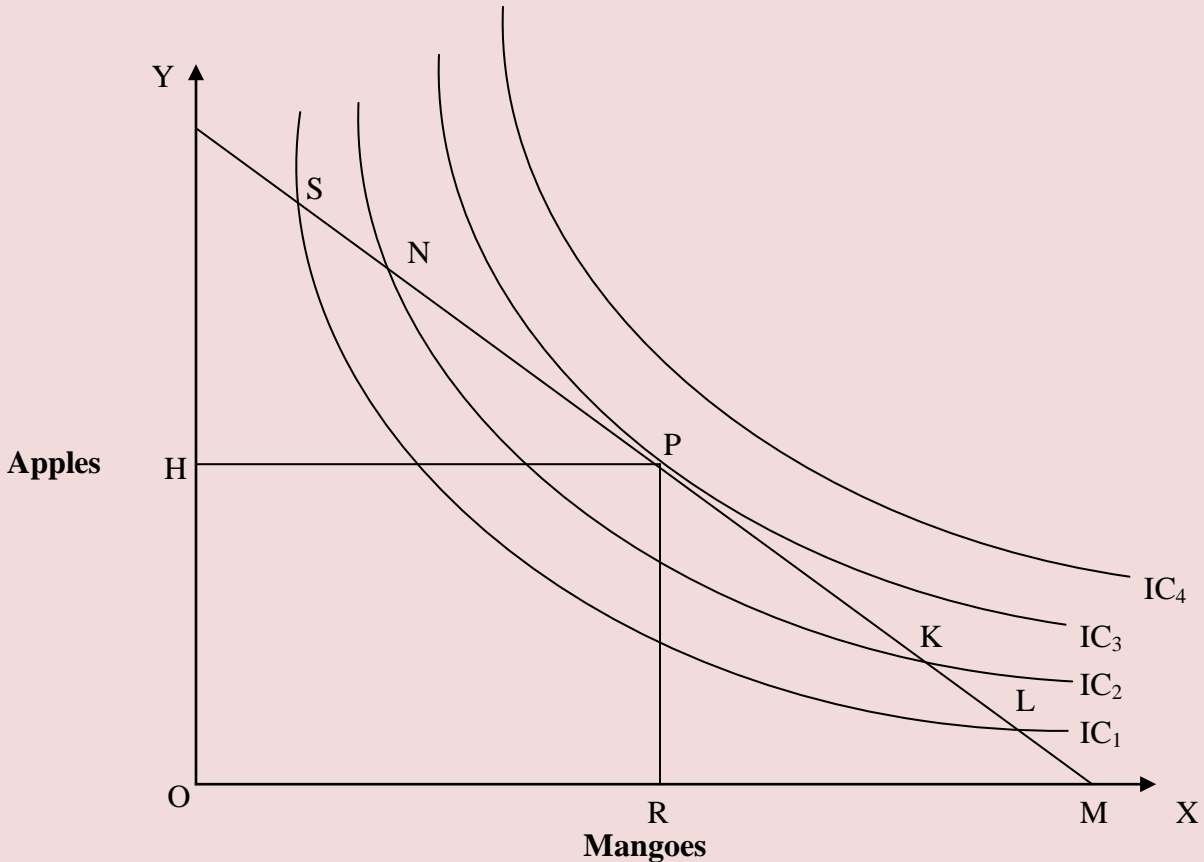
**Consumer's equilibrium or maximizing satisfaction:** The consumer is said to be in equilibrium when he obtains the maximum possible satisfaction from his purchases, given the prices in the market and the amount of money he has for making purchases.

In order to explain how a consumer reaches equilibrium, we shall make the following assumption.

- (i) Our consumer has an indifference map showing his scale of preferences for various combinations of two goods. This scale of preference remains the same throughout the analysis.

- (ii) He has a given and constant amount of money to spend on the goods and if he does not spend it on one good, he must spend it on the other.
- (iii) Prices of the goods, in the market are given and constant.
- (iv) Each of the good is homogeneous and divisible.
- (v) The consumer act rationally, that is, he tries to maximize his satisfaction.

Suppose our consumer has on indifference map, and the price line facing the consumer is AM, given a certain amount of money he has spend on two commodities (apple and mangoes and the price of apples and mangoes in the market.



Suppose our consumer has an indifference map, and the price line facing the consumer is AM, given a certain amount of money he has to spend on two commodities (apples and mangoes) and the price of apples and mangoes in the market. Actually the consumer will be in equilibrium at the point P i.e. he will be buying OR mangoes and OH apples. The consumer will maximize his satisfaction and be in equilibrium at a point where the price line touches (or a tangent to) an indifference curve. Such a point is P which line on the IC<sub>3</sub>. This is highest indifference curve to which he can go, given the money he has and the prices of the goods in market. Given a price line, there can only be one point such as P, since no two indifference curves can cut one another and all are convex to origin. Any combination other than P on the given price, can be shown to give less satisfaction to consumer, for all other points on the price line must lie on IC of a lower order that on which P lies.

In equilibrium at point P, the MRs of X (mangoes) for Y (Apples) is equal to the price ratio between these two goods, since both the  $IC_3$  and the price line AM have the same slope at point P (MRs of mangoes for apples is given by the slope of IC and the price ratio is given by the slope of price line AM). Thus, at point P;

$$MRS \text{ of Mango for Apple} = \frac{\text{Price of Mango}}{\text{Price of Apple}}$$

Price–income line AM shows the income and relative prices of the two goods to be purchased from the market. The equilibrium of the consumer must be on the some point on this line. That is why this line is called the price-opportunity line. It is this line that contains at the possible opportunity of combing the two goods that are open to our consumer. Any point not lying on this price line cannot be a possible equilibrium point, because his present price-income situation will not allow him to move on to that point (or purchase that combination)

**Conditions of equilibrium:**

Thus, two conditions must be satisfied for a consumer to attain equilibrium.

- (i) The price-line should be tangent to an indifference curve or MRs of one commodity for another should be equal to their relative prices.
- (ii) At point of equilibrium an indifference curve must be convex to the origin. It means that at, or near the point of equilibrium the MRs of mangoes for apples is falling.



## Lecture No.18& 19

### Consumer's Surplus – Meaning, Assumptions, Explanation, Difficulties in Measuring Consumer's Surplus, its Importance.

#### Meaning of consumer's surplus:

Consumer's Surplus is one of the most important concepts in economics. It was expounded by Alfred Marshall. In our daily expenditure, we often find that the price we pay for a commodity is usually less than the satisfaction we derive from its consumption. In our own mind, sometimes we are prepared to pay much more for a commodity than we actually have to pay. People are often heard saying, "I would have paid much more for it rather than go without it." This means that he has made a saving or derived extra satisfaction over and above the money he has paid.

In some cases, the idea of consumer's surplus is quite obvious, e.g., a packet of salt, a post-card, a newspaper, a match-box, etc. These things are very useful, but they are also very cheap. We are, therefore, prepared to pay much more for them, if need be, than we actually have to pay. From their purchase, therefore, we derive a good deal of surplus or extra satisfaction over and above the price that we pay for them. This is consumer's surplus.

Consumer's surplus is the excess of what we are prepared to pay over what we actually pay for a commodity. It is the difference between what we are prepared to pay and what we actually pay.

Thus, Consumer's surplus= what one is prepared to pay **minus** what one actually pays.

We can put it in the form of an equation thus:

**Consumer's Surplus=Total Utility- Total Amount Spent.**

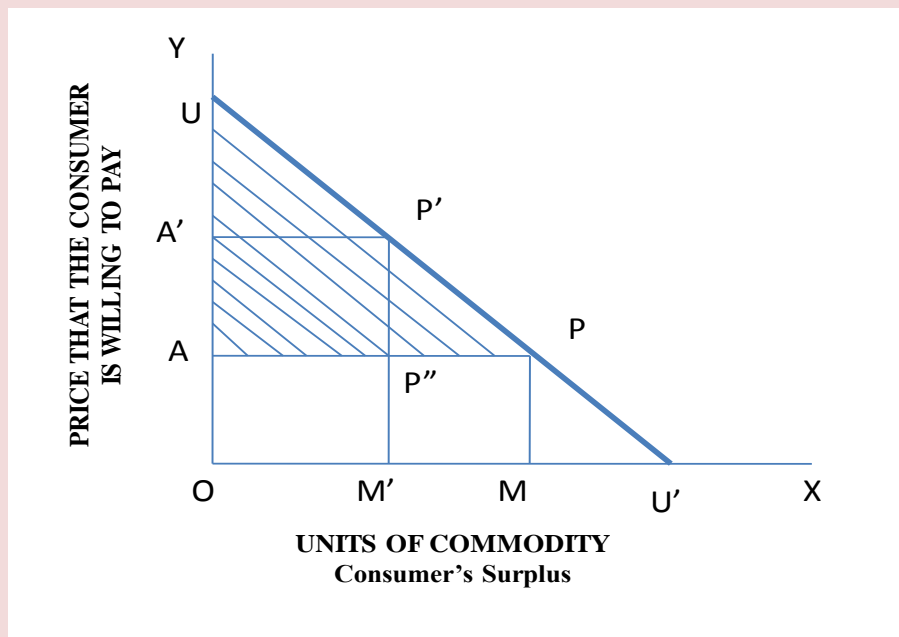
**Explanation.** We can illustrate the concept of consumer's surplus with the help of the table given below:

1	2	3	4
Unit (Oranges )	Marginal utility	Price (Rs.)	Consumer's surplus
1	2.0	0.5	1.5
2	1.8	0.5	1.3
3	1.5	0.5	1.0
4	1.1	0.5	0.6
5	0.5	0.5	0.0
Total unit purchased =5	Total utility =6	Total money spend = Rs. 2.50	4.4

**Consumer's surplus =6.9-2.5=4.4, i.e., Rs 4.40**

It is assumed in the above table that the price of oranges in the market is Rs.0.50 per orange. The consumer will purchase as many oranges as make his marginal utility equal to the price. Thus he will purchase 5 oranges and pay for each Rs.050. In this way he will

spend in all Rs 2.50. But the total utility of the 5 oranges is equal to 6.9. He thus gets a consumer's surplus equal to  $(6.90-2.50) = 4.40$ . The consumer's surplus can also be found from the fourth column of the table. The utility of the first unit of oranges to the consumer is equal to 2.0; therefore he would be prepared to pay Rs.2 for it rather than go without it. But he pays for the first orange only Rs. 0.5 because the price of an orange in the market is Rs.0.5. Therefore, from the first unit, the consumer gets consumer's surplus equal to  $(2.0-0.5) = 1.5$ , which is written in the fourth column. Similarly, the utility of the second orange is equal to 1.5 as consumer pay Rs.0.50 for it and therefore obtains  $(1.8-0.5) = 1.3$  as consumer's surplus. From the fifth unit the consumer's surplus derives satisfaction equal to 0.5 and he also pays Rs.0.50 for it. Thus, there is no consumer's surplus from the fifth unit. Now if we add the figures in the 4<sup>th</sup> column, we shall get the total consumer's surplus equal to Rs. 4.40.



**Criticism of consumer's surplus:** The concept of consumer's surplus has been criticized on several grounds:

**Imaginary:** It is said that this is a purely imaginary idea. You just imagine what you are prepared to pay and you proceed to deduct from that what you actually pay. It is all hypothetical. One may say that one is prepared to pay anything. Hence it is unreal.

**Difficult to measure:** It is difficult to measure consumer's surplus exactly. Few can say what they would be prepared to pay for a thing. Besides, different people are prepared to pay different amounts. It would be a hopeless task to put down how much each individual would be willing to pay. Hence the total consumer's surplus in the market cannot be measured.

**Surplus exhausted:** It is pointed out that if the consumer knew that any such thing existed, he would go on buying more and more till the surplus utility he enjoyed disappeared. This is

wrong. A consumer does not run after a surplus yielded by one commodity. He has to weigh the utilities of other commodities too.

**Not Applicable to Necessaries:** The idea of consumer's surplus does not apply to the necessities of life or conventional necessities. In such cases the surplus is immeasurable. What would not a man be prepared to pay for a glass of water when he is dying of thirst?

Dr. Marshall has given a detailed reply to all these points of criticism. He points out that the concept is not as unreal as it supposed to be. A man living in a city enjoys many amenities at low prices. If a man living in a distant village were keen to enjoy them, he would have to spend much more. Thus a man earning Rs. 1000 in city derives greater satisfaction from its outlay than a man having the same income in some remote village. The man in the city enjoys a consumer's surplus, because he can have more things and at lower prices.

**Hick's criticism:** The Marshallian measure of consumer's surplus has been severely criticized. A very serious objection against the Marshallian measure of consumer's surplus with the help of demand curve (or marginal utility curve) is that it is based on the twin assumptions that utility is measurable and that the marginal utility of money remains constant as a person spends more of it on a particular good.

Economists like Hicks and Allen have contended that utility is a subjective phenomenon and hence cannot be measured in concrete terms. Further, they contend that the assumption of constancy of marginal utility of money is not valid. Marshall's assumption of constant marginal utility of money ignores the "income effect" of the price change, which is often important. Marshall defended his assumption by pointing out that since consumer spends only a small fraction of his income on a particular good, the marginal utility of money does not change to any significant extent. But this need not necessarily be the case.

On the other hand, Prof. J. R. Hicks has rehabilitated the concept of consumer's surplus by explaining it in terms of ordinal utility function or indifference curve technique. He has given a measure of consumer's surplus without assuming utility to be measurable and the marginal utility of money to be constant.

### **Importance of consumer's surplus:**

The idea of consumer's surplus is not merely bookish. It has great practical importance and is useful in a number of ways:

**In public finance:** It is useful to a Finance Minister in imposing taxes and fixing their rates. He will tax those commodities in which the consumers enjoy much surplus. In such cases, the people would be willing to pay more than they actually pay at present. Such taxes will bring in more revenue to the State. They will also mean comparatively less hardship than if taxes were imposed on commodities which do not yield much consumer's surplus.

**To the businessman and monopolist:** To the businessman also the concept is very useful. He can raise prices of those articles in which there is a large consumer's surplus. In such cases, the consumers are willing to pay more than the prevailing price. The seller will be able to raise price especially if he is a monopolist and controls the supply of the commodity.

Comparing advantages of different places: Our knowledge of consumer's surplus proves useful when we compare the advantage of living in two different places. A place where there are greater amenities available at cheaper rates will be better to live in. In these places, the consumer's enjoy large surplus of satisfaction. Consumer's surplus thus indicates conjectural advantages, i.e., the advantages of environment and opportunities.

Distinction between value-in-use and value-in-exchange: Consumer's surplus draws a clear distinction between value-in-use and value-in-exchange. Commodities like salt and match-box have a great value-in-use but less value-in-exchange. Being necessities and cheap thing, they yield, however, a large consumer's surplus. The consumer's surplus depends on total utility, whereas price depends on marginal utility.

Measuring benefits from international trade: Consumer's surplus measures benefits from international trade. We can import thing cheaply from abroad. Before importing them, we were paying more for similar home-produced goods. The imports, therefore, yield a surplus of satisfaction. We would have paid for them more than what we actually pay. This is consumer's surplus. The larger this surplus, the more beneficial is the international trade.

## Lecture No. 20, 21 ,22 &23

### Elasticity of Demand – Meaning, kinds of Elasticity of Demand, Types of Elasticity of Demand, Factors Affecting Elasticity of Demand, Measurement and Practical Importance of Elasticity of Demand

**Elasticity of demand:** We know that there is a close relationship between price and demand. When price rises, demand contracts and when price falls demand extends. This extension and contraction which takes place in demand as a result of change in price is called elasticity of demand. The law of demand only states the direction of change of demand caused by the change in price. The relative magnitude of the demand is expressed by the concept of elasticity of demand.

**Meaning of elasticity:** The term elasticity expresses the degree of correlation between demand and price. It is the rate at which the quantity demanded varies with a change in price. It is the measure of the responsiveness of demand to changing price. The elasticity of demand is a measure of the relative change in amount purchase in response to a relative change in price on a given demand curve.

It may be carefully noted that elasticity depends primarily on proportional or percentage changes and not an absolute change in price and quantity demanded. It is defined as the degree to which a change in price will change the quantity demanded.

Another precise definition is by Mrs. Joan Robinson thus: the elasticity of demand, at any price or at any output, is the proportional change of amount purchased in response to a small change in price, divided by proportional change in price. Other things are assumed to remain constant, e.g., other price, consumer's income.

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

#### **Elastic and inelastic demand:**

The change in demand is not always in proportion to change in price. A small change in price may lead to a great change in demand. In that case, we shall say that the demand is elastic or sensitive or responsive.

A big change in price is followed only by a small change in demand, it is said to be a case of inelastic demand, e.g. salt.

The demand is elastic, when a fall in price increases the total amount spent or the total revenue of seller (i.e. price X quantity). In this case, percentage change in quantity demanded is greater than the percentage change in price.

But when a fall in price leads to a small increase in the quantity demanded so that total outlay of the purchaser or the total revenue of the seller (i.e. price X quantity) decreases, we say that the demand is inelastic. In this case the percentage change in quantity demanded is smaller than the percentage change in price.

#### **Five cases/degrees of elasticity:**

- (i) Perfectly elastic or infinite elasticity
- (ii) Perfectly inelastic or zero elasticity
- (iii) Relatively elastic
- (iv) Relatively inelastic; and
- (v) Unit elasticity

Figure I shows an infinitely elastic demand curve  $DD'$  which is a horizontal straight line parallel to the axis of X. It shows that even an infinitesimally small reduction in price leads to an unlimited extension of demand.

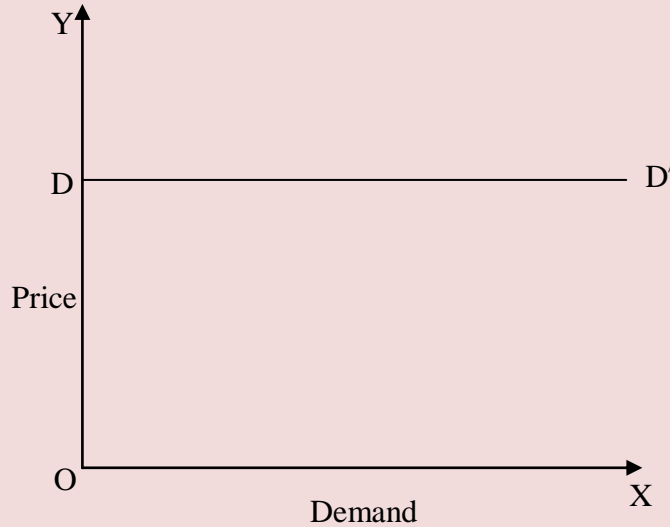


FIG.1 Amount demanded infinite elasticity horizontal demand curve

Figure 2 shows perfectly inelastic demand or zero elasticity. The demand curve  $DD'$  is a vertical straight line perpendicular to the axis of X and parallel to the axis Y. It shows that however, much of the price may fall or rise, the amount demanded remains the same.

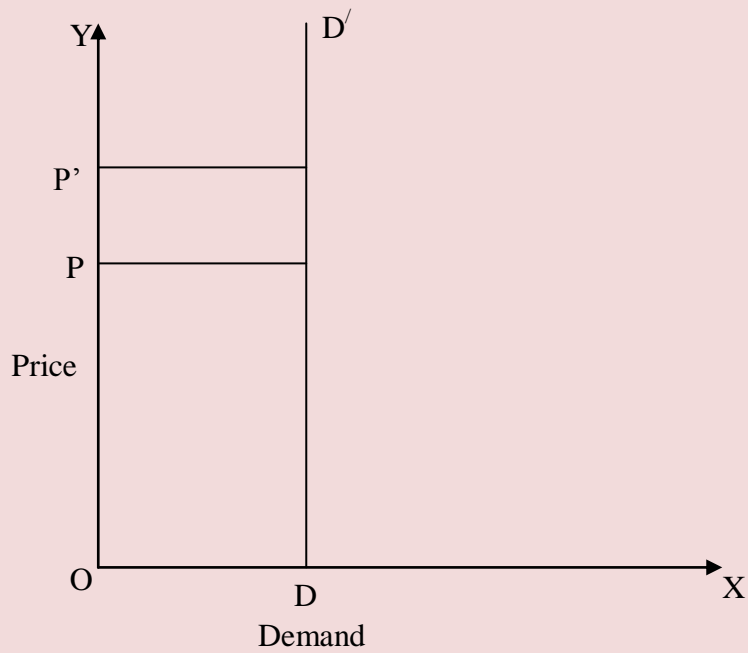


FIG.2 Amount demand zero elasticity  
vertical demand curve

Figure 3 shows less elastic demand commonly referred to as inelastic demand.

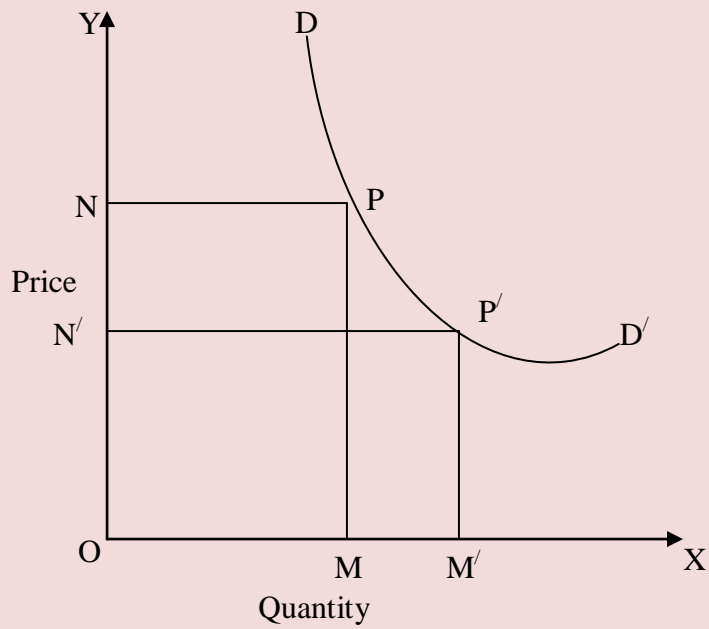


FIG.3 Amount demanded low elasticity  
steeper demand curve

In figure 4, the area  $OM'P'N'$  is greater than the area  $OMP'N$  and, therefore, the elasticity is more than unity.

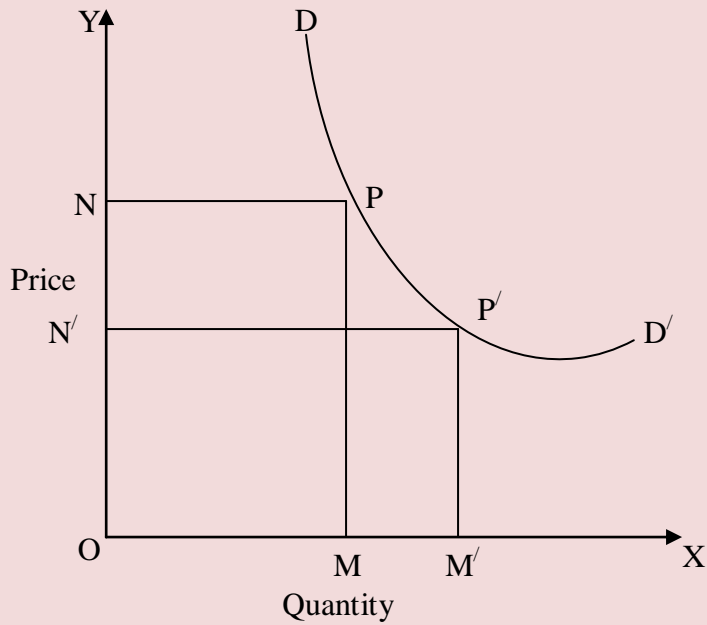


FIG.4 Amount demanded high elasticity  
flatter demand curve

In figure 5, the two areas are the same i.e. the total amount spent on the purchases of the commodity at different prices is same. Thus, the elasticity of demand in this case is unity. Such a curve is called an equilateral or rectangular hyperbola.

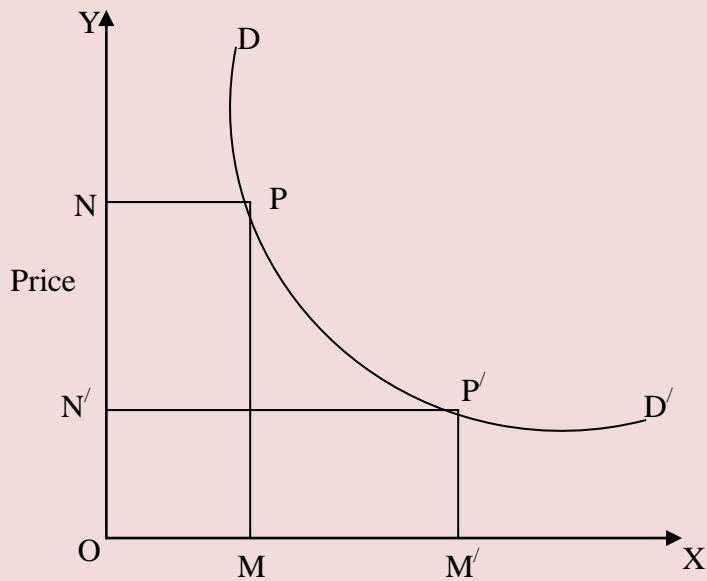


FIG.5 Amount demand  
Unit elasticity  
Demand curve is a rectangular  
Hyperbola



The elastic demand is said to be greater than unity (or one) and inelastic demand less than unity (but not less than zero). It is unity (or one) when the percentage change in price result in an exactly compensating percentage change in quantity demanded.

It may, however, be pointed out that both perfectly inelastic and infinitely elastic demand are the two extreme limits which are seldom met with in real life and can be conceived only theoretically. On other hand, in actual life we come across elasticity of demand which is somewhere between these two limits, i.e. it is more than zero but less than infinity.

The elasticity of demand at any price (or demand) is the ratio of the proportional change in demand and the proportional change in price.

Thus if D is demand at price P and if the demand varies by d in repose to a very small price variation p, elasticity of demand at the point of demand D or price P is measured by

$$e = \frac{d/D}{p/P} \text{ Or } \frac{d}{p} = \frac{P}{D}$$

- Demand for a good is said to elastic if the elasticity of demand for it is greater than one.
- Similarly, the demand for a good is called inelastic if elasticity of demand for it is less than one.
- Elasticity of demand equal to one, or in other words unit elasticity of demand, therefore, represent the dividing line between elastic and inelastic demand.

$$\begin{aligned} \text{Price elasticity} &= \frac{\text{Proportional change in quantity demanded}}{\text{Proportional change in price}} \\ &= \frac{\text{change in quantity demand}}{\text{quantity demand}} \\ &= \frac{\text{change in price}}{\text{Price}} \end{aligned}$$

$$\begin{aligned} e &= \frac{\Delta q/q}{\Delta P/P} = \frac{\Delta q}{q} \div \frac{\Delta P}{P} \\ &= \frac{\Delta q}{q} \times \frac{P}{\Delta P} \\ e &= \frac{\Delta q}{\Delta P} \bullet \frac{P}{q} \end{aligned}$$

**Types of elasticity:** we may distinguish between three types of elasticity, viz., price elasticity, income and cross elasticity.

Price elasticity: It measures the responsiveness of potential buyers to changes in price.

It is the ratio of percentage change in quantity demanded in response to a percentage change in price.

The price elasticity of demand depends upon

- (a) Proportion of income spent on the particular good
- (b) Income elasticity of demand
- (c) Elasticity of Substitution; and
- (d) Proportion of income spends on the goods other than X.

**Income Elasticity:** It measures the responsiveness of potential buyer to change in income. It shows how the quantity demanded will change when the income of the purchasers changes, the price of commodity remaining the same.

The income elasticity of demand for a good is the ratio of the percentage change in the amount spent on the commodity to a percentage change in the consumer's income, price of the commodity remaining constant. Thus,

$$\text{Income Elasticity} = \frac{\text{Proportionate Change In the quantity purchased}}{\text{Proportionate change in income}}$$

while prices remain constant.

- It is equal to unity or one: when proportion of income spent on a good remains the same even though income has increased.
- It is said to be greater than unity: when the proportion of income spent on a good increases as income increases.
- It is said to be less than unity: when the proportion of income spent on a good decreases as income increases.
- It is zero: when change in income makes no change in our purchases.
- It is negative: when with an increase income, the consumer purchases less, e.g. in the case of inferior goods.

**Cross elasticity:** Here, a change in the price of one good causes a change in the demand for another.

$$\text{Cross elasticity of demand of } x \text{ and } y = \frac{\text{Proportionate change in purchase of commodity } x}{\text{Proportionate change in price of commodity } y}$$

This type of elasticity arises in the case of inter related goods such as substitutes and complementary goods.

The cross elasticity of complementary goods is positive and that between substitute, it is negative.

**In mathematical terms:**

$$\text{Price Elasticity of Demand is} = \frac{\Delta q_A}{q_A} \div \frac{\Delta P_A}{P_A}$$

$$\text{Income Elasticity of Demand is } = \frac{\Delta q_A}{q_A} \div \frac{\Delta Y^d}{Y^d}$$

$$\text{Cross Elasticity of Demand is } = \frac{\Delta q_A}{Q_A} \div \frac{\Delta P_B}{P_B}$$

Where  $\Delta$  is change,  $\Delta q$  stand for some increase in  $q$  and  $-\Delta q$  for decrease in  $q$ ;  $q^A$  is the quantity of commodity A,  $P^A$  is the price of commodity A,  $P_B$  is the price of commodity B and  $y^d$  is some proportional increase in personal disposable income.

The price elasticity of demand depends upon

- (e) Proportion of income spent on the particular good
- (f) Income elasticity of demand
- (g) Elasticity of Substitution; and
- (h) Proportion of income spend on the goods other than X.

Substitution elasticity: It shows to what extent one commodity can be substituted for another without making any change in the total satisfaction derived by the consumer. i.e. he remains on the some indifference curve.

The elasticity of substitution between two goods is the measure of the ease or difficulty with which one commodity can be substituted for another.

These are two extremes, i.e., two limiting cases:

- (a) The elasticity of substitution may be infinite----- goods are perfect substitutes for one another i.e. they are identical.
- (b) These is a case of zero elasticity of substitution----- there can be no substitution at all and the goods must be used in fixed proportion or not at all.

$$\text{Elasticity of Substitution} = \frac{\text{Proportionate increase in the amount of } x \text{ with respect to } y}{\text{Proportionate decrease in the marginal rate of substitute of } x \text{ for } y}$$

Symbolically,

$$Es = \frac{\Delta \left( \frac{q_x}{q_y} \right)}{\frac{q_x}{q_y}} \div \frac{\Delta \left( \frac{\Delta y}{\Delta x} \right)}{\frac{\Delta y}{\Delta x}}$$

Here Es stand for substitution elasticity.

$\frac{q_x}{q_y}$  represents the original proportion between quantities of good x and y

$\Delta \left[ \frac{q_x}{q_y} \right]$  Stand for small change in the proportion of good x and y

$\frac{\Delta y}{\Delta x}$  is the initial marginal rate of substitution of x for y

$\Delta \left[ \frac{\Delta y}{\Delta x} \right]$  is the change in the marginal rate of substitution of good x for y.

**Factors determining the price elasticity of demand:**

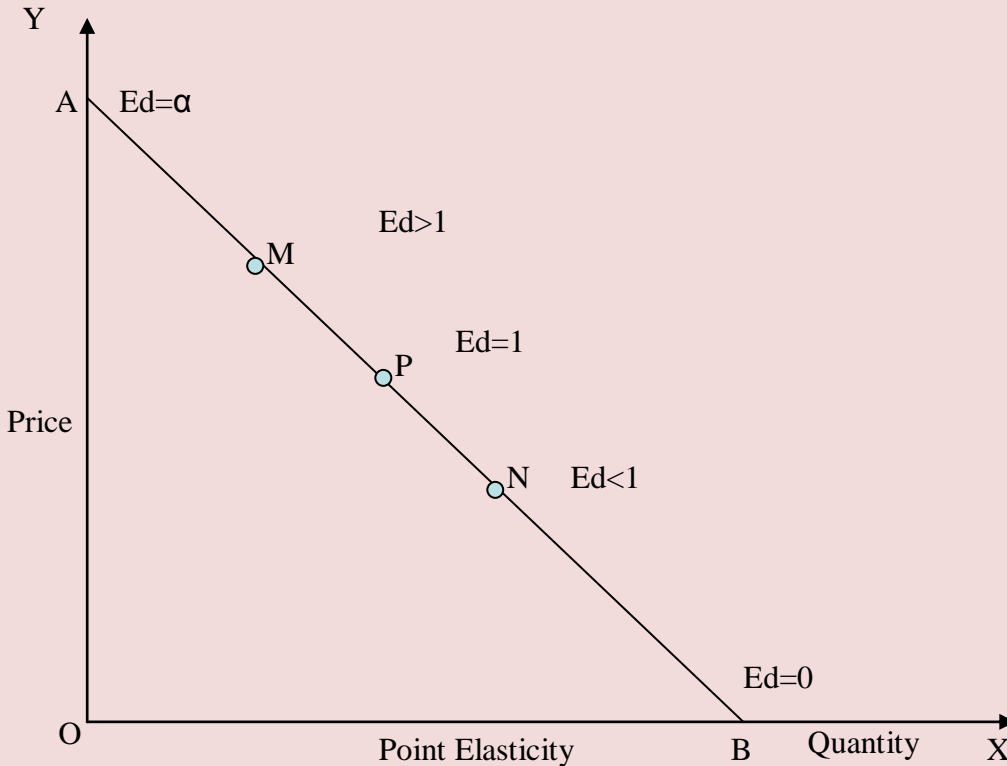
1. **Necessaries and conventional necessities:** We must buy fixed quantities of such commodities, whatever the price.
2. **Demand for luxuries is elastic:** It stands to reason that lowering of the price of things like radio and T.V. sets, refrigerators and artistic furniture will lead to more being bought, i.e. the demand is elastic.
3. **Proportion of total expenditure:** If a consumer good absorbs only a small proportion of total expenditure, the demand will not be much affected by a change in price. Hence, it will be inelastic. Conversely, if it absorbs the bulk of total expenditure, the demand will be elastic.
4. **Substitutes:** The main cause of differences in the responsiveness of the demand for goods to change in their price lies in the fact that there are more competing substitutes for some goods than for others.
5. **Goods having several uses:** The demand for a commodity having several uses is elastic.
6. **Joint demand:** The demand for jointly demanded goods is less elastic.
7. **Goods, the use of which can be postponed:** Demand for such good is elastic.
8. **Level of prices:** Elasticity of demand is great for high prices; great or at least considerable for medium prices, but it declines as the price falls, and gradually fades away if the fall goes so far that satiety level is reached.
9. **Level of incomes:** The demand on the part of the poor is more elastic than on the part of the rich.
10. **Market imperfection:** Owing to ignorance about market trends, the demand for a good may not increase when its price falls for the simple reason that consumers may not be aware of the fall in price.
11. **Technological factors:** Low price elasticity may be due to some technical reasons e.g. lowering of elasticity rate may not increase consumption because the consumers are unable to buy the necessary electric appliances.
12. **Time period:** The elasticity of demand is greater in the long run than in the short run for the simple reason that the consumer has more time to make adjustment in his scheme of consumption. In other words, he is able to increase or decrease his demand for a commodity.

**Measurement of elasticity:** For practical purpose, it is not enough to know whether the demand is elastic or inelastic. It is rather more useful to find out to what extent it is so. For that purpose it is essential to measure the elasticity.

1. **Point method of measuring price elasticity of demand:** The general formula for measurement of price elasticity of demand is

$$Ed = \frac{\text{Lower segment (of the demand curve)}}{\text{Upper segment (of the demand curve)}}$$

If we take a 45° line demand curve and select different point at different places, the elasticity of demand is different at different points.



$$(i) \quad Ed \text{ at point 'A'} = \frac{\text{Lower segment}}{\text{Upper segment}} = \frac{AB}{0}$$

This means  $Ed = \infty$  (perfectly elastic)

$$(ii) \quad Ed \text{ at point 'M'} = \frac{\text{Lower segment}}{\text{Upper segment}} = \frac{MB}{AM}$$

When  $MB > AM$ , Hence  $Ed > 1$  that is relatively elastic demand curve

$$(iii) \quad Ed \text{ at point 'P'} = \frac{\text{Lower segment}}{\text{Upper segment}} = \frac{PB}{AP}$$

When  $PB = AP$  Hence,  $Ed = 1$  that is unit elasticity of demand (This represent the dividing line between elastic and inelastic demand)

$$(iv) \quad Ed \text{ at point 'N'} = \frac{\text{Lower segment}}{\text{Upper segment}} = \frac{NB}{AN}$$

Where  $NB < AN$  is  $Ed < 1$  that means elasticity of demand is relatively inelastic demand.

$$(v) \text{ Ed at point 'B'} = \frac{\text{Lower segment}}{\text{Upper segment}} = \frac{0}{AB}$$

That is  $E_d = 0$ , that means it is perfectly inelastic demand curve.

**2.** Total outlay method: According to this method, we compare the total outlay of the purchases (or total revenue, i.e. total value of sales from the point of view of seller) before and after the variations in price. Elasticity of demand is expressed in three ways:

- (1) Unity (or unitary elasticity)
- (2) Greater than unity.
- (3) Less than unity.

**Unity:** It is unity, when even though the price has changed, the total amount spent (total revenue of seller) remains the same. The rise in price is exactly balanced by reduction in purchases and vice-versa.

**Greater than unity:** When with the fall in price, the total amount spent (total revenue of the seller) increases or the total amount spent (total revenue) decreases as the price rises.

**Less than unity:** When the total amount spent (total revenue of the seller) increases with a rise in price and decreases with a fall in price.

Sr. No.	Price of pencil Per Dozen (1)	Quantity demanded in Dozen (2)	Total outlay (Revenue) (3) = (1)*(2)
1	8.0	3	24.0
2	7.0	4	28.0
3	6.0	5	30.0
4	5.0	6	30.0
5	4.0	7	28.0
6	3.0	8	24.0

As between  $\frac{(1) \text{ and } (2)}{(2) \text{ and } (3)}$   $E_p > 1$

$(3) \text{ and } (4)$   $E_p = 1$

$(4) \text{ and } (5)$   $E_p < 1$

Thus, elasticity is a warning signal for the businessmen. It tells him that in the case of inelastic demand reduction in price will reduce his income or revenue and increase in price will increase it. The effect will be opposite if the demand is elastic.

**3.** Proportional Method: In this method, we compare the percentage change in price with the percentage change in demand. The elasticity is the ratio of the percentage change in the quantity demanded to percentage change in price charged. The formula is:-

$$\begin{aligned} \text{Price Elasticity} &= \frac{\text{Proportionate change in demand}}{\text{Proportionate change in price}} \\ &= \frac{\text{Change in demand}}{\text{Amount demand}} \div \frac{\text{Change in Price}}{\text{Price}} \end{aligned}$$

This method is also known as Percentage method (Flux Formula)

1. When percentage change in demand over percentage change in price is equal to one, we say that elasticity of demand is equal to unity.
2. When percentage change in demand is more in relation to the percentage change in price, then the elasticity of demand is said to be greater than unity.
3. When the percentage change in demand is less than in relation to the percentage change in price, then the elasticity of demand is said to be less than unity.

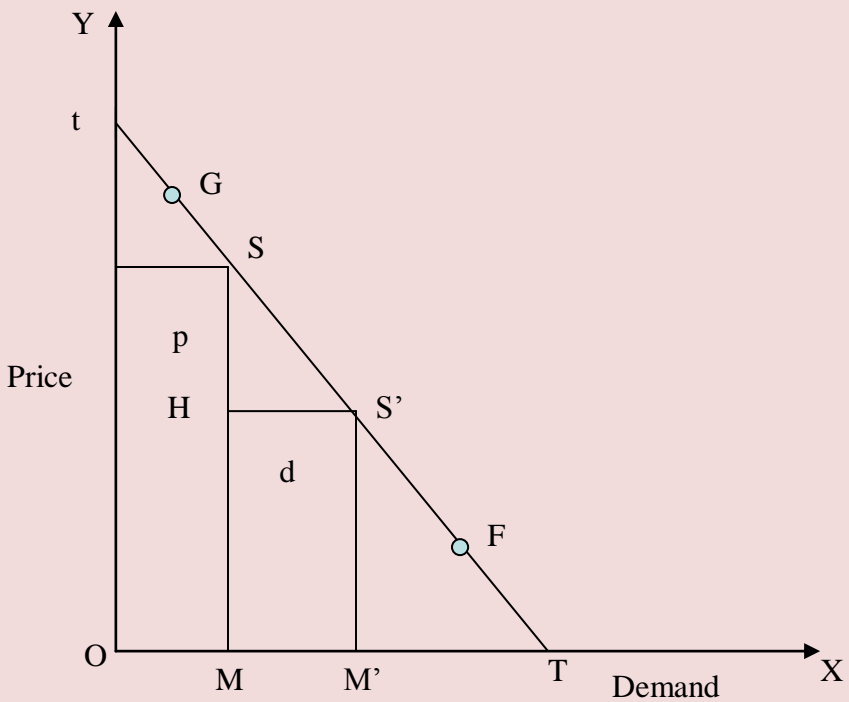
Suppose the price to a particular brand of a radio set falls from Rs 500 to Rs 400 each i.e. 20 percent fall. As a result of this fall in price, suppose further that the demand for the radio set has gone up from 400 to 600, i.e. 50 percent increase. Elasticity of demand is  $50/20$  or 2.5 percent.

The elasticity of demand is always negative, although by convention it is taken to be positive. It is negative because change in quantity demanded is in opposite direction to the change in price. That is a fall in price is followed by rise in demand, and vice-versa. Hence, elasticity is always less than zero, unless of course the demand curve is abnormal, i.e., sloping upward from left to right. Strictly speaking, in mathematical terms, there should be minus sign (-) before the figure indicating price elasticity. But by convention, for the sake of simplicity, the minus sign is dropped in the economics.

4. Geometric method: Elasticity of demand can also be geometrically measured. Let us assume that the demand curve is a straight line. In Figure I it is  $tT$ ,  $t$  being on  $y$ -axis and  $T$  on  $X$ -axis,  $S$  is a Point on the demand curve  $tT$ . At this point price is  $SM$  and demand is  $OM$ . The price fall a little by  $p$  to  $S'M'$  and demand expand by  $d$  to  $O'M'$ .

Elasticity of demand at  $S$  is  $d/p \times SM/OM$ . In the similar triangle  $SHS'$  and  $SMT$ ,  $d/p = MT/SM$ . Elasticity of demand at  $S$  is, therefore,  $MT/SM$ . Elasticity of demand at  $S$  is, therefore,

$$\begin{aligned} &= MT/SM \times SM/OM \\ &= MT/OM \\ &= ST/St \end{aligned}$$



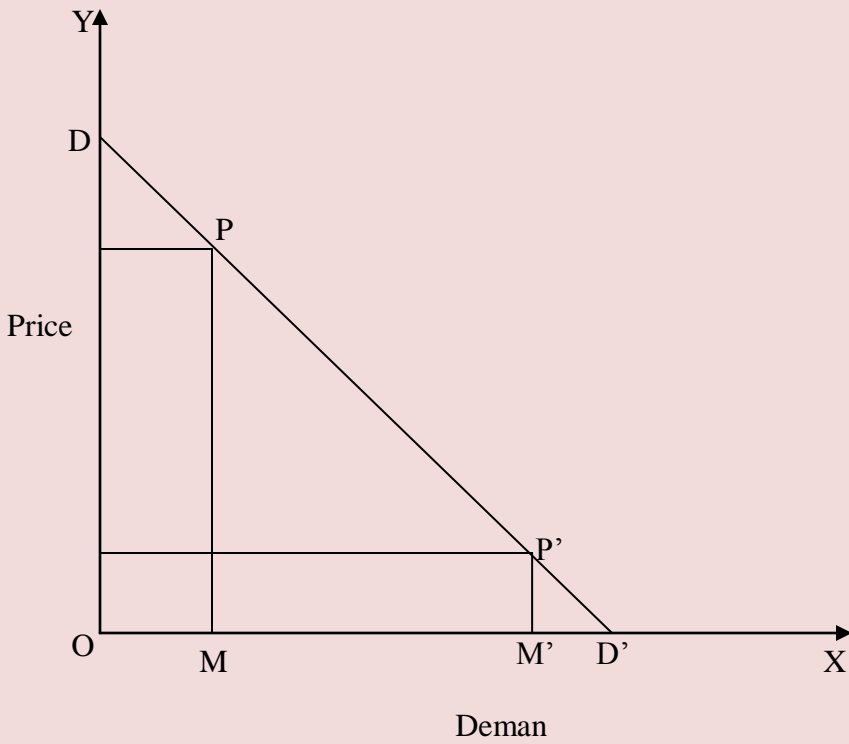
The numerical value (as 2 or 1 or 1/2) of elasticity of demand is called the coefficient of elasticity.

Dr. Marshall and other have found a rough way of on measuring the elasticity of demand. It is equal to unity, less than unity and more than unity.

Equal to unity: Elastic type ( $e_p = 1$ )

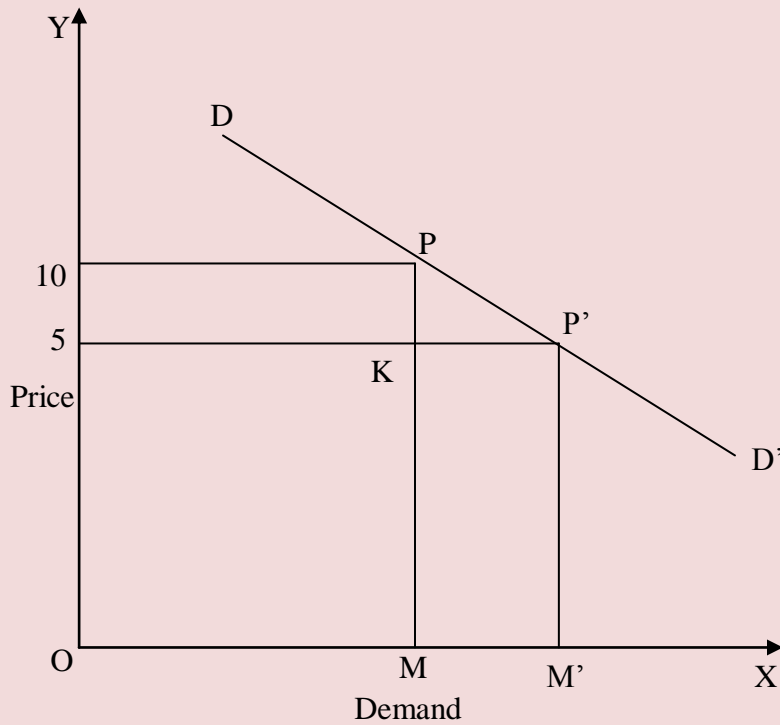
The extension and contraction of demand takes place in the same proportion as the fall or rise in price. Total expenditure remains the same with the fall or rise in price.





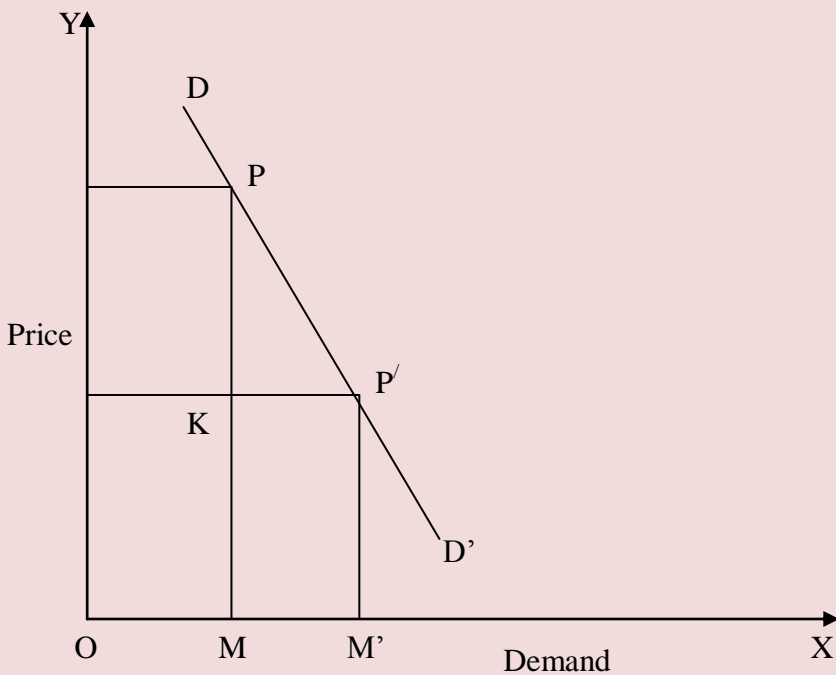
Greater than unity: Elasticity is greater than unity ( $ep > 1$ )

Total expenditure will increase with the fall in price and will decrease with the rise in price.



Less than unity: Elasticity is less than unity ( $ep < 1$ )

Total expenditure will decrease with the fall in price and will increase with the rise in price.



**Practical applications of elasticity of demand:** The concept of elasticity of demand is of great practical importance in the sphere of government finance as well as in the trade and commerce.

- 1) Taxation: The minister of finance can be more sure of his revenues if he taxes those commodities for which the demand is inelastic.
- 2) Monopoly price: Knowing the nature of demand of the various groups of consumer, the monopolist can practice price discrimination. So the businessman, especially if he is a monopolist, will have to consider the nature of demand while fixing his price.
- 3) Joint products: The concept of elasticity of demand finds application in the case of joint products also. The producers will be guided mostly by the demand and its nature while fixing his price.
- 4) Increasing returns: When an industry is subject to increasing returns, the manufacturer lower the prices to develop the market so that he may be able to produce more and take full advantage of economies of large scale production.
- 5) Output: Elasticity of demand affects industrial output. Reduction in price will certainly increase the sale in the market as a whole.
- 6) Wages: Elasticity of demand also exerts its influence on wages. If the demand for a particular type of labour is relatively inelastic, it is easy to raise wages, but not otherwise.
- 7) Poverty in plenty: The concept of elasticity explains the paradox of poverty in midst of plenty. For example a bumper crop instead of being a cause of agricultural prosperity may spell disaster if the demand for the commodity is inelastic. This is specially so if

the produce is perishable. A rich harvest may actually fetch less money than a poor one.

- 8) Effect on the economy: The working of economy in general is affected by the nature of consumer demand. It affects the total volume of goods and services produced in the country. It also affects producer's demand for different factors of production, their allocation and remuneration.
- 9) Economic policies: Modern government regulates output and prices. In this they are guided by the nature of demand. The government can create public utilities where demand is inelastic and monopoly element is present.
- 10) International trade: The nature of demand for the internationally traded goods is helpful in determining the quantum of gain accruing to the respective countries. This is how it determines the terms of trade.
- 11) Rate of foreign exchange: While fixing the rate of exchange, the government has to consider the elasticity or otherwise of its imports and exports.

**Theoretical importance:** Apart from the practical importance, the concept plays a crucial role in economic theory and is extremely used as a tool of economic analysis.

- 1) Price determination: The concept of elasticity of demand is used in explaining the determination of price under various market conditions.
- 2) Price discrimination: The concept of elasticity of demand is useful in explaining the conditions under which price discrimination by a monopolist becomes profitable.
- 3) Measuring degree of monopoly power: Elasticity of demand is also used in measuring degree of monopoly power which a monopolist has to influence price.
- 4) Classification of goods as substitutes and compliments: Goods are classified as substitutes and complimentary on the basis of cross elasticity.
- 5) Boundary between industries: Cross elasticity of demand is also useful in indicating boundaries between industries. Goods with high cross elasticity constitute one industry, whereas goods with lower elasticity constitute different industries.
- 6) Market forms: The concept of cross elasticity helps to understand different market forms. Elasticity indicates percent competition, whereas zero or near zero elasticity indicates pure monopoly and high elasticity indicates imperfect competition.
- 7) Incidence of taxes: The concept of elasticity of demand is used in explaining the incidence of indirect taxes like sales tax and excise duty.
- 8) Theory of distribution: Elasticity of demand is useful in the determination of relative share of various factors of production. If the demand for a factor of production is less elastic, its share in the national dividend is higher, and vice-versa. If elasticity of substitution is high, the share will be low.

Thus, the concept of elasticity of demand is highly useful as a tool of economic analysis.

It is not possible to lay down any hard and fast rule as to which commodity has as elastic demand and which inelastic. When we want to know whether the demand is elastic or inelastic, we must first know the class of people with reference to whom we wish to ascertain the fact.

## Unit-IV

### Lecture No. 24 & 25

## National Income – Meaning, Concepts, Measurement and Importance of National Income

### National income:

Output and employment in a country depend on the size of national income Dr Alfred Marshall defines National income (or National Divided) thus:

Labour and capital of a country acting on its natural resources, produce annually a certain net aggregate of commodities material and immaterial including services of all kinds. The word net means that from the gross value of the output depreciation of capital must be deducted.

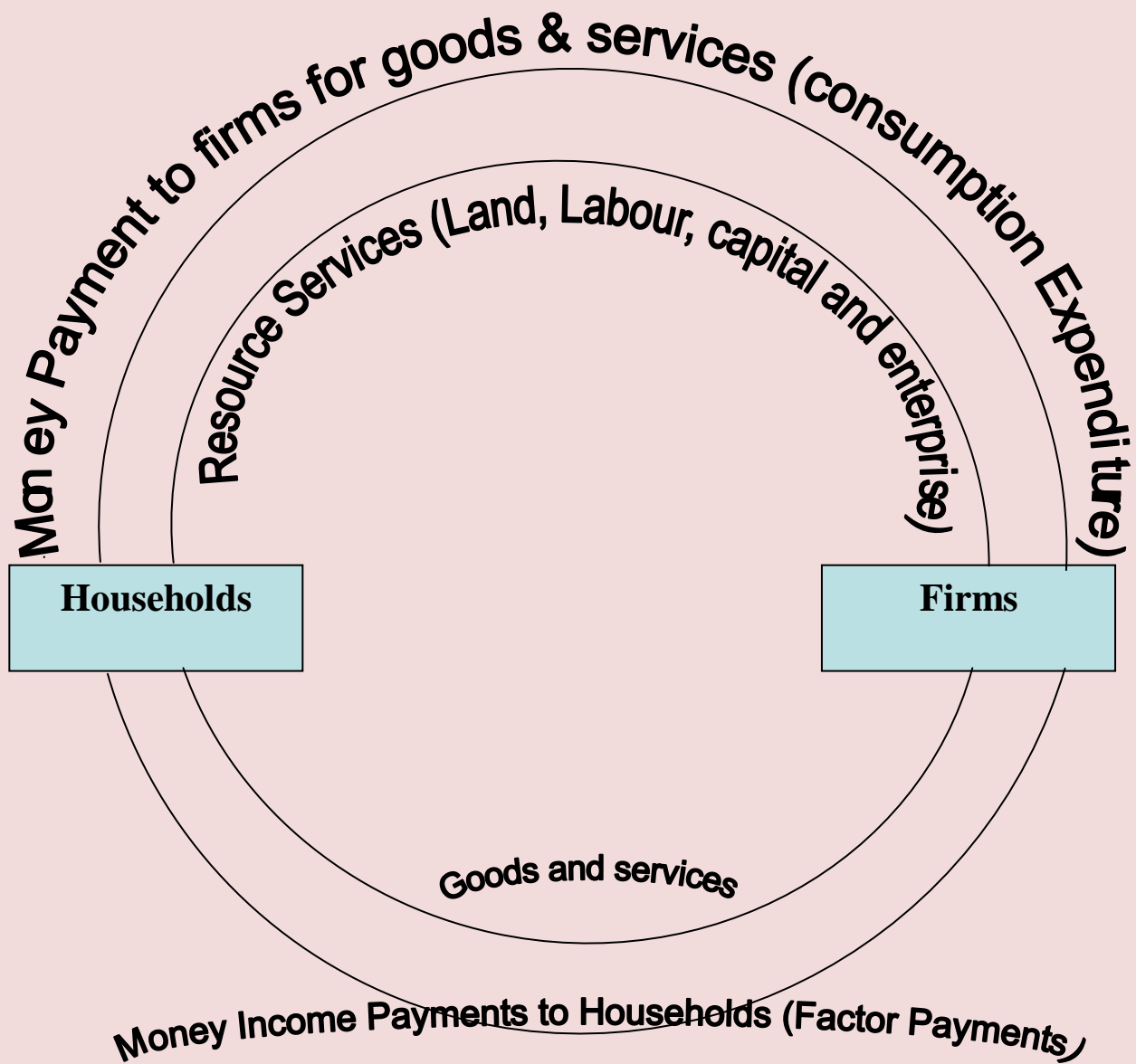
The concept of national income has three interpretations.

- It represents a receipts total
- It represent an expenditure total
- It arises out of the fact that every expenditure at the same time is a receipt by another and if goods or services bought are valued at their sales prices, we have three fold identities that the value received equals the value paid, equal the value of goods and services given in exchange.

**Definition of national income:** According to present ideas, national income may be defined as the aggregate factor income (i.e. earnings of labour and property) which arises from the current production of goods and services by the nation's economy.

There are three measures of national income of a country:

- a) As the sum of all incomes, in cash and kind, accruing to factors of production in a given time period, i.e. the total of income flows;
- b) As the sum of net output arising in several sectors of the nation's production;
- c) As the sum of consumer's expenditure, government expenditure on goods and services and net expenditure on capital goods.



### Circular flow of income

**Concept of national income:** Five important concepts of national income, viz., the Gross National Product, Net National Product, National Income, Personal Income, and Disposable Income can be studied

1. **Gross National Product (GNP):** This is the basic social accounting measure of the total output or aggregate supply of goods and services. Gross National Product is defined as the total market value of all final goods and services produced in a year. It is a measure of the current output of economic activity in the country.

Two things must be noted in regard to gross national product:

(i) It measures the market value of the annual output. In other words, GNP is a monetary measure.

(ii) For calculating the gross national product accurately all the goods and services produced in any given year must be counted once but not more than once.

Another important thing to be born in mind while calculating the GNP is that non productive transactions should be excluded. These are purely financial transactions or transfer payments like old-age pension, or unemployment doles which are merely grants or gifts or transactions relating to existing shares or second hand shares.

**2. Net National Product (NNP):** When charges for depreciation are deducted from the gross national product, we get net national product.

It means the market value of all final goods and services after providing for deprecation. Therefore, it is called national income at market prices. Thus

Net National Product  
Or  
National Income at Market Price } = Gross National Product - Depreciation

**3. National Income or National Income at Factor cost (NI):** It means the sum of all incomes earned by the resource suppliers for their contribution of land, labour, capital and entrepreneurial ability which go into year's net production.

National Income shows how much costs society, in terms of economic resources, to produce net output.

It is really the national income at factor cost for which we use the term "National Income".

Thus, national income (or national income at factor cost) is equal to net national product minus indirect taxes plus subsidies.

National Income  
Or  
National income at factor cost } = Net National Product (National income at market price)  
- indirect taxes + subsidies

**Personal Income (PI):** It is the sum of all incomes actually received by all individuals or households during a given year.

Personal Income = National income – Social security contributions – Corporate income taxes- Undistributed corporate profits + Transfer payments.

**Disposable Income (DI):** After a good part of personal income is paid to government in the form of personal taxes like income tax, personal property tax, etc, what remains of personal income is called disposable income

Disposable Income = Personal income- Personal taxes

Disposable income can either be consumed or saved. Therefore,

Disposable Income = consumption + saving

**Measurement of national income:** There are three possible measures of national income:

1. Total income flow
2. Net outputs, and

### 3. Final expenditures

All these methods arrive at the same result. Which of these methods is adopted in actual practice i.e. calculating the national income of a country depends on the nature and conditions of its economy as well as purpose of undertaking this exercise?

1. Production or output method: According to this method the economy is divided into different sectors such as agriculture, mining, manufacturing, small enterprises, commerce, transport, communication and other services. Then, the gross product is found out by adding up net values of all the production that has taken place in these sectors during a given year.

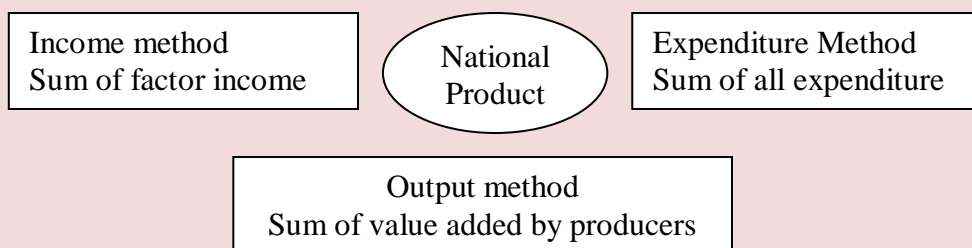
The aggregate or net value of production of all the industries and sectors of the economy plus the net income from abroad will give us the gross national product. By subtracting the total amount of depreciation from the figure of gross national product, we get the net national product or national income.

This method can be used where there exists a census of production for the year. The one great advantage of this method is that it reveals the relative importance of the different sectors of the economy by showing their respective contribution to the national income. This method is called national income by industrial origin.

2. Income method: According to this method national income is obtained by summing up of the incomes of all the individuals in the country. Therefore, national income is calculated by adding up the incomes of land, wages and salaries of employees, interest on capital, profits of entrepreneurs (including undistributed profits of joint stock companies) and income of self employed people. This method has the great advantage of indicating the distribution of national income among different income groups such as land lords, capitalists, workers etc., therefore, this is called national income by distributive shares.

3. Expenditure method: According to this method we can get the national income by summing up all consumption expenditure and investment expenditure made by all individuals as well as government of a country during the year. Hence, the gross national product is found by adding up:

1. What private individuals spend on consumer goods and services? This is called personal consumption expenditure.
2. What private businesses spend on replacement, renewals and new investment? This is called gross domestic private investment.
3. What the government spends on the purchase of goods and services i.e., government purchases.
4. What the foreign countries spend on the goods and services of the national economy over and above what this economy spends on the output of the foreign countries i.e. exports minus imports.



**Difficulties of measurement:** There are some conceptual problems that crop up when we start measuring the national income of a country.

1. The first problem relates to the treatment of non- monetized transactions such as the services of housewives to the members of their families and farm output consumed at home. On this point, the general agreement seems to be to exclude the services of housewives while including the value of farm output consumed at home in the estimate of national income. This however, gives rise to certain anomalies.
2. The second difficulty arises with regard to the treatment of the government in national income accounts.
3. The third major problem arises with regard to the treatment of income arising out of activities of the foreign firm in a country. Should their income/ income of foreign firms form a part of the national income of the country in which they are located or should it belong to the national income of the country owing the firms? On this point, the IMF view point is that production and income arising from an enterprise should be ascribed to the territory in which production takes place. However, the profits earned by foreign branches and subsidies are credited to the parent concern.

**Significance of national income statistics:** There are several important uses of national income statistics and therefore, there is great need of their regular preparations. The followings are some of the important uses of national income estimates:

First, national income estimates reveals the overall performance of the economy, as it seeks to measure the level of production in a year.

Secondly, by comparing the national income estimates over a period of time, we can know whether the economy is growing, stagnant or declining.

Thirdly, the national income estimates show the contribution made by the various sectors of the economy such as agriculture, manufacturing industry, trade etc., to the national income.

Fourthly, national income estimates throw light on the distribution of national income among different categories of income such as wages, profits, rents and interest.

Fifthly, the national income estimates also contain the figures of consumption, saving and investment in the economy.

Sixthly, with the help of national income estimates of various countries of the world, we can compare the standard of living and the levels of economic welfare of the people living in



those countries. Moreover, developed and under developed countries are usually classified on the basis of per capita income.

Finally, national income estimates are a valuable guide to economic policy, especially in these days of development planning and active government interventions in the economy.

By looking at the national income statistics, the government can decide if the economy or its various sectors need any stimulus or regulation. In fact, no development planning is possible without national income estimates. National income estimates prove very useful for formulating plans and fixing targets of production. Preparation of plans depends very much on the availability of data regarding national income, consumption, saving and investment which are all provided by national income estimates.

## Lecture No. 26 & 27

### Public Finance – Nature and Scope of Public Finance, Importance and Role or Functions of Public Finance, Sources of Government Finance

**Meaning of public finance:** The government has to perform some functions. To carry out these functions,

it needs funds. Everyone has to contribute something. So the public finance deals with why the government takes money, how it gets money and where it spends money?

#### **Distinction between public and private finance:**

There are some important differences between private and public finance. They are:

1. An individual's income determines his expenditure, while a state's proposed expenditure determines its income. The state first decides the nature and scale of its expenditure and then proceeds to find funds to meet it. An individual knows his income and he has to plan out his expenditure accordingly. An individual adjusts his expenditure to his income, whereas the state adjusts its income to its expenditure.
2. A public authority can vary the amount of its income and expenditure within limits. An individual cannot easily double his income or halve his expenses even if he would be better off that way. But this is not so difficult in the case of governments.
3. A public authority usually does not discount the future at as high a rate as an individual: the reason is obvious. The life of a man is limited in years and his foresight is limited. A state is supposed to live forever.
4. There is no fixed period of time over where an individual balance his budget: State budgets are generally made for one year. But the income and expenditure of an individual are continuous and cover the whole period of his life.
5. The individual finance is kept a secret where as a state finance is made public.
6. A state can raise an internal loan, an individual cannot. Nobody can borrow from himself. But state can borrow from its own citizen.
7. The state can issue paper currency in order to meet its expenditure. But no such course is open to a private individual.
8. No equi- marginalizing of utilities: An individual tries to maximize satisfaction from his income by distributing his expenditure in such a manner as to have equi –marginal utility in every case but the state expenditure is done by the finance Department in an objective manner.
9. The private individual lacks the coercive authority which a government has. A govt. has simply to pass a law and compel the citizens to pay a tax or subscribe to compulsory loan i.e. compulsory deposits, but an individual cannot do anything of the kind.
10. An individual after meeting his needs saves something to lay buy. Not so with a state. These are some of the features which distinguish public finance from private finance.

#### **Importance of public finance:**

The importance of public finance lies in the following.

1. It is one of the most effective investments of the state control over the economy. It is not merely means of collecting state revenues and making disbursement.
2. The state activities which have to be financed by public revenues are over expanding. This has added to the importance of public finance manifold.
3. Growing significance of fiscal policy in tackling economic problems has increased the importance of public finance.
4. The study of public finance is especially important for the underdeveloped countries. Only a prudent management of state finance is essential to break the vicious circle of poverty in which the underdeveloped countries are involved. Fiscal policy is a powerful tool for increasing capital formation, accelerating growth, increasing national income and raising the level of employment.

#### **Role or functions of public finance:**

The role or major functions of finance are the following. These functions underline the importance of public finance.

1. **Allocative functions:** It refers to the process by which total resource use is divided between private and social goods by which the mix of social goods is chosen. This is done by budgetary policy.
2. **Distributive functions:** the budgetary policy also affects the distribution of income in the community. The tax and expenditure measures are adopted to modify the existing distribution with a view to reducing economic inequalities. In this way optimal income distribution is brought about.
3. **Stabilization function:** The budgeting policy can also be used to maintain a high level of employment, reasonable degree of price level stability, an appropriate rate of economic growth and stability in the balance of payments.

In fact, there is no aspect of economic activity which can escape being affected by the budgetary policy.

#### **Sources of government finance:**

The functions of modern government are very important and extensive and call for heavy expenditure. To meet expenditure government need an equally large income. There are four main sources from which this income is obtained. They are:

1. Taxes, direct and indirect.
2. Prices; earnings of states, commercial and industrial undertakings.
3. fees and assessment
4. loans

In addition to these, there are some minor sources such as fines and penalties, reparations and indemnities, tributes and gifts.

**Taxes:** Taxes are the most important source of state revenue today. A tax has been defined as a “compulsory contribution of the wealth of a person or a body of a person” for the services of the public powers. Two points should be carefully noted.

1. A tax is a compulsory payment. Nobody can escape taxation if his income has reached the assessable limits.
2. A particular tax is not, normally speaking, a price for any particular service performed by the state.

Taxes are meant to cover the general expenses of the state and are not levied for any particular purpose. Hence, the government does not promise to perform a specific service in return for the payment of particular tax.

Motive behind taxes: Taxes are mostly levied with the object of raising revenues. A penalty, on the other hand is imposed to stop people for doing certain things.

Sometimes a tax may bring in some revenue and also check people from consuming some harmful article like opium.

Besides, certain taxes may be of the nature of protective duties. They are levied in order to protect some home industry against foreign competition.

Sometimes, a tax aims at removing the inequalities in the distribution of wealth in a society.

Well- to -do people may be taxed to provide services like free schooling and free medical aid for the poor?

Thus, raising revenue is not the only purpose for which taxes are levied.

Prices; earning of state enterprises: when a government engages in business enterprises, it sells the services to the consumer at the fixed rate. The consumers are free to use the services or not. Government do not usually undertake these enterprises for the sake of profit, but to provide such services to the people as can either be provide only by the Government or can better be provided by them by any private agency. However, now a day's government undertakes in addition certain activities like trade, industry and business with the idea that the huge profits earned should not go in to private pocket, but should be used for the welfare of the nation.

Fees and assessment: A fees is a payment made by a person to the government on account of a special benefit, received by him. For instance there are patent fees, court fees, tuition fees, etc. In every case there is as specific benefit enjoyed by a person for which he pays the fee.

A special assessment is a particular fees charged from a person by the government e.g. for a new canal or a new rail road, a drain etc.

Loans: Besides the taxes. fees, etc., loans are raised by government in emergencies like war or to finance economic development plans or when costly enterprise like a new railway line or a steel plant or a multipurpose project has to be undertaken. Since the benefit from such enterprise accrues to future generation even more than to the present ones.

## Lecture No. 28, 29 & 30

### Public Revenue – Meaning, Kinds of Taxes, Impact, Incidence and shifting, Advantages and Disadvantages of Direct and Indirect Taxes, Incidence of Taxation, Canons of Taxation

#### Public revenue:

A modern state taps a number of sources to collect its revenue. Broadly speaking the government revenues can be classified as

- (i) Tax Revenue
- (ii) Non tax Revenue

Tax revenue: It is derived from the various taxes (a) Direct taxes e.g. income-tax, wealth tax, gift tax, expenditure tax, etc (b) Indirect tax e.g. customs duties, excise duties, sales tax etc.

Non tax revenue: It is derived from public undertaking called prices and other miscellaneous receipts. It also raises loans, short term and long term to augment its revenue.

The major sources of revenue are Taxes and Prices. The minor sources are Fees, Special Assessment, Fines, Tributes, indemnities, Gift and Grants, Forfeitures and Escheats.

#### Kinds of taxes:

- Taxes may be
- (I) Proportional
  - (II) Progressive
  - (III) Regressive, or
  - (IV) Digressive

A proportional tax: is one which takes out of the pockets of every person exactly the same percentage of income. Such a tax is very simple and does not change the nature of distribution of wealth in the country.

For instance, a tax on all incomes, big or small, at a flat rate of says 5%. But obviously poorer people with smaller incomes are hit harder in this system. Consequently, in modern taxation, proportional taxes have been given up in favour of progressive taxes.

A progressive tax: This tax tries to distribute the sacrifice in a more just manner. The higher incomes are charged tax at a higher rate. Since marginal utility of money falls with its increase, richer people have a greater capacity to pay taxes. Besides, progression reduces inequalities in wealth to some extent. India has adopted it.

A regression tax: is one which is charged from the poor at a higher rate than from the rich. There is no justification for taxing higher incomes at lower rate. This system is obviously unjust. It has only one thing in its favour and that is that as poorer people are more in number, such a tax brings in greater revenue. But regressive taxes are bad in principle and should be

avoided as far as possible. In fact they do not figure in the tax system of modern states e.g. land rent paid by poor people.

A digressive tax: is one which increases as incomes rise, but the rate does not increase in the same proportion as the income. It is so to say, a milder form of progression which means that larger incomes make a lower relative sacrifice than smaller incomes.

Direct and indirect taxes: Another distinction of no less importance is the one between direct and indirect taxes. Generally taxes on income are direct and those on goods indirect.

A direct tax is one which is really paid by the person on whom it is legally imposed.

An indirect tax is imposed on one person but is paid partly or wholly by another (Dalton)

### **Impact, incidence and shifting:**

Suppose a tax is levied on house-owner. Being compulsory they have to pay it or, in specific terms, the impact, of the tax is on them. Impact here means burden.

Naturally house-owner will not pay it quietly. Apart from efforts to get it repealed, they can try to make it up by raising their rent charge.

The tenants, too, will try to avoid it, but if they cannot get alternative accommodation they have no option, but to suffer the increase in rent.

The house-owners have, so to say, shifted their burden to their tenants. But this shifting may go even further.

Suppose the tenants are employed and are well organized. They can demand house rent allowance or increased salaries. If they succeed, the burden is shifted to the employers. This shifting may go to any length. But somewhere it must come to an end. The real burden will then be borne by the people who cannot push it any further. The incidence or the real weight of the tax thus falls on them.

Shifting starts with impact and ends in incidence. Thus, the impact may be on one set of persons and the incidence on a different group all together.

Now, a direct tax is one whose impact and incidence are on the same person i.e. tax-payer is also the tax-bearer.

An indirect tax, on the other hand is one of which the impact and incidence are on different persons, i.e. there is a shifting of the tax.

J.S. Mill defines a direct tax as one which is levied on the same person who is desired to pay it (e.g. income tax or death duties)

An indirect tax conversely is one, which is levied on one person with the expectation or intention of its being shifted to some other persons, e.g. taxes on commodities like sugar, tobacco, steel etc.

### **Advantages and disadvantages of direct taxes:**

Direct taxes have the following advantages in their favour:

(i) Equitable: The burden of direct taxes cannot be shifted. Hence equality of sacrifice can be attained through progression.

- (ii) Economical: The cost of collection of direct taxes is low. They are mostly collected at the source. The employer acts as an honorary tax collector. This means great economy.
- (iii) Certain: The payers know how much is due from them and when. The authorities also know the amount of revenue they can expect.
- (iv) Elastic: The yield from income tax or death duties can be easily increased by raising their rate.
- (v) Productive: As a community grows in numbers and prosperity, the return from direct taxes expands automatically. The direct tax yields large revenue to the state.
- (vi) A means of developing civic sense: The tax payer claims the right to know how the Government uses his money and approves or criticizes it. Civic sense is thus developed. He behaves as a responsible citizen.

Direct taxes have the following disadvantages in their favour:

- (i) Inconvenient: It pinches the payer and thus very inconvenient to pay. Nobody can help feeling the pinch.
- (ii) Evadable: The assessed can submit a false return of income and thus evade the tax.

Advantage and Disadvantages of Indirect Taxes:

Indirect taxes have advantages of their own.

- (i) The poor can contribute: The poor are always exempted from paying direct taxes. They can be reached only through indirect taxation.
- (ii) Convenient: They are convenient to both the tax-payer and the state.
- (iii) Broad-based: As indirect taxes can be spread widely, they are more beneficial and suitable.
- (iv) Easy Collection: collection takes place automatically when goods are bought and sold.
- (v) Non Evadable: They cannot be evaded as they are a part of the price.
- (vi) Elastic: They are very elastic in yield, if imposed on necessities of life which have an inelastic demand.
- (vii) Equitable: When imposed on luxuries on goods consumed by rich, they are equitable.
- (viii) Check harmful consumption: By being imposed on harmful products, they can check consumption of harmful commodities.

Indirect taxes have some disadvantages too, which are as follows.

- (i) Regressive: Indirect taxes are not equitable.
- (ii) Uncertain: when the thing is not purchased, the question of the tax payment does not arise.
- (iii) Raising price unduly: They cause the price of an article to rise by more than tax.
- (iv) Uneconomical: The cost of collection is quite heavy.
- (v) No civic consciousness: These taxes do not develop civic consciousness, because many times the tax-payer does not even know that he is paying a tax.
- (vi) Harmful to industries: They discourage industries if raw materials are taxed.

**Incidence of taxation:**

Incidence means the final resting place of a tax. The incidence is on the man who ultimately bears the money burden of the tax.

Impact and incidence distinguished: The impact of the tax is on the person who pays it in the first instance and the incidence is on the one who finally bears it.

If an excise duty is imposed on sugar, it is paid in the first instance by the sugar manufacturers, the impact is on them. But the duty will be added to the price of the sugar sold, which through a series of transfers, will ultimately fall on the consumer of sugar. The incidence is, therefore, on the final consumer.

Incidence is not shifting: shifting means the process of transfer i.e. the passing of tax from the one who first pays it to the one who finally bears it. It is through this process of shifting that the incidence of a tax comes finally to rest somewhere. The process of shifting may be slow or may be only partially effective so that the burden of a tax may not fall entirely on the person who is intended to bear it.

Incidence and effect: The effect of a tax refers to incidental results of the tax. There are several consequences of the imposition of tax which are quite distinct from the problem of incidence.

**Importance of incidence:** The study of incidence is very important. The tax system is not merely aimed at raising a certain amount of revenue, but aim is to raise it from those sections of the people who can best bear the tax. The aim in short is to secure a just distribution of the tax burden. This obviously cannot be done unless an effort is made to trace the incidence of each tax levied by the state.

**Canons of taxation**

Adam Smith laid down four principles to guide the taxing authority.

The principles of canons of taxation enunciated by Adam Smith were so important that they have become classic. They are:

(1) Canon of equality: The subjects of every state," Smith asserted, ought to contribute towards the support of the Government as nearly as possible in proportion to their respective abilities, that is, in proportion to the revenue which they respectively enjoy under the protection of the State. Equality here does not mean that all tax-payers should pay an equal amount. Equality here means quality or justice. It means that the broadest shoulders must bear the heaviest burden. It lays the moral foundation of tax system.

(2) Canon of Certainty: Adam Smith further said, the tax which each individual has to pay ought to be certain and not arbitrary. The individual should know exactly what, when and how he is to pay a tax; otherwise it will cause unnecessary suffering. Similarly the State should know much it will receive from a tax.

(3) Canon of Convenience: Smith wrote, "Every tax ought to be levied at the time or in the manner which it is most likely to be convenient to pay it."



(4) Canon of Economy: Lastly, Adam Smith held that “every tax ought to be so contrived as both to take out and keep out of the pockets of the people as possible over and above what it brings into the public treasury of the State. “ This means that the cost of collection should as small as possible. If the bulk of the tax is spent on its collection, it will take much out of the people pockets but bring very little into the State’s pocket. It is not a wise tax.

**Other canons of taxation:**

(5) Canon of Productivity: This canon emphasizes that a tax should bring in a substantial amount of money to the state. After all the main object of the taxing authority is to secure funds. It is much better to have a few taxes which yield good revenue instead of many taxes yielding a little.

(6) Canon of Elasticity: This canon points out that a tax should automatically bring in more revenue as the country’s population or income increases. There should be an automatic link between the needs of the State and resources of the people. If, in an emergency, an increase in the rate of the tax brings in increased income, the tax is elastic.

(7) Canon of Simplicity: It argues that the tax system should be simple; otherwise there would be confusion and worse still corruption. During the war and after, certain taxes, e.g., on the sale of cloth and other essential supplies in India resulted in corruption mainly because they lacked in simplicity.

(8) Canon of Variety: It is also necessary that the tax system of a country should be diversified. Reliance on just a few taxes is risky. In order to be just, a tax system must be broad-based. In order to be adequate, it must be diversified, having a wide coverage over commodities and persons.

(9) Canon of Flexibility: Flexibility connotes the absence of rigidity in the tax system. A flexible tax quickly adjusts to the new conditions. Presence of flexibility is a pre-condition for elasticity. Lack of flexibility in a tax can cause financial troubles to a State.

These are some important principles of taxation.

## **Lecture No. 31 & 32**

### **Public Expenditure – Meaning, Revenue and Capital Expenditure, Principles of Expenditure**

**Public expenditure:** There are two important aspects of Public Finance, viz., Public Revenue and Public Expenditure, This department of public finance received scant attention at the hands of writers on public finance throughout the 19<sup>th</sup> century. Attention was almost exclusively focused on public revenues. It is only in the present century that it came to be realized that public expenditure is no less important in its implications and bearing on public welfare than public revenue. The main reason for the early neglect of the subject of public expenditure seems to be that the amount of public expenditure was very small as the field of governmental activity was restricted. Now public expenditure has reached astronomical figures.

In recent times, public expenditure has increased enormously. The main reason is that the functions of the state have increased manifold. In the past, the state was regarded only as a police state concerned with defence from foreign aggression and maintenance of law and order within the State. Now the State is regarded as a Welfare State which is concerned with promoting the welfare of its citizens. As such, it has to provide not only social security but it has also to look to economic stability and economic growth which calls for ever increasing investment expenditure.

#### **Revenue and capital expenditure**

Public expenditure can be classified as Revenue Expenditure and Capital Expenditure.

**Revenue expenditure:** It is ordinary routine type of expenditure incurred in running the administration. It is current expenditure and includes the expenditure incurred in running the administration or in supplying routine services or in the collection of taxes, duties, fees, assessments, etc. as well as interest on public debt.

Revenue expenditure of Government of India;

- Expenditure on civil administration
- Defence services
- Debt services-Pensions
- Social and development services
- Other miscellaneous expenditures

Revenue expenditures of States in India;

- Social; and development expenditure on education
- Medical and public health
- Agriculture
- Veterinary and co-operation
- Electricity schemes
- Rural and community development
- Civil works
- Industries and supplies

-Other Developmental expenditure

-It also includes non- developmental expenditure as a collection of taxes, debt services, civil administration, famine etc.

Capital expenditure: This expenditure is of extra ordinary nature. The capital expenditure represents capital outlay both developmental and non developmental

- Acquisitions or creation of an asset
- Undertaking new multipurpose projects.
- To fight a war

The governments of India incurs same capital expenditure on defence, payment of commuted value of pensioners, State trading schemes railway construction extension and improvement of post and telegraph facilities civil aviation, irrigation and discharge of permanent debt, advances to state and other loans and advances.

Similarly, in the case of State Government capital expenditure includes capital outlay as

- Multipurpose river valley schemes
- Irrigation and navigation
- Schemes of agricultural improvement and research
- Electricity schemes
- Road transport
- Buildings, road and water works
- Industries development

This is the developmental capital expenditure but there is no n- development capital expenditure as an state trading, compensation to land owners, discharge of permanent debt repayment of loans to the central and of other loans as well as loans and advances by the State Government.

### **Principles of public expenditure:**

Just as there are well-known principles or canons of taxation, similarly it is possible to formulate some principles to which prudent public expenditure should conform. These principles are:

#### 1) Principle of Maximum Social Benefit

It is necessary that all public expenditure should satisfy one fundamental test, viz., that of Maximum Social Advantage. That is, the government should discover and maintain an optimum level of public expenditure by balancing social benefits and social costs. Every rupee spent by a government must have as its aim the promotion of the maximum welfare of the society as a whole. Care has to be taken that public funds are not utilized for the benefit of a particular group or a section of society. The aim is the general welfare. Government exists for the benefit of the governed and the justification of the government expenditure is, therefore, to be sought in the benefit of the community as a whole.

#### 2) Canon of Economy

Although the aim of public expenditure is to maximize the social benefit, yet it does not exonerate government from exercising utmost economy in its expenditure. Economy does not

mean niggardliness. It only means that extra vagrancy and waste of all types should be avoided.

Public expenditure has great potentiality for public well but it may also prove injurious and wasteful. Thus, if revenue collected from the tax payer is heedlessly spent, it would be obviously uneconomical.

To satisfy the canon of economy, it will be necessary to avoid all duplication of expenditure and overlapping of authorities. Further, public expenditure should not adversely affect saving. In case government activity damaged the individual's will or power to save, it would go against the canon of economy.

### 3) Canon of Sanction

Another important principle of public expenditure is that before it is actually incurred it should be sanctioned by a competent authority. Unauthorized spending is bound to lead to extravagance and over-spending. It also means that the amount must be spent on the purpose for which it was sanctioned. Allied to the canon of sanction, there is another viz., auditing. Not only is previous sanction of public expenditure essential but a post-mortem examination is equally imperative. That is, all the public accounts at the end of the year should be properly audited to see that the amounts have not been misspent or misappropriated.

### 4) Canon of Elasticity

Another sane principle of public expenditure is that it should be fairly elastic. It should be possible for public authority to vary the expenditure according to need or circumstances. A rigid level of expenditure may prove a source of trouble and embarrassment in bad times. Alteration in the upward direction is not difficult. It is easy, rather tempting, to increase the scale of expenditure. But elasticity is needed tempting, to increase the scale of expenditure. But elasticity is needed most in the downward direction. When the economy axe is applied it is a very painful process. Retrenchment of a wide-spread character creates serious discontent. It is very necessary, therefore, that when the scale of public expenditure had to be increased, it should be increased gradually. A short spell of prosperity should not lead to long-term commitments. A fair degree of elasticity is essential if financial breakdown is to be avoided at a time of shrinking revenue.

### 5) No Adverse Influence on Production or Distribution

It is also necessary to ensure that public expenditure should exercise a healthy influence both on production and distribution of wealth in the community. It should stimulate productive activity so that income and employment of the living. But this object of raising of living standards of the masses will be served only if wealth is evenly distributed. If newly created wealth goes to enrich the already rich, the purpose is not served. Public expenditure should aim at reducing the inequalities of wealth distribution.

### 6) Principle of Surplus

It is considered a sound or orthodox principle of public expenditure that as far as possible public expenditure should be kept well within the revenue of the State so that a surplus is left at the end of the year. In other words, the government should avoid deficit budget, But the modern economists, especially Keynes, do not regard surplus budgeting as a virtue, rather

deficit budgeting is more useful in raising the levels of income and employment in the under-developed countries. All the same, budget deficits running over a series of years are considered bad for the financial stability of the country and they cause inflation which is injurious to the health of the economy.

#### 7) Promotion of Economic Growth and Stability

In modern times, a very important principle of public expenditure is that it should promote economic development and economic stability, directly or indirectly. No public expenditure should impair the economy's potentialities for economic growth. In all public expenditure requirements of economic growth and economic stability (avoiding economic fluctuations) are kept in the forefront.

#### Conclusion

Public expenditure to be beneficial must conform, as far as possible, to the principles enumerated above. But an all pervading principle is that of functional finance, which we have explained at some length in the immediately preceding chapter. That is, public expenditure should be directed to the achievement of economic and social objectives on which the country may have set its heart.

## Lecture No. 33 &34

### Inflation – Meaning, Inflationary Gap, Types of Inflation, Causes and Control of Inflation

**Inflation:** By inflation in ordinary language, we mean a process of rising prices. A situation is described as inflationary when either the prices or the supply of money are rising, because in practice both will rise together.

It is a case of “too much money chasing too few goods. Thus, inflation is generally associated with an abnormal increase in the quantity of money resulting in abnormal rise in prices.”

**Inflationary Gap:** Keynes invented the term “inflationary gap to describe a situation when there is excess of anticipated expenditures over the available output at base price.” In simple words, it is a gap between money income of the community and the available supply of output of goods and services.

However, when discussing inflation, we are thinking of a persistent rise in prices rather than a once for all rise in prices. A rise in price is one of the indicators of inflation rather than being its cause.

There are three main features of inflation:

1. It is a process of rising prices.
2. It is initiated by some change which makes it impossible to satisfy the whole of the demand which is forth coming at existing process so that initial price rises occur.
3. It is propagated by the reactions of buyers or group of buyers to the initial price rise so that further rise in prices is induced.

**Deflation:** is the opposite of inflation. It usually means an excessive fall in prices and money income of the factors of production

**Reflation:** refers to a process of bringing down prices moderately from their high level.

**Stagflation:** is used when there is stagnation as well as inflation both side by side as prevailed in India in 1974-75 and again in 1978-80.

**Suppressed inflation:** this inflation exists in the economy in those conditions in which consequent upon adopting the policies of effective price control and rationing of goods by the government, price increases are suppressed.

Sometimes deliberate policies are pursued to prevent price –rises in the present but it is only a temporary muzzling of the inflationary process. When the controls are abolished the pent up demand leads to inflationary spiral.

**Hyper inflation:** It signifies a state of affairs where wages and prices clash each other at a very quick speed. This is a state of galloping inflation.

**Open inflation:** inflation is open when there is no barrier to price rise and it exists in the economy in the absence of government controls on price rise.

**Ratchet inflation:** this inflation emerges in the economy when although the aggregate demand is not excessive, it is so distributed in the economy that it is excessive in certain sectors of the economy and adequate in others.

**Internationally generated inflation:** It has been frequently argued by governments that inflation is not generated domestically but it is rather than international phenomenon beyond their control. This view of inflation seeks to ascribe the price rise to international forces.

**Mark-up inflation**

**International liquidity inflation**

Distinction is sometimes made between demand- pull inflation and cost- push inflation.

1. **Demand pull inflation:** This represents a situation where the basic factor at work is the increase in demand for resources either from the government or the entrepreneurs or the households. The result is that the pressure of demand is such that it cannot be met by the currently available supply of output. For example, in a situation of full employment, the government expenditure or private investment goes up, this bound to generate an inflationary pressure in economy.
2. **Cost-push inflation:** A situation where even though there is no increase in aggregate demand, prices may still rise. This may happen if the costs, particularly the wage costs, go on rising. Now as, the level of employment increase, the demand for workers rises progressively so that the bargaining position of the workers is enhanced. To exploit this situation, they may ask for an increase in wage rate, which are not justifiable either on grounds of a prior rise in productivity or of cost of living.

**Inflationary process:** Basically inflation represents a situation whereby the pressure of aggregate demand for goods and services exceeds the available supply of output. In such a situation, the rise in price level is a natural consequence. The basic frame work for the inflationary process is when aggregate demand for all purposes – consumption, investment and government expenditure exceeds the supply of goods at current prices.

**Causes of inflation:** The causes of inflation may be grouped under two headings:

1. Increase in demand which may be due to
  - Increase in money supply
  - Increase in disposable incomes
  - Increase in community's aggregate spending on consumption and investment goods.
  - Excessive speculation and tendency to hoarding and profiteering on the part of producers and traders.
  - Increase in foreign demand and hence exports.
  - Increase in salaries, wages or dearness allowance.
  - Increase in population.

These causes may operate singly or of combination with one another.

Generally, the most important cause of inflation is excessive public expenditure financed by deficit financing during war or on the implementation of plans for economic development.



The newly created money increase government demand for goods and services and also the purchasing power of the people through increase in disposable income.

2. No corresponding increase in the output of goods and revenues which may be due to:

- Deficiency of capital equipment;
- Scarcity of other complementary factors of production, e.g. skilled labour or technicians, essential the raw materials or lack of dynamic entrepreneurs.
- Increase in export for earning the required foreign exchange.
- Decrease in imports owing to war or restriction on imports necessitated by an adverse balance of payment and efforts to rectify it.
- Speculative hoarding by the producers, traders and middlemen in anticipation of a further rise in prices.
- Drought, famine or any other natural calamity adversely affecting agricultural production.
- Prolonged industrial unrest resulting in reduction of industrial production.

The demand pull inflation is caused primarily by factors operating on the demand side resulting in excess of aggregate demand over available supply of goods and services.

The cost push inflation on the other hand is caused by increase in salaries, wages the rising cost of machinery and capital equipment and of essential raw materials.

### **Control of inflation:**

Inflation is very complex phenomena. There is no one sovereign remedy to combat it. On the other hand, measures have to be taken on several fronts, monetary and non monetary, to fight it. All these measures have one common aim. They aim at reducing monetary expenditure taking the available output as given. Broadly speaking the anti- inflationary measures can be classified as under:

- Monetary measures
- Fiscal measures
- Physical or non- monetary measures

We shall now say a word about each

Monetary measures: The best remedy to fighting inflation is to reduce the aggregate spending. Monetary policy can help in reducing the pressure of demand. The mechanics of dear money policy is as follows:

1. Raising bank rate: The rise in the bank rate will be followed by in other market rates of interest. There will be an all around hardening of the rates of interest. A rise in the rate of interest will tend to reduce the amount of aggregate spending.
2. Direct controlling credit creation: The method is to cut directly the credit creating capacity of banks. We know that in their own interest banks want to keep minimum reserve of cash which bear a more or less a definite relationship to the volume of their deposits. If the central bank of country reduces the cash available to the bank system, the capacity of the banks to lend money to the borrowers will be reduced. The banks therefore in their own interest will be induced to contract the supply of credit.

Thus the monetary measures consists infixing



1. higher discount rate
2. higher reserves required
3. open market operations
4. selective credit controls or regulation of consumer credit and varying margin requirements

Fiscal measures: The two wins of fiscal policy are government revenue and government expenditure. The government's fiscal policy can contribute to the control of inflation, either by reducing private spending by increasing the taxes on private sector or by decreasing government expenditure or combining both the elements. Thus, the fiscal measures consist in:

1. Reduction in government spending
2. Imposition of new taxes or increasing the old ones to control the size of disposable income in the hands of people and to reduce the magnitude of inflationary group.
3. The encouragement of saving or introduction of compulsory saving scheme.
4. Public debt management so as to reduce the money supply.
5. Gold sterilization as done in United States and
6. Over valuing domestic currency in terms of foreign currency.

Physical or non monetary measures:

Apart from the monetary and fiscal measures, it becomes necessary to resort to some measures of non-monetary nature. But it should be clearly understood that such measures are much less practicable than the monetary- fiscal ones. Hence full reliance cannot be placed on them. They can only be considered as supplementary to more effective measures.

The non- monetary measures, among others include.

1. Increasing output or increasing imports and decreasing exports so as to increase the available supply of goods in short supply.
2. controlling money wages to keep down costs and
3. Price control and rationing.

Price control:

One method of preventing prices from rising is to impose price control on important commodities. This is an attempt to suppress inflation rather than to control it effectively. The basic pressure will not be allowed to express themselves in the form of a rise in prices which are now deliberately sought to be controlled. Such a state of affairs is called suppressed inflation. The logic of economic analysis as well as historical facts amply proves that price controls by themselves are no solution of the inflationary pressure.

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