

BCOG-171 Principles of Micro Economics

School of Management Studies

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BLOCK 1 FUNDAMENTAL PROBLEMS OF ECONOMIC SYSTEM AND BASIC CONCEPTS

THE PEOPLE'S UNIVERSITY

BLOCK 1 FUNDAMENTAL PROBLEMS OF ECONOMIC SYSTEM AND BASIC CONCEPTS

To find appropriate solutions to the present day complex business problems, personal experience, intuition, insight, foresight, judgement, etc., are no longer adequate. The economic reasoning and tools of analysis are very essential in arriving at an optimum solution to business problems. Being a Commerce student, therefore, it is essential for you to have at least a working knowledge of the relevant economic theory. This Course on Economic Theory has been designed essentially to fulfil this requirement. This is an introductory block on Economic Theory. The main focus in this block is to build some foundations for your study of micro economics. This includes the fundamental questions and problems faced by every economy, the basic economic terms and concepts, and the various economic systems found in different countries.

This block consists of two units.

Unit 1 describes the meaning of an economic system, fundamental problems of an economy, and the nature of resource allocation in different types of economic systems. It also discusses the meaning and features of various factors of production

Unit 2 discusses some basic economic laws, concepts and terminology. It also explains how different parts of the economic system are interdependent.



UNIT 1 FUNDAMENTAL PROBLEMS OF ECONOMIC SYSTEMS

Structure

- 1.0 Objectives
- 1.1 Introduction
- 1.2 An Economic System
 - 1.2.1 Concept of Scarcity
 - 1.2.2 An Economic System or Economy
 - 1.2.3 Economic entities
- 1.3 Factors of Production
 - 1.3.1 Land
 - 1.3.2 Labour
 - 1.3.3 Capital
 - 1.3.4 Entrepreneurship
- 1.4 Fundamental/Central Problems of an Economy
 - 1.4.1 What to Produce?
 - 1.4.2 How to Produce?
 - 1.4.3 For Whom to Produce?
 - 1.4.4 The Problem of Growth
 - 1.4.5 Choice between Public and Private Goods
 - 1.4.6 The Problem of Merit Goods
- 1.5 Production Possibility Curve
- 1.6 Allocation of Resources
 - 1.6.1 Resource Allocation in a Capitalist Economy
 - 1.6.2 Resource Allocation in a Socialist Economy
 - 1.6.3 Resource Allocation in a Mixed Economy
- 1.7 Let Us Sum Up
- 1.8 Key Words
- 1.9 Answers to Check Your Progress
- 1.10 Terminal Questions

1.0 OBJECTIVES

After studying this unit, you should be able to:

- explain the problem of scarcity of resources for satisfying everincreasing wants of a society;
- state the meaning and nature of an economic system;



- describe the concept of economic entities;
- explain the concept of factors of production and also their main types and characteristics;
- state the source, nature and relevant details of the fundamental problems of an economy;
- describe the concept of production possibility curve;
- state the issues relating to allocation of resources between investment and consumption, and between private and public goods;
- explain the methods of resource allocation in a market economy, a socialist economy and a mixed economy.

1.1 INTRODUCTION

In this introductory unit, you would be introduced to some important fundamental questions and problems faced by every economy. A familiarity with them would help you in understanding economic reasoning and theories based upon that reasoning. It would also become easier for you to understand the nature of problems which an economy faces and the type of solutions for resolving such problems. In this unit, you will study in detail the meaning of an economic system or an economy, fundamental problems of an economy, meaning and characteristic features of factors production, the concept of production possibility curve, and the nature of resource allocation indifferent types of economic systems.

1.2 AN ECONOMIC SYSTEM

Before we discuss the fundamental concepts, questions and problems faced by every economy, let us first know the meaning and nature of an economic system.

1.2.1 Concept of Scarcity

"Scarcity" lies at the root of all economic activity. The concept of scarcity finds an expression in two basic facts of economic life, as follows.

- A. Unlimited wants or ends, and
- B. Scarce resources or means.

A. UNLIMITED WANTS OR ENDS

Every person has some wants. If they are not satisfied, the person concerned feels a 'pain' which may be physical or psychological or both. If, on the other hand, a want is satisfied, the feeling of 'pain' is replaced by that of 'satisfaction' or 'fulfilment'. This fact urges every human being to satisfy his wants. Some people try to reduce their wants, but even such persons make an effort to satisfy their wants, however limited they may be. You should note that different persons have generally different wants, and wants of even the same person keep changing with the

Fundamental Problems of Economic Systems

passage of time, change of place and status. This is because wants of a person depend upon a number of factors. Such factors differ from person to person and also over time. They include his physical health, his ideas and attitudes, the society he belongs to, the place he lives in the season of the year, and so on. Wants of a person also change with the change in his/her income.

Human wants have certain characteristics and you should make note of them for understanding the nature of an economic system. One such characteristic is that many of the human wants cannot be satisfied permanently. We say that these wants 'recur'. When such a want is satisfied, it emerges again and has to be satisfied repeatedly. For example, a person can satisfy his hunger by consuming food, but he becomes hungry again after some time and needs food to satisfy it. Another characteristic of human wants is that new wants keep coming up. That is to say, as some wants are satisfied, new ones take their place.

These two characteristics of wants, namely, i) recurrence of wants satisfied earlier, and (ii) emergence of new wants, mean that human wants are unlimited and keep increasing. Human beings have a constant urge to improve their standard of living and to explore the unknown. They feel like trying new things. Also an ever changing state of affairs keep creating new wants.

You should note the fact that satisfaction of a want requires the use of some goods or services, called 'means' of satisfaction. Any specific want may be satisfied by various means. Similarly, a specific mean may be usable to satisfy various wants. For our purpose, however, a more significant basic fact is that the available goods and services are never sufficient to satisfy all our recurring and ever-increasing wants.

Each of the following goods cost Rs. 100. You have one hundred rupee note with you.

- 1. A ticket to a PVR movie
- 2. A fiction
- 3. A text-book on Economics
- 4. A big chocolate for your friend.

How will you spend your money?

Find out your Priorities if:

- a) All of your friends in your friend circle have the same priority.
- b) Your priorities remain the same always.

B. SCARCE MEANS OR RESOURCES

Fulfillment of wants requires resources (or the means to satisfy wants). Availability of resources is limited in relation to requirements. This basic fact is common to all individuals, all groups and all societies; howsoever rich a person or an economy may be it cannot free itself from the grip of scarcity.

Scarcity is a situation in which the available resources fall short of requirements. (This may be with reference to an individual or a group of individuals; an economy or a group of economies called GLOBAL ECONOMY).



ASK
Mukesh
Ambani
or
Bill Gates
or

George Soros

Have they overcome scarcity?





However, scarce means have alternative uses. The same person can work on writing a software solution or preparing guidelines for executives. He can do one job, not both, because of the scarcity of time.

You have budgeted 3 hours of your time each day for relaxation and leisure. A few of the options available to you are:

- Spend it with your friend
- Watch a movie.
- Play a video-game
- Spend time on Face book, Twitter or any other social network

You may choose one or more; total time spend has to be 3 hours.

The available piece of land can be used for cultivation of cotton or setting up a factory. How to make a choice?

Available savings with your parents can be put in a fixed deposit with a bank or invested on a stock exchange. What to do?

How will you make a choice?

All these questions arise because the available resources are scarce. But all the resources have alternative uses. The ends also differ in intensity.

Fundamental Problems of Economic Systems

The resources therefore need be allocated among different uses in a systematic coordinated manner. Every individual and economy has to device a mechanism for this.

SCARCITY IS NOT THE SAME THING AS POVERTY.

POVERTY IMPLIES NON-AVAILABLITY OF RESOURCES

SCARCITY IMPLIES NON-AVAILABILITY OF RESOURCES TO FULFILL EVERY CONCEIVABLE DESIRE

EVEN FOR BARE SUBSISTENCE.

"A POOR PERSON SUFFERS FROM BOTH POVERTY AND SCARCITY

A RICH PERSON SUFFERS ONLY FROM SCARCITY AND NOT POVERTY"

Example- Scarcity of Medicines and other medical facilities during second wave (2021) of corona pandemic

What is the way out of this scarcity? Some thinkers believe that human beings should cut their wants to meet this imbalance. But this philosophy is approved by very few persons and their thinking and behaviour hardly makes any difference to the thinking and behaviour of the society as a whole. In other words, the fact is that the society does not want to check the growth of wants. It only tries to satisfy more and more of them. And this is the basic behaviour pattern which we must accept as a reality.

Satisfaction of wants of an increasing scale requires two-fold strategy:

- 1) Means provided by nature are insufficient for satisfying all wants of the members of the society. Therefore, their availability must be increased in possible ways such as, by organizing production centers, by training the labour force, by improving production methods, by creating institutions like money and banking and so on.
- 2) You have learnt that all wants of all people cannot be satisfied. Therefore, some system has to be devised whereby more important and more urgent wants are identified out of the total and are given priority. In the other words, scarce means have to be rationed out between members of the society and their use for different wants has to be regulated. It implies that the use of resources has to be 'Economised'—which means that the resources cannot be wasted or put to less important uses.

1.2.2 An Economic System or Economy

Different societies try to solve these issues in different ways and in the process each society creates a set-up called 'an economy'. The term economy or 'economic system' is a comprehensive one. It covers the entire set-up created for meeting the basic and permanent problem of an imbalance between means and wants. Thus it includes not only the natural resources of a country, but also those which are created by man. It includes the entire arrangement relating to production, trading and exchange, transportation and

distribution of goods and services. Similarly, various institutions like currency, banking, financial assets, and markets, etc., created and maintained to meet the above said twin objectives are part of an economic system.

You would realize that in reality the composition of an economy will depend upon a number of factors. The extent of natural resources of a country, its geographical and climatic factors, its social, political and religious set-up, its past history and many other forces determine the exact form of the economy of that country. As a result, the economy of one country can substantially differ from that of another. It is for this reason that we talk of the Indian Economy as against the British Economy or the Japanese Economy. Thus, the term Indian Economy represents the totality of the set-up, institutions, arrangements which the Indian society has built up for meeting the twin objectives of

- i) increasing the availability of means to satisfy wants, and
- ii) using them in the most economical manner possible. All the natural and man-made productive resources are also part of the Indian Economy.

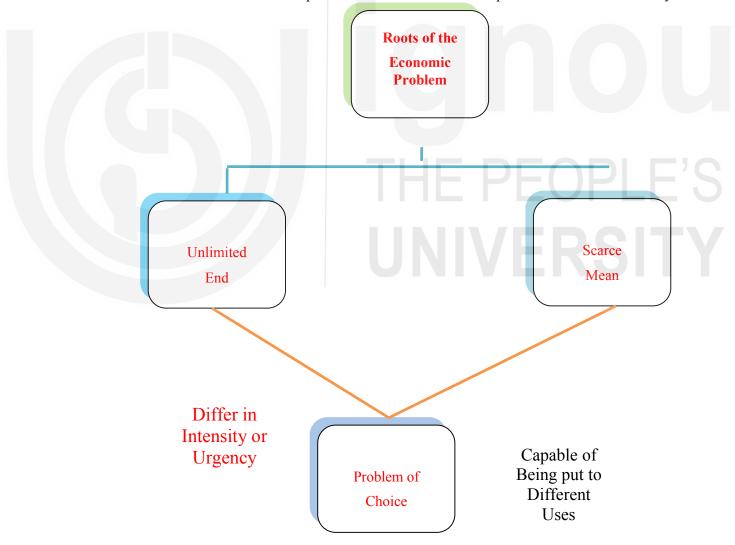


Figure 1.1: Roots of the Economic Problem

Knowledge of salient and distinguished features of an economy helps you in analysing its problems and their possible solutions. Accordingly, we also classify economies on the basis of their distinguishing features. For example, take the case of a capitalist economy. In this case, the means of production are owned and inherited by individuals, and various economic decisions are guided by prices of goods and services in the market. The income of an individual is determined by means of production supplied by him to the market and the rates at which they are paid for their service.

Another manner of distinguishing between different economies is with reference to the predominance of the type of productive resources, income and employment, etc. On this basis, an economy may be an agricultural or an industrial one. Similarly, depending upon its level of development (that is ability to produce means of satisfaction), an economy may be termed as a developed economy or an underdeveloped economy. You should also note that with the passage of time, the salient features of an economy generally undergo a change either through historical evolution or through deliberate policy measures.

Therefore, every economy has to solve the basic problem of scarcity of means of satisfaction in relation to ever increasing wants. The means and wants can be combined in alternative ways. The problem of scarcity exists whether an economy is developed or underdeveloped. Hence, it has to address itself to two issues:

- 1) increasing the availability of means of satisfaction, and
- 2) laying down the priorities of the wants to be satisfied.

1.2.3 Economic Entities

Economic entities are the decision-making units of an economic system. Normally, we think of such economic units as individuals, households, business firms and companies, institutions, and various organs of State. They undertake a variety of decisions while acting in different capacities, such as consumers, savers, investors, buyers of inputs, suppliers of goods and services, borrowers, lenders and so on. It is the decisions and activities of economic entities which comprise the working of an economy and determine its health and efficiency.

Check Your Progress A

1.

State two important characteristics of wants which make them unlimited in number.

2.	What is an economic system?

- 3. State whether the following statements are **True** or **False**.
 - i) All the human beings have limited wants.
 - ii) All persons have identical wants.
 - iii) In some economic systems, it is possible to satisfy all wants of all persons.
 - iv) Wants of a person depend entirely upon his income.
 - v) A given want can be satisfied once, though it may emerge again.
 - vi) Wants and means of their satisfaction can be combined in alternative ways.
 - vii) Majority of individuals try to reduce their wants in line with the availability of means of satisfaction.
 - viii) Economic entities are like commission agents who help others in activities like buying and selling.

1.3 FACTORS OF PRODUCTION

You have already learnt that the nature provides us, free of cost, with only a limited resources which are insufficient for satisfying all our wants. Accordingly, their availability has to be increased for satisfying additional wants. You can also say that these resources have to be produced.

In economics, the term 'Production' implies the transformation of various inputs into outputs thereby increasing the want-satisfying capacity of the inputs. Items which are so transformed are called inputs while output is nothing but the transformed form of inputs. A particular transformation is production if the want-satisfying capacity of the output (also called 'product') is more than that of its inputs. To put it differently production is nothing but the creation of utility. Now you may ask what utility is. In economics, utility means the expected satisfaction which the consumers hope to derive from the use of various goods and services.

Transformation of inputs into output (i.e., production) can take many forms. Quite often there is a change in the physical and chemical form of inputs such as conversion of raw cotton into finished cloth. An item can acquire utility when it is transported to those who need it more. This form of production is through 'place transformation'. Similarly, many items gain utility when they are stored for later use. You can also think of various activities like processing, packing, etc., which form part of the production set-up of the

economy. It is also noteworthy that production includes the provision of services even when they do not involve the use of a material item.

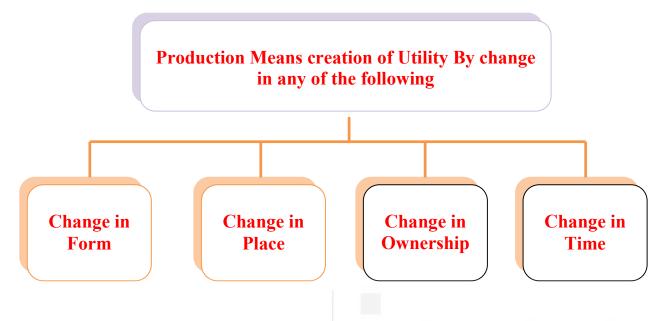


Figure 1.2: Meaning of Production

This brings us to the concept of **Production Resources** or **Factors of Production**, that is, items which act as inputs in production. Individual items of the inputs can be classified or grouped into some broad categories such that all units belonging to the same category are equally productive or homogeneous or perfect substitutes of each other while those belonging to different categories are not classified in this manner, each group of input units is referred to as a factor of production. In general, the input units are classified into four main factors of production. They are 1) land, 2) labour, 3) capital and 4) organisation or entrepreneurship. Let us discuss about each of them in detail.

1.3.1 Land

The term 'Land' does not represent just the area available for cultivation, factories, houses, roads, etc. It is used in a much broader sense. It includes the materials and the forces which nature gives us free for the satisfaction of our wants or for the production of goods and services. Thus, the term land not only includes land in ordinary sense of the term, but also the resources like water, climate, sunshine, minerals and the like.

In other words, land includes not only the land used for agricultural or industrial purposes, but also all the natural resources taken from above or below the soil. Thus, land represents the sum total of natural resources available to the economy.

Defined in this way, supply of land is fixed. It is predetermined by nature, and man cannot add to it through his own efforts. While an individual can get more of land by paying for it, the society as a whole cannot increase its availability. Land has no mobility. Land cannot be transferred from one place

to another. But its use can be transferred; a plot of land can be used either for paddy or for jute. However, a transfer price is necessary.

What about the market prices of different forms of land or natural resources? Although we say that land is a free gift of nature, an individual may not get the land free of cost. He has to pay some money and buy it. Market price to land comes into existence as a result of economic arrangements like private ownership and inheritance. Being scarce in supply, its ownership and possible use generate a price, which is normally called 'rent'.

1.3.2 Labour

In economics, the term labour is used to denote any manual or mental activity that is undertaken in exchange for a payment. This concept of labour, however, is confined to only human effort and the work performed by animals and machines is not considered as labour.

It is noteworthy that labour cannot be separated from the person of the labourer and used as an input. That is to say, the labourer has to sell it in person. Another feature of labour is that its performance cannot be postponed. If a labourer does not work during one month, then the labour of that period cannot be performed in future. Labour not performed is labour lost forever. For this reason, the bargaining strength of workers tends to be low and they frequently have to accept low wages or go without any income. Moreover, those workers who do not have any other source of income find themselves in a still weaker bargaining position.

SIZE OF LABOUR

Labour is not a homogeneous factor of production. We come across a large variety of workers, both skilled and unskilled. Clubbing them together in one group of factors of production is, therefore, helpful only in a simplified form of economic analysis. You would note that even unskilled workers do not have a uniform productive efficiency. Depending upon their health, general intelligence, age, social background, the extent of education etc., different workers have different productive capacities for a given job. Similarly, each worker is not equally productive in different jobs. His capacity to work changes when he shifts from one kind of work to another. This difference is more among skilled labour. A skilled worker is educated and trained for a specific job. Each kind of skilled job requires specific education and training. For this reason, labourers require additional training and education when they are shifted from one type of skilled work to another. If we ignore migration of workers from one country to another, the population of a country becomes the only source of its total labour force. But its size of labour force is influenced by other causes also, such as the proportion of persons in different age groups, social customs, attitudes, etc.

Size of labour force refers to the number of persons who are able and willing to work. Work force is that part of labour force which gets employed. Thus:

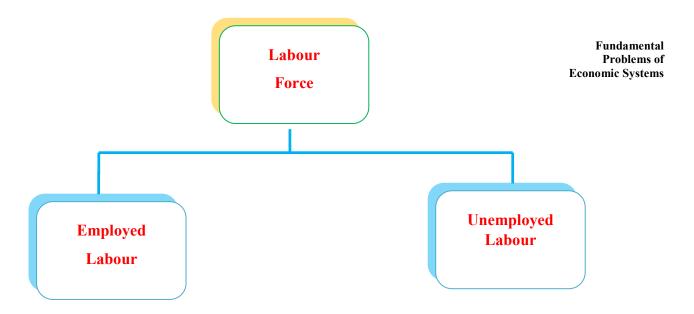


Fig 1.3: Size of labour

QUALITY OF LABOUR

Till now, we have been talking about the quantity of labour, that is, the number of workers available for different kinds of employment. However, the discussion of labour as a factor of production would remain incomplete without a reference to its quality. In the context of a single worker, this concept denotes two aspects: i) the intensity with which a worker works, and ii) the maximum efficiency which that worker can achieve.

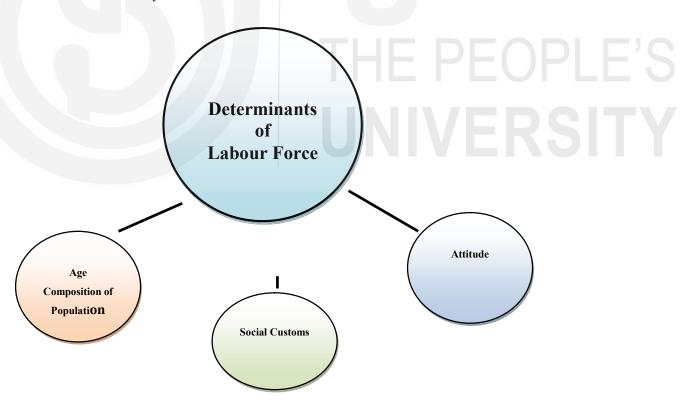


Figure 1.4: Determinants of labour force

The efficiency of labour depends upon the willingness of the worker to work without wasting any time and effort. It depends upon a number of influencing

forces, such as the general social atmosphere, the loyalty which he feels towards his job, the wage rate, the work atmosphere and similar other aspects. The level of efficiency of a worker, on the other hand, depends upon his education and training, skill, health and personal qualities, the climatic conditions and the organisational set-up of the production unit.

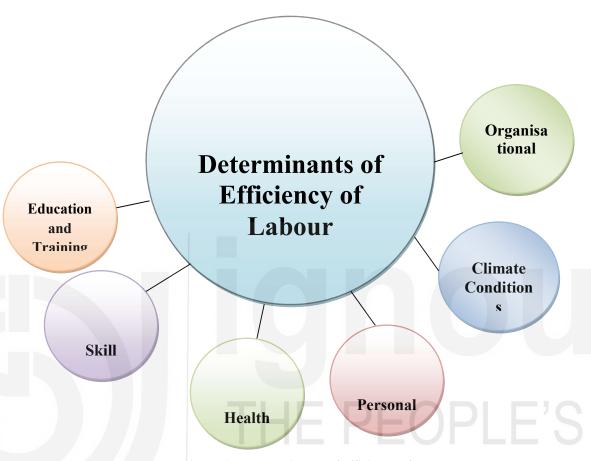


Figure 1.5: Determinants of efficiency of labour

Land and labour are called two primary factors of production. Production is not possible without using these two primary factors of production. Labour cannot work unless there is land to work upon, and land by itself cannot produce anything unless labour acts on it.

1.3.3 Capital

The term 'capital' refers to that group of productive resources which are the result of human labour. Capital represents man-made productive resources. They are produced means of production. While land is a free gift of nature in the sense that its availability is there without spending any labour on it, capital is not a free gift in that sense. Capital is, in a way, a form of concealed or crystallized labour. It appears in various forms such as plant and machinery, buildings, roads, bridges, means of transportation and communication, and so on.

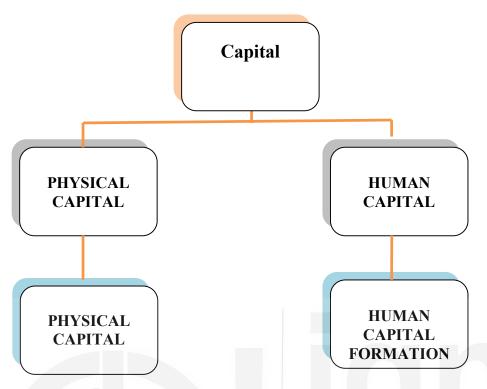


Figure 1.6: Forms of Capital

The process of development requires skill and training of the labour force so that the labour force can make use of machines and equipment in an efficient manner. An underdeveloped country is required to train its labour force in engineering, technology, medicine, management and a number of other fields. Since skill formation improves the productive capacity of the labour force, this process is referred to as human capital formation. Since a healthy worker is considered more productive, investment in the health of workers is also included in human capital formation.

You should note that only those products which are meant to be used for further production come under capital. If a product is used for final consumption, it is not a part of capital goods. It frequently happens that while some units of a particular product are used as capital, others are used for final consumption. Such products, thus, become partly capital.

Since capital is the result of human labour going into the production of means of production instead of goods meant for consumption, there is no end or upper limit to the extent it can be accumulated. An economic system can keep diverting a portion of its productive resources to the production of goods meant for further production and thereby add to its capital stock. This process is called 'Capital formation'. We should note that production involves the use of capital stock of the economy. Therefore, in the process of production, capital stock of the economy that gets used up. Machines and equipment, when used, undergo wear and tear, that is, machines and equipment get depreciated. These need are replaced by new machines and equipment. Thus, during a long period of time, some capital goods get depreciated, while new capital goods, equipment and implements get added.

If the amount of new machines and equipment added to the production unit is more than the amount of capital goods that got depreciated, the net stock of capital goods will increase. This net addition to the capital stock constitutes capital formation. Capital formation adds to the capital stock and hence it increases the production capacity of the economy. It thereby increases the size of potential output in the economy through use of machines and equipment, when used up, such machines and equipment also undergo wear and tear.

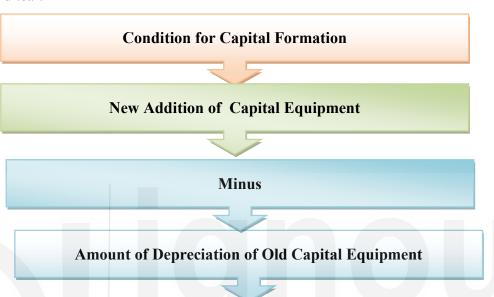


Figure 1.7: Conditions for Capital Formation

Why should an economy add to its capital stock? The answer lies in the fact that an increase in capital stock, when properly used, increases labour productivity. When the economy diverts its productive resources to the production of capital goods, there is reduction in immediate availability of consumption goods. But there will be much larger increase in the production of consumption goods in later periods.

1.3.4 Entrepreneurship

Economists believe in the existence of a fourth factor of production, namely, organization or entrepreneurship which is supplied by the entrepreneur. Land, labour and capital by themselves cannot come together and organize themselves into productive processes to yield output. They have to be procured and put to work in a systematic and coordinated manner. Most production processes are time consuming. The entrepreneur procures the inputs and pays for them in anticipation of receiving larger sales proceeds when the output is sold. It is the entrepreneur who assumes the risk of loss and it is he who is entitled to a profit, if there is any. The job of the entrepreneur is particularly risky in an atmosphere of uncertainty.

Check Your Progress B

1.	List the major factors of production?

.....

- 2. State whether each of the following statements are **True** or **False.**
 - i) Utility is the same thing as satisfaction.
 - ii) Utility is the want-satisfying capacity of a thing.
 - iii) Production is the creation of utility.
 - iv) Availability of land to a country can be increased.
 - v) A factor of production consists of various items which can be substituted for each other without affecting total output.
- 3. 1Fill in the blanks.
 - i)are two primary factors of production.
 - ii) In a production process, inputs are the items which go into it while output are the items which
 - iii) Capital is the means of production meant for
 - iv) While land is a free gift of nature, capital is.....

1.4 FUNDAMENTAL/ CENTRAL PROBLEMS OF AN ECONOMY

You have learnt that the basic characteristic of every economic system is the scarcity of resources in relation to human needs, and the use of such resources in alternative ways to meet the ends. Accordingly, every economy is faced with certain basic or fundamental problems which it must try to solve within its socio-economic framework. These fundamental problems are:

- i) What to produce?
- ii) How to produce?
- iii) For whom to produce?
- iv) The choice between current consumption and growth through saving and investment.

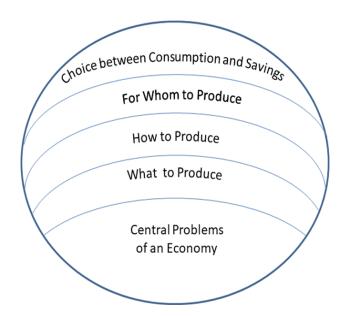






Figure 1.8: Fundamentals/Central Problems of an Economy

In addition, every economy has to face other important questions, such as the choice between public and private goods. There are also certain other problems like unemployment, balance of payments, etc., which crop up now and then and which may or may not be faced by all economies. Let us discuss in detail about these problems which are central or basic to every economy.

1.4.1 What to Produce?

You have already learnt that an economy does not have enough resources to produce everything required by it. So, it must be selective and decide what to produce and what not to produce. When some goods are not produced, some wants of the society remain unsatisfied. The decisions regarding the wants to be satisfied and the goods and services to be produced are interrelated and one does not stand independent of the other. This is called 'Allocation of productive resources'. If some factors of production are employed in the production of product X, they are not, to the extent being employed in the production of product Y. The problems can be illustrated by the famous Production Possibility Curve which you shall study later in this unit.

You should note that this problem cannot be removed completely from the scene. Developed economies, for example, have more productive resources. Even in these cases, the resources are not sufficient for meeting all their needs. Moreover, the nature of this problem does not change by changing the structure of the economy. Irrespective of the type of economic system-a capitalist or a socialist or a mixed economy—the allocation of resources between production of different goods has to be decided. Later in this unit, you will study how different economic systems solve their problems in different ways.

1.4.2 How to Produce?

This is a problem which covers the details of the allocation of productive resources in the production of various goods and services. More precisely, you can say that when an economy decides to produce product X it has also to work out exactly how much of labour, capital, land etc., would go into its participation. The exact proportion of factors of production used in the production of an item is called the technique of production of that item. For example, we may think of goods which are produced by using more of labour than capital. In such cases, labour intensive techniques of production are said to be in use. On the other hand, if more of capital goes into the production of an item, then, we say, that it is being produced by a capital-intensive technique. For any country, ideally speaking, the choice of technique of production depend upon the relative availability of factors of production. A country like ours which has more of labour and less of capital should go in for labor-intensive techniques of production. Similarly, there are many countries which have abundance of capital but a shortage of labour. They should prefer capital-intensive methods of production.

Fundamental Problems of Economic Systems

When an individual producer is to decide about the technique of producing any particular product, he considers the prices and productivities of alternative inputs. He tries to use those inputs for which the output per unit of cost is the maximum because it is this choice which is most profitable for him. This way, he can keep the cost of production low and, thus, maximises profit.

His decision is based on consideration of following two factors:

- i) the relative price of labour and capital; and
- ii) the relative efficiency of the two inputs

He will choose that combination of labour and capital that

- a) yields maximum output for the given combination; or
- b) the cost per unit of output i.e. the lowest.

1.4.3 For Whom to Produce?

A society comprises a large number of individuals and households. All the output of consumption goods and services is ultimately meant for their use. Therefore, all the goods and services produced are to be distributed amongst the individuals and households. The share of each individual and household has to be determined and also the quantities of specific goods and services which comprise that share.

You can easily see that it is possible to propose different principles whereby this distribution may be carried out. In an economic system organized on market principles, the income shares of individual members of the society are determined in the following manner. In a market economy, productive resources are privately owned. They are sold, bought and hired like any other goods or services. The price of a productive resource is determined by the market forces of demand and supply. Whenever it is to be employed by a producer, he has to pay its market price to its owner. It is for the owner to supply it to the market or withhold it. The income of each individual, under these conditions, is determined by the amounts of different productive resources owned and supplied by him to the market and their respective prices.

This system of income distribution has obviously many shortcomings. It is not related to the effort put in by members of the society. The ownership of means of production is uneven between members of the society. This leads to large scale inequalities of income distribution also. In modern economies, governments try to reduce these inequalities through various measures like taxation, etc.

In a socialist economy, on the other hand, an effort is made to reduce the inequalities by shifting the ownership of means of production (other than labour) to the State or cooperatives, and relating incomes of individual members of the society to their work performance. The state assures some basic necessities for everyone and it also takes care of the old, sick and



children. An individual can get additional income only by doing some additional work.

You would note that in an underdeveloped economic system, which has a limited number of households and individuals, it is possible to have complete physical rationing of goods and services. But with development, the organisational structure of an economy also becomes increasingly complex. It starts producing a much larger quantity of goods and services. As the number of occupations increases, the variety of inputs and outputs leads to a corresponding increase in the number of goods and services. Quite often, the size of the society also becomes large. Under such circumstances, it is no longer possible to have a system of complete physical rationing of goods and services. It is more practical to ensure purchasing power to individual members of the society and at the same time fix prices for goods and services. When the members have the purchasing power, they can decide on their own what to buy and how much to buy, subject to the condition that they pay for each purchase. But in this manner, the problem for whom to produce boils down to that of distribution of income amongst members of the society. It is possible that the actual pattern of income distribution may have such inequalities which are not acceptable to the society. In that case, the authorities try to modify the income distribution through various policy measures including taxation.

The problem of distribution does not have any easy solution. It is not always possible for everyone to agree to a particular rule of income distribution and the extent to which income inequalities should be allowed. It is also not easy to estimate relative needs of the members of the society. Moreover, any system of income distribution is bound to have an impact of incentives for production by the members of the society and, therefore; on the level of national income.

1.4.4 The Problem of Growth

Every economy seeks to increase its stock of capital to increase its production capacity and thereby generate more income. The generated income in an economy has two alternative uses, viz. consumption expenditure (C) and saving (S). Thus, Y = C + S, saving is source of finance for investment in an economy. Investment adds to the capital stock of an economy. And therefore, there is a need to reduce consumption expenditure (and thereby increase investment); this help in capital formation.

1.4.5 Choice between Public and Private Goods

In order to understand the problem of choice between private and public goods, you should first know the meaning of public and private goods. Let us understand these two concepts first.

1. **Private Goods:** There are certain goods (the term goods here includes services also) whose availability can be restricted to selected individuals only. For example, a product may be priced in the market and only those who pay its price may be allowed to have it. This characteristic of a

Fundamental Problems of Economic Systems

product by which some people can be prevented from its use is referred to as the 'principle of exclusion'. Accordingly, those persons who cannot pay for it or who are not ready to pay, are not allowed to use it. The use of the goods is thus divisible between different persons. Any goods which can be priced and whose use can be restricted to selected persons is termed as Private goods. You should remember that private goods are not necessarily produced by the private sector of the economy. It may also be produced by the government or public sector or by cooperatives or by production units owned jointly by the private and public sectors.

Public Goods: When it is not possible to restrict the availability of a product to selected individuals, they are termed as Public goods or Social goods. Such goods cannot be so priced as to deprive some persons from using it. That way, it is indivisible. Defence service is a typical example of a public service. When a country is protected against foreign aggression, every citizen is protected. You cannot declare that only those who pay a stated price to it would be taken care of and others would be left unprotected. Similarly, when street lights are provided, everyone in the locality gets the benefit. But you should know that equal availability of public goods does not mean that every member of the society actually gets an equal share in it. For example, people living near the political boundaries of a country or near the sensitive military targets are likely to suffer more than others in a war. The main criterion of indivisibility of goods is that it should be equally available to all members of the society without consideration of their ability or willingness to pay for it. Such goods have to be provided out of the public funds and not through market pricing.

In actual practice, it is difficult to find pure public or pure private goods. Most of them are a mixture of both. We, therefore, term goods public or private depending upon its dominating characteristics.

With its limited resources, an economy cannot have enough of both public and private goods. It must try to achieve an optimum combination of both. This decision also brings in another question. Who should be given the responsibility of providing public goods and who should provide private goods? Economists argue that those goods which are predominantly public in character should be produced by the public sector, since their cost of supply cannot be recovered through sale proceeds. On the other hand, private goods can be provided by both the private sector and the public sector. The choice depends upon the philosophy which the society believes in.

1.4.6 The Problem of Merit Goods

This is other problem which a modern society faces. Those goods whose consumption is considered highly desirable for the members of the society are termed as Merit goods. The important feature of the merit goods is that their consumption benefits both the users and non-users. For example, if a person is educated, it not only helps him but also the society as a whole. Education, therefore, is a merit product/ service and it is desirable that every

member of the society gets education. Consumption of merit goods benefits the society as a whole and raises the level of its efficiency and well-being. Therefore, every society has to decide the extent it can and should produce and consume merit goods. It is found that if the production and supply of merit goods is left in the hands of the private sector, the amount produced remains quite insufficient. For example, education is a costly merit service, and every one cannot pay for it. Therefore, if it is left in the hands of the private sector, many intelligent and deserving but poor students would not be able to study. Such a situation would be bad not only for such students themselves but also for the society as a whole. Similar disastrous results would follow if health care was left totally in the hands of the private sector. It allows, therefore, that the authorities should either take up the responsibility of providing merit goods themselves, or at least supplement their supply by the private sector.

Check Your Progress C

1.	What are the fundamental problems of an economy?			
2.	What is capital formation?			
	JAHRE PEOPLES			
3.	What is a technique of production?			
1	What are merit goods?			
4.	what are ment goods!			

		. Fundamental Problems of . Economic Systems
5.	Differentiate between public and private goods.	
6.	State whether each of the following statements are True or False .	
	i) Allocation of productive resources is similar in all types of economies.	of
	ii) The exact proportion of factors of production used in the production of an item is called the technique of production of that item.	on
	iii) Private goods are available to all individuals free of cost.	
	 iv) Goods whose availability is not restricted to selected individuals at called public goods. 	re
	v) Consumption of merit goods is beneficial only to those persons who consume them.	10
	vi) Indian Airlines supplies a service which adds to well-being people hence it is public good.	e;
7.	It is always desirable to replace labour by capital. Why?	
		ERSITY

1.5 PRODUCTION POSSIBILITY CURVE

You have learnt that an economy cannot produce everything it requires and a choice has to be made between various goods and services that can be produced. You also know that increasing the production of some goods implies a corresponding reduction in the production of other goods because less of productive resources are left for the latter. The economy, therefore, has to choose between alternative combinations of goods and services. This problem of choice can be illustrated by a simple graph known as **Production Possibility Curve or a Product Transformation Curve.** A typical Production Possibility Curve (PPC) is drawn on the following assumptions:

i) The country has to choose between alternative combinations of only two goods, say, LED (L) and Computer monitor (M).

- ii) All productive resources of the country are given and addition to them is not possible.
- iii) All productive resources of the economy are fully employed. There is no wastage or underemployment.
- iv) The productive resources are suitable for the production of both goods, i.e., L and M. They can, therefore, be shifted from the production of one to the other goods. However, such a shift would reduce the production of the first goods and increase that of the other.
- v) No factor of production is considered to be specific in the production of one good alone and totally inappropriate for the production of the other.
- vi) We consider the productive efficiency of the productive resources only in physical terms, i.e., the units of LED (L) and Computer monitor (M) which they can produce. No effect on their prices is taken into account.

Efficiency in production means productivity i.e. output per unit of an input. Let the input be worker. Suppose an economy produces only two goods X and Y. Suppose a worker is employed in production of X because he is best suited for it. The economy decides to reduce production of X and increase that of Y. The worker is transferred to Y. He is not that efficient in production of Y as he was in X. His productivity in Y will be low and so cost of production high.

Based upon these assumptions, we can illustrate the set of production possibilities faced by a country by a hypothetical example. Look at Table 1.1 carefully. The figures in the table show that all the productive resources of the country put together can produce a maximum of either 30 L or 30 M or some other combinations thereof. Note that the maximum possible units of L and M need not be equal. They are only so in our example. It is also seen that as more L are produced, the quantity of M keeps decreasing. Thus, for example, when the production of L is increased from 15 to 20 in number, the production of M falls from 24 to 20. It means a loss of 0.8 of M for each additional L. Similarly, when production of L is increased from 20 to 25, production of M falls from 20 to 14. It is a loss of 1.2 of M for each additional L produced. Similar, position would be found if we increase the production of M and reduce that of L. Thus, when we increase the production of M from zero to 14, production of L falls by 5. In other words, each unit of M causes a reduction of 5/14 or 0.357 L. However, when the production of M is increased from 14 to 20, the fall in the production of L per unit of M work out 5/6 or 0.833 per L.

The production possibilities illustrated in Table 1.1 are also represented in Figure 1.1 in the form of a Production Possibility Curve (PPC)

Units of Mis measured along X-axis and the Units of L are measured along Y-axis. The respective pairs of the units of L and M are plotted and joined with each other to yield a curve which is called the Production Possibility Curve. Thus, the PPC represents all the possible combinations of L and M which can be produced by using all the productive resources of the economy. In that sense, each point on the curve represents the maximum possible

output and, for that reason, it is also termed as the Production frontier of the economy.

Table 1.1 Production Possibilities Faced by Country

Combination	LED (L) (Unit)	Computer Monitor (M) (Unit)	Loss of M for each additional L produced (Unit)	Loss of L for each additional M produced (Unit)
1	30	0	2.8	-
2	25	14	1.2	0.357
3	20	20	0.8	0.833
4	15	24	0.6	1.250
5	10	27	0.4	1.667
6	5	29	0.2	2.500
7	0	30	- /	5.000

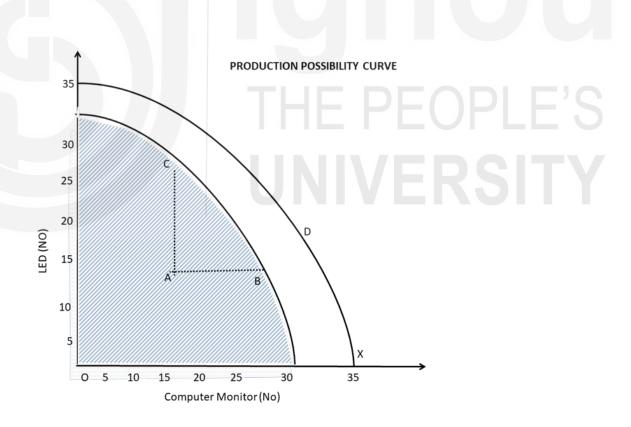


Figure 1.9: Production Possibility Curve

The economy can produce any combination of L and M represented by a point either on the PPC or in the shaded area of the diagram. Production combinations, represented by the shaded area imply that the economy can produce either L or M or both, but if it does so it is wasting some of its

productive resources. Thus, consider point A which represents a combination of 10 units of M and 14 units of L. The PPC, however, shows that with this much of M, the economy can produce 27 L (as shown by point C on PPC). Alternatively, with 14 L, the quantity of M can be increased to 25 (see point B).

Any point beyond the PPC, that is in the non-shaded area of the diagram, shows a combination of L and M which the economy cannot produce. For example, point D represents a combination of 30 units of M and 20 units of L. However, when 30 units of Mis produced, no resources are left for the production of L. On the other hand, if 20 L are produced, then the quantity of M has to be reduced to 20 units

Characteristics of PPC

A typical PP curve has two characteristics:

1) Downward sloping from left to right

It implies that in order to produce more units of one good, some units of the other good must be sacrificed (because of limited resources).

2) Concave to the origin

A concave downward sloping curve has an increasing slope. The slope is the same as MRT. So, concavity implies increasing MRT, an assumption on which the PP curve is based.

Can PP curve be a straight line?

Yes, if we assume that MRT is constant, i.e. slope is constant. When the slope is constant the curve must be a straight line. But when is MRT constant? It is constant if we assume that all the resources are equally efficient in production of all goods.

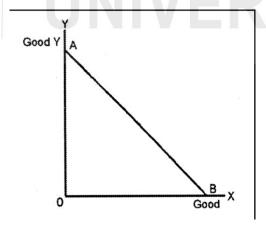


Figure 1.10: Straight line PP Curve

Note that a typical PP curve is taken to be a concave curve because it is based on a more realistic assumption that all resources are not equally efficient in production of all goods.

Does production take place only on the PP curve?

Yes, and No, both. Yes, if the given resources are fully and efficiently utilized. No, if the resources are underutilized or inefficiently utilized or both. Refer to the figure 1.10

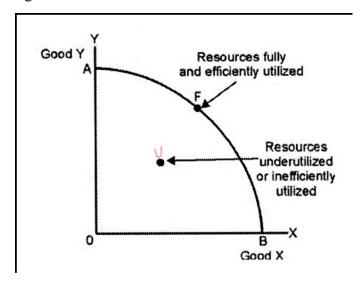
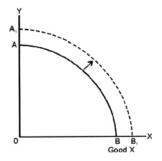


Figure 1.11: PP Curve and Production

On point F, and for that matter on any point on the PP curve AB, the resources are fully and efficiently employed. On point U, below the PP curve or any other point but below the PP curve, the resources are either underutilized or inefficiently utilized or both. Any point below the PP curve thus highlights the problem of unemployment and inefficiency in the economy.

Can the PP curve shift?

Yes, if resources increase. More labour, more capital goods, better technology, all means more production of both the goods. A PP curve is based on the assumption that resources remain unchanged. If resources increase, the assumption is broken, and the existing PP curve is no longer valid. With increased resources there is new PP curve to the right of the existing PP curve.





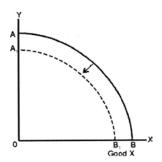
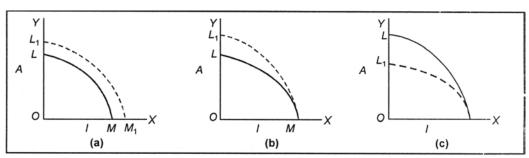


Figure 1.13: Shift of PP curve to left

It can also shift, to the left if the resources decrease. It is a rare possibility but sometimes it may happen due to fall in population, due to destruction of capital stock caused by large scale natural calamities, war, etc.

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Q.1. Which of the following will be the new production possibility frontier, if new technology is developed that enables higher productivity in Agricultural (A) only? Industrial output (I) is not impacted.



Ans. Fig. (*b*)

Extension of the Production Frontier: The PPC or production frontier is subject to a change over time. As an economy adds to its productive resources, or learns to use them more efficiently, its productive capacity increases and it can produce more of both LED (L) and Computer monitor (M). As a result, the PPC moves outwards as, for example, to the position shown by the upper line. It should be noted that the new PPC need not be parallel to the old one.

1.6 ALLOCATION OF RESOURCES

You know that every economy has to decide about the allocation of its productive resources between different uses. In this context a question arises as to how this issue is resolved. While trying to answer this question, we should keep in mind that the pattern of resources allocation is closely linked to the solution of the fundamental problems of an economy which have been discussed earlier in this unit.

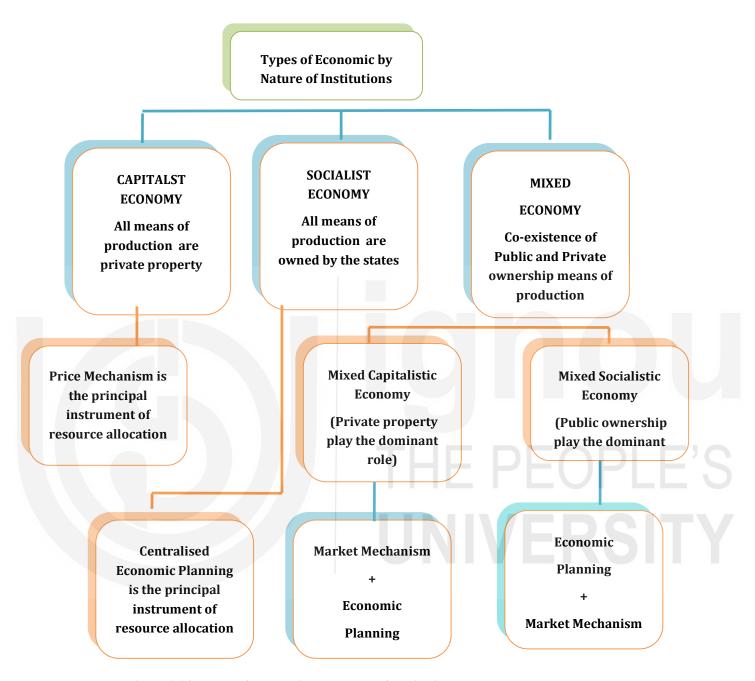


Figure 1.14: Types of Economies by Nature of Institutions

The problem of resources allocation may be tackled in several ways and each economy tries to solve it in line with its own chosen objectives. For this purpose, every economy devises a system of rules and regulation. To administer these rules, institutional arrangements are made. A set of such institutional arrangements is called an economic system. The nature of economic system may vary from a system in which all means of production are owned by the State, to a system in which all the means of production are private property. This type of economic system is called a socialist economy or a centrally controlled economy. The latter type of economy is called a free market economy or a capitalist economy. Each economic system selects certain rules and regulatory devices which guide the allocation of productive

resources. However, it need be deemed here that no single system of resource allocation can be termed ideal or best for all economic systems and for all times to come. Therefore, most of the economics turn around a system in which public ownership over the means of production co-exists with private ownership. This system is called a mixed economy.

1.6.1 Resource Allocation in a Capitalist Economy

At this stage of your study, the terms capitalist economy and market economy may be treated as one and the same. For understanding the problem of resource allocation in a capitalist economy, we should first know the relevant characteristics of such an economic system. The characteristic features of a capitalistic economy are as follows:

- i) Means of production, i.e., the productive resources, are privately owned. Those people who own the resources have the authority to withhold their supply from the market whenever they want to.
- ii) All goods and services (including productive resources) have a price in the market determined by the interaction of demand and supply. The free interaction of prices with forces of demand and supply covers all the goods and services and it is called the **Price mechanism.** Remember that freedom of price mechanism is an important characteristic of capitalism or a market economy.
- iii) Labour power is also considered a commodity and can be bought and sold just like any other commodity.
- iv) Every economic unit behaves in a rational manner, that is to say, it acts only in its own interest. The seller sells a product to the highest bidder only and the buyer buys a product at the lowest possible price, and so on.
- v) The income of an individual member of the society is determined by two aspects:
 - 1) the quantities of productive resources supplied by him to the market, and
 - 2) the prices at which they are paid for.
- vi) Every economic unit is guided by the price mechanism. It takes note of the changing prices and takes decisions covering buying, selling, consumption investment, production and so on.

In such an economy those goods and services are produced which yield maximum profits. Therefore, productive resources are also allocated to such items only. Since goods with higher demand fetch higher prices and yield more profit, the productive resources are allocated to the production of the most profitable goods. But there is also the question as to which specific resources should be used to produce a specific item. The employer makes this choice by considering two aspects: a) productivity of a factor of production, and b) the price which has to be paid for it. He compares these two aspects of every productive resource, and selects a factor for which the ratio of productivity to price is higher. The employer tries to ensure that for each rupee spent on inputs, he gets the maximum possible return. You already

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know that prices of productive resources and their ownership determine the distribution of income among the members of the society. They in turn decide which goods and services to demand. In this manner, the market mechanism guides every economic unit in its decision-making and determine the allocation of resources between different employments.

In a market economy income distribution suffers from large scale inequalities. In a poor country like ours, people with low income often do not have enough purchasing power to demand basic necessities of life while rich people demand luxuries, and make it profitable to produce them. As a result, in such a country, there may be insufficient production of basic necessities like milk while the economy may be producing luxuries like air conditioners. To put it differently, the demand pattern generated by inequalities of income distribution may not represent real needs of the society.

Every economy divides a system as per rules and regulations. To administer these rules, institutional arrangements are made a set of such institutional arrangement i.e. called an economic system. The nature of economic system may vary from a system in which all the means of productions are owned by the state, to a system in which all the means of production are private property. This type of economic system is called a socialist economy or a centrally controlled economy. The later type of economy is called a free market economy or a capitalist economy.

1.6.2 Resource Allocation in a Socialist Economy

The term socialism is used to represent a number of economic systems which differ from each other in details. However, main features of a socialist economy are as follows:

- i) The means of production are not privately owned. Instead, they are owned by cooperatives or by the government.
- ii) A socialist economy tries to maximize the welfare of the members of the society. It tries to ensure that the production of goods and services is in conformity with the actual needs of the members of the society. It also tries to reduce income and wealth inequalities to the minimum possible level.
- iii) With these objectives in view, market mechanism is not allowed to work freely. This means that prices are not allowed to fully reflect the effects of demand and supply forces. Similarly, decision regarding demand and supply of goods and services are not always guided by prices. Such decisions are taken out of the hands of individual economic units. Instead they are taken by some form of central planning authority such as the government itself or some agency appointed by it for this purpose. The central authority takes the necessary decisions on behalf of individual economic units. It is the central planning authority which decides the way the central problems of the economy are to be solved. It is for this reason that a socialist economy is usually referred to as the centrally planned economy also.

iv) The producers and sellers are not allowed to act rationally. That means they are not allowed to maximise their profits. Instead, most prices of inputs and outputs are administered, that is, decided administratively by the authorities. Some of the essential goods and services may be rationed and provided to all or selected members of the society freely or at subsidized rates. Generally, only on-essential items are sold at market prices.

Thus, the entire decision-making regarding resource allocation is in the hands of the authorities in a centrally planned economy. The market forces are not allowed to influence these decisions. The authorities decide what goods and in what amounts are to be produced. They decide the allocation of resources for the production of these goods. Considerations of prices and profits are not allowed to affect their decisions. Instead they have the goal of finding out the real needs of the society and direct the productive resources of the economy towards meeting them. A major drawback of a socialist system is that it may reduce the incentive to work and produce. Therefore, a worker can get additional income only by putting in additional labour.

1.6.3 Resource Allocation in a Mixed Economy

A mixed economy is one in which some decisions are left to the market forces while others are taken under direct government regulation or even ownership. Some selected areas of economic activities are reserved for the government sector. The government acquires the necessary productive resources for these activities and employ them in conformity with its priorities. The production pattern of the public sector, the prices of output items of the public sector and other measures are used to regulate the allocation of resources in private sector as well. These other measures include price controls, licensing, taxation, subsidies, and others. Additionally, various labour welfare measures are undertaken. Similar steps are taken to encourage the use of productive resources for encouraging the development of backward areas of the country, for removing specific shortages, and for bringing about a balanced development of the economy as a whole.

Check Your Progress D

1.	What is Production Possibility Curve?

- 2. State whether each of the following statements are **True** or **False**:
 - i) In a market economy, resource allocation is always in conformity with real needs of the society.
 - ii) Decisions based on economic rationality are always good from the society's point of view.

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- iii) In a market economy, decisions of every economic unit are guided by price signals.
- iv) In a socialist economy; the central problems are solved by market mechanism.
- v) In a mixed economy, resource allocation is decided partly by the authorities and partly by the private sector.
- vi) In a mixed economy, private sector is left totally unregulated by the authorities.
- 3. Fill in the blanks.
 - i) The term market mechanism denotes an interaction between
 - ii) Economic means that an economic unit is acting to serve its own interests.
 - iii) In aeconomy, all economic decisions are guided by economic rationality.

Brain Teasers

- **Q.1.** Giving reasons, state which of the following statements are True or False:
 - (i) An economy always manages to meet all the needs of the people living in the country.
 - (ii) In the context of an economy, when we talk about 'scarcity', we refer to short supply of money.
 - (iii) A 'Production Possibility Frontier' (PPF) is always represented as a downward sloping curve.
 - (iv) How does Honda Motor Car Co. fix the price of its cars is studied in macro-economics.
- **Ans.**(i) False: An economy seeks to provide means of living to all the people. It may be successful (as in most of the developed countries), or it may not be successful (as in many underdeveloped countries) to achieve its objective.
 - (ii) *False:* Scarcity refers to limited availability of all types of goods and services in relation to their requirements. The concept of scarcity, thus, is not limited to money alone.
 - (iii) *True:* A PPF represents different combinations of two commodities that can be produced with the help of available resources in an economy. If an economy decides to produce a larger quantity of one commodity, it would be left with lesser resources to produce another commodity. A downward sloping curve represents this relationship.
 - (iv) *False:* Macroeconomics is the study of aggregates e.g., determination of general price level in an economy. The principles

underlying the pricing of a single good by a single firm or single industry are studied in microeconomics.

Q.2. Give reasons for the following:

- (i) A Production Possibility Frontier is always a downward sloping concave curve.
- (ii) An efficient economy would always produce a combination of goods that lies on the given Production Possibility Frontier.
- (iii) Growth of an economy is represented in the form of a rightward shift of a Production Possibility Frontier.
- **Ans.**(i) One, a PPF slopes downward to indicate that if an economy chooses to produce a larger quantity of one commodity it would have to reduce the production of another commodity.

Two, the concave shape of the PPF is due to the applicability of the Law of Increasing Marginal Opportunity Cost.

- (ii) Any point on a given PPF presents a production available resources. Likewise, any point to the right of the PPF is beyond the available resources. Any combination located below the given PPF shows on underutilization of available resources. Likewise, any point to the right of the PPF is beyond the available resources.
- (iii) By economic growth, we mean that an economy has developed greater capacity to produce larger quantity of goods by acquiring more resources. Graphically, this would be represented by a rightward shift of the PPF.
- **Q.3.** Giving reasons, state if the following statements are true or false:
 - (i) Because of destruction caused by war, a country's PPF will-shift to the right.
 - (ii) A job guarantee scheme will lead to a rightward shift of the PPF.
 - (iii) If a PPF shifts to the right, the new PPF will be parallel to the original.
- **Ans.**(*i*)False: Country's PPF will shift to the left; this will be due to the fact that the country's capacity to produce will get reduced.
 - (ii) False: A job guarantee scheme does not add anything new to a country's resources. This will only ensure that available unutilized or unemployed resources are productively employed.
 - (iii) False: A new PPF needs not to be parallel to the old one. It can take any possible shape.
- **Q.4.** Give reasons for the following:
 - (i) Every economy has to make the decision relating to what to produce.

- (ii) Problem of choice arises because available resources have alternative uses.
- **Ans.**(i) Every economy gets faced with the scarcity of resources, i.e., no economy possesses infinite resources to produce each and everything in infinite quantities. Therefore, it has to decide to produce a good and forego the production of another.
 - (ii) Available resources are always scarce. But the available resources can be put to alternative uses. Therefore, an economy will always prefer to make use of its resources in production of those goods and services that are most desired and forego the production of less-desired goods and services.
- **Q.5.** Giving reasons, state which of the following are normative statements:
 - (i) A rise in the price of a commodity results in a fall in quantity demanded of commodity.
 - (ii) A good monsoon results in good agricultural output.
 - (iii) Government should raise taxes on industries that cause pollution.
 - (iv) Households should be advised to cut back their consumption expenditure.
- **Ans.**(i) and(ii) are only positive statements. These state a simple cause-and-effect relationship.
 - (iii) and (iv) are normative statements. They have an element of judgement. They suggest a course of action that may be undertaken to reach the desired end.
- **Q.6.** Giving reasons, state if the following statements are true or false:
 - (i) In a market economy, government does not impose any taxes.
 - (ii) In a centrally controlled economy, all the means of production are state-owned
 - (iii) The USA is a mixed capitalistic economy, as is India.
- **Ans.**(i) *False:* In a market economy most of the means of production constitute private property. Therefore, most of the economic decisions are taken by resource-owners. But that does not mean that the government does not perform any function in this type of economy. In order to perform these functions, every government collects revenue by way of taxes.
 - (ii) *True*: Means of production are not a private property. These are owned by the state, which decides their use.
 - (iii) *True*: The USA, as also India, is a mixed capitalistic economy. State-owned enterprises co-exist with private ownership over assets and enterprises.

1.7 LET US SUM UP

Every society is faced with an unending problem of scarcity of means in comparison with their need to satisfy the ever-increasing and unlimited wants. So, every society tries to increase the availability of the means on one hand and to economies their use on the other. For this purpose, various institutions, methods and arrangements are devised, and they, in their totality, are called an 'economy' or an economic system'. The precise nature of an economic system differs from society to society. Moreover, the economic system adopted by a society also keeps on changing over time. Economies may be classified in a number of ways, such as on the basis of predominance of productive resources in use, the type of goods and services produced, the type of institutions and property rights, and so on. Economic entities are the decision-making units of an economic system.

Productive resources or means of production are the inputs used for production. The term production is taken to mean the creation of or addition to utility (i.e., the want-satisfying capacity of an item). Means of production can be classified into groups of homogeneous units (i.e., units which can be substituted for each other without affecting total production). Each such group is known as a 'factor of production'. It is conventional to group the factors of production into four categories: 1) land, 2) labour, 3) capital, and 4) organization or entrepreneurship.

Land denotes productive resources provided free of cost by nature. It cannot be created by man though it is possible to discover existing but unknown resources. Similarly, it is possible to discover new uses for the known resources. Labour stands for both physical and mental efforts of human beings used for production. Capital represents the sum total of man-made resources, (i.e., the produced means of production). Entrepreneurship is the ultimate decision-making and risk bearing function connected with business activities.

Every economy has some fundamental problems which originate from the scarcity of means of production in relation to wants. These problems are i) what to produce, ii) how to produce, iii) for whom to produce, and iv) the choice between current consumption and growth through saving and investment. The problem of what to produce is closely related to the allocation of means of production between alternative employments, while choice of techniques highlights the problem of how to produce. In addition, every economy has also to decide between the private and public goods, as also the extent to which private goods should be produced in the private sector.

Furthermore, every economy is faced with the need to increase the supply of merit goods i.e., goods whose consumption is believed to be beneficial both for the consumers and for the society as a whole.



Fundamental Problems of Economic Systems

The problem of what to produce is generally illustrated with the help of a Production Possibility Curve (PPC) or 'Product Transformation Curve'. It is drawn on the basis of some simplifying assumptions. The main idea conveyed by a PPC is that when an economy is using its resources fully, then with given techniques of production, it cannot increase the production of some goods without simultaneously reducing that of the others. However, with economic growth it is possible to simultaneously increase the production of all goods and the PPC moves outwards.

Allocation of resources is different from one economic system to the other. In a market-or capitalist economy, the allocation takes place with the help of market mechanism, that is, through the interaction between demand, supply and prices. In this economy, the means of production are owned by private economic units and they take decisions in different capacities (such as consumers, producers, and so on) in response to changes in prices caused by market mechanism. The response of each unit is dictated by considerations of economic rationality. The employment of means of production is decided by employers by comparing the productivity of an input with its price. The employer tries to ensure that for each rupee spent on inputs, he gets the maximum possible return. Accordingly, it is the demand pattern in the economy which finally determines the resource allocation. Since, a market economy is characterized by large scale inequalities of income and wealth distribution, the demand pattern is not able to reflect the true needs of the society. It becomes profitable to produce and sell luxuries than necessities. Consequently, the resource allocation also does not reflect the true needs of the society.

In a socialist economy, the means of production are not owned privately. Instead, they are owned by the government or cooperatives. A socialist economy tries to reduce income and wealth inequalities. It tries to ensure that the production of goods and services (and, therefore, resource allocation) conforms to the actual needs of the society. For this reason, market mechanism is not allowed to work freely. Prices of most goods and services are decided administratively without reference to their demand and supply position. Individual economic units are restricted in their decisions on the basis of economic rationality.

In a mixed economy, decision-making is shared between individual economic units and the authorities. However, where need be, even private economic units operate under a variety of government regulations such as price controls, subsidies, taxes, licenses, quotas, labour laws, and so on.

1.8 KEY WORDS

Capital: Man-made or produced means of production.

Capitalist Economy (Market Economy): An economic system in which the means of production are owned and inherited by individuals. They take the economic decisions and they are guided by the prices of goods and services in the market.

Economic Entities: The decision-making units in an economic system.

Economic System or An Economy: The sum total of all institutions, methods and arrangements to deal with the problem of scarcity of means (resources) in relation to unlimited wants and the choice of wants to be satisfied.

Entrepreneurship: The ultimate decision-making and risk-bearing connected with business activities. This is the organizing function which combines the services provided by other resources so that goods are produced.

Factors of Production: The inputs (land, labour, capital and entrepreneurship) necessary to carry on production.

Input: An item which goes into the production process.

Labour: Human effort, physical and mental, which is used as input for production.

Land: Those means of production which are provided free of cost by nature. It includes land used for agricultural or industrial purposes, as well as natural resources taken from above or below the soil.

Market Mechanism: Denotes the interaction between demand, supply and prices and the response of decision-making economic units to changes in prices.

Merit Goods: The goods whose consumption is believed to be desirable for the benefit of the society and the consuming individuals.

Private Goods: Goods whose availability can be restricted to selected users. It is divisible in that sense.

Production: Creation of utility by different methods.

Production Possibility Curve or Product Transportation Curve: A graphic representation of the combinations of maximum amounts of goods X and Y which can be produced with the given productive resources of the economy and under certain other simplifying assumptions.

Productive Resources: Items which can be used as inputs in production.

Public Goods: Goods or services whose availability cannot be restricted to selected users only through pricing or through other measures. The benefits of the goods are indivisible and people cannot be excluded.

1.9 ANSWERS TO CHECK YOUR PROGRESS

Check your progress A

- 3. i) False ii) False iii) False iv) False v) True vi) True vii) False viii) False
- 4. c

Check your progress B

- 2. i) False ii) True iii) True iv) False v) True
- 3. i) Land, Labour ii) come out of it iii) further production iv) created by man

Check your progress C

6. i) False ii) True iii) False iv) True v) False vi) True

Check your progress D

- 2. i) False ii) False iii) True iv) False v) True vi) False
- 3. i) demand, supply and prices ii) rationality iii) market/capitalist

1.10 TERMINAL QUESTIONS

- 1. What is an economic system? Explain the fundamental/central problems of an economy.
- 2. What are the main characteristics of human wants?
- 3. 'Scarcity is the mother of every economic system'. Explain.
- 4. What do you understand by factors of production? Briefly explain each of the four main factors.
- 5. Write short notes on the following:
 - a) Public goods and Private goods
 - b) Merit goods
 - c) Human wants
- 6. Explain how the solutions to the fundamental/central problems of an economy are interlinked with each other.
- 7. Explain the concept of a Production Possibility Curve. Enumerate its assumptions. Illustrate it with the help of an example.
- 8. Briefly explain how resource allocation takes place in the following economic system.
 - a) Market economy
 - b) Socialist economy
 - c) Mixed economy
- 9. Giving reasons state which of the following statements are true or false:
 - i. All human wants cannot be satisfied. It is a universal truth.
 - ii. Only a resource rich economy like Dubai is not faced with the problem of choice.



- iii. The difference between labour force and work force of an economy indicated the size of unemployed persons.
- iv. National Library at Kolkata is a right example of a public good.

Answers: i. True, ii. False, iii. True, iv. True

10. Match the pairs among the following:

i.	Economic Planning	a. Capitalism
ii.	Public Park	b. Socialism
iii.	Income determined by market forces	c. Public good
iv.	Re-distribution of income	d. Instrument of Resource Allocation

Answer: i. d; ii. c; iii. a; iv. b

Note: These questions will help you to understand the unit better. Try to write answers to them. Do not sent these answers to the university for assessment. They are for your practice only.



UNIT 2 BASIC CONCEPTS AND FRAMEWORK

Structure

- 2.0 Objectives
- 2.1 Introduction
- 2.2 Preliminary Economic Vocabulary
- 2.3 Economy as a System of Circular Flows
- 2.4 Economic Methodology and Economic Laws
 - 2.4.1 Inductive and Deductive Reasoning
 - 2.4.2 Ceteris Paribus
 - 2.4.3 Equilibrium
- 2.5 Positive versus Normative Economics
- 2.6 Microeconomics and Macroeconomics
- 2.7 Stocks and Flows
- 2.8 Statics and Dynamics
- 2.9 Opportunity Cost
- 2.10 Let Us Sum Up
- 2.11 Key Words
- 2.12 Answers to Check Your Progress
- 2.13 Terminal Questions

2.0 OBJECTIVES

After studying this unit, you should be able to:

- explain important concepts and terms which form a part of popular economic vocabulary;
- describe how economic reasoning is arrived at and generalisation of economic laws are formulated;
- state the nature and reliability of economic laws;
- explain some of the analytical concepts associated with economic reasoning; and
- discuss whether economics is put to use for improving our material wellbeing or not.

2.1 INTRODUCTION

In Unit 1 you have studied the meaning of an economic system, fundamental problems faced by all economic systems, factors of production and how



resources are allocated in different types of economic systems. In the process of discussion, you come across some basic concepts like utility, production, factors of production/inputs, production possibility curve, scarcity, etc. In this unit, you will learn more details about some of these concepts and also be introduced to a few more new concepts. You will also study how different parts of an economic systems are interdependent. You will be introduced to the fundamentals of economic reasoning and the nature and reliability of economic laws and theories. Similarly, you would learn whether Economics is only a knowledge giving subject or provides practical guidelines for improving our material well-being. While studying this unit, a few analytical concepts connected with economic reasoning will also be discussed.

2.2 PRELIMINARY ECONOMIC VOCABULARY

Utility: You already know that utility of goods is their want-satisfying power. It is satisfaction expected from the use of a product under consideration and is, therefore, subjective and not objective. That is to say utility of goods for a consumer depends upon his assessment of the satisfaction which he hopes to derive from their use. There is no way of measuring it either by mechanical or quantitative methods. Utility also depends upon the intensity of the want/wants to be satisfied. As a result, utility of goods differs from one individual to another. Also, for the same individual every additional unit of goods is expected to yield relatively lower utility, because the intensity of the want being satisfied decreases with the use of the goods.

We can measure Utility or a good in two forms: (i) Marginal Utility and (ii) Total Utility. Marginal utility means additional utility or satisfaction derived by a consumer from the consumption of an additional unit of a product. The sum of utilities derived from consumption of each of the units constitutes total utility.

Value: The term value is used in two different senses. Firstly, it is used to convey the usefulness of goods to their users or consumers. In this sense, it has utility for the users and is therefore, useful to them. Such a value is called the use value of a product.

FOR MORE CLARITY!

In economics, the marginal utility of a good or service is the utility gained (or loss) from an increase (or decrease) in the consumption of that good or service. Economists sometimes speak of a law of diminishing marginal utility, meaning that the first unit of consumption of a good or service yields ore utility than the second and subsequent units.

The concept of marginal utility played a crucial role in the marginal revolution of the late 19th century, and led to the replacement of the labour theory of value by neoclassical value theory in which the relative prices of goods and services are simultaneously determined by marginal rates of substitution in consumption and marginal rates of transformation in production, which are equal in economic equilibrium.

Secondly, a product has a value in the sense that it can be exchanged or sold against something else. The price for which it can be sold is termed its exchange value.

The use value of a product depends upon the intensity of the want/wants being satisfied by it. For that reason, necessities of life like water have high use-value for the initial doses. But if they are quite abundant, their marginal use-value or marginal utility decreases to a very low level. The exchange value of a product, on the other hand, is influenced by its cost of production, and its scarcity in relation to its demand. It is for this reason that some goods like diamonds and gold have high exchange value.

Wealth: The concept of wealth has different meanings in different contexts. In essence, it represents the sum total of all usable resources available. Wealth of an individual, therefore, comprises not only his landed property and all belongings, but also his money balances and other financial assets. In the case of an economy, however, the concept of wealth has a different coverage. All the natural resources of the country, whether owned by the government or other economic entities, form part of its wealth. From this point of view, national wealth also includes human wealth represented by the size, health, education and training of the population, its moral character and attitude to work. National wealth also includes man-made resources like machinery and equipment, buildings, roads and bridges and so on. You should remember that financial wealth of an individual does not form a part of national wealth since claims of one set of people get cancelled by liabilities of the other.

Goods: The term goods include services also. All items are goods if they have utility, or if they can be used for further production of the goods and services. Goods can be classified in various ways. Those goods which are meant for satisfying wants of individuals and households are called Consumption goods. On the other hand, those goods which are used for producing goods/services for sale are called Intermediate goods. They are 'Inputs' of production. When they are usable more than once for production (such as machinery and equipment), they are known as Capital goods. Examples of intermediate goods are raw materials, coal, machines, hand tools, etc. used by manufacturing industries; or seeds, fertilizers, and pesticides used by agriculturists. It should be remembered that the same goods may shift from the category of consumption goods to that of intermediate ones and vice versa depending upon the purpose for which they are used. Thus, a car used by its owner for his private use is a consumption article but used as a taxi, it becomes a capital or an intermediate product. LPG being supplied to households is a consumption good while CNG being used in transportation is a capital good.

CONSUMPTION GOODS

Those goods which are used to satisfy consumers desires

INTERMEDIATE GOODS

Those goods which are used for producing goods/services for sale

CAPITAL GOODS

Those goods which help in production of more goods
E.g.- Machinery

Figure 2.1: Types of Goods

Goods are also classified on the basis of the type of wants satisfied by them. Those goods which satisfy our basic wants like hunger, protection against heat and cold, or meet certain social obligations are called 'Necessities'. Wants being satisfied in this case are quite intense and, therefore, necessities have a very high utility. If we come to wants with somewhat lower intensity, then the goods needed for their satisfaction are classified as 'Comforts'. Use of comforts normally increases our working capacity and productivity. Similarly, Luxuries are those goods whose consumption is directed to the satisfaction of least intense wants. Such wants are satisfied mainly for reasons of social prestige, etc. In general, an individual give first preference to necessities followed by comforts and luxuries. You should remember, however, that the same goods may be a luxury for some individuals, comfort for others and necessity for some others. Moreover, with the passage of time, the needs of even the same individual can change leading to a reclassification of goods for him.

Demand: As you know, at different prices, the buyers are ready to buy different quantities of the goods in question. Demand for goods, therefore, has a meaning only when the price is mentioned along with the quantity to be bought, and the buyer so have both the willingness and the ability to pay the price. Normally, the demand for goods falls when their price rises or vice versa. However, under special circumstances and for certain goods this may not happen. Generally, when the price of goods is expected to change, its demand also changes in the same direction. For instance, during a period of scarcity, the demand for food may increase with an increase of price, since consumers being afraid of its not being available, would like to stock more than their normal requirement. They fear that the food prices would go up further. Similarly, diamonds, jewellery and other fancy goods are bought by a buyer primarily to show off his wealth. Therefore, the demand for goods of this variety goes up when their prices rise. Consumer's demand for a commodity is not influenced by only its price. There are other forces also at work.

Supply: The concept of supply of goods is associated with their availability. The producers and stockiest of goods are ready to offer different quantities of some goods for sale at different prices. Supply of goods is, therefore, the quantity offered for sale at a specified price. Clearly, the amount of supply changes along with its price. Normally, supply increases with increase of price and decreases with fall of price. However, supply of goods may change even at a given price if their cost of production changes. If the economy enters a phase of recession or depression, supply increases with fall of price

since the sellers expecting a further fall of price would like to dispose of their stocks.

Consumption: Just as the term production denotes the creation of utility in some form or other, consumption denotes the using up of that utility in satisfying some want or for the process of production. Destruction of utility is not consumption. In a modern economy, consumption of goods and services is preceded by their purchase in the market by spending some money. Therefore, very often expenditure for buying consumption goods is referred to as Consumption expenditure or simply, Consumption. In this context, the consumption is distinguished from investment which denotes expenditure for the purpose of business which either increase our capacity to earn or to produce or create durable assets. But consumption itself is taken to be represented by non-business expenditure. In other words, investment expenditure may be in the form of what is usually called working capital i.e., for operating the existing productive capacity, or it may be in the form of what is usually called fixed capital i.e. addition to productive capacity.

Exchange: Economic entities of economic activity viz., individuals and households, firms or business units, and organs of government etc., undertake a variety of economic activities. You are already familiar with some of them, like production and consumption. Exchange is also an important economic activity. When an economic entity provides goods or services in return for some other goods or services, the transaction is referred to as **Exchange**. To put it in different words, goods/ services are sold against other goods/services. The sale may also be against some amount of money. When exchange is between goods and services, it is known as a **Barter transaction** or a **Barter sale** or simply **Barter**. And when goods/services are sold against money, it is a **Money exchange**.

Exchange is the basis of all economic activity. In any type of economy, no individual or a group of individuals can be self-reliant or independent of others. The underlying principle of economic activity, as put by John Hicked is "You do this for me, I will do that for you". This type of exchange is a win-win situation, i.e. all the parties engaged in exchange will be better-off with exchange, then without it.

Why should an exchange take place? This question can be answered by looking at the exchange activity from the view of a buyer. If the buyer is a consumer, then the item brought has a greater utility for him than the utility of the item paid as a price. If the buyer is a trader, he hopes to get a higher price for the item when it is resold by him. Similarly, if the purchased item is an input for some production, the buyer hopes to get a larger return in the form of sales proceeds of the product. In all these cases, however, exchange is always voluntary and both the transacting parties (buyer and seller) hope to gain out of it. For this reason, it is often said that exchange is not robbery. However, you should remember that the benefit of transacting party may be small or large depending upon the bargaining power of the buyer.

Margin: The concept of margin is an important tool in an economic reasoning, and is used very extensively to describe the behaviour pattern and

decision-making of economic units in their various capacities. The concept is associated with the last unit of a variable under consideration. This point can be clarified by considering some commonly used terms. As you have noted earlier, marginal utility is the utility that is derived from the last unit of a commodity purchased by a consumer. As against this, average utility is the total utility derived from all the units bought divided by the number of units. As an example, consider a case in which a buyer purchases four loaves of bread having 20, 16, 14 and 6 units of utility respectively. Then, the utility of the fourth loaf of bread is the marginal utility and is equal to 6 units of utility. On the other hand, the consumer gets a total of 56 units of utility from all the four loaves and therefore the average utility works out to be 56/4 = 14 units. It is easy to see that any change in the quantity of the goods purchased and other related circumstances would most probably change both the average and marginal utility of a commodity. In either case, remember that marginal utility of an item is the addition to total utility made by its last unit. Correspondingly, in the field of production, we have the concept of Marginal cost which is the addition to total cost on account of the last unit of production. Similarly, Marginal revenue stands for addition to total sales proceeds when quantity sold is increased by one unit.

The Concept of Normal: In economics, the concept of normal denotes the most common or frequent occurrence. In other words, it indicates what happens in general. It has absolutely nothing to say about the desirability or otherwise of what happens. For example, when we say that normally a firm tries to maximise its profits, we are only stating a fact without implying that it is legally a correct thing to do. The term normal is used to generalize an occurrence or a behaviour pattern. The term is used in another sense also. Economic variables like prices, costs, growth, etc., have long term tendencies to behave in certain specified ways. The level (of price, production, cost, etc.) which a variable tends to achieve is called its normal level (of price, production, cost, etc.). Within a short period, however, a variable often moves away from its normal or long term trend.

2.3 ECONOMY AS A SYSTEM OF CIRCULAR FLOWS

You have already studied that the economic system is a set up for increasing and effective utilization of productive resources. You are also familiar with the decision-making economic entities viz., individuals and households, business units and organs of government. These economic entities undertake economic activities like consumption, production, investment, exchange, etc. These activities are not haphazard. They follow a certain pattern. They get coordinated with each other and the economy begins to operate in an orderly manner. The study of the economic activities and the economy which they create reveal that the economic activities obey certain laws or rules. They are responsive to various forces and stimuli, and therefore their decision-making and activities can be standardized. That is to say, they are not haphazard but have enough consistency to be stated in the form of generalization and economic laws. Viewed this way, an economy can be said to be a system so

that its working can be understood in terms of some laws. It brings into existence a set of exchange transactions that can be grouped into circular flows of goods and services.

The concept of an economy as a system of circular flows can be understood by considering a simplified picture. As a first step, you may consider an economy which has only two categories of economic entities: 1) households (including individuals), and 2) business units. The households are the consuming units of the economy. All the consumption goods are used by them. They are also the owners of all the means of production including those with the business units—since the households own the business units as well. The business units, on the other hand, are the producing units of the economy.

In this set up, the households sell their means of production including labour to the business units, and get in return goods and services produced by the business units. This way a circular flow is established between these two sets of economic units i.e., household and business units. Business units also sell goods and services to each other. Output of one set of producers becomes the input for the other. You can find a large number of cases where this happens. For instance, agriculture needs many industrial goods like fertilizers and tractors as inputs. Similarly, industry uses many agricultural goods as raw materials. Also each industry buys quite a few inputs from other industries. In this manner, a number of mini circular flows of goods and services can be established.

These circular flows can be understood more easily if we consider the sale/purchase of goods and services against money. The households sell means of production owned by them to business units and get the remuneration in the form of money. The business units sell their products to households against money. The business units also sell their products to each other.

There are business units and whose job is to borrow the savings of the households and other business units and re-lend the funds to needy economic units. Thus, funds flow from the households to the capital markets by way of: a) fresh loans and investments, and b) debt servicing. Debt servicing means meeting of interest and debt repayment obligations of outstanding loans from the capital market to the households. Similarly, funds move from the capital market to the households by way of: a) fresh loans to households, and b) servicing of existing debts and investments of the households. The business units also invest their surplus funds in the capital markets and borrow from them in case of need. That way, we can explain the circular flow of funds between the capital markets and the rest of the business units.

The circular flows can be more realistic if we bring the factor of government in this discussion. As you know, the government provides a number of services to the society like defence, law and order, justice, and so on. The resources needed for this purpose are obtained in numerous ways, including taxation of households, business units and capital markets, as also by borrowings from all of them. The government may also act like a business

unit and sell some of its services to the public. This way, funds flow from the rest of the economy to the government. Similarly, the government pays to the rest of the economy for buying goods and services, as subsidies and for servicing public debt. The government may also provide loans to households and business units which would supplement the financial flows by way of fresh loans as also by way of their servicing by the non-government units.

We can conclude that there is a strong interrelationship and interdependence of economic units upon each other. In physical terms, this is known as input-output relationship which means that each economic unit gets its inputs from others and pays for them in terms of its output(s). This fact has a very important implication for the economic system. The economy can develop if a large number of economic units start producing inputs and outputs for sale to each other.

Check Your Progress A

1.	Distinguish between value in- exchange and value-in-use of goods.			
	·····			
2.	Distinguish between consumption expenditure and investment expenditure.			
3.	Distinguish between barter exchange and money exchange.			

- 4. State whether the following statements are **True** or **False**.
 - i) Utility is an objective thing and can be measured.
 - ii) Marginal utility of goods is the utility derived from their last unit.
 iii) Use value of a product is the same as its exchange value.

- iv) Use value of goods does not change from person to person or over time.
- v) Financial resources of a country form a part of its wealth.
- vi) Financial resources of an individual form part of his wealth.
- i) The price and supply of goods normally move in opposite directions.
- ii) The demand and price of goods normally move in opposite directions.
- iii) Consumption is the same thing as destruction of utility.
- iv) If a consumer buys six oranges, the marginal utility of oranges to him is the utility of the sixth orange.
- 1. Which of the following is not necessarily a capital good:
 - (a) A weaving machine in a textile unit
 - (b) Air-conditioners in a movie theater
 - (c) LPG Cylinder
 - (d) A shop in a super-mall.
 - 2. Arrange the following objects in ascending order of utility for you.
 - (a) A one-third can of Coke offered to you for consumption.
 - (b) A set of sample papers (almost sure-short) with solutions in economics sent to you on the eve of examination.
 - (c) A slice of rotten cake
 - (d) A bottle of perfume as a gift from a friend.

2.4 ECONOMIC METHODOLOGY AND ECONOMICLAWS

Every science has its own analytical technique (tools of analysis), the way it gathers the basic information (data) to be analyzed, and the way its reasoning is carried out, and so on. All these put together are called its methodology. In economics also, a suitable methodology is needed and every economist uses some form of it. In every science, inferences or conclusions are drawn based upon certain causes. These causes may be laid down in the form of imaginary conditions or drawn from observed facts or they may be a mixture of the two. The corresponding outcome is then worked out and the statement depicting the relationship between specified causes and their outcome is termed as the law of that science. Each science has numerous such laws.

In a social science, the subject matter is the behaviour of man within his social set up. The behaviour of persons who live in isolation and away from the society like the "risk is" living in seclusion in mountains is not studied in a social science. The actions (both individuals and collective) of persons living in a society form the areas of investigation of a social science. An effort is made to determine the activities of the members of a society in response to various causes and forces, and the expected behavioural outcome

in response to different sets of causes and forces is then put forth in the form of generalizations. These generalizations are the statements of tendencies and are known as social laws.

Economics being a social science, economic laws are, therefore, a part of social laws. In the words of Alfred Marshall, we should separate that part of behaviour of members of the society where the main motive happens to be an economic one, and that is where the main motive can be expressed in terms of money price. The corresponding activities are then economic activities. However, such a dividing line between economic laws and other social laws is not always clear. Very often an activity happens to be motivated by a combination of both economic and non-economic considerations. As a result, it is often quite difficult to formulate pure economic laws which have full validity also.

2.4.1 Inductive and Deductive Reasoning

Economists have followed two traditions in formulating economic laws. According to one tradition, the causes (also called conditions or assumptions) are specified and different economic units are expected to behave in a rational manner. The outcome in this case is predictable provided the assumptions made are satisfied. The assumptions themselves may be totally unrealistic or may be very close to reality but they are stated in a precise manner. In any case, this type of reasoning is called **deductive reasoning**. In this method, the generalization or law is stated and the individual activities are expected to conform to it. A typical example of deductive reasoning is a the famous law of demand which states that, other things being equal, the quantity of a product demanded varies inversely with its price. When price falls, demand rises and when price rises, demand falls. This you will study in detail in subsequent Units.

As against this deductive reasoning, some thinkers try to discover economic laws the other way round. Instead of laying down causes or conditions on a hypothetical basis, they collect the actual information regarding the behaviour of economic units under different conditions. In other words, empirical information is collected and generalizations regarding the behaviour of economic units under different conditions are worked out. This is called the method of **inductive reasoning.** A well-known example of the use of this method is the Engel's Law. Through a study of family budgets, Engel concluded that as the income of a family increases, the proportion of its expenditure on necessities decreases while that on comforts and luxuries goes up. Most business firms prefer this line of approach.

Both deductive and inductive methods have their merits and demerits. Deductive method helps us in laying down many basic principles of behaviour of man. It provides a theoretical foundation to our reasoning. On the other hand, it may be far removed from reality and totally inapplicable.

Inductive reasoning makes use of actual behaviour pattern of the economic units and is, therefore, expected to depict reality more faithfully. It is for this reason that most business firms undertake empirical investigation to

determine the expected response of consumers to bring change in quality and price of their products or to the way the products are advertised. Knowledge of the response of different sections of the economy such as consumers, investors, farmers, manufacturers, etc. helps the authorities in formulating effective policy measures for achieving their goals. However, inductive reasoning also has its own limitations.

As stated earlier, our economic activities are motivated by both economic and non-economic causes. The economic laws state the effects flowing from changes in economic causes only. However, non-economic causes also keep changing and, therefore, economic laws based upon inductive reasoning need not remain valid in future as well

In economics, both inductive and deductive methods of reasoning are used to supplement our understanding of an economy and its working. None of them is a perfect and ideal method for all occasions. But used together, they enable us to improve both the analytical techniques. They help us in the advancement of economic science and make it more useful. In the final analysis, they tend to converge together. While inductive approach helps us in selecting more relevant assumptions of deductive reasoning, the latter helps us in interpreting complex reality in a more meaningful manner.

Economic laws suffer from many limitations and so they cannot be used for predictions with certainty. You should remember that these limitations are associated not with the way in which the relationship between causes and their affects works out but with the way the causes themselves are selected. A little elaboration of this statement would help you in understanding the limitations of economic laws much better.

Firstly, you should note that in economics, it is not possible to have controlled experiments as can be done in the case of physical sciences. Economics deals with human beings and their activities which cannot be reduced to responses limited to selected conditions in isolation.

Secondly, our economic activities are affected by a large number of causes. And it is not possible to take into account all of them. Quite often, it is not possible to even identify all the causes. In actual practice, therefore, an economist has to use his judgment in selecting what he considers the most important cause and try to find out response of economic units to it.

Thirdly, it often happens that before the final outcome is available, the causes themselves undergo a change. Some causes cease to exist, and new ones appear. Examples of changing causes can be the imposition of or withdrawal of a tax on a commodity, a strike by labour producing that item, the discovery of a substitute item, and so on.

2.4.2 Ceteris Paribus

It is for these reasons that every economic law has to be stated with some conditions or qualifications. It is accompanied by the words, **ceteris paribus** which means 'other things, being equal'. Even when these words are not stated explicitly, they are supposed to be there. The statement of this

condition means that once the said causes start working, they are not disturbed by any outside force till the final outcome. You should note that even in other sciences also, this condition is always there in an explicit form. In other sciences, the ceteris paribus frequently holds or can be made operative under laboratory conditions. But in economics, this condition is not satisfied. You cannot conduct economic experiments under controlled conditions. Since economic laws are the statements of economic activities in response to various forces, the economists use certain guiding principles under which the response is supposed to come into existence. One such guiding principle is that every economic unit decides about its response to various causes on the criterion of rationality. It means that the response is determined in such a way that it is expected to serve the interest of the responding units in the best possible manner. For example, for a given amount of expenditure, a consumer is supposed to aim at getting maximum possible utility from his purchases. A monopolist is expected to choose that quantity of output and fix that price for his product which brings him maximum profit.

While formulating economic laws, the next guiding principle is as follows. It is assumed that every economic unit, guided by the motive of rationality, tries to achieve optimality, that is the best attainable position. Optimization means that a criterion or objective is located and an effort is made to achieve it or to come as close to it as possible. Two examples of such criteria are maximising the profit, and minimising the cost of production. In actual practice, a criterion may not be achieved on account of some handicaps.

2.4.3 Equilibrium

The concept of equilibrium is an important tool of analysis in economics. It is very frequently used and you should become familiar with it. Usually, an economic variable (such as the price of a commodity) is subject to various forces trying to pull it in different directions. When these forces are in balance, the value of variable stops changing and it is said to be in equilibrium.

Check Your Progress B

1.	Distinguish between deductive reasoning and inductive reasoning.		
2.	Define the concept of optimization.		

- 3. State whether the following statements are **True** or **False.**
 - i) Economic laws can be used to make exact predictions.
 - ii) An economic law is a statement of economic activities in response to various forces and the results thereof.
 - iii) Inductive reasoning is based upon a study of observed facts.
 - iv) Deductive reasoning is based upon specified causes.
 - v) In deductive reasoning, all the assumptions are unrealistic.
 - vi) It is always possible to distinguish economic laws from the rest of social laws.
 - vii) Economic laws are not as exact of those of physical sciences.
 - viii) Every economic law is accompanied by the qualification ceteris paribus.
 - ix) An economic variable is in equilibrium when the forces determining it are in balance with each other.

2.5 POSITIVE VERSUS NORMATIVE ECONOMICS

You know that economics is a social science and it studies the behaviour of human beings in relation to the satisfaction of their material needs. In this context, there has been a difference of opinion as to whether study of economics should be confined to only facts and theoretical reasoning or it should be used for improving the working of the economy and material well-being of the members of the society.

The term **positive economics is concerned with only formulating economic laws and describing reality.** The economic laws may be derived from theoretical assumptions or from recorded facts. Either way, they only tell us what exists. They do not pass any judgement as to whether the findings of economic analysis are desirable or need a modification.

As against this, normative economics realizes the fact that an economy is never perfect. The outcome of its working can always be improved upon. It is quite normal to find an economy faced with many problems requiring immediate attention. Such problems can be related to price changes, employment, scarcity of certain inputs, inequalities of income and wealth, and so on. In normative economics, the knowledge gained is put to use for improving the working of the economy. Targets of improvement are laid down and policy measures are formulated by which the targets are to be achieved. Thus, normative economics is concerned with what ought to be. It is applied economics. Study of economics becomes fruit-bearing, that is, it is used as an art for achieving certain goals. By its very nature, normative economics involves the use of value judgment, that is, deciding what is good and desirable as against what is bad and to be avoided. A particular problem faced by normative economists is that it is often not possible to have a set of commonly agreed goals. Consequently, in line with his preferences, each

economist may prescribe a different set of remedial measures. You should remember that in both positive and normative economics, we make use of propositions, theories and laws. Moreover, in positive economics we stop at their derivation while in normative economics we use them for achieving chosen goals.

The argument in favor of normative economics is that we are concerned with our material well-being and we must try to improve our lot and the working of the economy. Accordingly, we should not study economics for its own sake. Instead we should put economics to a practical use and therefore prefer normative economics to the positive one.

A positive statement

"An increase in price of petrol leads to a fall in its quantity demanded."

A normative statement

"Government should take steps to cut the consumption of Petrol"

More generally, normative statement uses the verb "should"

2.6 MICROECONOMICS AND MACROECONOMICS

The terms microeconomics and macroeconomics are used in connection with the level of aggregation, that is the extent to which economic units and variables are covered in economic analysis. At one end, the analysis may cover the behaviour and responses of a single economic unit and at the other extreme it may cover the entire economy. These two terms (micro and macro) are derived from Greek words 'mikros' and 'makros' which mean small and large respectively.

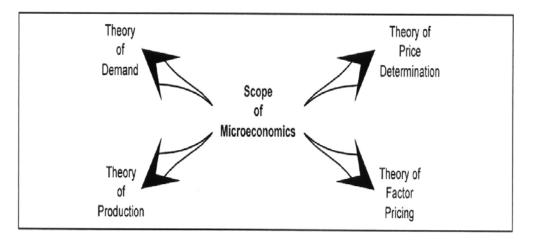
Microeconomics deals with the behaviour of individual elements in an economy such as the determination of the price of a single product or the behaviour of a single consumer **business** firm. You may take the example typical of a individual consumer of a certain good.

In microeconomics, you try to find out change in his demand for goods in response to the price of those goods, prices of other

For More Clarity!

Microeconomics (from Greek prefix micro meaning "small" + "economics") is a branch of economics that studies the behaviour of how the individual modern households and firms make decisions to allocate limited resources. Typically, it applies to markets where goods or services are being bought and sold. Microeconomics examines how these decisions and behaviours affect the supply and demand for goods and services, which determines prices, and how prices, in turn, determine the quantity supplied and quantity demanded of goods and services.

goods, his own income, his tastes and so on. Similarly, in microeconomics the determination of price of an individual good is studied. The determination of the price per unit of a factor of production also forms a part of microeconomics.



As against this, macroeconomics covers large aggregates or collection of economic units which may extend to the entire economy. In the words of Kenneth Boulding, "Macroeconomics covers the great aggregates and averages of the economic system rather than individual items". Here we study collections of variables and economic units (i.e., macro variables) such as national income, employment, level of prices in general, intersectional flows of goods and services, total savings and investment, and the like. While the study of an individual firm or an industry lies within the scope of microeconomics, an entire sector falls within the scope of macroeconomics.

To use a metaphor, macroeconomics studies elephant as one object; microeconomics (like five blind men in a folk tale) studies individual parts of a whole body. Each study leads to different result or, to use another metaphor, one enjoys the macro view of a cricket test match while one enjoys a ball-by-ball description when sitting in before a TV.

Complementarily of Microeconomics and Macroeconomics: Both microeconomics and macroeconomics have a place of their own and none can be dispensed with. It is useful to study both.

Firstly, a modern economy is a highly complex system in which a very large number of forces are at work in an interdependent manner. It is not possible to take into account all of them simultaneously. For studying it in bits and parts and then 'move on to the study of the economy as a whole, the necessity of studying individual units and their small groups establishes the usefulness of microeconomics.

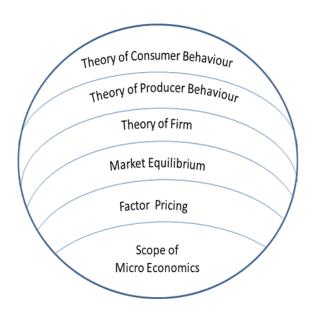


Figure 2.2: Scope of Microeconomics

Secondly, the necessity to study the working of the economy as a whole establishes the usefulness of macroeconomics. Health and prosperity of the constituent elements of the economy (i.e., the individual economic units and their groups) can be ensured only if the performance of the economy as a whole is excellent.

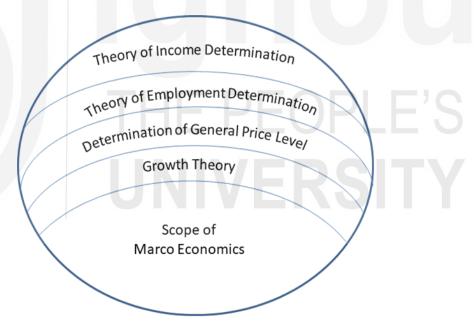


Figure 2.3: Scope of Macroeconomics

However, you should remember that it is not always possible to extend the conclusions of microeconomics to macroeconomics without modifying them. This is because in many cases the outcome of the activities of individual economic units cannot be added up. Instead, they come in conflict with each other and modify the final result. For example, if an individual increases his savings by reducing his expenditure, he adds to his accumulated wealth. But if everyone does so, there would be a fall in demand and prices. Consequently, output may also fall. Similarly, an individual can buy more of a commodity at a given market price. If a large number of such individuals try to buy more, the price would go up. Take the example of bank deposits.

An individual deposit holder can close his account with the bank and withdraw the entire deposit. If all the depositors try to do so, the bank will not be able to pay them all and may even fail.

To sum up, it may be stated that microeconomic behaviour cannot be added up in a linear fashion to derive macroeconomic behaviour. There may be conflict among the units as stated above. However, the study of microeconomic unit does help in many situations to understand a macroeconomic phenomenon. For instance, there is wide spread sickness in Indian small scale industry. To comprehend this phenomenon, it is important to study the causes of sickness of individual units, formulate a set of causes, identify major causes and then suggest remedial action.

2.7 STOCKS AND FLOWS

Economic variables are of two kinds: 1) Stocks, and 2) Flows. A stock variable is the one which can be measured only with reference to a point of time and not over a period of time. As against this, a flow variable is the one which can be measured only with reference to a period of time and not a point of time. You have already come across numerous economic variables which belong to one category or the other. Take the examples of the supply of money and magnitude of wealth. They have reference to point of time. They are, therefore, 'stock' concepts. Correspondingly, examples of flow variables are production, saving, expenditure, income, sales, purchases, etc. All these variables can be measured only over a period of time. A factory can produce so much during, say, a month and not at a given moment of time. A person does not have an income at a point of time. But he has it only for a period of time. A flow concept can assume some value only with the passage of time, not otherwise. You are already familiar with the concepts of demand and supply. These two are also flow variables. Demand for goods is always its quantity which the buyers would like to buy at a stated price during a given period of time. Similar is the case with supply. You would note that stock and flow variables are often used together in economic analysis.

2.8 STATICS AND DYNAMICS

These two terms differentiate different techniques of economic analysis. In static analysis (also called static economics), the basic elements of the economic system are taken to be given and non-changing. They are known as parameters of the economy and include population, tastes, techniques of production, the organisation of the markets, and so on. With given parameters, an equilibrium position is selected and one or more specified variables are allowed to change subject to the usual condition of ceteris paribus. They are allowed to work out their effect to a new equilibrium position. The technique of estimating new equilibrium position subject to the two conditions mentioned viz., a) no change in parameters, and b) ceteris paribus, is called static analysis or static economics. Since in this technique two equilibrium positions are compared, it is also known as comparative static. In a refined form of this technique, the condition of a fixed parameter

is removed, but parameters are allowed to change only at predetermined rates so that it is still possible to work out the position of new equilibrium whenever any change is initiated in the original equilibrium position.

In contrast, in dynamic economics or dynamic analysis both the parameters of the economy and other things are allowed to change in a non-predictable manner. As a result, it is no longer possible to work out the new equilibrium position on the basis of initial equilibrium conditions. In dynamic analysis, therefore, the changes in the economy take place at rates which themselves keep changing in a non-predictable manner. The only way by which the new position of a variable in the economy, as compared with its initial position, can be found out is by tracing the path of change, that is by following each state of change and accommodating any variation in all the determining causes.

You should note that in reality, almost every economic system happens to be a dynamic one--it keeps changing in a non-predictable manner. It is more so in the case of modern economics where there is a continuous effort to accelerate the process of its growth and where it is exposed to effects from the rest of the world. Still, the technique of static analysis has its advantages. It teaches an analyst how each variable should be taken into account.

2.9 OPPORTUNITY COST

The term opportunity cost refers to the cost of getting something in the form of losing something else in exchange. Every gain to the economy as a whole or to an individual economic unit has an opportunity cost. This fact has its origin in the shortage or scarcity of resources in comparison with their needs. The concepts of opportunity cost can be illustrated in many ways. For a consumer, the opportunity cost of buying an item shows itself in the form of the price which he pays for it in money terms. But in the final analysis, it is the goods and services which he cannot get because he chose to buy that item. In the same way, when somebody saves a portion of his income, then the opportunity cost of that saving is the sacrifice of current consumption. In contrast, the opportunity cost of current consumption is the loss of similar consumption in future which would have been possible through saving now and spending later. For a lender, the opportunity cost of yield from investing in one form of financial assets is the loss of yield from the next best alternative investment. For a factor of production, the opportunity cost of earnings from the existing employment is the loss of earnings from the next best available employment. This is also known as the transfer earnings of that factor of production. For a producer, the opportunity cost of producing an item A is the corresponding loss of what could have been produced otherwise.

Opportunity cost is opportunity lost!

Thus, the concept of opportunity cost is a comprehensive and wide one. It is applicable to the length and breadth of our economic activities because with limited resources we cannot produce and get everything. Opportunity costs, measured in different contexts, manifest themselves in different ways such as money cost, the loss of alternatives output the loss of alternative income yield the loss of alternative utility and so on. Moreover, while in some cases it may be possible to express opportunity cost in terms of money, in others it may not be so.

The concept of opportunity cost is equally applicable in the case of the economy as a whole. An economy cannot produce everything it wants and must choose to produce selected goods and services at the cost of others. You are already familiar with the concept of production possibility curve (Unit 1) in which you noted the fact that an additional production of LED means a corresponding reduction in the production of Computer monitor. However, remember that the opportunity cost of an item is not always a fixed one. Normally, it keeps increasing when the quantity of an item increases. Of course, other influencing causes also are at work and bring about a change in the opportunity cost of any item under consideration.

Check Your Progress C

- 1. State whether the following statements are **True** or **False**.
 - i) Positive economics is concerned with what ought to be.
 - ii) Normative economics requires a system of value judgment for recommending policy steps.
 - iii) Every economist prescribes the same remedies for a particular economic problem.
 - iv) Positive economics always depict reality.
 - v) We can always extend the conclusions of microeconomics to the field of macroeconomics.
 - vi) Demand and supply are both stock variables.
 - vii) In comparative statics, a comparison of two equilibrium positions is made.
 - viii) The statement, that every gain to the economy as a whole or to an individual economic unit has an opportunity cost, is often not true.
 - ix) Opportunity cost to the economy of producing an item is always a fixed one.

2. Match the item in Column A with those in Column B

	Column A	Column B
i)	Study of individual firm and industry	a) Barter
ii)	A variable which can be measured at a point of time	b) Macroeconomics

iii)	Study of an entire sector of an economy	c) Marginal utility
iv)	A variable which can be measured over a period of time	d) Ceteris paribus
v)	Want satisfying capacity of a good	e) Flow variable
vi)	Satisfaction yielded from consuming one additional unit	f) Microeconomics
vii)	Other things being equal	g) Utility
viii)	Exchange of apples with eggs	h) Stock variable

2.10 LET US SUM UP

In economics, there are a number of terms and concepts like utility, value, exchange, wealth, goods, supply, demand, consumption, margin, etc., which form a part of popular economic vocabulary.

The economy can be viewed as a system of circular flow of goods and services. These circular flows take place between different sectors of the economy such as households, business units, government, etc. Each economic units gets its inputs from others and pays for them in terms of its output(s). This fact has a very important implication for the economic system. Economic laws are formulated to depict the activities of economic units in response to various causes and forces. They are statements of tendencies. Since they deal with the behaviour of human beings as members of the society, they are a part of social laws.

Economic laws are formulated on the basis of deductive or inductive reasoning. In the deductive approach, assumptions or causes are selected and conclusions are derived by reasoning. The causes or assumptions may or may not depict reality. On the other hand, in inductive reasoning, facts are gathered and an effort is made to discover the actual behaviour pattern of economic units in response to various forces and stimuli. Both approaches should be used to refine and strengthen economic laws and understand the working of an economy.

Since it is not possible to have controlled experiments and the human behaviour is subject to an unpredictable change, economic laws cannot be used for reliable predictions. Moreover, the reality is so complex that it is not possible to take all the operative causes into account while formulating economic laws. Furthermore, in most cases, before the final outcome is realised, some outside forces disturb the process. It is for this reason that the statement of every economic law carries the qualification **ceteris paribus** or **other things being equal.**

The term positive economics denotes that part of economic analysis which just describes reality (or theoretical reasoning) without stating the desirability

or otherwise of the findings. Normative economics, on the other hand, is concerned with what ought to be. It views reality in the light of chosen goals of society and suggests ways and means of achieving them.

The term "microeconomics' and 'macroeconomics' are used in connection with the level of aggregation, that is, the extent to which economic units and variables are covered in economic analysis. **Microeconomics** studies the economic activities and responses of individual economic units and their small groups. **Macroeconomics** covers large collections of economic units, their aggregates and averages and macro variables like national income, employment, and so on. Both microeconomics and macroeconomics have a place of their own and both should be studied.

Economic variables can be classified into stocks and flows. **A stock variable** is the one which can be measured only with reference to a point of time. A **flow variable**, on the other hand, is measurable only over a period of time. Frequently, a simultaneous use of both types of these variables is needed.

Static economic or comparative statics is a technique of analysis in which the parameters of the economy are taken to be given. The assumption of ceteris paribus is made and the initial and final equilibrium positions are compared. In dynamic economics or dynamic analysis, parameters of the economy are allowed to change and the condition of ceteris paribus is dropped. In this analysis, the position of a variable, compared with its initial position, can be found out only by tracing the path of change.

The opportunity cost of an item is the loss of something else in the process of gaining it. The concept is applicable to every aspect of an economic system. Opportunity costs manifest themselves in the form of money cost, the loss of alternative output, the loss of alternative income-yield etc. The concept is applicable at both micro and macro levels.

2.11 KEY WORDS

Average Utility: Total utility divided by the number of units of the goods.

Barter: Exchange of goods/services against other goods/services.

Ceteris Paribus (Other Things Being Equal): Is a condition attached to the statement of every economic law and means that no outside force would disturb the process before final outcome is reached.

Comforts: Goods which are used for increasing our productive capacity and for making our lives more comfortable.

Consumption: Using up of Utility of goods in the satisfaction of a want.

Deductive Reasoning: The technique of analysis in which the causes or assumptions are selected and results derived.

Demand: The amount of goods which the buyers are ready to buy, per period of time, at a given price per unit.

Dynamic Economics (Economics Dynamics): A technique of analysis in which both the parameters of the economy and other things are allowed to change in a non-predictable manner. The position of the variable under consideration can be estimated only by tracing the path.

Economic Laws: Statements of tendencies which depict the standardized or generalized response of economic units to different forces and stimuli.

Exchange Value: The price which an item commands in the market Flow

Variable: A variable which can be measured only with reference to a period of time.

Goods: Items which have a utility or can be used for the production of other goods or services.

Inductive Reasoning: The technique of analysis in which factual information is used to discover the behaviour pattern of different economic units in response to various forces and stimuli

Intermediate Goods: Inputs used for production.

Luxuries: Goods which are meant for status or social standing.

Macroeconomics: Branch of economic analysis that focuses on the workings of the whole economy or large sectors of it.

Margin: The value of the variable under consideration related to the last unit of an item.

Marginal Utility: The additional or extra satisfaction yielded from consuming one additional unit of a commodity.

Methodology: Represents the tools of analysis, the collection of and use of basic information, and the way reasoning is carried out.

Microeconomics: Branch of economic analysis that focuses on individual economic units or their small groups and micro-variables like individual prices of individual commodities, etc.

Money Exchange: Sale of goods/services against money.

Necessities: Goods which are used for satisfying basic wants of existence.

Normal: Denotes the most common or frequently occurring or the long-term tendency of a variable.

Normative Economics: That part of economic analysis which is concerned with what ought to be, and the way it can be achieved by changing the existing situation.

Opportunity Cost: The value of the next best use (or opportunity) for an economic item, the value of the sacrificed alternative.

Positive Economics: That part of economic reasoning which covers what is, without going into its desirability or otherwise, and without suggesting ways for changing the existing state of affairs.

Static Economics (Comparative Statics): A technique of analysis in which the initial and final equilibrium positions are compared on the assumption that basic elements of the economic system (called the parameters of the economy) do not change.

Stock Variable: A variable which can be measured only with reference to a point of time.

Supply: The quantity of goods which the sellers are ready to sell, per unit of time, at a given price per unit.

Total Utility: The total satisfaction derived from all the units of an item.

Use Value: Utility of goods.

Utility: The want satisfying capacity of goods. It the service or satisfaction an item yields to the consumer.

2.12 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress A

1. i) False ii) True iii) False iv) False v) False vi) True vii) False viii) True ix) False x) True xi) False

Check Your Progress B

2. i) False ii) True iii) True iv) True v) False vi) False vii) True viii) True ix) True

Check Your Progress C

- 1. i) False ii) True iii) False iv) False v) False vi) False vii) True viii) False ix) False
- 2. i) f ii) h iii) b iv) e v) g vi) c vii) d viii) a

2.13 TERMINAL QUESTIONS

- 1. Distinguish between positive and normative economics. Which one should be preferred and why?
- 2. Write short notes on the following:
 - a) Concept of Equilibrium
 - b) Limitations of Economic Laws
 - c) Ceteris Paribus
 - d) Tracing the Path of Change
- 3. Distinguish between:
 - a) Microeconomics and Macroeconomics

- b) Static Economics and Dynamic Economics
- 4. State the reasons on account of which almost every modern economy is a dynamic one.
- 5. In what forms opportunity costs manifest themselves for the consumer, the producer, the investor, and a factor of production?

Note: These questions will help you in understanding the unit better. Try to write answers for them. But do not send your answers to the University. They are for your practice only.

