B.A. ECONOMICS – I YEAR

DJN1A : MICRO ECONOMICS

SYLLABUS

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Reference Books:

1. D. Bose & Marimuthu, Micro Economics, Himalaya Publishing House, Mumbai, 2011

2. Dewett. K.K, Modern Economic theory, Shyam Lal Charitable Trust, Ram Nagar, New Delhi, 12th Revised Edition, 1981.

3. M.L. Seth, Micro Economics, Progress publications, 1987.

4. Maria john Kennedy, N. Advanced Micro Economic Theory, Himalaya Publishing House, Mumbai, 1st Edition, 1997.

5. Sundaram, K.P.M., Vaish, M.C., Micro Economic Theory, S.Chand & Company Ld., 12th Edition, 1997.

6. Rmita Singh, Emerging trends in Micro Economics, ALP Books, New Delhi, 2011.

7. Jhingan, M.L, Modern Micro Economics, Vrindha publications, 2006.

8. Sankaran. S. Micro Economics, Margham Publications, Publishers and Book seller, Madras, 7th Edition, 1990.

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CONTENTS

UNIT I : INTRODUCTION TO ECONOMICS:

Definitions - Wealth, Welfare, Scarcity - Economic is a social science - Nature and scope of Economics - Normative and positive - Economic static and dynamic Concepts - Distinction between Micro and Macro Economics.

1.1 DEFINITION OF ECONOMICS

It is very difficult to define economics because economics is very dynamic subject. Its scope keeps on changing rather expanding. Still for proper understanding of any subject, it becomes necessary to define it as close as possible. We begin by a general description of economics provided by Wikipedia. It describes economics as below.

"Economics is the social science that is concerned with the production, distribution and consumption of goods and services. The term economics comes from the Ancient Greek— oikonomia, "management of household, administration" from oikos, "house" + nomos, "custom" or "law", hence "rules of the house (hold)". Current economic models developed out of the broader field of political economy in the late 19th century, owing to a desire to use of an empirical approach more akin to the physical science."

"Economics aims to explain how economies work and how economic agents interact. Economic analysis is applied throughout society, in business, finance and government, but also in crime, education, the family, health, law, politics, religion, social institutions, war, and science. The expanding domain of economics in the social science has been described as economic imperialism."

The above description of economics shows the nature of economics in modern context. It tells that economics can be used for raising the living standard of people and their welfare. However, it also wants that economic issues or economic objectives might become a tool in the hands of people, who want to exploit it for ulterior motive like separation from others. However, now we can discuss some formal definitions given by the economists over a period of time.

Some of the important definitions of economics are those of leading economists like Adam Smith, Alfred Marshall, Lionel Robbins and Samuelson.

1.1.1 Adam Smith's Definition (Wealth Definition)

Adam Smith (1723-90) defined economics as follows:

"Economics is the science of wealth".

Adam Smith is known as the Father of Political Economy because he was the first person who put all the economic ideas in a systematic way. It is only after Adam Smith, we study economics as a systematic science.

The term "wealth" has a special meaning in Economics. In the ordinary language, by "wealth", we mean money, but in economics, wealth refers to those goods which satisfy human wants. But we should remember all goods which satisfy human wants are not wealth. For example, air and sunlight are essential for us. We cannot live without them. But they are not regarded as wealth because they are available in abundance and unlimited in supply. We consider only those goods which are relatively scarce and have money value as wealth.

J.S. Mill defined economics as "the practical science of the production and distribution of wealth".

Adam smith was of the view that economics was concerned with the problems arising from wealth-getting and wealth-using activities of people. He was interested mainly in studying the ways by which the wealth of all nations could be increased.

Criticism

There is a lot of criticism against Adam Smith's definition of economics. It has got a bad name for economics. Some social scientists like Ruskin and Carlyle called it "a dismal science", "a dark science". But this criticism is unfair, because it is based on a misunderstanding about the nature and scope of economics. As this definition emphasized "wealth", they thought it is all about money. They concluded that economics taught men and women how to make money. So they called it a selfish science as in their opinion it emphasized on "the means to get rich".

The above charge against economics is a false one. In economics, wealth does not refer to money. It refers to the scarce goods which satisfy our wants. Moreover, early economists used the term "wealth" in the sense of welfare. A great demerit of Adam Smith's definition is that there is overemphasis on wealth. There is no doubt that we have to study about wealth in economics. But it can be only a part of the study. There is the other side. In fact, it is a more important side and that is the study of man.

Economics is a social science. Hence the proper study of mankind should be man and not wealth alone. When we discuss Adam Smith's definition of economics, we have to keep in mind the time in which he lived. He was writing his book at a time when England was on the eve of Industrial Revolution. The large investments of capital and use of large scale machinery enabled England to produce wealth on a large scale. So it is only natural that Adam Smith emphasized on wealth and considered economics as "an enquiry into the nature and causes of the wealth of nations".

1.1.2 Alfred Marshall's Definition (Welfare Definition)

Alfred Marshall (1842-1924) wrote a book *Principles of Economics* in 1890. In it, he defined economics as **"A study of mankind in the ordinary business of life".**
An altered form of this definition is:

"Economics is a study of man's actions in the ordinary business of life".

Marshall agrees that economics studies about wealth. But he does not accept the view that economics studies about wealth alone. In the words of Marshall,

"Economics is on the one side a study of wealth, and on the other and more important side, a part of the study of man. Man is the centre of his study.

According to him, the study of man is more important than the study of wealth. In economics, we do not study about all aspects of humankind. As Cairn cross puts it, economics studies about man as "buyer and seller, producer and consumer, saver and investor, employer and worker". It studies about how people get their income, how they use it
and how they make best use of their resources.

Economics studies how people try "to increase the material means of well-being". According to this definition, we may say that economics is the study of the causes of material welfare. Marshall's definition is known as material welfare definition of economics because of its emphasis on welfare.

Criticism

There is no doubt that Marshall's definition is a great improvement over the definition of Adam Smith. For its emphasis is on social problems. And economics is a social science.

Moreover, it tells us about the link between wealth and welfare. But the main idea of Marshall that economics is a science that deals with material welfare has been strongly criticized. Lionel Robbins is a great critic of this definition. He says that Marshall's definition misrepresents the science of economics.

First, if we go by the definition of Marshall, in economics we should consider only those activities which promote material welfare. But many activities do not promote welfare but are rightly considered as economic activity. For example, we know that alcoholic drinks and cigarettes are bad for our health. But these commodities are produced and sold. There is a market for them. And there are buyers and sellers. So the production and distribution of these goods is economic activity. Let us take another example. War does not promote material welfare. But we have "economics of war". And it is an important branch of economics. There are many economic problems with regard to war. Sometimes, the economic causes of war are more important than the political and social causes. So it is not right to say that economics studies material welfare.

Second, some activities promote welfare but not material welfare. For example, the activities of doctors, lawyers, actors, musicians promote our welfare. But their labour does not result in the production of material goods. If we follow the material welfare definition of economics, we cannot consider the activities of the above categories of labour as economic activity as they do not promote material welfare. But we make use of their services. We pay a price, sometimes very high price, for their services. Their services have economic value. It is misleading to describe economics as the study of the causes of material welfare. In the words of Lionel Robbins, "whatever economics is concerned with, it is not concerned with the causes of material welfare as such".

Third, Marshall's definition is classificatory. It is not analytical. It considers the production of material goods (e.g. chairs, tables, cycles and cars, bread) alone as economic activity. As the services of a teacher or a judge do not produce material goods, they are not considered as economic activity. This is a wrong view. As Lionel Robbins says, "we do not say the production of potatoes is economic activity and the production of philosophy is not".

Lastly, by introducing ethical concepts like welfare, economics will become an inexact science. For it is rather difficult to measure welfare. And some economic policies which promote the welfare of some people may affect the welfare of others.

In spite of the above criticism against Marshall's definition, we should not forget that Marshall has widened the scope of economics by establishing a link between wealth and man and his welfare. Modern definitions of economics are based on a theory of scarcity and choice.

1.1.3 Lionel Robbins' definition (Scarcity Definition)

Lionel Robbins has defined economics as follows :

"Economics is the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses".

Robbins has given the above definition in his book "An Essay on the Nature and significance of Economic Science". The definition of Robbins is based on the following basic assumptions.

1. Ends are various. The term "ends" mean wants. Human wants are unlimited.
2. Means are limited. Means like time, money and resources are limited.
3. We can put time and money to alternative uses. For example, though time is limited, we can use it for different purposes. We can use time for earning money or we may enjoy it as leisure, and
4. All wants are not of equal importance.

We have to note certain things here. The fact that we have many wants is not of interest to an economist by itself. For example if you want to do two things and you have enough time and means with which to do them, and you do not want the time or means for anything else, then you need not economize anything. Though your means are limited, if they do not have alternative uses, you cannot economize anything. Further, if all wants are of equal importance, you cannot economize anything. We know time is limited. There are only 24 hours in a day. If a worker wants only money he has to work for long hours and forgo leisure. If he wants leisure, he has to forgo his income. He cannot have both at the same time.

We may, however, note that all means which satisfy human wants are not limited. For example, air and sunshine are available in abundance.

They are free goods. But many things we want are scarce in relation to our wants. So, economics studies human behaviour as a relationship between unlimited wants and scarce

means. As means are limited, we have to pay a price for them. We study in economics how the prices of scarce goods are determined. We have to choose among different wants.

That is why we say that scarcity and choice are central problems in economics. Economics is the science of choice. Choice between alternatives is the basic principle underlying all economic activity. This is applicable to all economic systems – capitalism, socialism and mixed economy

The capitalist economy is also known as market economy. There, the consumer will have a wider choice than in a socialist economy which is also known as command economy. A socialist economy is a planned economy. As all basic decisions are taken by the government, the consumer will have limited choice. And we have mixed economy. India is a good example of mixed economy where public sector and private sector play important roles in different economic fields. In some fields, the consumer has more choice and in other areas where the State has greater control, he has limited choice. But under all these systems, there is some kind of planning; it is a question of degree. And all economic life involves planning. "To plan is to act with a purpose, to choose, and choice is the essence of economic activity". **Lionel Robbins'** definition is also known as scarcity definition of economics.

Criticism

The definition of Marshall classified human behaviour into economic activity and non-economic activity. It considered only those activities which promoted material welfare as economic activity. But Robbins' definition covers the whole field. If there is scarcity of a thing in relation to the demand for it, it becomes the subject – matter of economics. That way, even the labour of those who provide services (eg. lawyers, doctors, actors) are taken for study in economics.

Another merit of Robbins' definition is it makes economics a scientific study. Ethical aspects of economic problems are not taken into account in discussions. In other words, the moral aspects are not considered. And it does not try to establish a link between economics and welfare. But some economists criticize this view. They say that as economics is a social science, its aim should be promotion of human welfare. That is why some economists say Robbins' definition has no human touch about it. It looks at economics only as the science of pricing process. But economics is more than a theory of value or resource allocation.

According to Robbins, an economic problem will arise only when there is scarcity, but it may arise during times of abundance as well. For example, the great depression of 1930s was caused not so much by scarcity but by plenty. That is why the world depression was described as poverty in the midst of plenty.

In spite of the above criticisms, we have to note that most of the economists have accepted the definition of Robbins because it emphasizes scarcity and choice which are two important facts of life under all economic, political and legal systems. It is true that there have been improvements in the methods of production because of technological advancements. But scarcities are always with us. That is why we say economics is the science of scarcity.

1.1.4 Samuelson's Definition (Modern Definition of Economics)

Samuelson's definition is known as a **modern definition of economics**.
According to Samuelson,

"Economics is a social science concerned chiefly with the way society chooses to employ its resources, which have alternative uses, to produce goods and services for present and future consumption".

The above definition is general in nature. There are many common points in the definitions of Robbins and Samuelson. Samuelson's definition tells us that economics is a social science and it is mainly concerned with the way how society employs its limited resources for alternative uses. All this we find in the definition of Robbins. But Samuelson goes a step further and discusses how a society uses limited resources for producing goods and services for present and future consumption of various people or groups. An interesting point that Samuelson tells is that the society may or may not make use of money.

Net Economic Welfare (NEW)

Samuelson has coined the concept of Net Economic Welfare.

According to Samuelson,
"Net Economic Welfare (NEW) is an adjusted measure of total national output that includes only consumption and investment items that contribute directly to economic welfare".

As we become rich, generally, we prefer leisure to income. When we allocate more time for leisure, gross national product (GNP) may come down. But welfare goes up. So when we

estimate GNP, we must include satisfaction, derived from leisure by giving it a value in Net Economic welfare.

Women do a lot of work at home and it is not taken into account while calculating GNP. But we must include that while estimating GNP. Only then, we will get a correct picture of NEW. In any society, there will be some illegal activities. (eg. drug trade). We should not include it in NEW. They are "social bads" There are some underground activities. Those who earn huge incomes (eg. lawyers, accountants, actors) may not report actual income for tax purposes. This unaccounted money (black money) must somehow be included in GNP estimates. Otherwise, we will get a lower figure for GNP. During the process of economic growth, there will be environmental pollution. To get NEW, we should deduct the cost of pollution from the G.N.P.

The concept of Net Economic Welfare has become very important in the study of National Income.

1.2 Economics is a social science

Three different types of science can be distinguished;

- ✓ Natural science,
- ✓ Life science and
- ✓ Social science.

Natural science studies physical and chemical processes.

Life science studies chemical processes within living bodies and the behaviour of plants and animals.

Social science analyses human behaviour, while taking the results of the other groups of sciences as a description and explanation of the human environment.

Nature and scope of economics- Normative and positive Science

The scope of economics is very wide. It includes the subject matter of economics, whether economics is a science or an art and whether it is a positive or a normative science. A study of definitions of economics throws light on the nature of economics which we discuss. **L.M. Fraser** has classified the definitions of economics into Type A and Type B. Type A definitions are related to wealth and material welfare and Type B to the scarcity of means.

Economics is a social science which deals with human wants and their satisfaction. It is mainly concerned with the way in which a society chooses to employ its scarce resources which have alternative uses, for the production of goods for present and future consumption.

The existence of human wants is the starting point of all economic activity in the world. Unless we make efforts, we cannot satisfy wants. Hence, wants, efforts and satisfaction form the circle of economics. We may say economics is the science of wants. But in the real world, the means which satisfy our wants are limited, that is, there is scarcity of the means which satisfy our wants. Time and money are limited. And land, labour and capital which are used in production are limited. Though science has increased our resources, our wants have also increased. We may satisfy some wants now. But soon, new wants appear. But all our wants cannot be satisfied because means are limited.

We study economics because there is scarcity of many goods we want. This problem is common to the individual as well as the State. That is why we say Economics is the science of scarcity. And scarcity is the basic fact of life. Our wants are unlimited but means are limited. This leads to choice making. If there is unlimited supply of goods which satisfy our wants, the problem of choice will not arise. It is true that we have many wants. But all wants are not of equal importance. So we choose the more important and the more urgent wants. So choice is the essence of economic activity. We may also say that economics is the science of choice. Of course, all goods we want are not scarce. There are certain things like air and sunshine which are available in abundance. Though they are very essential for our life, we do not pay any price for them. They are free goods and they are not very important for our study. But many things we want are scarce and we have to pay a price for them. So, in economics, we study how prices of different things are determined. We may also say that economics is a science that deals with pricing process.

Modern economy is a monetary economy. Prices are paid in money. So money plays an important role in the economic life of a society. It is used for buying and selling of goods, for payment of rent, wages, interest and so on. In economics, we study about the role of money in the affairs of mankind.

We shall now sum up our discussion about the nature of economics. Economics is a social science which studies about human wants and their satisfaction. Human wants are unlimited. So scarcity is the fundamental fact of life. As all wants are not of equal importance,

this leads to choice. Economics is the science of choice. As there is scarcity of goods, we have to pay a price for them. So, economics studies about the pricing process. And, as prices are paid in money, we study about the part played by money in the economic life of a society. We study how people get and spend money, how they earn a living and how it affects their way of life and so on. All the scarce goods which satisfy our wants are known as wealth. So, in economics, we study about the production of wealth, exchange of wealth, distribution of wealth and consumption of wealth. As wealth is produced to promote human welfare, we study the relationship between wealth and welfare.

Before we discuss whether economics is a positive or normative science, let us understand their meanings which are best described by J.N. Keynes (father of Lord Keynes) in these words: "A positive science may be defined as a body of systematised knowledge concerning what is, a normative science as a body of systematised knowledge relating to criteria of what ought to be, and concerned with the ideal as distinguished from the actual." Thus positive economics is concerned with "what is" and normative economics with "ought to be."

The horizon of economics is gradually expanding. It is no more a branch of knowledge that deals only with the production and consumption. However, the basic thrust still remains on using the available resources efficiently while giving the maximum satisfaction or welfare to the people on a sustainable basis. Given this, we can list some of the major branches of economics as under:

Microeconomics:

This is considered to be the basic economics. Microeconomics may be defined as that branch of economic analysis which studies the economic behaviour of the individual unit, may be a person, a particular household, or a particular firm. It is a study of one particular unit rather than all the units combined together. The microeconomics is also described as price and value theory, the theory of the household, the firm and the industry. Most production and welfare theories are of the microeconomics variety.

Macroeconomics:

Macroeconomics may be defined as that branch of economic analysis which studies behaviour of not one particular unit, but of all the units combined together. Macroeconomics is a study in aggregates. Hence it is often called Aggregative Economics. It is, indeed, a realistic method of economic analysis, though it is complicated and involves the use of higher

mathematics. In this method, we study how the equilibrium in the economy is reached consequent upon changes in the macro-variables and aggregates. The publication of Keynes' General Theory, in 1936, gave a strong impetus to the growth and development of modern macroeconomics.

International economics:

As the countries of the modern world are realising the significance of trade with other countries, the role of international economics is getting more and more significant nowadays.

Public finance:

The great depression of the 1930s led to the realisation of the role of government in stabilising the economic growth besides other objectives like growth, redistribution of income, etc. Therefore, a full branch of economics known as Public Finance or the fiscal economics has emerged to analyse the role of government in the economy. Earlier the classical economists believed in the laissez faire economy ruling out role of the government in economic issues.

Development economics:

As after the Second World War many countries got freedom from the colonial rule, their economics required different treatment for growth and development. This branch developed as development economics.

Health economics:

A new realisation has emerged from human development for economic growth. Therefore, branches like health economics are gaining momentum. Similarly, educational economics is also coming up.

Environmental economics:

Unchecked emphasis on economic growth without caring for natural resources and ecological balance, now, economic growth is facing a new challenge from the environmental

side. Therefore, Environmental Economics has emerged as one of the major branches of economics that is considered significant for sustainable development.

Urban and rural economics:

Role of location is quite important for economic attainments. There is also much debate on urban-rural divide. Therefore, economists have realised that there should be specific focus on urban areas and rural areas. Therefore, there is expansion of branches like urban economics and

rural economics. Similarly, regional economics is also being emphasised to meet the challenge of geographical inequalities.

There are many other branches of economics that form the scope of economics. There are welfare economics, monetary economics, energy economics, transport economics, demography, labour economics, agricultural economics, gender economics, economic planning, economics of infrastructure, etc.

Economics as a Positive Science:

It was Robbins who in his An Essay on the Nature and Significance of Economic Science brought into sharp focus the controversy as to whether economics is a positive or normative science.

Robbins regards economics as a pure science of what is, which is not concerned with moral or ethical questions. Economics is neutral between ends. The economist has no right to pass judgment on the wisdom or folly of the ends itself. He is simply concerned with the problem of scarce resources in relation to the ends desired.

The manufacture and sale of cigarettes and wine may be injurious to health and therefore morally unjustifiable, but the economist has no right to pass judgment on this, since both satisfy human wants and involve economic activity.

Following the classical economists, Robbins regards the propositions involving the verb ought as different in kind from the proposition involving the verb is. He finds a 'logical gulf between the positive and normative fields of enquiry as they "are not on the same plane of discourse."

Since "Economics deals with ascertainable facts" and "ethics with valuations and obligations," he finds no reason for "not keeping them separate, or failing to recognise their essential difference." He, therefore, opines that "the function of economists consists in exploring and not advocating and condemning." Thus an economist should not select an end, but remain neutral, and simply point out the means by which the ends can be achieved.

Like Robbins, Friedman also considers economics as a positive science. According to him, "the ultimate goal of a positive science is the development of a 'theory' or 'hypothesis' that yields valid and meaningful (not truistic) predictions about phenomena not yet observed." In this context, economics provides systematic generalisations which can be used for making correct

predictions. Since the predictions of economics can be tested, economics is a positive science like physics which should be free from value judgements.

According to Friedman, the aim of an economist is like that of a true scientist who formulates new hypotheses. Hypotheses permit us to predict about future events or to explain only what happened in the past. But predictions of such hypotheses may or may not be limited by events. Thus economics claims to be a positive science like any other natural science.

Thus economics is a positive science. It seeks to explain what actually happens and not what ought to happen. This view was held even by the nineteenth century economists. Almost all leading economists from Nassau Senior and J.S. Mill onwards had declared that the science of economics should be concerned with what is and not with what ought to be.

Economics as a Normative Science:

Economics is a normative science of "what ought to be." As a normative science, economics is concerned with the evaluation of economic events from the ethical viewpoint. Marshall, Pigou, Hawtrey, Frazer and other economists do not agree that economics is only a positive science. They argue that economics is a social science which involves value judgements and value judgements cannot be verified to be true or false. It is not an objective science like natural sciences. This is due to the following reasons.

First, the assumptions on which economic laws, theories or principles are based relate to man and his problems. When we try to test and predict economic events on their basis, the subjectivity element always enters.

Second, economics being a social science, economic theories are influenced by social and political factors. In testing them, economists are likely to use subjective value judgements.

Third, in natural sciences experiments are conducted which lead to the formulation of laws. But in economics experimentation is not possible. Therefore, the laws of economics are at best tendencies.

Economic static and dynamic Concepts

Time element is very useful in studying the working of an economy.

There are two main lines of approach. They are

      1. Static analysis and

      2. Dynamic analysis.

In the case of static analysis, we examine a problem at any given moment of time. Even in static analysis, sometimes we consider a short period rather than a single point. We assume that some changes take place during the short period. The method of approach where we take note of changes in the short period is known as comparative statics. For example, in comparative statics, we compare the state of economy at one moment to the state of the economy at another moment. Marshall's analysis of supply and demand is a good example of comparative statics.

In dynamic analysis, we examine the path or process by which the economy moves from one state of equilibrium to another. Time element is an important factor is dynamic analysis. Change is the key word in dynamic analysis. For example, investment during a period may depend upon the rate of interest in the previous period. The study of the trade cycle may be given as a good example of dynamic analysis.

Distinction between Micro and Macro Economics

Definition of Micro Economics

Microeconomics is the branch of economics that concentrates on the behavior and performance of the individual units, i.e. consumers, family, industry, firms. Here, the demand plays a key role in determining the quantity and the price of a product along with the price and quantity of related goods (complementary goods) and substitute products, so as to make a judicious decision regarding the allocation of scarce resources, concerning their alternative uses.

Definition of Macro Economics

Macroeconomics is the branch of economics that concentrates on the behavior and performance of aggregate variables and those issues which affect the whole economy. It includes regional, national and international economies and covers the major areas of the economy like unemployment, poverty, general price level, GDP (Gross Domestic Product), imports and exports, economic growth, globalization, monetary/ fiscal policy, etc. It helps in resolving the various problems of the economy, thereby enabling it to function efficiently.

Distinction between Micro and Macro Economics

Microeconomics studies the particular market segment of the economy, whereas Macroeconomics studies the whole economy, that covers several market segments.

Microeconomics deals with an individual product, firm, household, industry, wages, prices, etc., while Macroeconomics deals with aggregates like national income, national output, price level, etc.

Microeconomics covers issues like how the price of a particular commodity will affect its quantity demanded and quantity supplied and vice versa while Macroeconomics covers major issues of an economy like unemployment, monetary/ fiscal policies, poverty, international trade, etc.

Microeconomics determines the price of a particular commodity along with the prices of complementary and the substitute goods, whereas the Macroeconomics is helpful in maintaining the general price level.

While analyzing any economy, microeconomics takes a bottom-up approach, whereas the macroeconomics takes a top-down approach into consideration.

Basic for comparison	Micro Economics	Macro Economics
Meaning	The branch of economics that studies the behavior of an individual consumer, firm, family is known as Microeconomics.	The branch of economics that studies the behavior of the whole economy, (both national and international) is known as Macroeconomics.
Scope	Covers various issues like demand, supply, product pricing, factor pricing, production, consumption, economic welfare, etc.	Covers various issues like, national income, general price level, distribution, employment, money etc.
Importance	Helpful in determining the prices of a product along with the prices of factors of production (land, labor, capital, entrepreneur etc.) within the economy.	Maintains stability in the general price level and resolves the major problems of the economy like inflation, deflation, reflation, unemployment and poverty as a whole.

Limitation	It is based on unrealistic assumptions, i.e. In microeconomics it is assumed that there is a full employment in the society which is not at all possible.	It has been analyzed that 'Fallacy of Composition' involves, which sometimes doesn't proves true because it is possible that what is true for aggregate may not be true for individuals too.

As microeconomics focuses on the allocation of limited resources among the individuals, the macro economics examines that how the distribution of limited resources is to be done among many people, so that it will make the best possible use of the scarce resources. As micro economics studies about the individual units, at the same time, macro economics studies about the aggregate variables. In this way, we can say that they are interdependent.

Micro and Macro Economics are not contradictory in nature, in fact, they are complementary. As every coin has two aspects- micro and macro economics are also the two aspects of the same coin, where one's demerit is others merit and in this way they cover the whole economy. The only important thing which makes them different is the area of application.

Main Divisions of Economics

There are four main divisions of economics.

They are:

1. Consumption
2. Production
3. Exchange and
4. Distribution.

In modern times, economists add one more division and that is public finance. In public finance, we study about the economics of government. The economic functions of the modern State have increased to a great extent. Public finance has become an important branch of economics. All the above divisions are interrelated. And they are dependent on each other.

OBJECTIVE TYPE QUSTIONS

Who is known as father of economics?

 (a) Keynes *(b)* Samuelson *(c)* Marshall *(d)* Adam Smith

Which of the following economist is credited for growth of macroeconomics?
(*a*) Adam Smith (*b*) Keynes (*c*) J.S. Mill (*d*) Karl Marx

In 'Science of material welfare' formed the basis of defining economics by:
(*a*) Adam Smith (*b*) Marshall (*c*) Robbins (*d*) Samuelson

'General Theory' authored by J.M. Keynes was published in:
(*a*) 1919 (*b*) 1930 (*c*) 1936 (*d*) 1956

Which of the following economist is identified with welfare economics:
(*a*) A.C. Pigou (*b*) Edwin Cannan (*c*) Robbins (*d*) Samuelson

The author of wealth definition is :
(a) Alfred Marshall b) Lionel Robbins c) Adam Smith d) Samuelson

The author of scarcity definition is
(a) Adam Smith (b) Samuelson (c) Alfred Marshall (d) Lionel Robbins

The concept of Net Economic Welfare has been given by
(a) Samuelson (b) Marshall (c) Adam Smith (d) Lionel Robbins

Economics is a
a) Positive science b) Normative science c) Both d) none

FILL IN THE BLANKS

The term "micro" means_____

Economics is a _____ science

An example of cosmopolitan wealth is _____

MATCH THE FOLLOWING

"Principles of Economics"	a) Stock
First Nobel prize	b) Flow
Dynamic approach	c) Marshall
Wealth	d) Time Element
Income	e) Tinbergen and Frisch

SHORT ANSWER

1) State Alfred Marshall's definition of economics
2) What are the main divisions of economics?
3) Describe the relationship between economics, mathematics and statistics.

LONG ANSWER

1) State and examine the criticism against Adam Smith's wealth definition.
2) Distinguish between micro economics and macro economics.
3) Is economics a positive science or a normative science?
4) Write a note on static and dynamic concepts.
5) Examine Marshall's definition of economics.
6) Examine Lionel Robbins definition of economics.
7) Discuss the relationship between economics and other social sciences.
8) Discuss the nature and importance of economics laws.
9) Discuss the nature and scope of economics.

- D.Bose & Marimuthu, Micro Economics, Himalaya Publishing House, Mumbai, 2011.
- Dewett. K.K. Modern Economic theory, Shyam Lal Chairtable Trust, Ram Nagar, New Delhi, 12th Revised Edition, 1981.

UNIT II : CONSUMPTION:

Human wants - characteristics and classification of human wants - Law of diminishing marginal utility - Law of Demand - Law of Supply - Consumer's surplus - Elasticity of demand - types-measurement - Factors determining elasticity of demand.

CONSUMPTION

Consumption deals with the satisfaction of human wants. There is economic activity in the world because there are wants. When a want is satisfied, the process is known as consumption. Generally, in plain language, when we use the term "consumption", what we mean is usage. But in economics, it has a special meaning. We can speak of the consumption of the services of a lawyer, just as we speak of the consumption of food. In the sub-division dealing with consumption, we study about the nature of wants, the classification of wants and some of the laws dealing with consumption such as the law of diminishing marginal utility, Engel's law of family expenditure and the law of demand.

2.1 Human Wants

"Man is a bundle of desires." In common language, there is not much difference between a 'desire' and a 'want.' But in economics, there is difference between a 'desire' and a 'want'. Every desire cannot be a want. If a poor person desires to have a car, his desire cannot be called a want. A desire can become a want only when a consumer has the means (i.e. money) to purchase the thing and he is also ready to spend the means (money). For a desire to become a want, the following four elements must be present.

1. The desire for a thing.

2. Efforts to satisfy the desire.

3. The means (i.e. money) to purchase the thing.

4. Readiness to spend the means (i.e. money) to satisfy the desire.

These four essential elements constitute a want. Suppose, Indhu desires to possess a car, for this, he should make efforts and earn money to purchase it. She should also be ready to spend

the money to purchase it. If all these four elements are present, only then Indhu's desire to have a car can become his want.

In the words of Penson,

"Want is that effective desire for a particular thing which expresses itself in the effort or sacrifice necessary to obtain it."

2.1.1 Characteristics and classification of human wants

Characteristics of wants

1. **Wants are unlimited:** Man is a bundle of desires. There is no limit to human wants. If one set of wants are fulfilled, immediately another set of wants would be felt. Even the richest man will have a list of wants to be fulfilled. Man is a bundle of wants and his wants are numerous. Man remains busy throughout his life in order to satisfy these wants. When one want is satisfied, another want crops up. In this way, wants arise one after another. The second want arises after the satisfaction of the first want, the third after the second and so on. This endless circle of wants continues throughout human life. Thus wants are unlimited. The importance of this characteristic lies in the fact that wants are unlimited and men are always busy in making efforts to satisfy their wants. This is the main reason of the continuous economic progress in the world.

2. **Every want is satiable:** Wants in general are unlimited. But a single or a particular want is satiable. We can completely satisfy a single want. A man is hungry and he requires food. By spending some money on food, he can get food and satisfy his hunger. We cannot satisfy all our wants because the means to satisfy them are limited. But a person can satisfy a particular want. For example, hunger can be satisfied by taking food. He may take one, two, three or more pieces of bread. Ultimately, he will say that he does not want more bread. The Law of Diminishing Marginal Utility depends on this particular characteristic of human wants.

3. **Wants are competitive:** Wants are unlimited. The resources and time at our disposal are much limited and we cannot satisfy all wants. So the wants will be competing to get satisfied. One set of wants may be competing with other set of wants to get preference of choosing first. For example, Raju has a sum of Rs.20. With this amount of Rs.20, he has

to choose between going to a movie, buying a magazine or buying vegetables. Of course, a consumer will choose the more urgent wants and distribute his income on several goods in such a manner as to get maximum satisfaction. We can satisfy only a few wants and not all wants because our means are limited. Therefore, we always have to make a relative comparison of the intensity of our different wants. Only that want is satisfied first which is the most urgent. For example, suppose, a student has Rs. 20 with him. With this amount he can purchase either a copy or see a picture. Now there will arise a competition between his want for a copy and for a picture. If his intensity for the copy is more intense, he will purchase the copy, instead of seeing the picture. In this way, there is always a competition among our various wants. The Law of Equi-Marginal Utility depends on this characteristic of human wants.

4. **Wants are complementary:** Some wants are complementary in nature, i.e. they have to be satisfied together. Though the want may be a single one, we require many commodities and services to satisfy that want. Want for 'writing' includes want for paper, pen and ink. In some cases, wants may be both 'competitive' and 'complementary'. For example, labour and machinery. Labour can be displaced by machinery. Machines cannot work without the help of labour. Wants are competitive but a few wants are complementary to each other. To satisfy one want for a good, we have to arrange for another good also. For example, the want for a car can be satisfied only when we fulfil the want for petrol also. Such wants are called complementary. This characteristic of human wants is the basis of the derived demand or joint demand for goods. Certain wants are competitive as well as complementary to each other. For instance, labourers are required to operate machines. Therefore, the demand for labour is a complementary want for machines. But, at the same time, machines can be used in place of labour for the production of goods. Here, machines reduce the want for labour and thus wants for machine and labour are also competitive to each other. The problem of choice of techniques (i.e. labour-intensive or capital-intensive) depends on this characteristic of wants.

5. **Wants are alternative:** A want can be satisfied by two or more goods or by two or more methods. A want for hot drink may be satisfied by coffee or tea. We may go by 'bus' or 'train' or by 'taxi' to reach our destination. Thus, a want can be satisfied by many ways.

These alternative goods or methods are called 'substitutes'. We can satisfy our hunger either with rice, bread, vegetables, fruit, meat, eggs, milk, etc. The concepts of elastic demand, composite demand, or alternate demand are explained with the help of this characteristic of wants.

6. **Wants vary with time, place and person:** Wants are not static in character. They are changing with time, place and person. We require hot drinks in winter and cool drinks in summer. People of England require warm woollen suits and rain coats. People of India require only cotton. The wants of a villager in Andhra Pradesh are different from a business magnet living in Bombay. The wants of our forefathers were different from the wants of the present generation. So, wants vary with generation, culture, society, geographic location and the extent of economic development.

7. **Some wants recur again:** Some wants are felt again and again. The want for food can be satisfied by eating food. Again the same want appear after a few hours. That is why we say wants are recurring in nature. Most wants recur. If they are satisfied once, they arise again after a certain period. We take food and our hunger is satisfied. But after a few hours, we again feel hungry, and we have to satisfy our hunger every time with food. Therefore, hunger, thirst, etc. are such wants which occur time and again. The continuous production of different goods and services is based on this characteristic of wants.

8. **Wants are influenced by advertisements:** Effective advertisements through films, journals, radio and TV will create new wants and the existing wants get modified. Through advertisements and clever salesmanship, businessmen create tastes for their products.

9. **Wants become habits and customs:** If a particular want is satisfied repeatedly by a commodity, then it becomes a habit. Example: drinking coffee and tea. Wants become habits and habits are responsible for wants. Certain wants become habits. For example, the continuous use of opium, liquor, cigarettes, etc. become habits. The concept of Standard of Living depends on this characteristic of human wants.

10. **Hidden Wants:** Hidden wants are those about which we do not know apparently. They lie hidden in our sub-conscious mind. But per chance, when we come across it or get satisfaction from the use of certain things, it becomes a necessity or a want for us. For example, a worker goes to his factory on foot and he does not need a bicycle. Suppose he

gets a bicycle in the lottery, then he thinks that the bicycle was an important want for him. This feature of wants is of great importance as a man goes on making use of new goods, which increase the production "of consumption goods.

11. **Wants are Relative:** Certain human wants are relative to time and place. We need woollens during the winter and cotton clothes during the summer. But when we go to a hill station during the summer, we need woolens. So wants change from time to time, from person to person and from place to place. The behaviour of traders and producers, who keep more stock of goods during seasons, is based on this characteristic of human wants.

12. **Wants vary in Intensity:** All our wants are not of equal importance. Certain wants have more intensity whereas other wants have less intensity. Food, clothes and shelter are more urgent wants than radio, scooter, etc. The Law of Family Budget is based on the above two features of human wants.

13. **Wants are affected by Income:** Income of the individuals also affects their wants. As income increases, wants also increase. The wants of rich and poor people are not the same.

14. **Wants are affected by Fashion:** Many of our wants are affected by fashion. Wants change with the change in fashion.

15. Wants are affected by Advertisements: Wants are also affected by advertisement of goods and services made by producers and sellers. When we see an advertisement about a new product in a daily newspaper or TV, there arises a want for it. At present, most of our wants are the result of attractive advertisements. These advertisements have a direct appeal and consumers by and large are persuaded to go for the consumption of these goods. The concept of Selling Costs depends on these characteristics of human wants.

16. **Wants are affected by Social Customs:** Man is a social animal. Therefore, wants are also affected by our social customs. For example, the demand for a band at the time of marriage is a want affected by our social customs.

17. **Wants increase due to the Spread of Knowledge and Civilization:** Human wants increase with the spread of knowledge and the progress of civilization. The modern man has more wants in comparison to the wants of a man who used to live in the forests in olden times. Therefore, it can be said that human wants increase with an increase in

knowledge and civilization. Even today wants of a person living in the city are more in number and variety than a person living in a village. The economic development of a country depends on this characteristic of human wants.

18. **Present wants are more important than Future Wants:** It is natural among human beings to prefer the present wants to the future wants, as the satisfaction of present wants gives more satisfaction than the future wants. Future is uncertain and who knows whether we live or not. How much is consumed and saved by a man out of his income depends on this feature of wants. This characteristic also explains one of the reasons as to why interest is paid.

19. **Wants are affected by Religion:** Religion also affects human wants. To wear a turban is a religious want of the Sikhs.

Exceptions to the Characteristics of Wants:

Prof. Moreland has explained certain exceptions or limitations of the characteristics of human wants. These exceptions are the following.

1. The chief characteristic of human want is that wants are unlimited. But according to Moreland, the wants of sadhus and saints are limited because they minimise their wants, and their attitude and goal of life is different.

2. In the above characteristics, we discussed that a particular want can be fully satisfied. But they want for money can never be satisfied fully. Nobody says that he does not want more money.

3. The want for prestige goods is never satisfied. For instance, women always desire to have more and more ornaments. So is the case with a stamp collector.

But modern economists do not attach much importance to these exceptions of wants given by Moreland. It is because these are concerned only with the abnormal persons like sadhus, saints, misers etc., whereas economics does not study the behavior of such abnormal persons. Therefore, it can be concluded that these exceptions, are meaningless.

Classification of Wants

In Economics, wants are classified into three categories, viz.,

1. Necessaries
2. Comforts and
3. Luxuries.

1) Necessaries

Necessaries are those which are essential for living. Man requires certain basic things to live. He wants food, clothing and shelter. Without these things, life is impossible.

2) Comforts

Comforts refer to those goods and services, which are not essential for living but which are required for a happy living. A TV, a sofa-cum bed, a cushioned revolving chair may be stated under 'comforts'. Eating superior varieties of food may also add to the happiness of the consumer. Example: eating fruits, drinking milk etc. Comforts promote efficiency also.

(3) Luxuries

Those goods that are used to show off one's higher status in life (e.g. diamond - studded jewels) are luxuries.

2.2 Law of diminishing marginal utility

The law of diminishing marginal utility is a law of economics stating that as a person increases consumption of a product while keeping consumption of other products constant, there is a decline in the marginal utility that person derives from consuming each additional unit of that product. Marginal utility is derived as the change in utility as an additional unit is consumed.

Utility refers to the amount of satisfaction a person gets from consumption of a certain item and marginal utility refers to the addition made to total utility, we get after consuming one more unit.

Definition

The law of diminishing marginal utility explains an ordinary experience of a consumer. If a consumer takes more and more units of a commodity, the additional utility he derives from an extra unit of the commodity goes on falling. Thus, according to this law, the marginal utility

decreases with the increase in the consumption of a commodity. When marginal utility decreases, the total utility increases at a diminishing rate.

Gossen, Bentham, Jevons, Karl Menger contributed initially for the development of these ideas. But Alfred Marshall perfected these ideas and made it as a law. This Law is also known as Gossen's I Law.

Definition According to Marshall, "The additional benefit which a person derives from a given increase of his stock of a thing diminishes with every increase in the stock that he already has".

According to Marshall, "The additional benefit a person derives from a given increase of his stock of a thing diminishes with every increase in the stock that he already has"

Marginal Utility is the addition made to the total utility by consuming one more unit of a commodity. For example, if a consumer consumes 10 biscuits, the marginal utility is the utility derived from the 10_{th} unit.

It is nothing but the total utility of 10 biscuits minus the total utility of 9 biscuits.

Thus

$$MU_n \quad = \quad TU_n - TU_{n-1}$$

Where

MU_n	=	Marginal Utility of 'n_{th}' commodity.
TU_n	=	Total Utility of n units.
TU_{n-1}	=	Total Utility of n-1 units.

Marginal Utility	**Total utility**
(i) Declines	Increases
(ii) Reaches zero	Reaches maximum
(iii) Becomes negative	Declines

Assumptions of the Law

1. The units of consumption must be in standard units e.g., a cup of tea, a bottle of cool drink etc.

2. All the units of the commodity must be identical in all aspects like taste, quality, colour and size.

3. The law holds good only when the process of consumption continues without any time gap.

4. The consumer's taste, habit or preference must remain the same during the process of consumption.

5. The income of the consumer remains constant.

6. The prices of the commodity consumed and its substitutes are constant.

7. The consumer is assumed to be a rational economic man. As a rational consumer, he wants to maximise the total utility.

8. Utility is measurable

Explanation:

As more and more quantity of a commodity is consumed, the intensity if desire decreases and also the utility derived from the additional unit.

Suppose a person eats Bread. and 1st unit of bread gives him maximum satisfaction. When he will eat 2nd bread his total satisfaction would increase. But the utility added by 2nd bread (MU) is less than the 1st bread. His Total utility and marginal utility can be put in the form of a following schedule.

Slices of Bread	Total utility	Marginal utility
0	0	-
1	70	70
2	110	40
3	130	20
4	140	10
5	145	5
6	140	-5
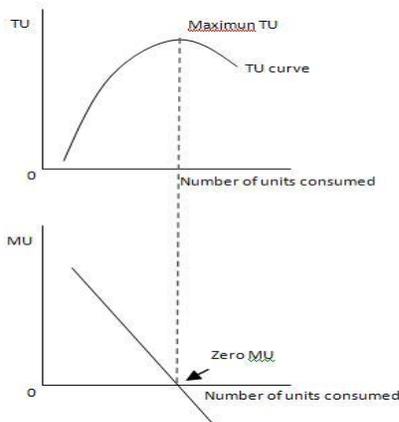
Plotting the above data on a graph gives

- Here, from the MU curve we can see that MU is declinig as consumer consumes more of the commodity.
- When TU is maximum, MU is Zero.
- After that, TU starts declining and MU becomes negative.

Exceptions:

- Money
- Hobbies and Rare Things
- Liquor and Music
- Things of Display

Importance:

- Basis of Law of Demand
- Basis of Consumption Expenditure
- The basis of Progressive Taxation

Importance of Law of DMU

i. The Law of Diminishing Marginal Utility (DMU) is the foundation for various other economic laws. For example, the Law of Demand is the result of the operation of the Law of Diminishing Marginal Utility. In other words, as more and more units of a commodity are consumed, each of them gives less and less marginal utility. This is due to the operation of the Law of DMU. As utility falls, consumer is therefore willing to pay a lower price only.

ii. The Law of DMU operates in the case of money also. A rich man already possesses a lot of money. If more and more money is newly added to his income, marginal utility of money begins to fall. Alfred Marshall assumed that the marginal utility of money remains constant.

iii. This law is a handy tool for the Finance Minister for increasing tax rate on the rich.

iv. Producers are guided by the operation the Law of DMU, unconsciously. They constantly change the design, the package of their goods so that the goods become more attractive to the consumers and they appear as 'new goods'. Or else, the consumers would think that they are using the same commodity, over and over. In such a situation, the Law of DMU operates in the minds of the consumers. Demand for such commodities may fall.

v. Criticism

The Law of DMU is criticised on the following grounds.

i. Deriving utility is a psychological experience, when we say a unit of X gives ten units of utility; this means that utility can be measured precisely. In reality, utility cannot be measured. For example, when a person sees a film and says it is very good, we cannot measure the utility he has derived from it. However, we can measure utility indirectly by the cinema fare he is willing to pay.

ii. The Law is based on a single commodity consumption mode. That is, a consumer consumes only one good at a time. This is an unrealistic assumption. In real life, a consumer consumes more than one good at a time.

iii. According to the Law, a consumer should consume successive units of the same good continuously. In real life it is not so.

iv. The Law assumes constancy of the marginal utility of money. This means the marginal utility of money remains constant, even when money stock changes. In real life, the marginal utility derived from the consumption of a good cannot be measured precisely in monetary terms.

v. As utility itself is capable of varying from person to person, marginal utility derived from the consumption of a good cannot be measured precisely.

2.3 Law of Demand

The law of demand states that there is a negative or inverse relationship between the price and quantity demanded of a commodity over a period of time. Definition: Alfred Marshall stated that " the greater the amount sold, the smaller must be the price at which it is offered, in order that it may find purchasers; or in other words, the amount demanded increases with a fall in price and diminishes with rise in price". According to Ferguson, the law of demand is that the quantity demanded varies inversely with price.

The law of demand states that other factors being constant, price and quantity demand of any good and service are inversely related to each other. When the price of a product increases, the demand for the same product will fall.

Thus the law of demand states that people will buy more at lower prices and buy less at higher prices, other things remaining the same. By other things remaining the same, we mean the following assumptions.

Mathematically, the inverse relationship may be expressed as a causal relation:

$$Q_x = f(P_x), f' < 0,$$

Where Qx is the quantity demanded of good x, Px is the price of the good,   is the demand function and is its derivative.

Here, Px is the causal factor (independent variable) and Qx Is the dependent variable
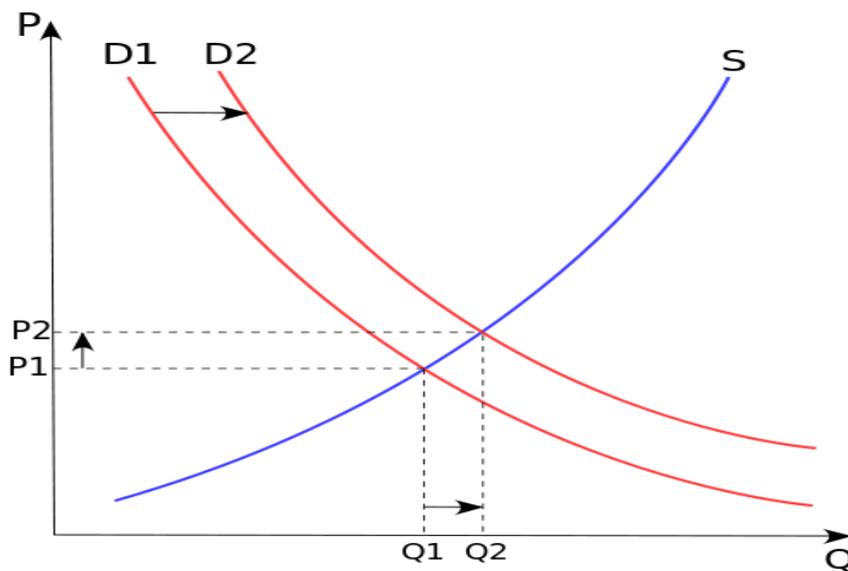
A demand curve shown in red and shifting to the right, demonstrating the inverse relationship between price and quantity demanded (the curve slopes downwards from left to right; higher prices reduce the quantity demanded).

Assumptions of the Law

1. No change in the consumer's income

2. No change in consumer's tastes and preferences

3. No changes in the prices of other goods

4. No new substitutes for the goods have been discovered

5. People do not feel that the present fall in price is a prelude to a further decline in price. Demand Schedule Demand schedule is a tabular statement showing how much of a commodity is demanded at different prices.

Demand Schedule

Price(Rs.)	Quantity Demanded (units)
5	10
4	20
3	30
2	40
1	50

The demand curves slope downwards because the demand curve slopes downwards mainly due to the law of diminishing marginal utility. The law of diminishing marginal utility states that an additional unit of a commodity gives a lesser satisfaction. Therefore, the consumer will buy more only at a lower price. The demand curve slopes downwards because the marginal utility curve also slopes downwards.

Exceptions to the Law of Demand

The Law of demand is a general statement telling that prices and quantities of a commodity are inversely related. There are certain peculiar cases in which the law of demand will not hold good. In those cases, more will be demanded at a higher price and less will be demanded at a lower price. The demand curves in those cases slope upwards showing a positive relationship between price and quantity demanded

For example, let's assume we have a market that has only three consumers: Sting, Morrissey, and Ice Cube. We create a market demand schedule in Table 3-2 by adding up the quantities demanded at each price by each consumer.

Market Demand Schedule for DVD Movies

Average Price of DVD Movies	Quantity Purchased			
	Sting	Ice Cube	Morrissey	*Total*
Rs.25	0	1	0	*1*
Rs.20	2	2	1	*5*
Rs.15	4	3	2	*9*
Rs.10	6	4	3	*13*
Rs.5	8	5	4	*17*

The market demand schedule applies to a specific population and to a specific period of time. The number of DVDs demanded by the students at George Mason University will certainly be less that the number demanded by the entire population of the United States. Similarly, the number demanded over the period of a month will be less than for an entire year. But, we usually don't worry about the details of population or time period when talking about demand and supply theory in this course.

The demand curve is a graphic representation of the market demand schedule and the Law of Demand. The demand curve represents the quantities of a good or service that consumers are willing and able to purchase at various prices.
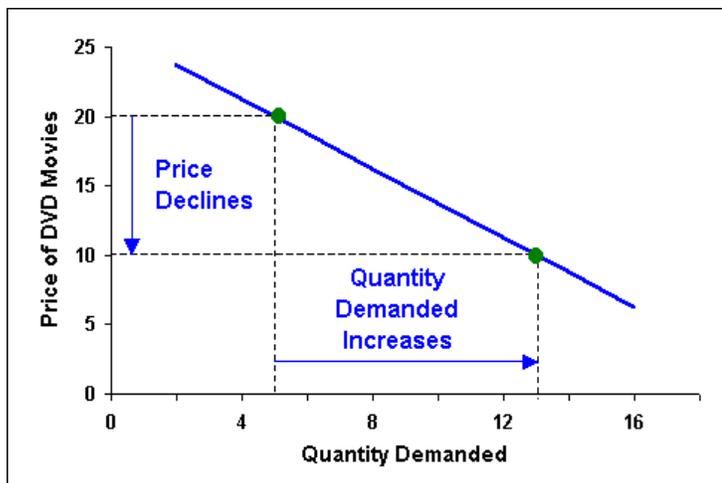
Market Demand Curve for DVD Movies

By tradition, the demand curve is drawn with prices on the vertical or y-axis and quantities demanded on the horizontal or x-axis. The demand curve slopes down to right based on the Law of Demand. As the price of a good increase, consumers switch purchases to other goods, reducing the quantity demanded.

Using our market demand schedule for DVD movies in Table 3-2 above, we can draw a demand curve with price on the vertical axis (y-axis) and quantity demanded on the horizontal axis (x-axis), as shown in Figure.

The Law of Demand implies the following with respect to a demand

The demand curve is downward sloping

The demand curve has a negative slope

The demand curve shows an inverse relationship between price and quantity demanded

1. **Factors determining demand**

2. **Tastes and preferences of the consumer**

   Demand for a commodity may change due to a change in tastes, preferences and fashion. For example, the demand for dhoties has come down and demand for trouser cloth and jeans has gone up due to change in fashion.

3. **Income of the consumer**

   When the income of the consumer increases, more will be demanded. Therefore, we can say that as income increases, other things being equal, the demand for a commodity also increases. Comforts and luxuries belong to this category.

4. **Price of substitutes**

   Some goods can be substituted for other goods. For example, tea and coffee are substitutes. If the price of coffee increases while the price of tea remains the same, there will be increase in the demand for tea and decrease in the demand for coffee. The demand for substitutes moves in the opposite direction.

5. **Number of consumers**

Size of population of a country is an important determinant of demand. For instance, larger the population more will be the demand, for certain goods like food grains, and pulses etc. When the number of consumers increases, there will be greater demand for goods.

6. **Expectation of future price change**

If the consumer believes that the price of a commodity will rise in the future, he may buy a larger quantity in the present. Suppose he expects the price to fall, he may defer some of his purchases to a future date.

7. **Distribution of income**

Distribution of income affects consumption pattern and hence the demand for various goods. If the government attempts redistribution of income to make it equitable, the demand for luxuries will decline and the demand for necessities of life will increase.

8. **Climate and weather conditions**

Demand for a commodity may change due to a change in climatic conditions. For example, during summer, demand for cool drinks, cotton clothes and air conditioners will increase. In winter, demand for woollen clothes increases.

9. **State of business**

During boom, demand will expand and during depression demand will contract.

10. **Consumer Innovativeness**

When the price of wheat flour or price of electricity falls, the consumer identifies new uses for the product. It creates new demand for the product.

2.4 Law of Supply

Law of supply states that other factors remaining constant, price and quantity supplied of a good are directly related to each other. In other words, when the price paid by buyers for a good rises, then suppliers increase the supply of that good in the market.

The law of supply is the microeconomic law that states that, all other factors being equal, as the price of a good or service increases, the quantity of goods or services that suppliers offer

will increase, and vice versa. The law of supply says that as the price of an item goes up, suppliers will attempt to maximize their profits by increasing the quantity offered for sale.

Description: Law of supply depicts the producer behavior at the time of changes in the prices of goods and services. When the price of a good rises, the supplier increases the supply in order to earn a profit because of higher prices.
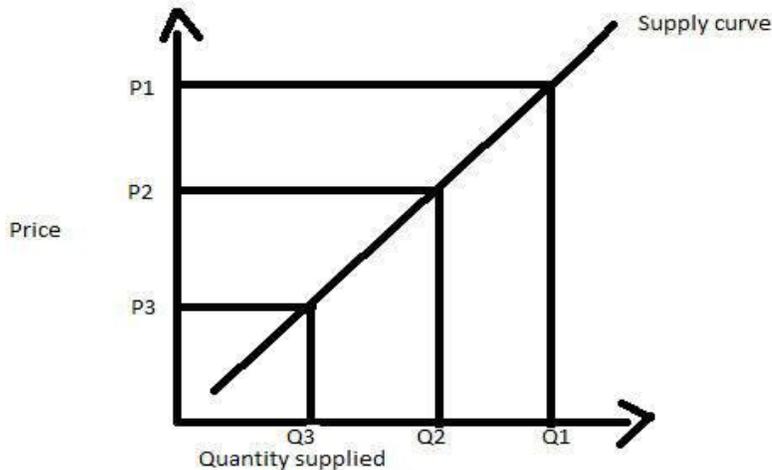

The above diagram shows the supply curve that is upward sloping (positive relation between the price and the quantity supplied). When the price of the good was at P3, suppliers were supplying Q3 quantity. As the price starts rising, the quantity supplied also starts rising.

2.5 Consumer's surplus

Consumer surplus is defined as the difference between the consumers' willingness to pay for a commodity and the actual price paid by them, or the equilibrium price.

Description:

Total social surplus is composed of consumer surplus and producer surplus. It is a measure of consumer satisfaction in terms of utility. Graphically, it can be determined as the area below the demand curve (which represents the consumer's willingness to pay for a good at different prices) and above the price line. It reflects the benefit gained from the transaction based on the value the consumer places on the good. It is positive when what the consumer is willing to pay for the commodity is greater than the actual price. Consumer surplus is infinite when the demand curve is inelastic and zero in case of a perfectly elastic demand curve.
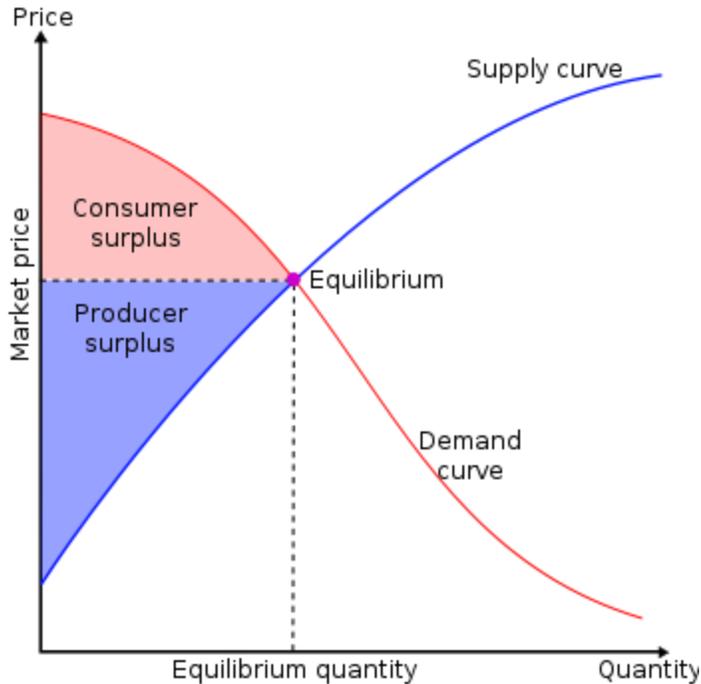
2.6 Elasticity of Demand

The law of demand explains that demand will change due to a change in the price of the commodity. But it does not explain the rate at which demand changes to a change in price. The concept of elasticity of demand measures the rate of change in demand.

The concept of elasticity of demand was introduced by Alfred Marshall. According to him "the elasticity (or responsiveness) of demand in a market is great or small according as the amount demanded increases much or little for a given fall in price, and diminishes much or little for a given rise in price".

Types of Elasticity of Demand

There are three types of elasticity of demand;

1. Price elasticity of demand;

2. Income elasticity of demand; and

3. Cross-elasticity of demand

Price elasticity of demand

"The degree of responsiveness of quantity demanded to a change.in price is called price elasticity of demand"

The main cause of differences in the responsiveness of the demand for goods to changes in their price lies in the fact that there are more competing substitutes for some than others. Economic theory finds it useful to distinguish between those goods, which are more responsive to price changes, and those, which are less responsive. Price elasticity of demand is therefore a technical term used by economist to describe the degree of responsiveness in the demand for a good to a fall or rise in its price. Alfred Marshall the great Cambridge economist of the late nineteenth and early twentieth centuries, introduced he concept of elasticity of demand into economic theory.

It is price elasticity of demand which is usually referred as elasticity of demand. But, besides price elasticity of demand there are various other concepts of demand elasticity like income and cross elasticity of demand. In economics, elasticity always means a ratio or relative changes in two quantities.

The price elasticity of demand

$$= \frac{\text{Proportionate change in amount demanded}}{\text{Proportionate change in price}}$$

$$= \left(\frac{\text{Change in amount demanded}}{\text{Amount demanded}} \right) + \left(\frac{\text{Change in Price}}{\text{Price}} \right)$$

(or) in the symbolic terms $Ep = \left(\frac{\Delta q}{q} \right) + \left(\frac{\Delta p}{p} \right)$

$$Ep = \left(\frac{\Delta q}{p} \right) \times \left(\frac{p}{q} \right)$$

Where,   E = Price elasticity of demand

q = quantity demanded

p = price of a commodity

Δ - Small change.

Price elasticity of demand is negative, since the change in quantity demanded is in opposite direction to the change in price. But for the sake of convenience in understanding the magnitude of response of quantity demanded to the change in price, we ignore the negative sign and take into account only the numerical value of the elasticity.

Price elasticity of demand is generally classified under five sub-heads.

1. Unitary elastic demand (Ep = 1)

It refers to that situation where a given proportionate change in the quantity demanded, for example, a 20% change in price causes 20% change in demand.

Price elasticity is unity for

$$Ep = \frac{\% \text{ change in Demand}}{\% \text{ change in Price}}$$

In below Fig. 3.3 ΔP represents change in price, ΔQ represents change in demand and DD the demand curve ($\Delta q = \Delta p$).

Amount demanded
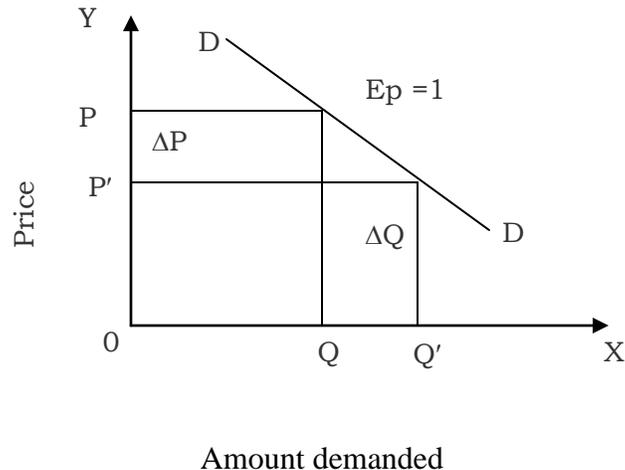
FIG. 3.3

2. Relatively elasticity demand (Luxuries)

When the change in demand is more than proportionate to the change in price, price elasticity of demand is greater than unity. If the changes in demand is 40% when price changes by 20% then Ep = 40% / 20% = 2 (>1). In figure 3.4 $\Delta q > \Delta P$.
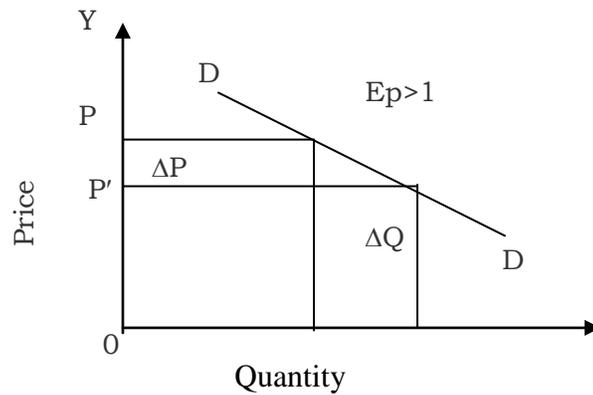
Fig. 3.4

In figure 3.4 ΔQ > ΔP

3. Relatively inelastic demand (Necessaries)

If refers to a situation where a big proportionate change in the price of a commodity is accompanied by a smaller proportionate change in its quantity demanded. For example, when a 20% change in price causes 10% change in demand. In figure 3.5, ΔQ < ΔP. Then Ep = $\dfrac{10\%}{20\%}$ = **½** < 1
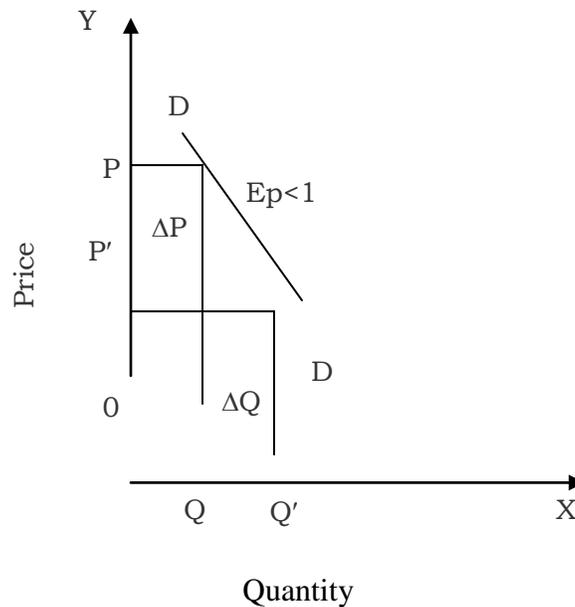
Fig. 3.5

Then Ep = $\dfrac{10\%}{20\%}$ = ½ < 1

It is known as relatively inelastic demand.

4. Perfectly inelastic demand (Salt)

Zero elasticity of demand is one when whatever be the change in price there is absolutely no change in demand. Price elasticity of demand is perfectly inelastic in this case. A 20% rise or fall in price leads to no change in the amount demanded. Here   Ep = $\dfrac{0}{20}$ = 0

Fig. 3.6 denotes perfectly inelastic demand.
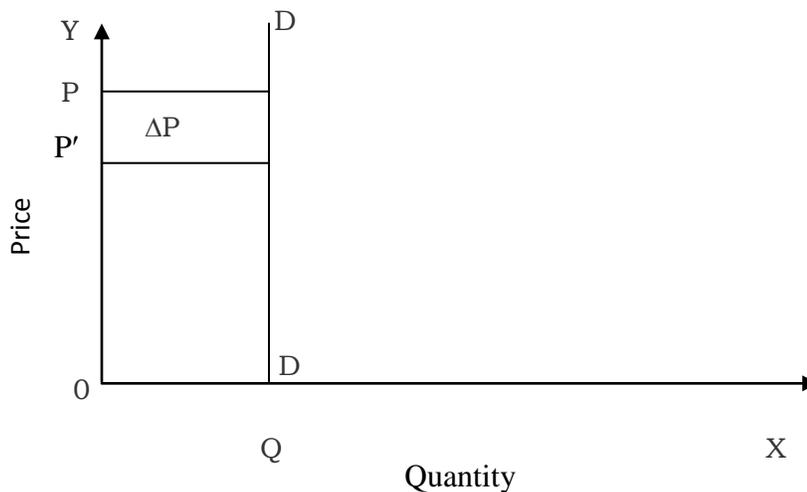
Fig. 3.6

5. Perfectly elastic demand (Ep = Infinity)

Lastly price elasticity of demand refers to that situation where the slightest rise in price cause the quantity demanded of the commodity to fall to zero and a small fall in price below OP gives rise to an indefinitely large increase in amount demanded. Visibly no change in price causes an infinite change in demand. In Fig. 3.7, at OP price, the quantity demanded continues to increase from OQ to Q′. It is perfectly elastic demand.
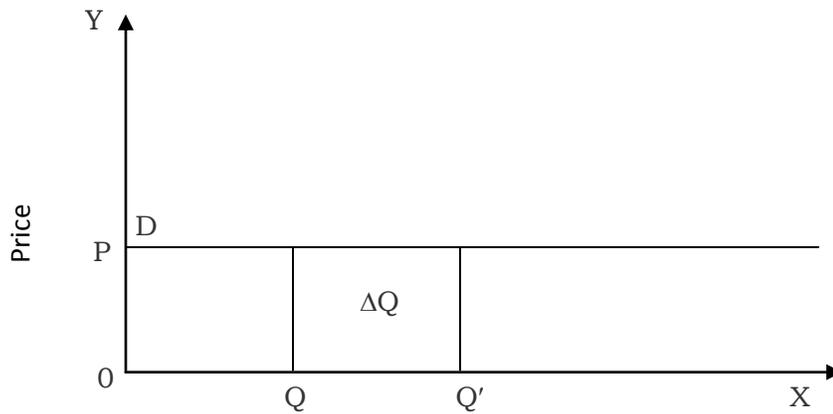
Demand

Fig. 3.7

B) INCOME ELASTICITY OF DEMAND

When we speak of price elasticity, we assume that other things remain the same except quantity changes in response to price changes. But in the world other things do not remain equal. For instance, the income of the consumer may change. If we allow the income to change while holding all other things including price constant, we get an income elasticity.

$$Ei = \frac{\text{Proportionate change in amount demanded}}{\text{Proportionate change in income}}$$

$$= \frac{\text{Chnage in amount dd}}{\text{Original dd}} + \left(\frac{\text{Change in income}}{\text{Original income}} \right)$$

$$= \left(\frac{\Delta Q}{Q} \right) + \left(\frac{\Delta I}{I} \right)$$

$$Ei = \frac{\Delta Q}{\Delta I} \times \frac{I}{Q}$$

Where, Ei = Income elasticity of demand

Q = Original quantity demand,

I = Original income

ΔQ = Change in amount demanded

ΔI = Change in income.

Normally, income elasticity of demand for a commodity is positive except in the case of inferior goods where income effect is negative. In the case of an inferior good, the demand varies inversely with income and as a result, income elasticity of demand is negative. The possible income demand curves are given below.

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1. High income elasticity of demand (Luxuries)

Here the value of co-efficient E_i, is greater the unity. In this case increases in income are accompanied by relatively large increase in quantity demanded (Fig. 3.8).
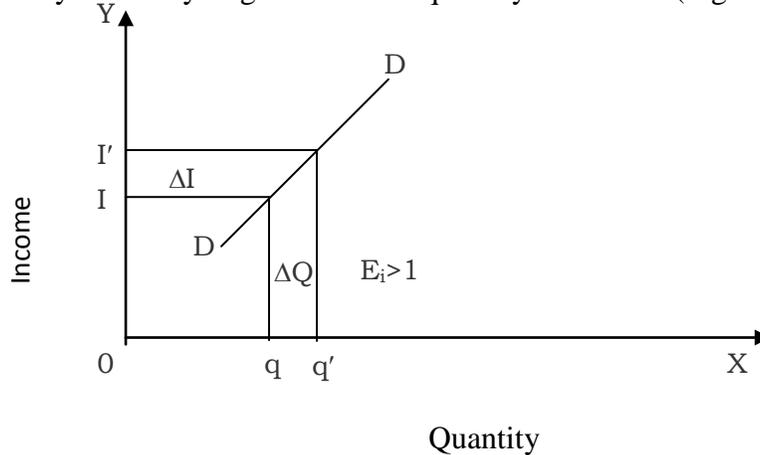

Quantity

Fig. 3.8

2. Unitary income Elasticity of Demand

In explains that the proportionate change in quantity is equal to the proportionate change in money income. The value of the co-efficient (E_i) is equal to unity (Fig. 3.9).
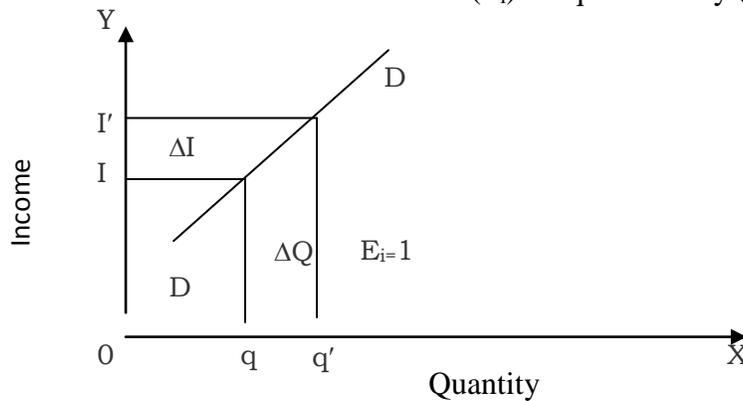

Quantity

Fig. 3.9

3. Low income elasticity of demand (Necessaries)

Here the relative change in quantity demanded is less than the relative change in money income. The value of the income elasticity co-efficient (Ei) is less than unity. The figure 3.10 explains the low-income elasticity of demand.
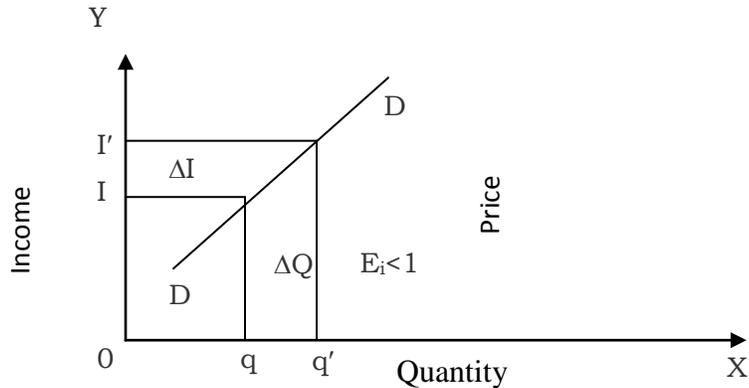

Fig. 3.10

4. Zero income elasticity of demand

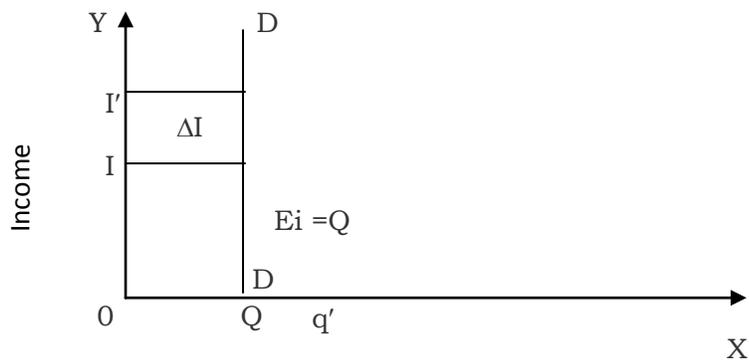In the case of zero income elasticity of demand, quantity bought is constant regardless of change in income

Fig. 3.11

5. Negative income Elasticity

It explains less is bought at higher incomes and that more is bought at lower incomes. The value of co-efficient (Ei) is less than zero or negative.

The differences between the price elasticity and income elasticity of demand can be noted here. If the coefficient is greater than one income elasticity "is high" and if the coefficient is less than one income elasticity is "low". In contrast, demand is "elastic" if the coefficient of price elasticity is greater than one and "inelastic" if it is less than one.

Goods differ widely in their income elasticity's. Jewellery, precious stones, automobiles etc, are the examples of goods whose income elasticity's tend to be high. In contrast, soap, salt, matches, newspapers etc., are the examples of low income elasticity of demand.

Prof. Engel's analysis of family budgets revealed that the responsiveness of demand to a change in income is different for different goods. According to Prof. Engel.

Ei > I for superior goods,

Ei > 0 for normal good and

Ei < 0 for the inferior goods.

C) THE CROSS ELASTICITY OF DEMAND

The cross elasticity of demand indicates the effect of change in price of one good on the demand of other good.

$$\text{Cross Elasticity of demand} = \frac{\text{Proportionate change in quantity demand of good X}}{\text{Proportionate change in price of good Y}}$$

$$Ec = \frac{\Delta X}{X} \Big/ \frac{P_Y}{\Delta P_Y} = \left(\frac{\Delta X}{\Delta P_Y}\right)\left(\frac{Py}{X}\right)$$

where, X = quantity demanded for commodity X.

P = Price of commodity Y.

Thus, a change in the price of one good causes a change in the demand for another.

This type of elasticity arise in the case of inter-related goods such as substitutes and complementary goods. Where two goods are substitutes, a reduction in the price of X will cause a reduction in the quantity demanded of the other and vice versa. But, when two goods are complementary, reduction in the price of one will cause an reduction in the quantity demanded of the other and vice versa. The comparison between the proportionate changes or percentage changes in the quantity demanded of X and the price of is a measure of cross elasticity of demand.

$$\text{Cross Elasticity for X} = \frac{\text{Proportionate change in demand for good X}}{\text{Proportionate change in price of good Y}}$$

$$\text{Cross Elasticity for Y} = \frac{\text{Proportionate change in demand for good Y}}{\text{Proportionate change in price of good X}}$$
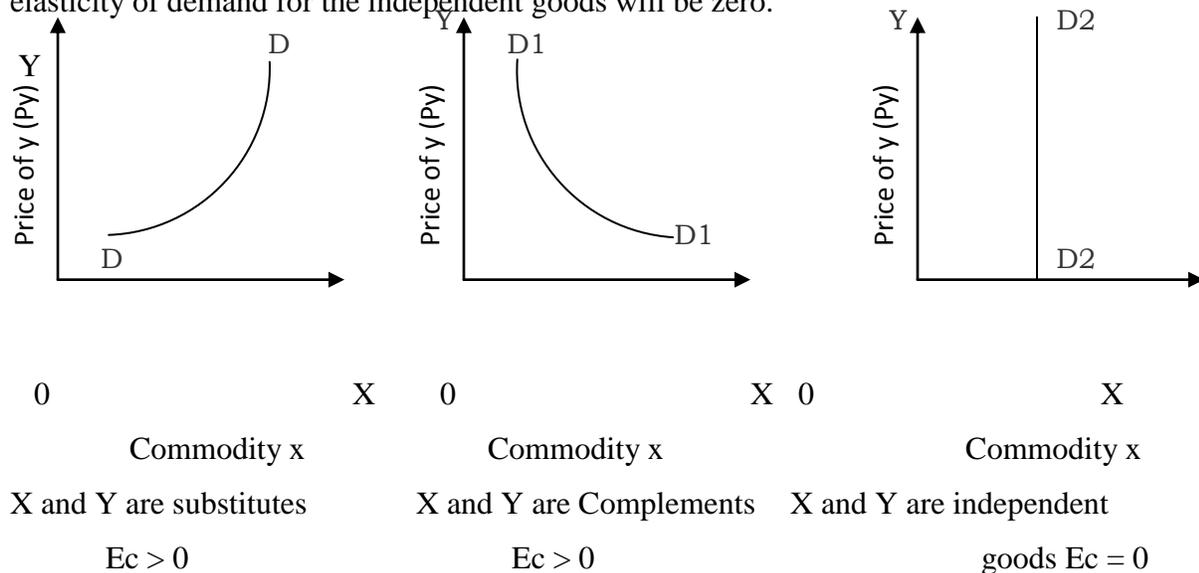
As said above the cross elasticity of demand for commodity X may be positive or negative, depending on the nature of relationship between X and Y. For substitutes, the price changes and the quantity changes are in the same direction. If the price of Y goes up, so does the quantity demanded of X and cive versa. So cross elasticity is positive for substitutes.

Let us assume the two commodities are Limca and Gold spot. If the price of Limca increases people in large numbers will drink Gold spot. The cross elasticity in such a case would therefore be positive because the change in demand for gold spot and the change in price of Limca move in the same direction close substitutes have high cross elasticity of demand. If the commodities are poor substitutes for each other, the cross elasticities are low.

If the two goods are complementary products, such as sugar and tea, the cross elasticity will be negative. Because, an increase in the price of sugar would reduce its demand. Demand for tea will also fall. Thus, the change in the price of sugar and the change in the demand for tea move in the opposite direction. Therefore, the cross elasticity of demand for complementary goods will be negative.

Sometimes it is possible that the two goods X and Y are neither substitutes nor complements, i.e. they are unrelated or independent goods. In such a situation, the cross elasticity of demand for the independent goods will be zero.

0 X	0 X	0 X
Commodity x	Commodity x	Commodity x
X and Y are substitutes	X and Y are Complements	X and Y are independent
Ec > 0	Ec > 0	goods Ec = 0

Figures – 12

The three situations can be illustrated with the help of the Figures 12. Here Figure 1 explains that an increase (decrease) in the price of Y will lead to an increase (decrease) in the

quantity of X. Thus the two goods will be labeled as substitutes and the cross elasticity of demand will be positive (Ec > 0). Figure 2 explains that an increase (decrease) in the price of Y will lead to a decrease (increase) in the quantity of X. Thus the two goods will be labeled as complements and the cross elasticity of demand will be negative (Ec= 0). Figure-3 explains that an increase in the price of Y will make no effect on the quantity of X and therefore, the cross elasticity of demand will be zero (Ec = 0).

EXERCISE
PART A .

I. Choose the correct answer

1. Necessaries, comforts and luxuries are

 a) Classification of goods and services b) Classification of wants c) Classification of utility d) None of the above

2. The Indifference curve approach was introduced by

a) Alfred Marshall b) Lionel Robbins c) J.R. Hicks and R.G.D. Allen d) Adam Smith

3. Utility is a

a) Social concept b) Subjective / psychological concept c) Political concept d) Scientific concept

4. Single commodity consumption mode is

 a) Production possibility curve b) Law of Equi-marginal utility c) Law of supply d) Law of Diminishing Marginal Utility

Consumer surplus is

A) Potential Price – Actual Price b) $MV_n = TV_n - TV_{n-1}$ c) Demand = supply d) None

II. Fill in the Blanks

 6. _____ means using up of goods and services

7. wants may be both _____ and _____

 8. Marshallian utility approach is _____ analysis

 9. Marginal utility falls to zero, when the total utility is _____

10. An indifference curves is _____ to the origin

III. Match the following

11. Wants   a) Marshall
12. "Principles of economics"   b) Hicks and Dalton
13. Maximum social advantage   c) Diamond, Jewels
14. Indifference curve   d) Advertisements
15. Luxuries   e) Ordinal Ranking

IV Answer in a word or two

16. Define Utility

17. What is the other name for the law of Equi-Marginal Utility

18. What is Indifference curve ?

19. What is Indifference Map ?

20. What is the other name for budget line ?

PART B

Answer the following questions in about four or five lines

21. What are the causes for wants?

22. What are the classifications of goods?

23. Define the Law of Diminishing Marginal Utility.

24. What are the properties of Indifference curve?

25. Define "consumer's surplus" in the words of Marshall.

PART C

Answer the following questions in about a page

26. Distinguish between total and marginal utility.

27. What are assumptions of Law of Dimnishing Marginal Utility

28. Bring out the importance of Law of Dimnishing Marginal Utility

29. Mention the limitations of Law of Equi-Marginal Utility

30. Describe consumer's equilibrium with the help of indifference map.

PART D

Answer for each question should be about three pages

31. Explain the characteristics of human wants

32. Describe the Law of Diminishing Marginal Utility with a diagram?

33. Explain Consumer's Surplus with the help of a diagram and bring out its importance and its criticism.

34. Explain the Indifference Curve Approach

35. What is Indifference curve map ? Explain the properties of indifference curve with diagrams.

- D.Bose & Marimuthu, Micro Economics, Himalaya Publishing House, Mumbai, 2011.
- Dewett. K.K. Modern Economic theory, Shyam Lal Chairtable Trust, Ram Nagar, New Delhi, 12th Revised Edition, 1981.

UNIT III: PRODUCTION:

Land: Meaning - characteristics - Laws of variable proportion - Labour: Meaning - Characteristics - Division of labour - Capital: Meaning - Characteristics - Types of capital - Functions of capital- Organization: Meaning - Functions of an entrepreneur - Returns to scale - Isoquant - Iso - cost curve - Producers equilibrium.

LAND

MEANING OF LAND

In ordinary usage, by land we mean soil or the surface of the earth or ground which we see. But in economics, the term 'land' has a special meaning. It refers to all gifts of nature which yield an income and which are under human control and ownership. It also includes mineral deposits, seas, rivers, natural forests, vegetation, fisheries etc.

Marshall defines 'land' as follows: "By land is meant the material and forces which nature gives freely for man's aid, in land and water, in air, and light and heat." Therefore to economists, "Niagara falls is land, a stream of water in an irrigated territory is a land and a flock of wild geese is land." But air, sunshine, rain or climate etc. should be executed from land, because they are not under anybody's control and ownership and hence possess no exchange value.

CHARACTERISTICS OF LAND

As a factor of production, land possesses certain characteristics as follows:

1. **Free Gift of Nature:** Land is a free gift of nature. Man can improve the quality of land by his efforts though he cannot create land. It existed even long before the evolution of mankind.

2. **The Supply of Land is fixed:** The supply of land is fixed in quantity. Land has no supply price. The price prevailing in the market cannot increase or decrease the supply of land. Thus the total land area available to mankind as a whole is fixed in quantity although the total amount in use may vary from time to time.

3. **Land is Permanent:** Land cannot be destroyed. The fertility of the soil can be exhausted by continuous cultivation, but its form will remain the same. According to Ricardo, land possesses "original and indestructible powers,"

4. **Land is Immobile:** Land is immobile in the geographical sense. However depending upon the season different varieties of crops can be cultivated or its ownership may be changed. In this sense land possesses mobility.

5. **Land is Heterogeneous:** Land differs in fertility. Some plots are more fertile, and some plots possess situational advantage. When different grades of land are cultivated, the superior lands or lands which are located nearer the market yield surplus than the inferior or marginal lands.

6. **Land is a Passive Factor of Production:** Land cannot produce by itself. To grow a crop or extract minerals from the earth man has to apply labour and capital.

7. **Land has Many Uses:** Land can be used in a variety of ways. It can be cultivated, playgrounds can be formed, factories can be constructed and shipping is possible in the sea and big rivers.

8. **No Cost of Production:** Land has no cost of production.

9. **Primary Factor:** Land is a primary factor of production. To start any business or production process, we need the help of land.

10. **Law of Diminishing Returns:** The yield from land is subject to the law of diminishing returns.

LAW OF VARIABLE PROPORTIONS

Various factors of production have to be combined to produce goods. The level of output depends upon the combination of factors. In order to bring out a change in the level of production, the amount of various factors engaged in production will have to be changed. An increase in production is possible only when all the factors are increased simultaneously or when same of the factors is increased while other remain constant. Therefore, to bring out an increase in output, the producers use more and more of the variable factor with the given amount of the fixed factors. In the Theory of Production, the Law which explains the relationship between on

variable factor and output, keeping the amounts of other factors fixed is called as the "Law of Variable Proportion". This Law is a new name given to the "Laws of Returns".

LABOUR

MEANING OF LABOUR

The term 'labour' is used in various senses. Broadly speaking, any work, whether manual or mental, which is undertaken for a monetary consideration is called 'labour' in economics.

Marshall defines labour as "any exertion of mind or body undergone partly or wholly with a view to some good other than the pleasure derived directly from the work.

CHARACTERISTICS OF LABOUR

Labour is different from other factors of production. It is a living thing, and that makes all the difference. Labour is not only a means of production, but also the beneficiary of production. There are certain characteristics of labour which distinguish it from the rest of the factors of production. Such characteristics are often labelled as peculiarities of labour. These characteristics are given below.

1. Labour is Perishable: Labour is a perishable commodity. Therefore it cannot be stored for the future. Eric Roll remarks, "it has no reserve price." If a labourer is idle for a day, that day is lost forever and cannot be recovered anymore. The time during which he remains idle is irrevocable lost. Hence, labourers are forced to accept even low wages.

2. Labour is Inseparable from the Labourer: Land and capital can be separated from their owner, but labour cannot be separated from the labourer. A teacher by staying in a cinema theatre cannot teach economics to the students in the class. "The worker sells his work but he himself remains his own property." Labourer has to go to the specified spot to deliver his labour. Therefore the environment and the working conditions in which the worker has to work is of utmost importance in the supply of labour.

3. **Weak Bargaining Power of Labour:** Labour has a very weak bargaining power. Labourers are generally poor and have no reserve fund. Moreover in certain occupations like agriculture, they are unorganized. Hence they are exploited by the employers and re paid lower wages than what they ought to get.

4. **Less Mobility of Labour:** Labour is not as mobile as capital. Adam Smith said "Of all sorts of luggage, the human being is the most difficult to transport." The differences in customs, languages, environments etc., at different places are obstacles to the movement of the workers from one place to another.

5. **Inelastic Supply of Labour:** The supply of labour can neither be increased nor decreased easily and quickly at will. In other words, there is no rapid adjustment of the supply of labour to its demand. For example, during depression times, when the demand for labour shrinks, the supply of labour cannot be reduced easily. During war when the demand for labour increases, its supply cannot be increased quickly and the wages must rise.

6. **Labour is Means as well as an End:** Labour is the cause of production and when production is made the labourer also consumes the product. In other words, he is the means as well as the end of production. Just like the two faces of the same coin, on the one side he is a producer and on the other side he is a consumer.

7. **Differences in the Efficiency of Labour:** Labour differs in efficiency. Some labourers are more efficient due to their qualities, education, training etc. whereas others are less efficient on account of their ignorance, illiteracy etc.

8. **Indirect Demand for Labour:** The demand for labour is not direct but indirect. The demand for labour depends upon the final goods which they help to produce. The demand for carpenters and doctors depend upon the demand for housing and health.

9. **Increase in Wages may reduce the Supply of Labour:** Changes in the price of labour react rather curiously on its supply. In case of ordinary commodities, the relation between price and quantity is direct. More of a commodity will be supplied at a higher price. But in the case of labour when wage rate increase, the supply of labour may decrease. For example, when wages are low, all the members of a family may have to work to earn their livelihood. But when wage rates are increased, the labourer alone may work and his wife and children may stop working. Likewise,

workers may prefer more leisure and work for lesser hours when wage rate is increased beyond a certain level. This explains the phenomenon of the backward sloping curve of labour.

10. Cost of Production of Labour: While it is easy to estimate the cost of production of crop or machine, it is not so in the case of the cost of production of a labourer. Suppose a person becomes a scientist at the age of twenty eight, but it is difficult to calculate the cost of his education, food, clothing, recreation etc.

11. Capital can be Invested on Labour: In order to make the labourer more efficient, capital can be invested on labour. This process of investment of capital on labour is known as human capital investment. Moreover labour creates capital.

12. Labourer is a Human Being: Machines ar3e passive. The labourer may be very happy and much attached towards his work. In certain cases he may be indifferent towards his work. The employer has to give due recognition to the habits, customs and sentiments of his workers. This aspects of labour has an important bearing on the quantity and quality of work, turned out by the labourer.

13. Labour is an Active Factor of Production: Land and capital are passive factors of production. They cannot yield anything without the participation of man in the production process.

DIVISION OF LABOUR

Meaning

When manufacturing of an article is split up into a number of processes and each process is done by a separate group of labourers, it is called "Division of Labour". This Division of Labour may be defined as "Specialisation of Labour in Particular Type of Jobs". Adam Smith has illustrated this, in his famous example of pin-making industry. This pin making industry is divided into 18 processes.

CAPITAL

Capital is that part of the wealth of individuals and communities, other than land, which is used to assist in the production of goods. According to Marshall, "Capital consists of all kinds of wealth, other than free gifts of nature, which yield income."

Wealth can be looked from two angles, as to whether it is used for immediate consumption or to assist further production. In other words, wealth connotes two forms of economic goods. A car, books, a house etc., are good examples of consumer's goods. These goods are used directly to satisfy human wants. Producer's goods on the other hand are those which do not yield any direct satisfaction, but can be used for further production of wealth. Examples of producer goods are factories, raw materials, canals and bridges, roads and railways etc. These producer's goods are termed as capital in economics. But it is to be noted that capital is a produced means of production. In the words of Prof. Fisher "Capital is that property which is the product of past labour, but which is used as a means to further production."

CHARACTERISTICS OF CAPITAL

Capital as a factor of production possesses certain peculiarities.

1. **Capital is Man-made:** Capital is not a free gift of nature. It is a produced means of production, Knut Wicksell therefore defines capital as "single coherent means of saved-up labour which is accumulated in the course of years."

2. **Capital Grows out of Savings:** Capital is the result of saving. Saving involves postponement of present consumption. People save for various motives. When saving is high capital will also be high.

3. **Capital Depreciates:** The wear and tear in a capital asset is known as depreciation. When machines are used continuously beyond a certain limit, it cannot be used for further production.

4. **Capital is Variable:** Capital is variable in the sense that it can be increased or decreased at will. In other words capital is elastic in nature.

5. **Capital is Mobile:** Among the four factors of production capital is the most mobile factor. Land lacks mobility in the geographical sense. Labour mobility is not perfect

due to economic, social, political, religious and cultural reasons. Entrepreneur also lacks mobility. Capital can be easily sent to any part of the world.

6. **Capital is a passive Factor:** Capital by itself cannot produce anything. Capital has to be combined with land and labour in the process of production. For example, even the costly computer may not be of any use unless it is operated by a person.

7. **Capital is Productive:** Capital is demanded because it increase the productivity of land and labour. A farmer with the help of a tractor or a fisherman with the help of a boat can produce much more than without them.

8. **Capital Yields Income:** The owner of capital derives income by properly utilizing it. As Champman writes "Capital is wealth which yields income".

TYPES OF CAPITAL

Capital is classified in different ways, depending upon its uses in different types of industries.

1. **Private Capital and Community Capital**

Private Capital refers to capital owned by individuals, e.g., cinema theatre, school, hospital etc. Community capital means the capital owned by the community, e.g., roads and dams.

2. **Sunk Capital and Floating Capital**

Sunk capital refers to those capital goods which have a specific purpose. It is also known as 'specific' or 'specialized' capital, e.g., road roller and rail engine.

Floating capital refers to those capital items which have a variety of uses. It is also known as 'non-specific' or non-specialized' capital, e.g., coal, electricity, machines etc.

3. **Fixed Capital and Circulating Capital**

Fixed capital consists of durable goods like plant, machinery and buildings. They can be put to use for a number of years. They are fixed capital not because they are fixed in position or place, but because their form does not change much in the process of production.

Circulating capital refers to those items of capital which can be used only once, e.g., seeds, manure, and fertilizers. But the value of circulating capital can be recovered after selling the produced products.

4. Productive Capital and Consumptive Capital

Productive capital refers to those items of capital which are directly used in production, e.g., plant, raw materials etc.

Consumptive capital refers to those capital items which are not directly used in production, but are necessary for labourers to continue production efficiently and continuously, e.g., food, clothing shelter etc.

5. Real Capital and Financial Capital

Real capital refers to various tangible physical assets like machines, tools etc. Financial capital refers to claims of people over real assets, like shares and bonds.

6. Material Capital and Personal Capital

Material assets are tangible assets which can be transferred from one person to another. Personal capital refers to such extraordinary talents and skills such as the melodious voice of a singer or the efficiency of a surgeon. Personal capital cannot be transferred from one person to another.

7. Remunerative and Auxiliary Capital

Remunerative capital refers to capital which is used to pay wages and salaries to labourers. Auxiliary capital refers to all those capital goods that assist the workers to enhance productivity, e.g., machines, raw materials etc.

8. Working Capital and Loanable Capital

Working capital refers to capital used as raw materials, and semi-finished goods which a producer always keeps at hand to continue production without any disturbance. Loanable capital refers to capital which is available in the market for interest (in the form rent).

9. Lucrative Capital and Human Capital

Lucrative capital means capital which yields a regular income to the owner. Human capital refers to investment on education, health and training etc. The notable contributors to the development of the concepts of human capital are professors Simon Kuznets and Kenneth Galbraith.

10. National Capital and International Capital

The capital asset owned by a nation is known as national capital. The railways and post and telegraph in India are examples of national capital. International capital refers to the capital

owned by a group of nations. The capital of I.M.F and I.B.R.D. are example of international capital.

FUNCTIONS OF CAPITAL

Capital performs the following functions:

Firstly, capital provides subsistence to workers.

Secondly, capital helps to increase the productivity of land and labour.

Thirdly, purchase of raw materials and equipments is made easy with capital.

Fourthly, provision of transport and communication is possible with capital.

Fifthly, capital facilities effective marketing.

Sixthly, capital formation which is the king-pin of progress is feasible only with the help of capital.

ORGANIZATION

Organisation is the act of co-ordinating the other three factors of production namely, land, labour and capital. Organisation is the very important factor. Organisation is done by Entrepreneur or Organiser.

Meaning of Entrepreneur

Entrepreneur is derived from two French words, "Enter" which means "between" and "preneur" which means "one who takes". Hence, originally Entrepreneur is a middleman who gets the products from farmers and sold to the public.

Today, the concept has been extended to include not only middlemen, but also all those who are self-employed, i.e., those who do not seek employment from others. In brief, "Entrepreneurs are who start and build their own enterprise, rather than taking up a job" and "Entrepreneurship is the trait of taking up own enterprise". Entrepreneurship may also be defined as "the ability to combine the factors of production to produce and earn profit".

FUNCTIONS OF AN ENTREPRENEUR

The functions of an Entrepreneur are broadly divided into two.

They are: i.   Organising Functions and

          ii.   Risk-Bearing Functions.

Organising Functions

Planning the Business: The first and foremost function of an entrepreneur is to plan the business. It is the entrepreneur who plans out every details of the business such as, what to produce, where to produce, how to produce, how much to produce and when to produce. After having planned out the every details of the business, he begins to organize the business.

Organising Production: The next important function of an Entrepreneur is organizing production. The factors of production required for production are orgainsed by the entrepreneur. He purchases land for the factory. He rises the capital. He appoints the skilled and unskilled labourers. He buys machines, equipments, tools, raw-materials etc.

Managing the Business: The entrepreneur is responsible to administrate the day-to-day business. He supervises, manages and directs the activities of all factors of production. He settles the industrial disputes if any.

Controlling the Business: The entrepreneur is the person who controls the whole business. He is the policy maker. He has to make many decisions. Others carry out his decisions.

Distributing the Rewards: It is an important function of the entrepreneur to distribute the rewards to the various factors of production, in the form of rent to landlord, wage to labourer and interest to capitalist. These rewards are made even before the product is sold or finished. When product is sold, he gets money, otherwise, he will face loss.

Risk Bearing Functions

Risk Taking: According to Prof. Hawley, Risk Taking is an essential function of an entrepreneur and is the basis of profit. It is one of the important functions of an entrepreneur. In modern days, goods are produced in anticipation of demand. This is highly risky. If the

anticipation of demand is correct, he gets profit, and if it is incorrect the incurs loss. It is the responsibility of the entrepreneur to bear risk. Therefore, he is called a "Risk – Taker".

Uncertainty Bearing: According to Prof. Knight, Uncertainty Bearing is the function of the entrepreneur. Modern entrepreneur has to meet several uncertainties like changes in price, demand, supply, taste and fashion of the consumers etc. It is the duty of the entrepreneur to bear such uncertainties.

Innovation: According to Prof. Joseph. A. Schumpeter, Innovation is the function of the entrepreneur. In order to beat out the rivals, entrepreneur tries to reduce the cost of production with the help of innovation. Innovations may take the form of introduction of new products or new raw materials or opening of new markets or using new methods of production. Therefore, an entrepreneur is also called as "Innovator".

LAW OF RETURNS TO SCALE

Under Laws of Returns, we studied the nature of change in output when factor proportions are altered by keeping at least one factor constant and other factors variable. Hence, Law of Returns is a short term phenomenon. But, under Returns to Scale we study the nature of change in output when all the factors in a scale are altered. In other words, the Returns to Scale explains how the alternation of all the factors in the same ratio affects the output. Hence, Returns to Scale is a long term phenomenon.

Three Stages of Returns to Scale

As in the case of Law of Returns, the Returns to Scale may be either equal or more than equal or less than equal in proportion. Hence, when the scale is increased, we may get either increasing returns or constant returns or decreasing returns.

Stage I

If the increase in all the factors (i.e., scale) leads to a more than proportionate increase in output, returns to scale are said to be 'increasing'.

Stage II

If the increase in all the factors leads to the proportionate increase in output, returns to scale are said to be 'constant.'

Stage III

If the increase in all the factors leads to less than proportionate increase in output, returns to scale are said to be 'decreasing'.

ISOQUANTS

Meaning

Isoquants are the firm's counterpart of the consumer's Indifference Curves. Isoquants are curves which represent the different combinations of two factors of production which are capable of producing the same output. In other words, Isoquants are the locus of all input combinations (X1 and X2) which give the producer the same level of output. These curves may be infinite number. Different Isoquants show different levels of output that can be obtained from different combinations of factors of production.

Isocost Curves:

Having studied the nature of isoquants which represent the output possibilities of a firm from a given combination of two inputs, we pass on to the prices of the inputs as represented on the isoquant map by the isocost curves. These curves are also known as outlay lines, price lines, input-price lines, factor-cost lines, constant-outlay lines, etc. Each isocost curve represents the different combinations of two inputs that a firm can buy for a given sum of money at the given price of each input.

Figure, 24.8 (A) shows three isocost curves AB, CD and EF, each represents a total outlay of 50, 75 and 100 respectively. The firm can hire OC of capital or OD of labour with Rs. 75. OC is 2/3 of OD which means that the price of a unit of labour is 1½ times less than that of a unit of capital. The line CD represents the price ratio of capital and labour. Prices of factors remaining the same, if the total outlay is raised, the isocost curve will shift upward to the right as EF parallel to CD, and if the total outlay is reduced it will shift downwards to the left as AB. The isocosts are straight lines because factor prices remain the same whatever the outlay of the firm on the two factors. The isocost curves represent the locus of all combinations of the two input factors which result in the same total cost. If the unit cost of labour (L) is w and the unit cost of capital (C) is r, then the total cost: $TC = wL + rC$. The slope of the isocost line is the ratio of prices of labour and capital i.e., w/r.

The point where the isocost line is tangent to an isoquant represents the least cost combination of the two factors for producing a given output. If all points of tangency like LMN are joined by a line, it is known as an output- factor curve or least-outlay curve or the expansion path of a firm. Salvatore defines expansion path as "the locus of points of producer's equilibrium resulting from changes in total outlays while keeping factor prices constant." It shows how the proportions of the two factors used might be changed as the firm expands.

For example, in Figure 24.8 (A) the proportions of capital and labour used to produce 200 (IQ_1) units of the product are different from the proportions of these factors used to produce 300 (IQ_2) units or 100 (OQ) units at the lowest cost.
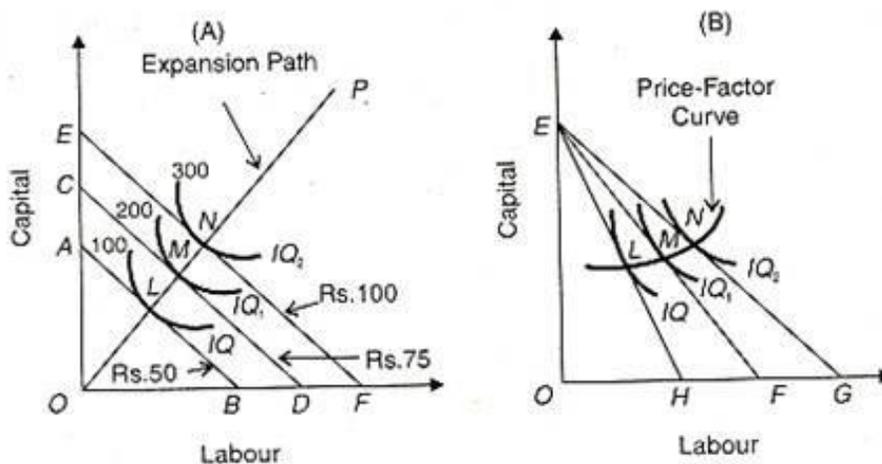
Like the price-income line in the indifference curve analysis, a relative cheapening of one of the factors to that of another will extend the isocost line to the right. If one of the factors becomes relatively dearer, the isocost line will contract inward to the left. Given the price of capital, if the price of labour falls, the isocost line EF in Panel (B) will extend to the right as EG and if the price of labour rises, the isocost line EF will contract inward to the left as EH. if the equilibrium points L, M, and N are joined by a line, it is called the price-factor curve.

The Principle of Marginal Rate of Technical Substitution:

The principle of marginal rate of technical substitution (MRTS or MRS) is based on the production function where two factors can be substituted in variable proportions in such a way as to produce a constant level of output.

The marginal rate of technical substitution between two factors C (capital) and L (labour), $MRTS_{LC}$ is the rate at which L can be substituted for C in the production of good X without changing the quantity of output. As we move along an isoquant downward to the right, each point on it represents the substitution of labour for capital.

MRTS is the loss of certain units of capital which will just be compensated for by additional units of labour at that point. In other words, the marginal rate of technical substitution of labour for capital is the slope or gradient of the isoquant at a point. Accordingly, slope = $MRTS_{LC} = -\Delta C/A L$. This can be understood with the aid of the isoquant schedule, in Table 24.2.

TABLE 24.2: Isoquant Schedule:

Combination	Labour	Capital	$MRTS_{LC}$	Output
1	5	9	—	100
2	10	6	3:5	100
3	15	4	2:5	100
4	20	3	L;5	100

The above table shows that in the second combination to keep output constant at 100 units, the reduction of 3 units of capital requires the addition of 5 units of labour, $MRTS_{LC} = 3:5$. In the third combination, the loss of 2 units of capital is compensated for by 5 more units of labour, and so on.

In Figure 24.9 at point B, the marginal rate of technical substitution is AS/SB, at point G, it is BT/TG and at H, it is GR/ RH.
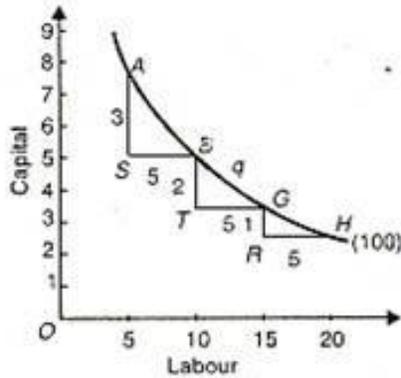
The isoquant AH reveals that as the units of labour are successively increased into the factor-combination to produce 100 units of good X, the reduction in the units of capital becomes smaller and smaller. It means that the marginal rate of technical substitution is diminishing. This concept of the diminishing marginal rate of technical substitution (DMRTS) is parallel to the principle of diminishing marginal rate of substitution in the indifference curve technique.

This tendency of diminishing marginal substitutability of factors is apparent from Table 24.2 and Figure 24.9. The $MRTS_{LC}$ continues to decline from 3:5 to 1:5 whereas in the Figure 24.9 the vertical lines below the triangles on the isoquant become smaller and smaller as we move downward so that GR < BT < AS. Thus, the marginal rate of technical substitution diminishes as labour is substituted for capital. It means that the isoquant must be convex to the origin at every point.

The Law of Variable Proportions:

The behaviour of the law of variable proportions or of the short-run production function when one factor is constant and the other variable can also be explained in terms of the isoquant analysis. Suppose capital is a fixed factor and labour is a variable factor. In Figure 24.10., OA and OB are the ridge lines and it is in between them that economically feasible units of labour and capital can be employed to produce 100, 200, 300, 400 and 500 units of output.
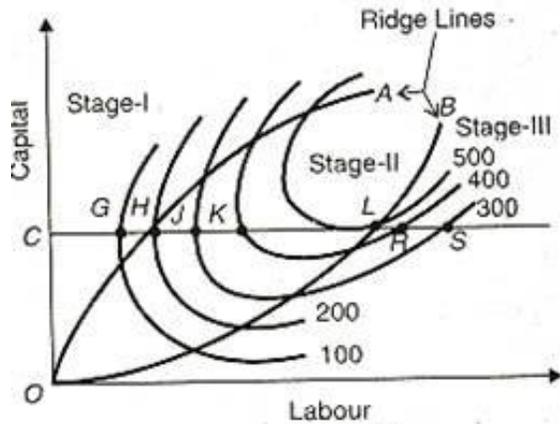
It implies that in these portions of the isoquants, the marginal product of labour and capital is positive. On the other hand, where these ridge lines cut the isoquants, the marginal product of the inputs is zero. For instance, at point H the marginal product of capital is zero, and at point L the marginal product of labour is zero. The portion of the isoquant that lies outside the ridge lines, the marginal product of that factor is negative. For instance, the marginal product of capital is negative at G and that of labour at R.

The law of variable proportions says that, given the technique of production, the application of mote and more units of a variable factor, say labour, to a fixed factor, say capital, will, until a certain point is reached, yield more than proportional increases in output, and thereafter less than proportional increases in output.

Since the law refers to increases in output, it relates to the marginal product. To explain the law, capital is taken as a fixed factor and labour as a variable factor. The isoquants show different levels of output in the figure. OC is the fixed quantity of capital which therefore forms a horizontal line CD. As we move from C to D towards the right on this line, the different points show the effects of the combinations of successively increasing quantities of labour with fixed quantity of capital OC.

To begin with, as we move from C to G to H, it shows the first stage of increasing marginal returns of the law of variable proportions. When CG labour is employed with OC capital, output is 100. To produce 200 units of output, labour is increased by GH while the amount of capital is fixed at OC.

The output has doubled but the amount of labour employed has not increased proportionately. It may be observed that GH < CG, which means that smaller additions to the labour force have led to equal increment in output. Thus C to H is the first stage of the law of variable proportions in which the marginal product increases because output per unit of labour increases as more output is produced.

The second stage of the law of variable proportions is the portion of the isoquants which lies in between the two ridge lines O A and OB. It is the stage of diminishing marginal returns between points H and L. As more labour is employed, output increases less than proportionately to the increase in the labour employed. To raise output to 300 units from 200 units, HJ labour is employed. Further, JK quantity of labour is required to raise output from 300 to 400 and KL of labour to raise output from 400 to 500.

So, to increase output by 100 units successively, more and more units of the variable factor (labour) are required to be applied along with the fixed factor (capital) , that is KL>JK>HJ. It implies that the marginal product of labour continues to decline with the employment of larger quantities to it. Thus as we more from point H to K, the effect of increasing the units of labour is that output per unit of labour diminishes as more output is produced. This is known as the stage of diminishing returns.

If labour is employed further, we are outside the lower ridge line OB and enter the third stage of the law of variable proportions. In this region which lies beyond the ridge line OB there is too much of the variable factor (labour) in relation to the fixed factor (capital). Labour is thus being overworked and its marginal product is negative. In other words when the quantity of labour is increased by LR and RS, the output declines from 500 to 400 and to 300. This is the stage of negative marginal returns.

We arrive at the conclusion that a firm will find it profitable to produce only in the second stage of the law of variable proportions for it will be uneconomical to produce in the regions to the left or right of the ridge lines which form the first stage and the third stage of the law respectively

In economics an isocost line shows all combinations of inputs which cost the same total amount. Although similar to the budget constraint in consumer theory, the use of the isocost line pertains to cost-minimization in production, as opposed to utility-maximization. For the two production inputs labour and capital, with fixed unit costs of the inputs, the equation of the isocost line is

where w represents the wage rate of labour, r represents the rental rate of capital, K is the amount of capital used, L is the amount of labour used, and C is the total cost of acquiring those quantities of the two inputs.

The absolute value of the slope of the isocost line, with capital plotted vertically and labour plotted horizontally, equals the ratio of unit costs of labour and capital. The slope is:

The isocost line is combined with the isoquant map to determine the optimal production point at any given level of output. Specifically, the point of tangency between any isoquant and an isocost line gives the lowest-cost combination of inputs that can produce the level of output associated with that isoquant. Equivalently, it gives the maximum level of output that can be produced for a given total cost of inputs. A line joining tangency points of isoquants and isocosts (with input prices held constant) is called the expansion path.

The cost-minimization problem

The cost-minimization problem of the firm is to choose an input bundle (K,L) feasible for the output level y that costs as little as possible. A cost-minimizing input bundle is a point on the isoquant for the given y that is on the lowest possible isocost line. Put differently, a cost-minimizing input bundle must satisfy two conditions:

1. it is on the y-isoquant
2. no other point on the y-isoquant is on a lower isocost line.

The case of smooth isoquants convex to the origin

If the y-isoquant is smooth and convex to the origin and the cost-minimizing bundle involves a positive amount of each input, then at a cost-minimizing input bundle an isocost line is tangent

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to the *y*-isoquant. Now since the absolute value of the slope of the isocost line is the input cost ratio, and the absolute value of the slope of an isoquant is the marginal rate of technical substitution (MRTS), we reach the following conclusion: If the isoquants are smooth and convex to the origin and the cost-minimizing input bundle involves a positive amount of each input, then this bundle satisfies the following two conditions:

- It is on the *y*-isoquant (i.e. $F(K, L) = y$ where F is the production function), and
- the MRTS at (K, L) equals w/r.

The condition that the MRTS be equal to w/r can be given the following intuitive interpretation. We know that the MRTS is equal to the ratio of the marginal products of the two inputs. So the condition that the MRTS be equal to the input cost ratio is equivalent to the condition that the marginal product per dollar is equal for the two inputs. This condition makes sense: at a particular input combination, if an extra dollar spent on input 1 yields more output than an extra dollar spent on input 2, then more of input 1 should be used and less of input 2, and so that input combination cannot be optimal. Only if a dollar spent on each input is equally productive is the input bundle optimal.

PRODUCER'S EQUILIBRIUM

(Least Cost Combination)

A rational firm seeks maximisation of its profit. Maximisation of profit implies minimisation of cost. The cost is minimum, when the input combination is optimal. In the theory of consumer behaviour we have analysed the equilibrium of a consumer with the help of the indifference curve analysis. Similarly, the producer's equilibrium can be examined with theory of production are, in fact, the counterpart of the indifference curves in the theory of consumption.

Assumptions

The principle of least-cost combination rests on the following assumptions:

1. Capital and labour are the two factors involved in production.
2. All the units of both the factors are homogeneous.

3. The prices of the factor units are given.

4. The total money outlay is also given.

5. There is perfect competition in the factor-market.

In order to analyse producer's equilibrium, the firm under consideration should know its iso-quant map and its iso-cost line.

Iso-quant Map

The iso-quant or equal product map has already been explained in the preceding pages. Iso-quants indicate various possibilities of combining two inputs. For each level of output there will be a different iso-quant. When a set of iso-quants are depicted on a graph it is called an iso-quant map.

Iso-quant Line

The concept of iso-cost line is not a new one. It is the counterpart of the budget line in the theory of consumption. The iso-cost line is the producer's resource line.

In the words of Prof. Barthwal "It is a locus of all combinations of two (or more) inputs which the producer can buy using his fixed outlay at fixed input prices."

We shall now draw the iso-cost line on the basis of an imaginary example.

Let us assume that a firm has a sum of Rs. 500 to spend on two factors, labour and capital. Further, let us assume that a unit of labour costs Rs. 10 and a unit of capital(machine) costs Rs.100. With a total outlay of Rs. 500 the firm could hire 50 units of labour and no capital, or it could hire 5 units of capital and no labour; or some combination of labour and capital in between.OM in the diagram represents 50 workers and ON represents 5 machines.

If we connect the two points N and M, we get the iso-cost line. Thus an iso-cost line gives all combinations of labour and capital at equal cost. The iso-cost line will shift when the prices of factors change, the outlay remaining the same. Likewise, the iso-cost line will shift to the right if the outlay of the firm increases. Hiring more of both inputs will cost more. When the total outlay is Rs. 600, the iso-cost line is $N_1M_1.N_2M_2$ is the iso-cost line when the outlay is Rs.700.

Thus, the iso-cost line depends upon two things: (1) The prices of the factors of production and, (2) the total outlay which the firm wants to make on the two factors of production. The slope of an iso-cost line is P_L/P_K, which is the ratio of the price of labour to the price of capital, when labour is shown on the x-axis and capital is shown on the y-axis.
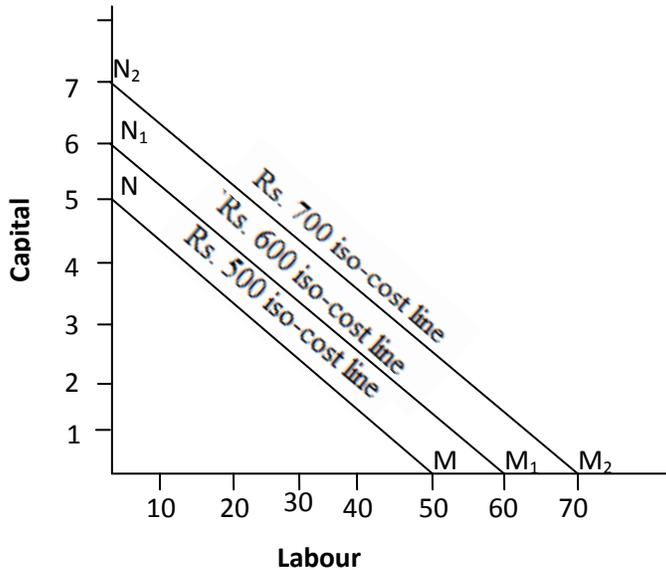
The Optimum Combination of Inputs

Let us consider the geometry of the producer's equilibrium.

Now the problem confronting the firm is to reach the highest possible iso-quant with
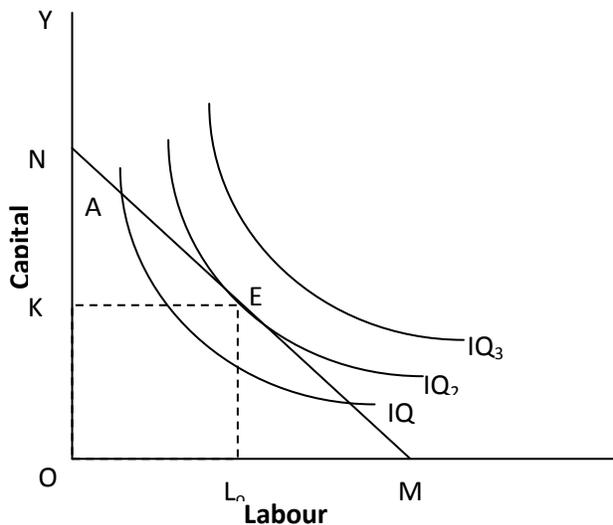
its given iso-cost line. In other words, it is the problem of getting the highest amount of output from the given outlay. Towards this end, the equal product map has been super imposed on the iso-cost line NM.

In Figure NM is the firm's iso-cost line. Iso-quants IQ_1, IQ_2 and IO_3 represent different levels of output. Equilibrium is attained at the point where the iso-quant is tangent to the iso-cost line. The iso-cost line NM sets the upper boundary for the purchase of the inputs when outlay and input prices are given.

Outlay is not sufficient to move to IQ_3. Likewise the segments of iso-quants falling below the iso-cost line indicate under-utilisation of his outlay fully. Rationality on the part of the producer requires full utilisation of resources for optimisation of output.

Point A and B also satisfy the tangency condition and moreover they lie within the reach of the producer. But at these points the firm remains at a lower iso-quant IQ_1, which yields a lesser level of output than that on IQ_2. Thus E is the point of equilibrium from where there is no tendency on the part of the producer to move away. The firm will get its maximum output when it employs OL_O units of labour and OK_O units of capital. The equilibrium position of the firm can also be explained in terms of the equality between MRTS and the factor price ratio. The slope of the iso-quant is the marginal rate of technical substitution (MRTS) and the slope of the iso-cost line indicates the factor price ratio. It follows that while in equilibrium,

$MRTS_{LK} = P_L/P_K$

Thus the marginal rate of technical substitution can also be written as the ration of the marginal product of labour to that of the marginal product of capital.

$$\frac{MP_L}{MP_K} = \frac{P_L}{P_K} \quad \text{(or)}$$

$$\frac{MP_L}{P_L} = \frac{MP_K}{P_K}$$

ISO-QUANTS AND RETURNS TO SCALE

Let us now examine the responses in output when al input are varied in equal proportions.

Returns to scale refer to output responses to an equi-proportionate, change in all inputs. Suppose labour and capital a doubled, then if output doubles, we have constant returns to scale. If output is less than double, we have decreasing returns to scale, and if output is more than double, we have increasing returns to scale.

Depending on whether the proportionate change in output equals, exceeds or falls short of the proportionate change in both inputs, a production function is classified as showing constant, increasing or decreasing returns to scale.

For computing the returns to scale in a production function, we calculate the function co-efficient represented by the symbol'. The ratio of the proportionate change in output to a proportionate change in all inputs is called the function co-efficient 'ε'. That is $\varepsilon = \dfrac{\Delta q/q}{\Delta \lambda/\lambda}$ where proportionate changes in output and all inputs are shown by $\Delta q/q$ and $\Delta \lambda/\lambda$. Then the returns to scale are classified as follows:

Increasing Returns to Scale

When output increases by a proportion that exceed the proportion by which inputs increase, increasing returns to scale prevail.
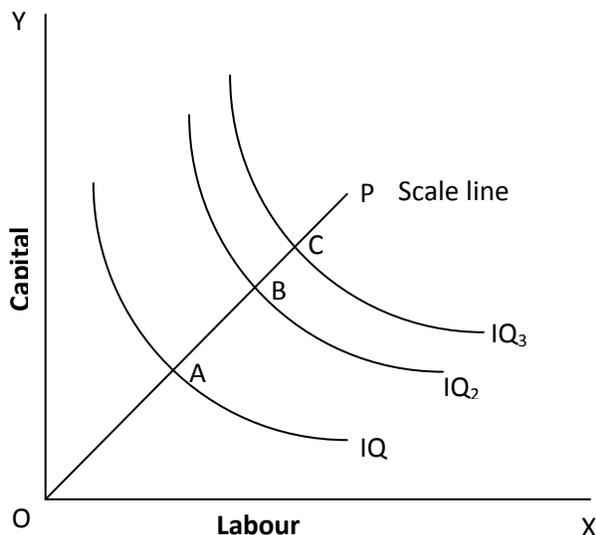
The line OP is the scale line because a movement along this line shows only a change in th scale of production. The proportion of Labour to capital along this line remains the same because it has the same slope throughout. The operation of increasing returns to scale is shown by the gradual decrease in the distance between the iso-quant. For example OA>OB>OC.

Cause of Increasing Returns to Scale

There are several technical and/or managerial factors that contribute to the operation of increasing returns to scale.
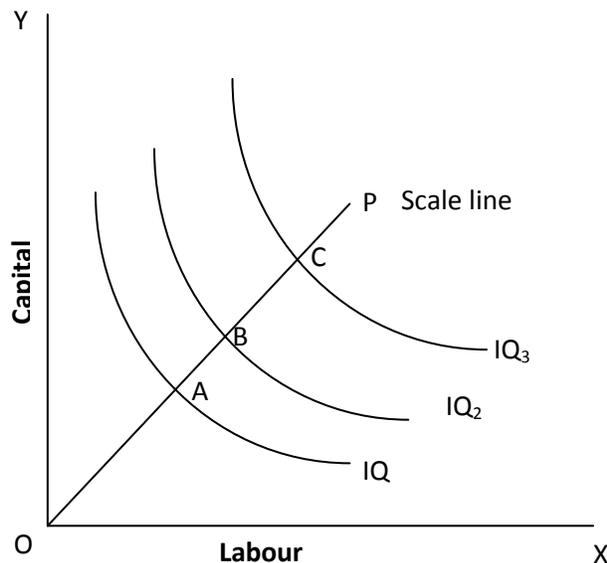
1. Increasing Specialisation of Labour

Increasing returns to scale can be the result of increase in the productivity of inputs caused by increased specialization and division of labour as the scale of operation increase.

2. Indivisibilities

In general, indivisibility implies that an equipment in available only in minimum sizes or in definite ranges of size. Specialised machines are generally far more productive than less specialised machines. In large scale operations the possibility of using specialized machines are higher, so productivity will also be higher.

3. Geometric Necessity

For some production processes, it is a matter of geometric necessity. A larger scale of operation makes it more efficient. For example, to double the grazing area, a farmer need not have to double the length of fencing, similarly, doubling the cylindrical equipment (like pipes and smoke stacks).

Decreasing Returns to Scale

Decreasing returns to scale prevail when the distance between consecutive iso-quants increase. For example, OA<AB<BC.

Decreasing returns arise when diseconomics are greater than economics. Difficulties in co-ordinating the operations of many factories and communication problems with employees may contribute to decreasing returns to scale. More than proportionate increases in managerial inputs may be required to expand output when an organization becomes very large.

Constant Returns to Scale

Constant returns to scale prevail when output also increases by the same proportion in which input increase. In the case of constant returns to scale the distance between successive iso-quant remains constant. For example, OA = OB = OC.
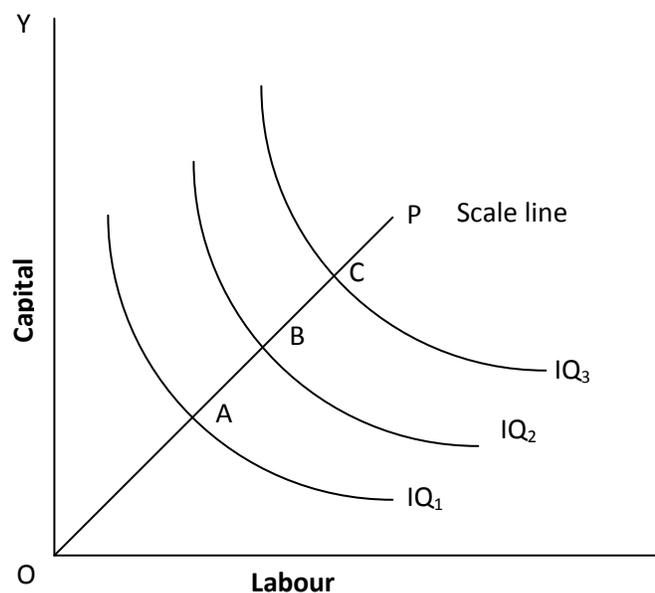
Constant returns arise when economics exactly balance with diseconomies. As economies of scale are exhausted, a phase of constant returns to scale may set in operation.

- Sundaram, K.P.M., Vaish, M.C. Micro Economic Theory, S.Chand & Company Ltd., 12th Edition, 1997.
- Rmita Singh, Emerging trends in Micro Economics, ALP Books, New Delhi, 2011.

UNIT IV: EXCHANGE

Cost and Revenue - Short run and Long run costs - Revenue curves under different market conditions - Perfect Competition - Monopoly - Discriminating monopoly - Monopolistic Competition - Features and price determination.

EXCHANGE

SHORT-RUN AND LONG-RUN COST CURVES

A study of different cost concept is helpful in understanding the behavier of costs over time.

Meaning of Short-run and Long –run

In the short-run, some factors are fixed while others are variable. The fixed factors are plant, equipment and a unique kind of skilled labour.

Short-run is defined as that period of time in which the firm can expand or contract its output only by varying the amounts of variables factors such as labour and raw materials. In the short period the size of the plant cannot be altered. More production is possible only by purchasing and using more raw materials.

Long-run is defined as that period of time in which both fixed and variable factors are variable and both the factors can be adjusted. Over a long period of time, te firm can expand its output by enlarging the size of the existing plant or by building a new plant of a greater productive capacity.

SHORT-RUN FIXED AND VARIABLE COSTS

Fixed costs are those costs that are invariant to that are invariant to the rate of production. They are the costs of indivisible factors such as building, machinery, vehicles etc. Once these costs are incurred they can be used over a period of time at no further cost. Even isf production is nil, fixed cost will have to remain the same.

Fixed costs usually include the following:

1. Rent for building

2. Interest for captial

3. Insurance premium

4. Property, business taxes etc.

5. Depreciation charges.

6. Sakaries if permanent staff

   Variable costs vary with the level of output. It rises when output expands and falls when output contracts. When output is nil, variable cost becomes zero.

Variable costs usually include the following:

1. Payments for raw materials

2. Wages for labour

3. Fuel and power charges

4. Excise duties, sales tax ect.

5. Interest on short term loans

6. Transport costs.

REVENUE CURVES UNDER DIFFERENT MARKET CONDITIONS

REVENUE CURVES OF THE FIRM UNDER PERFECT COMPETITION

When competition is perfect, the Average Revenue curve of the firm is a horizontal straight line. This is so because, the individual firm under perfect competition cannot influence the market price. The seller under perfect competition can sell any amount of the commodity at the ruling market price. In this case, when Average Revenue curve is the horizontal line, the Marginal Revenue curve coincides with the Average Revenue curve. This is so because additional units are sold at the same price as before and no loss is incurred on the previous units. So AR and MR will be equal and constant. This will be equal to price. The table shows TR,AR and MR under perfect competition.

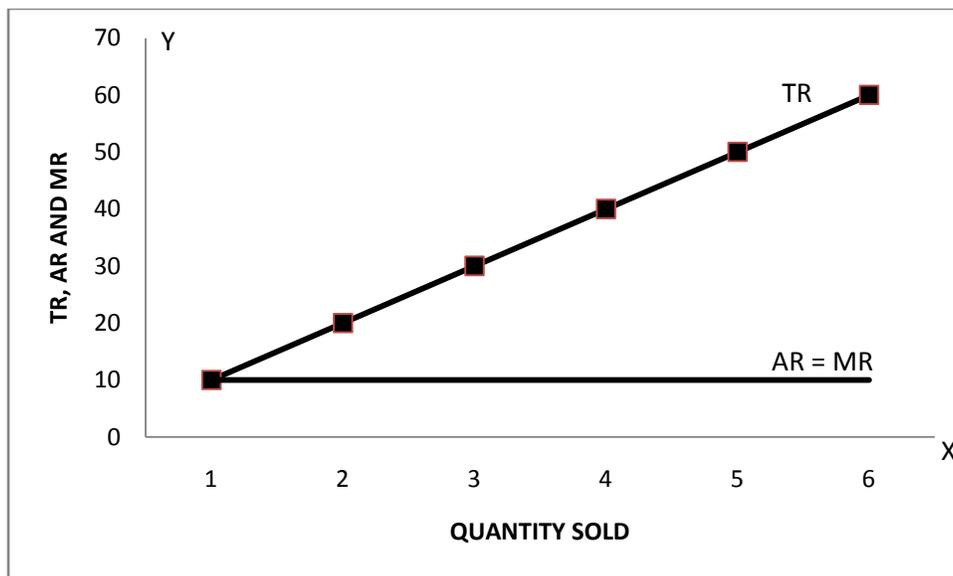The Table shows TR, AR, and MR under imperfect competition.

Table 9.1

Computation of TR, AR and MR under perfect competition

Number of Units Sold(q)	Price (AR) (in Rs.)	TR (AR x q) (in Rs.)	MR (in Rs.)
1	10	10	10
2	10	20	10
3	10	30	10
4	10	40	10
5	10	50	10

In Table 9.1, MR is equal to AR i.e. price. The TR, AR and MR curves are depicted in Fig 9.2

Revenue Curves Of The Firm Under perfect Competition

REVENUE CURVES OF THE FIRM UNDER IMPERFECT COMPETITION

When competition is imperfect (Monopoly, Monopolistic competition or Oligopoly), the AR curve of the firm will slope downwards. This is so because; a firm can sell larger quantities only when it reduce the prices. When the output is increased for selling, the Average Revenue or the Price will be declining. So the AR curve will be a declining curve. A falling price must mean some loss on the sale of additional supply. That is why, MR curve lies below AR curve.

The table shows TR,AR and MR under imperfect competition.

Computation of TR, AR and MR under Imperfect competition

Number of Units Sold(q)	Price (AR) (in Rs.)	TR (AR x q) (in Rs.)	MR (in Rs.)
1	10	10	10
2	9	18	8
3	8	24	6
4	7	28	4
5	6	30	2
6	5	30	0

In table when output is increased, the price has to be reduced to get adequate demand and consequently the AR is continuously falling, the MR also diminishes with increase in output. At the sixth unit, the MR comes to zero. If seventh unit is produced and sold, it will result in negative marginal revenue(i.e., loss).
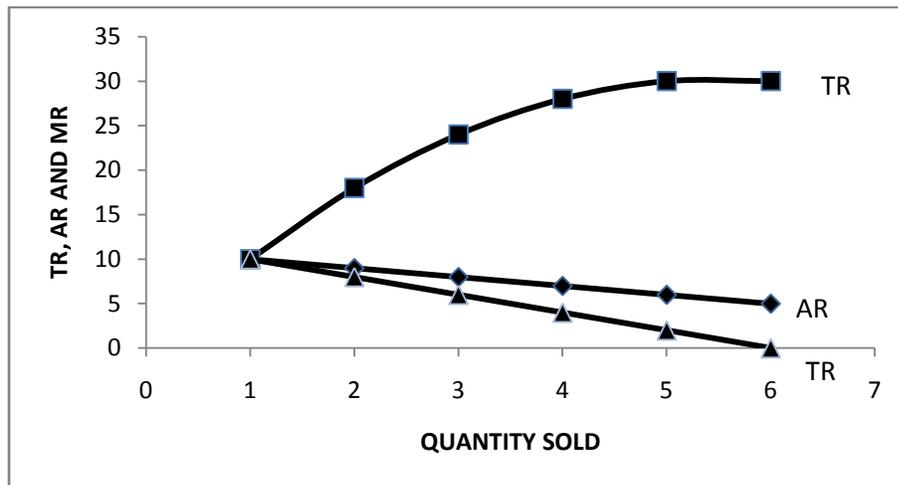
Revenue Curves Of The Firm Under Imperfect Competition

PERFECT COMPETITION

Meaning

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

Definitions

1. According to Mrs. Joan Robinson, "Perfect Competition prevails, when the demand for the output of each producer is perfectly elastic".
2. According to Leftwhich, "Perfect Competition is a market situation in which there are many firms selling identical products with no firm large enough relative to the entire market to be able to influence market price".

FEATURES OR CONDITIONS OF PERFECT COMPETITION

A market is said to be operating under Perfect Competition, if it satisfies the following condition:

1. The first important features of perfect competition are the existence of a large number of buyers and sellers in the market.
2. The second condition of perfectly competitive market is that all sellers are selling homogeneous or identical products. In other words, there is no product differentiation.
3. The next feature of perfect competition is that the firms are free to enter or leave the industry.
4. Another condition of perfect competition is the existence of perfect knowledge on the part of the buyers and sellers regarding the market conditions.
5. The existence of perfect competition depends upon the perfect mobility of factors of production.
6. In a perfectly competitive market, there are no transport costs.
7. The last feature of perfect competition is that there is only one price for the commodity.

DISTINCTION BETWEEN PURE AND PERFECT COMPETITIONS

Pure Competition

The Pure Competition is one which satisfies only the first three features of perfect competition, namely, existence of large number of buyers and sellers, existence of a homogeneous product and free entry and exit for firms.

Perfect Competition

In addition to the features of Pure Competition, the Perfect Competition satisfies the other conditions namely,

1. Existence of perfect knowledge on the part of the buyers and sellers regarding the marking conditions.
2. Perfect mobility of factors of productions.
3. There are no transport costs.
4. There is only one price for the product.

VALUATION UNDER PERFECT COMPETITION OR

PRICE DETERMINATION UNDER PERFECT COMPETITION

The equilibrium price and output are determined by the interaction of total demand and total supply. Equilibrium price is that price at which quantity demanded of the product is equal to the quantity supplied. The demand curve of the market will slope downwards from left to right. This is, because, buyers demand larger quantities at a lower price and vice versa. The supply curve will slope upwards from left to right. This is, because, producers increase the supply at a higher price and vice versa.

Table 4.1

Total Demand and Total Supply

Price of Rice (Rs. Per Kg.)	Total Demand (in Kg.)	Total Supply (in Kg.)
6	2	20
5	6	16
4	8	12
3	10	10
2	14	8
1	20	4

In Table 10.1, when the price of rice is Rs.6 per kg., the supply is 20kg., but the demand for rice is only 2 kg. Hence, 18kg. Of rice remain unsold. This will push down the price. When price falls from Rs.6 to Rs.5 the demand rises from 2kg to 6kg. While the supply falls from 20kg To 16kg,still the supply is in excess of the demand. Thus, the excess supply causes a further downward trend on price. This process continues till the price is reached at Rs.3 per kg. At which both demand and supply are equal (10kg). This is the equilibrium price.

Let us begin from a low price. When the price is Re.1 per kg. The demand (20kg) exceeds the supply (4kg). Thus, there is a shortage of supply (exceeds demand) of 16kg. In relation to higher demand. This will rise the price from Re.1 to Rs.2 per kg. This process continues till the price is reached at Rs.3 per kg. At which both demand and supply are equal (10kg). This is the equilibrium price.
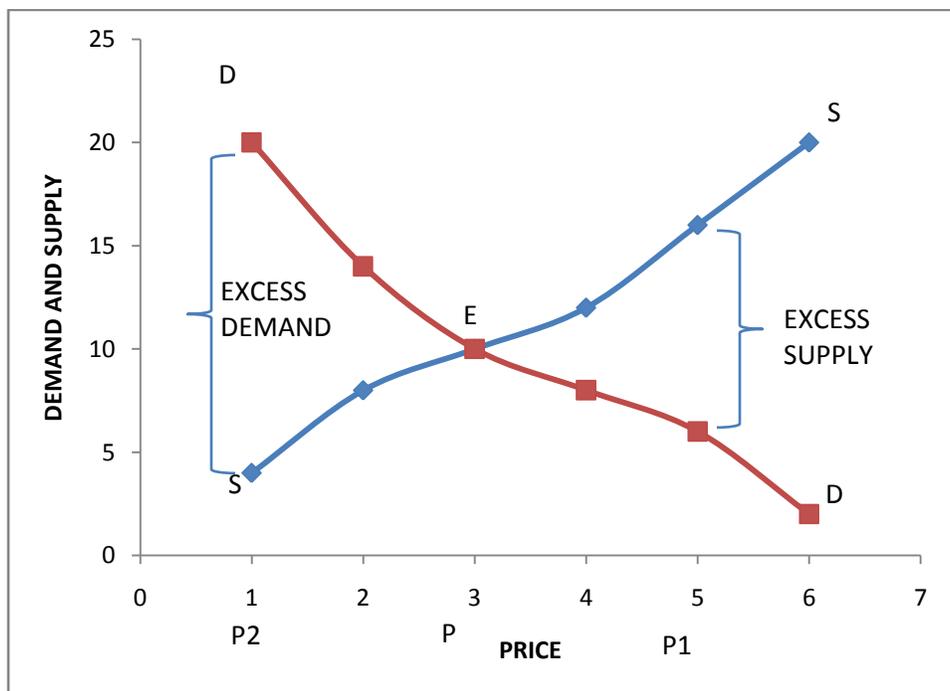
Fig.10.1: Valuation Under Perfect Competition

DEMAND AND SUPPLY

Explanation

In figure X axis represents demand and supply and Y axis represents price. DD is the demand curve and SS is the supply curve. Both these curves intersect each other at point 'E', the equilibrium point. At this point, equilibrium price is OP(Rs.3) and the equilibrium output is OM(10kg), where quantity demanded is equal to quantity supplied. When price increase from OP(the equilibrium price) to OP1, the supply is P1R while the demand is only P1Q. Thus, excess supply is QR. That is, more is offered for sale than what the people demanded. Hence, in order to dispose the excess supply, the competing seller will be induced to bring down the price from OP1 to Op, the equilibrium price, where the demand equal to supply.

Similarly, if price falls from OP to OP2, the supply is P2T only, while the demand is P2U. Thus, the excess of demand (shortage of supply) is TU. That is, buyers want to purchase more than what is available in the market at the prevailing price. Since demand is greater than supply, the competing sellers increase the price from OP2 to Op, the equlibrium price, where demand is equal to supply.

MONOPOLY

INTRODUTION

At one end of the market spectrum is perfect competition, with many sellers and at the other end is monopoly, with only one seller,"monopolist" is a Greek word, Mono means one and Polist means seller.

Monopoly is a market structure in which there is a single sellers, there are no close substitutes forthe commodity it produces and there are barriers to entry. The key to monopoly power is the ability to contorl the availabilty of a product.

When a commodity has distinct physical propertues and these are recongnise by everybody as distinct, then a firmproducing such a commodity can be called a monopoly firm. Joel Dean, an authority on managerial economics calls a monopolist products as "a oroduct of lasting distinctiveness". Such a product has no acceptable substitutes. Its distinctiveness lasts for many

years. The best example of monopoly is the Reserve Bank og India which alone has the right to issue currency notes.

CHARACTERISTICS OF MONOPOLY

The main features of monopoly are as follows:

1. One seller and a large number of buyers.
2. There is absence of competition.
3. No close substitutes.
4. Cross elasticity of demand for a monopolist's product is zero in case of pure monopoly and very low in the case of simple monopoly.
5. Difficult for new firms' to enter.
6. The distinction between firms and industry disappears.
7. Control over the supply of the commodity.

The type of monopoly explained above is simple monopoly. There is also a pure or perfect or absolute monopoly which is described later. But our analysis is based on a detailed discussion of simple monopoly and discriminating monopoly.

TYPES OF MONOPOLY

Monopoly is the anti-thesis of competition. There are various kinds of monopoly.

Monopoly

(A Single Seller)

Natural	Private	Discriminating	Simple	Trust	Holding Company
Public Utility Or social Services	Legal	Services	Fiscal	Cartel	Voluntary

1. Natural Monopoly

A natural monopoly is a special type of monopoly that arises due to economies of scale.

In the words of Baumol,

"A natural monopoly is an industry in which economies of scale and other related forms of saving make it cheaper to produce when there is one firm rather than several".

Natural monopolies arise on account of concentration of raw materials in a particular region. An example of natural monopoly is the nickel supply of Canada (about 90 percent of the world's supply). Likewise, most of the world's diamond mines are owned by the De Beers Company of South Africa. Factors like climate, environment and nearness to market, may also create natural monopolies.

2. Social Monopoly

Social monopolies are owned and managed by the government. The aim of his monopoly is not profit, but to be of service to the prople. Therefore, it is sometimes called welfare monopoly.

Example: Railways, electricity, post and telegraphs etc.

3. Private Monopoly

A private monopoly is owned and operated by a private individual or companies for the consideration of profit. Profit maximisation is the sole objective of such monopolies.

4. Legal Monopoly

Legal monopolies are conferred on certain firms and are protected by law for them to enjoy for some given period of time, the fruits of their labour. The special trade marks, copyrights and patents are the best examples of legal monopoly.

5. Service Monopoly

Monopoly may arise in services also. For example, there is only one doctor in a particular locality who alone can perform the most difficult operation. He is in the position of a monopolist.

6. Simple Monopoly

A simple monopoly is one in which the monopolist will charge the same price for a particular product for all the customers.

7. Fiscal Monopoly

Sometimes some activities like minting of coins or printing of currency will be undertaken only by the government for various reason. Such monopolies are known as fiscal monopolies.

8. **Discriminating Monopoly**

A discriminating monopoly is one in which different prices are charged for the same product for different customers.

For example, Lawyers charge different rates for different clients.

9. **Voluntary Monopolies**

Voluntary monopolies are created to eliminate competition and to reap abnormal profits.

(a) Cartel: A cartel is a group of firms whose objective is to limit the scope of competitive forces in the market.   For example, OPEC (the Organisation of Petroleum Exporting Countries).

(b) Trust: When all the firms merge into one association, the monopoly is referred to as a trust. The Associated Cement Companies(ACC) in India ia an example of a Trust.

(c) Holding Company: A holding company is one which obtains a monopoly position by owning the majority of shares in a company or a group of companies.

Monopolistic competition

Introduction

Monopoly and perfect competition are mutually exclusive and many industries fall in between them. While perfect competition is a myth, pure monopoly is a rarity. In actual life is difficult to find examples of perfect competition and pure monopoly. The theories of perfect competition and monopoly have constitute"classical" micro economic theory from Marshall to Knight.

In the late 1920s and early 1930s economists expressed their disappointment and displeasure with perfect competition and pure monopoly as tools in explaining real world's business behavior. Some duopoly models like Cournot and Edge worth were developed before the 1930s. But they were considered as academic intellectual exercise rather than explaining real world situations.   In fact, in 1926 Piero Sraffa in his article "the Laws of Returns under Competitive Conditions " pointed out the necessity for abandoning both perfect competition and pure monopoly.

In 1933, the price theory was reformulated by the pioneering works of Prof. Edward H. Chamberlin's :the theory of Monopolistic Competition:"__A reorientation of the theory of value,

and Prof. Joan Robinson's "The Economics of Imperfect Competition." These economists launched heavy attack on the orthodox neo-classical models of the firm.

Although there are similarities in their books, there is major difference as well.

A market for a product is said to be perfectly competitive is the following conditions are satisfied.

1. A large number of buyers and sellers.
2. Homogeneous product.
3. Free entry and exit of firms.
4. Perfect knowledge on the part of the buyers.
5. Perfect mobility of the factors of production.
6. No transport costs.

The absence of any one or two conditions will make the market an imperfect one. But Imperfect competition or market is a loose term, referring to a multitude of market situations.

If we say that the wall of a room is painted white, we can easily visualize a white wall; but if we say that a particular wall is not white we cannot really visualize the colour of the wall. For, it is possible that the wall is painted black or blue, or red, or orange, and so on. Likewise, perfect competition refers to a market situation whereas imperfect competition does not specify the market. The imperfect market may be duopoly, oligopoly, monophony, oligopoly, etc.

We shall explain the whole matter with the help of a simple chart.

Market Forms

Perfect Competition   Imperfect competition   Monopoly

Duopoly   Oligospony

Oligopoly   Monopsony
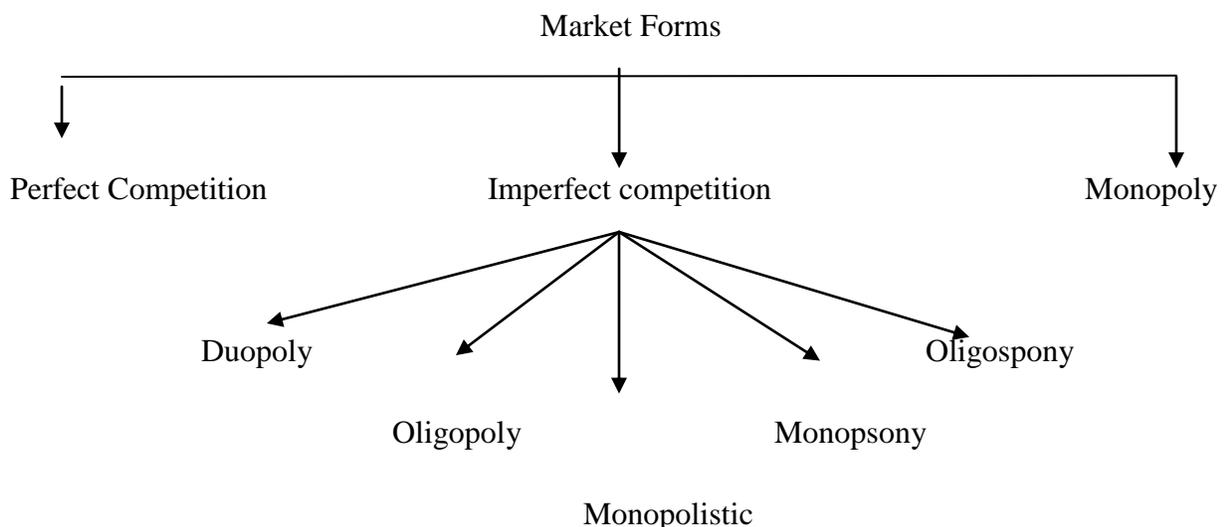
Monopolistic

COMPETITION

This perfect competition and pure monopoly are two extremes and imperfect competition is a middle ground between the two. Monopolistic competition is thus a form of imperfect competition.

DEFINITION OF MONOPOLISTIC COMPETITION

If perfect competition is the thesis, monopoly is the anti-thesis, then monopolistic competition is the synthesis between the two.

Monopolistic competition refers to a market situation in which a large number of sellers are offering similar but not identical produces. As Chamberlin pointed out, it is a blend of competition and monopoly. Therefore both competitive and monopoly elements exists side by side in such a market. The number required, to refer to monopolistic competitive firms may be 25,40,55 or 70. Retail stores in large cities are generally monopolistically competitive in nature; general stores, medical stores, restaurants, barber shops, dry cleaners, bicycle repair shops, shoe making industry, food processing industry and so on are good example for a monopolistic competitive market.

The following are some examples of monopolistic competition in the Indian context:

1. Shampoo   - Sunsilk,Clinic Plus, Ponds,Chik,Velvette,Kadal,Handy,Khushbu.
2. Blades   - Swiss,Ashok,7'O' clock,Laser,Wilkinson Sword.
3. Tea   - Three Roses, Ruby, A.V.T. Premium,Brooke Bond.
4. Tooth Pastes   - Binaca, Colgate,Forhans,Close-up,Promise,Vicco
                                  Vajradanti,Pepsodent.
5. Washing Powder   - Nirma, Chase, Surf, Ultra-Surf, Wheel,Rin.

Prof. Albert L. Meyers defined monopolistic competition as "A situation where there may be many sellers, but with differentiated produce, so that competition is no longer on price basis".

In the words of Profs. Stonier and Hague "There is competition which is keen, though not perfect, between many firms making similar products".

Features of Monopolistic Competition

The following are the main features of monopolistic competition.

1. Large Number of Sellers

The number of firms under monopolistic competition is relatively large, but it is not as large as under perfect competition. Since, there is homogeneity of goods; competition is keen though not perfect.

2. Product Differentiation

Product differentiation is the corner stone of monopolistic competition. Product differentiation is the process of altering goods that serve almost identical purpose so that they differ in minor ways. As Chamberlin pointed out, the products are heterogeneous rather than hemogeneous. But the products are only marginally differentiated. Therefore the cross elasticity of demand among the products are high.

Product differentiation like beauty is in the eyes of the beholder and in economics the beholder is always the buyer.

(1). By Changing the Quality of the Product

Real or physical differences may be created through changes in design, color, materials used and the style of the product.

(2). By Advertisement

Advertisement and sales promotion measures pave the way to create imaginary or artificial differences. Nowadays there is an irrational taste among consumers for products which are splashed on television, screens, newspapers or voiced through the radio. Product differentiation may also exist with respect to conditions surrounding its sale such as, the convenience or store location, delivery at the door step, credit facility, prompt services, the nice million dollar smile of the sales girl, gifts, etc.

(3). By Patent Rights and Trade Marks

Patent rights and trademarks also play their part to create product differentiation. For example, Coca Cola is a patent right granted by the U.S. Congress to their inventions. Trademarks like Pears, Rexona, Mysore Sandal etc. Provide varieties to consumers to prefer as per their choice.

(3). Non-Price Competition

Product variations and selling costs are alternative methods adopted by firms to increase sales. Since the products are slightly differentiated, selling cost is an inevitable variable which affects the sales pattern. Therefore, through advertisement the seller seeks to achieve a delicate balance between commodity homogeneity and heterogeneity.

(4). Freedom of Entry and Exit

Like perfect competition, the firms under monopolistic competition are free to enter or leave the industry. When firms in an industry are making super normal profits, new firms with a slight difference in the product will enter and the excess profit will be washed away. Therefore the firms will earn only normal profits in the long-run.

(5). Independent Behaviour

Another noticeable feature of monopolistic competition is that it has an independent price policy. Under perfect competition, the firm is simply a 'price taker' and it has to adjust the output according to the prevailing price which is determined by the two forces of demand and supply. Since the number of firms under monopolistic competition is large, if a firm lowers its price, its impact is thin by its spread over many of its rivals so that the sales damage caused to the rivals will be negligible. Therefore there is no possibility of retaliation in the form of price war as under oligopoly.

EQUILIBRIUM UNDER MONOPOLISTIC COMPETTION

Under perfect competition, the individual seller can sell as much as he pleases at the on going price. Under monopolistic competition, his market is separate from that of his rivals to some extent. The firm's sales are limited by three factors:

1. Price,
2. The nature of the product, and
3. Advertising outlays.

The present analysis is based on Prof. Edward H.Chamberlin's "The theory of Monopolistic Competition."

1.Price Problem

The demand curve facing a firm under perfect competition is horizontal and the firm has no independent price problem. It can produce and sell any level of output as it pleases at the prevailing price. But the demand curve facing a firm under monopolistic is sloping downwards to the right.

Since the products are slightly differentiated, from its rivals, consumers can find many close substitutes for the product, so that the monopolistically competitive firm's demand curve is highly price elastic.

By way of product differentiation the firms create 'Brand loyalty' or 'Story loyalty.' The downward sloping demand curve indicates that a seller can raise his price to some extent without losing all of his customers, Likewise it can lower its price to attract new customers to his kingdom but cannot get all the customers of other similar products.

A firm under monopolistic competition will try to get maximum profits. Towards this end, it may increase its profits by raising the price and selling less or by lowering its price and selling more. Thus price-output adjustment becomes necessary for a firm under monopolistic competition.

2. Nature of the Product

The second problem faced by a firm is the adjustment of his product through product variations. The volume of its sales depends upon the manner in which his product differs from those of his competitions. Product variation refers to an alteration in the quality of the product such as technical changes, a new design, better materials, a new and attractive package or container, prompt and courteous service, a different way of doing business or a different location. Where the possibility of differentiation exists, the sales depend upon the skill with which the product is distinguished from others.

3.Advertising Outlay

Selling costs play an important part under monopolistic competition. Every seller tries to influence the volume of his sales by incurring additional expenditure. Additional expenditure implies expenditure over and above his cost of production. Just as he adjusts price and products to maximize his output, he adjusts his advertising outlay and demand for his product in such a way as to ensure that his profits are maximum. Under perfect competition, selling cost is a waste, because the seller can sell any quantity at the existing price. But under monopolistic competition due to keen rivalry among producers, it is inevitable to attract other customers towards his side. Gains from advertising expenditure under monopolistic competition are due to two factors.

(i). Imperfect knowledge on the part of the buyers as to what type of product would give him the maximum satisfaction.

(ii). The possibility of altering wants by advertising or selling appeal.

Monopolistic competition therefore involves a complex problem with respect to all the three variables, viz, (i) price, (ii) product and (iii) selling outlay. It would be a very much complicated affair to discuss with reference to prices and output adjustment, with the assumption that product variation is constant and that selling costs are absent.

FEATURING OR CHARACTERISTICS OR ASSUMPTION OR CONDITIONS OF MONOPOLISTIC COMPETITION

1. Under Monopolistic competition, there should be a large number of sellers.
2. The products produced by the producers have close substitutes.
3. Under Monopolistic competition, the producer has to incur selling cost.
4. There is freedom of entry and exit of firms into the industry.
5. Under Monopolistic Competitions, different firms produce different varieties of products ie. Product differentiation.
6. The existence of Monopolistic Competition depends upon imperfections in the knowledge of buyers.
7. An important feature o monopolistic competition is the firm has a price policy, where as under perfect competitions a firm is only a price taker.
8. Another very important feature f Monopolistic Competitions is the "Non-Price Competition". It means, methods of competing rival other than price cutting, namely guarantee for the pairs within a particular time after sale services a gift scheme, a discount not declared in the price list, free transport etc.

PRICE DETERMINATION UNDER MONOPOLISTIC COMPETITION

Price-output determination under Monopolistic Competition is same as the analysis of equilibrium of a firm and industry. Under Monopolistic Competition, different firms produce different varieties of the products. Therefore, different prices for them will be determined in the market depending upon their respective demand and cost condition. The cost curves are governed by the Laws of Production The average revenue curve of the firm under Monopolistic Competitions will be a sloping downward curve from left to right. Further, the MR Curve will also a downward sloping curve but it will be steeper (less) than AR curve.

We have to study not only individual equilibrium of a firm but also "Group Equilibrium" of the firms or "equilibrium of the industry". First, let us discuss the equilibrium of the firm.

Short-Run Equilibrium of the Firm with Super Normal Profit

In Fig. 18.1 X axis represents output and Y axis represents price

SRMR =   Short –Run Marginal Revenue Curve.

SRAR =   Short-Run Average Revenue Curve.

SRMC =   Short-Run Marginal cost curve and

SRAC =   Short-Run Average Cost Curve

The point 'E' is the equilibrium point at which SRMR = SRMC. At this equilibrium point, the output is ON, the average revenue is NQ and the average cost is NR. Super normal profit per unit of output is the difference between average revenue and average cost, therefore RQ (NQ-NR) is the super normal profit is PQRS (shaded area) i.e. output multiplied by super normal profit per unit of output (SR x RQ).
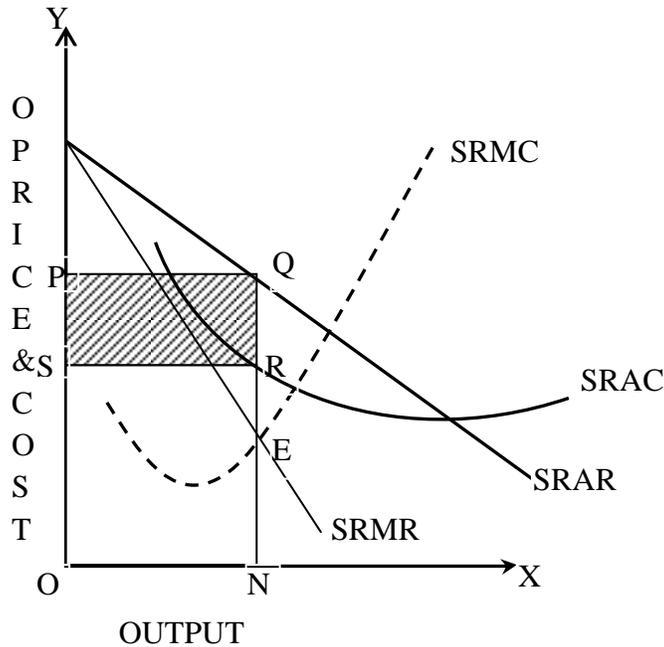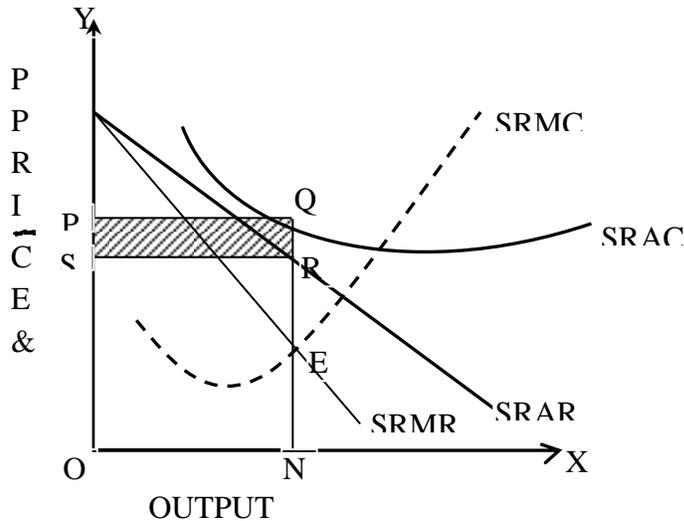
Short-Run Equilibrium of the Firm under monopolistic with Super Normal Profit

The point 'E' is the equilibrium point at which SRMR = SRMC. At this equilibrium point, the output is ON, the average revenue is NQ and the average cost is NR. Super normal profit per unit of output is the difference between average revenue and average cost, therefore RQ (NQ-NR) is the super normal profit is PQRS (shaded area) i.e. output multiplied by super normal profit per unit of output (SR x RQ).

Short-Run Equilibrium of the Firm with Loss

A firm under monopolistic competition will also be realizing loss in the short-run which is illustrate in fig 18.2. The firm comes to equilibrium at point 'E' where MR = MC. At this point the output is ON, the price (average revenue) is NR (OS) and the average cost is NQ. Average Revenue (NR) is less than average cost (NQ). Therefore loss per unit of output is the difference between AR and AC. Hence QR (NQ-NR) is the loss per unit of output. Since, total output is ON, the total loss is PQRS (Shaded area) i.e. Output multiplied by loss per unit of output.

Short-Run Equilibrium of the Firm under monopolistic with Loss

Thus in the short-run a firm under Monopolistic competition may either earns super normal profit or suffers loss.

Long-Run Equilibrium of the Firm with Normal Profit

We have seen that the firms under Monopolistic competition can earn either super normal profits or losses in the short-run. But, in the long-run, such profits or losses disappear. This is because, if the existing firms are earning super normal profits, the new firms will enter into the industry. As new firms enter and start production, supply will increase and hence the price will fall. Therefore, the super normal profits will disappear and the firms will earn only normal profits.

On the other hand, if the firms realize losses in the short-run, some firs will leave the industry due to losses. Therefore, the supply will decrease and hence the price will rise. So the loss will disappear and the remaining firms will earn only normal profits. Further firms earn normal profits in the long-run only hen average revenue is equal to average cost. Therefore, in the long-run, a firm under Monopolistic Competition attains equilibrium when,

AR = AC and also MR = MC.

The equilibrium point I É'where MR = MC. At this point, price (Average Revenue) is NQ (OP) and the average cost is also NQ. That id Q and R coincide and abnormal profit or los PQRS disappears. Therefore, there are no super normal profits, but there are only normal profits, which is included in the cost of production.

In the short-run, there is only one condition of equilibrium, i.e. MR = MC

But, in the Long-run, there are two conditions of equilibrium, there are

i.   MR = MC and
ii.   AR = AC
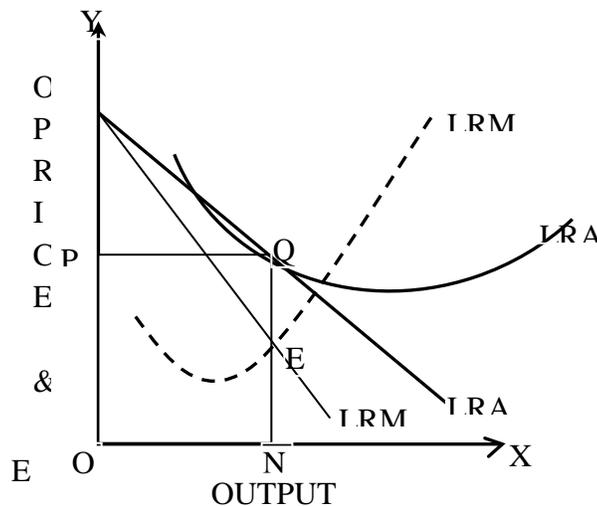
Long-Run Equilibrium of the Firm under monopolistic competition with Normal Profit

Group Equilibrium or Equilibrium of the Industry

So far, we have analysed the equilibrium of an individual firm under Monopolistic competition. Let us now analyse the "Group Equilibrium" or "Equilibrium of the Industry". Group Equilibrium means price output determination of a number firms (i.e. industry). Chamberlin uses the concept of "Product Group" for industry. The product group includes product which are closely related.

Assumption

Chamberlin adopts the following assumptions:

1. The demand and cost curves of all the products in the froup are uniform(similar). It is called "Uniformity Assumption".

2. The number of firms is large. It is called by Stigler as "Symmetry Assumption"

3. The firm are producing more or less similar products.

Let us discuss the equilibrium of the industry based on the above assumptions. Within the group, if a firm has successfully designed a popular brand, it will be earning super normal profits in the short-run profits will be disappeared. But, if the group as a whole is making super normal profits in the short-run, new firms will enter into the group. Therefore, extra profit will be disappeared.
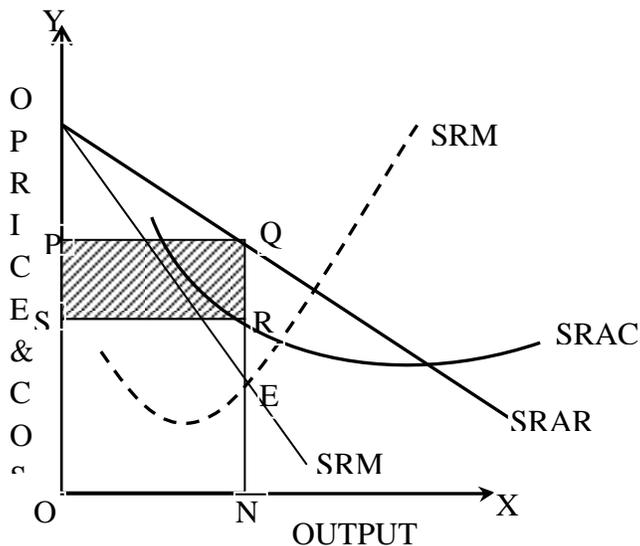
Short-Run Equilibrium of the Industry under monopolistic Competition

With Super Normal Profit

Short-Run Equilibrium (Super Normal Profit)

In Fig. equilibrium point is 'E', where MR=MC. The price(Average Revenue) is MQ (OP), average cost Is MR and output is OM. Super normal profit per unit of output is the difference between AR and AC. Therefore RQ is the super normal profit per unit of output. The total output is OM. Therefore, total super normal profit is PQRS (Shaded area) i.e. total output multiplied by super normal profit per unit of output.

Long-Run Equilibrium (Normal Profit)

In following figure the equilibrium point is 'E' where MR=MC. Average revenue is and average cost is also MQ. Therefore, AT. I.e. price is equal to AC and therefore, no super profit, but only normal profits, which is included in the cost of the production.
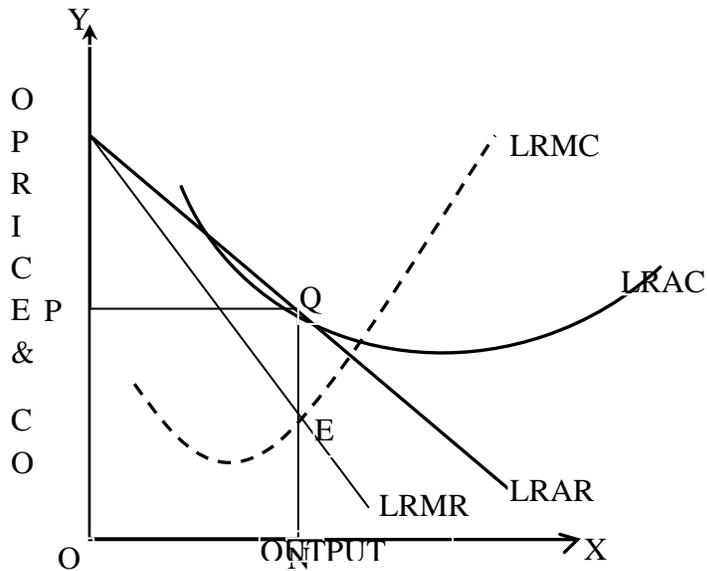
Long-Run Equilibrium of the Industry under monopolistic Competition With Normal Profit

UNIT V : DISTRIBUTION

Marginal productivity theory - Ricardian theory of Rent - Modern theory of Rent - Quasi Rent - Wage theories - Classical theory - Subsistence theory - Marginal productivity theory and - Modern theory Interest theories - Liquidity preference theory - Loanable Fund theory - Theories of profit- Innovation theory - Dynamic theory - Risk bearing theory - Uncertainty theory.

MEANING OF DISTRIBUTION

The science of economics has been broadly divided into four basic divisions, namely, consumption, production, exchange and distribution. Distribution refers to that branch of economics which analyses how the national income of a country is divided among the various factors of production. "The economics of distribution," says Chapman "accounts for the sharing of the wealth, produced by a community among the agents, or the owners of the agents which have been active in its production."

MARGINAL PRODUCTIVITY THEORY

Introduction

The Marginal Productivity Theory of Distribution explains how the prices of various factors of production are determined. In other words, this theory explains how rent, wage, interest and profit are determined. That is why this theory is also known as "General Theory of Distribution" or "National Dividend Theory of Distribution". This theory was developed by Clark, Wicksteed and Walras.

Explanation of the Theory

According to the /marginal Productivity Theory of Distribution, the price or the reward or the remuneration or the income of any factor of production is equal to the marginal productivity of that factor. In other words, each factor is rewarded according to its marginal productivity.

What is Marginal Productivity?

The Marginal Productivity is also known as "Marginal Physical Product"(MPP). The Marginal Product of a factor of production means the increment in the total product which is

obtained by the employment of an additional unit of that factor. The Marginal Product may be measured by three different quantities. They are as follows:

1. Marginal Physical Product(MPP)

Marginal Physical Product of a factor is the increment in the total product which is obtained by the employment of an additional unit of the factor.

2. Value of Marginal Product(VMP)

The Value of Marginal Product is obtained by multiplying the Marginal physical product of the factor by the price of product. Therefore,

VMP= MPP* Price

3. Marginal Revenue Product(MRP)

The Marginal Revenue Product of a factor is the increment in the total revenue which is obtained by the employment of an additional unit of that factor.

The difference between the above three concepts can be explained by the following illustration.

Suppose a firm under perfect competition employs 10 labourers. It produces 50 units of a commodity and sells them at Rs.8 each. The total revenue is 50*8=Rs. 400. If the firm increase one more labourer(11), the total output increases from 50 to 53 units and the total revenue becomes 53*8=Rs.424. In this case,

1. Marginal Physical Product = 53-50 = 3 units.
2. Value of Marginal Product = 3*8 = Rs.24.
3. Marginal Revenue Product = Rs.424 – Rs.400= Rs.24.

Therefore, under perfect competition,

VMP=MRP

Let us assume that the firm is under Imperfect Competition. We have already seen that under Imperfect Competition, a firm can sell more only at a less price. Therefore, the firm under consideration cannot sell 53 units, unless the price is reduced, say Rs.7.75. In this case,

1. Marginal Physical Product   =   53-50   =   3 units.
2. Value of Marginal Product   =   387.75   =   Rs.23.25.
3. Marginal Revenue Product   =   (53*7.75) – 50*8

$$= \text{Rs.410.75} - 400$$

$$= \text{Rs.10.75.}$$

Therefore, under Imperfect Competition.

$$V\,M\,P > M\,R\,P$$

Statement of the Theory

An employer employs a factor of production because of its productivity is needed for production. So, the price he wants to pay for the factor depends upon its productivity. The greater the productivity of a factor, the higher will be its price. If the price of a factor of production is less than its marginal revenue produce, the employer will use more of this factor, because thereby his profit will be increased. When more of a factor is employed, its marginal revenue product diminishes. But the employer will gain by using additional units of the factor until the marginal revenue product of the factor is equal to its price. The employer's profit will be maximum at this point. Beyond the point, the marginal revenue product is less than the price of the factor. Hence, employer will suffer loss when he uses more of the factor. Therefore, the conclusion is that the employer will adjust the price of the factor production as to equalize the marginal revenue product of that factor.

The marginal Productivity Theory of Distribution, therefore, states that

(a). The price of a factor of production depends upon its productivity.

(b). The price of a factor is determined by and will be equal to marginal revenue product of that factor.

(c). Under certain conditions, the price of a factor will be equal to both the average and marginal products of that factor.

The marginal productivity Theory of distribution can be represented diagrammatically as follows:
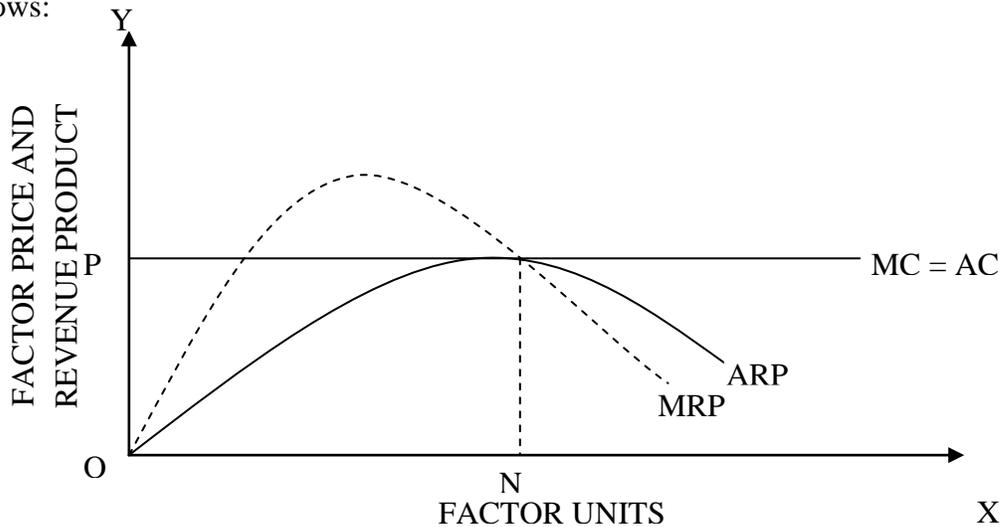

Fig Marginal Productivity under perfect competition

The figure refers to the factor pricing under perfect competition. X axis represents factor units and Y axis represents the factor price and revenue product. MRP is the marginal revenue productivity curve and ARP is the Average Revenue Productivity curve. AC is the Average Cost curve and MC is the Marginal Cost curve. When there is perfect competition in the factor market, the firm is in equilibrium (i.e. earning maximum profits) only when MC=MRP. Hence, in the figure the firm is in equilibrium, at point Q, by employing ON units of factors and paying OP price (NQ), where MC=MRP. At the point Q, marginal revenue product and average revenue product of the factor are also equal. The price paid to the factor (NQ) is also equal to marginal revenue product(NQ) and average revenue product(NQ). This means there is no exploitation of factors under Perfect Competition. Beyond the point Q, no employer will employ factors, because after that point, the price paid to the factor is more than marginal revenue product and average revenue product which will incur loss.
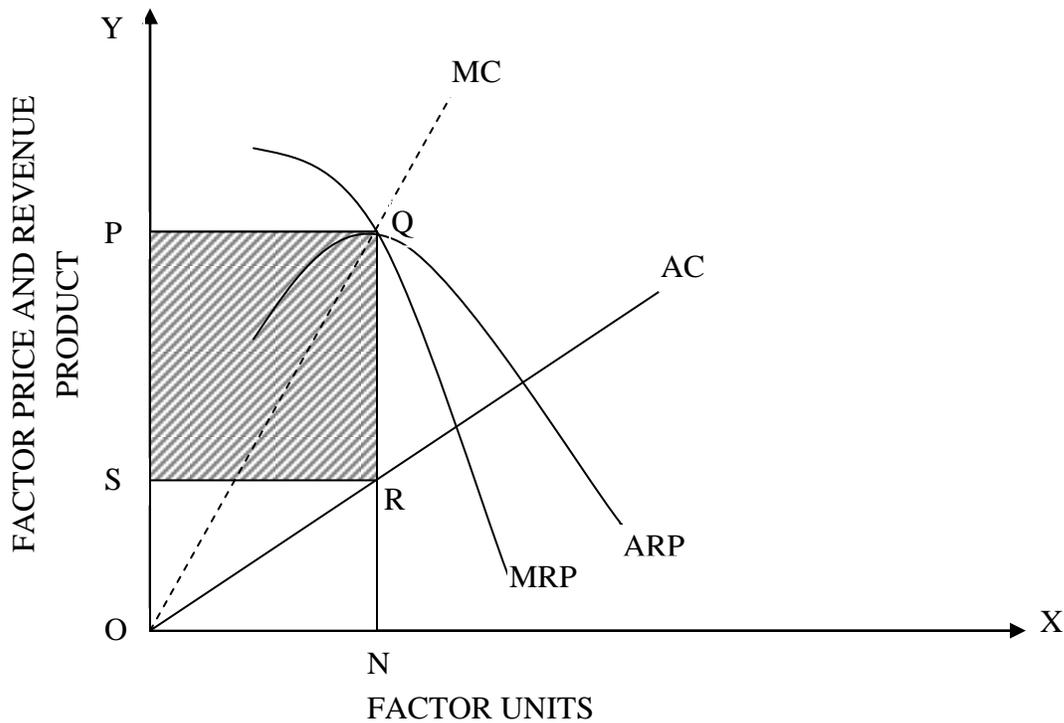
Fig. Marginal Productivity under Imperfect competition

In figure the factor pricing under Imperfect competition is represented. AC is Average Cost curve. It represents the price paid to the factors. It increases as the number of factors demanded by the employer increases. MC is the Marginal Cost curve. It represents the marginal cost paid to the factors. At the point Q, MC = MRP, where the employer attains his maximum profit and so he stops employment of the factors at the point. But the average cost paid is NR (OS) and the average revenue obtained is NQ (OP). Therefore, exploitation per unit of facotr is RQ. But the total number of factors is ON (SR). Thus, the total exploitation of factor by the employer is RQ X SR= "BPQRS" (shaded area). Thus, under Imperfect Competition, factor is exploited at the equilibrium position.

Assumptions

The Marginal Productivity Theory of Distribution is based upon the following assumptions:

1. All the factors of production are homogenous, i.e., they are all equal in efficiency.

2. Factors of production can be substituted for each other.

3. There is a Perfect Competition both in the factor market and product market.

4. There is a perfect mobility of factors of production.

5. There is full employment of factors.

6. This theory is applicable only in the Long-Run.

7. The entrepreneurs are motivated by profit maximisation.

8. There is no Government intervention in fixing the price of a factor such as Minimum Wage Policy.

9. There is no technological change. In other words, the techniques of production remain the same.

Criticism

This theory is criticized on the following grounds:

1. This theory assumes that all the factors of production are homogenous. This assumption is unrealistic. In reality, the factors of production are not homogeneous. For example, efficiency of labourers different the fertility of land differs.

2. The theory also assumes that factors can be substituted for each other. But in reality, factors cannot be substituted for each other.

3. This theory assumes that there is Perfect Competition both in the factor market and product market. But in real life, market is imperfect rather than perfect.

4. It is also assumed that there is perfect mobility of factors. But in reality, factors are not perfectly mobile. For example, labourers ate not perfectly mobile due to some factors like race, caste, religion and language. Land also lacks mobility.

5. This theory assumes that there is full employment of factors. But in reality, there is unemployment of factors.

6. This theory is applicable only in the Long-Run. Therefore, this theory is not applicable in the Short-Run.

7. This theory is an one sided theory. Because it considers only the demand for the factors, but it fails to consider the supply of factor.

RICARDIAN THEORYOF RENT

One of the oldest theories in economics, which have withstood the ravages of time, is Ricardo's theory of rent.

Ricardian theory of rent (1817) has an interesting antecedent. In Britain, during the early part of the 19th century, food prices had greatly increased, partly due to the Napoleonic wars and partly due to increase in population. This caused a great deal of anxiety to the British government. The government therefore appointed a committee to report on the matter. The committee reported that food prices were high, because rent were high. But, Ricardo after carefully analyzing the problem pointed out the cause as otherwise. According to him, "rents were high because food prices were high."

Ricardian theory of rent is also known as the rent of productivity difference or the rent of fertility difference.

Ricardo defines rent as "that portion of the produce of the earth which is paid to the landlord for the use of the original and indestructible powers of the soil."

Ricardo considered payment of rent as an indication of the niggardliness of nature. This was contrary to the opinion of the French economists known as 'physiocrats' who considered rent as the results of the bountry of nature.

Assumptions

1. **Specific Use of Land**

   1. Land has no alternative uses. At a given time a single agricultural commodity only is produced. The transfer price of land is therefore zero.
   2. Rent depends upon two main qualities of land – fertility and location.
   3. All the cultivable lands are owned by the landlords who rent out their lands to farmers. This means that no landlord is a farmer and no farmer is a landlord.
   4. **Differences in fertility**: Land differs in fertility. Some lands are more fertile than others. If equal doses of labour and other supporting factors are applied on different grades of land, it results in a higher yield in some lands and lower yields in others.

5. **Diminishing returns**: According to Ricardo, the cultivation of land is subject to the law of diminishing returns.

6. **Original and indestructible powers:** Land possesses certain original and indestructible powers.

7. **Perfect competition:** The theory is based on the assumption of perfect competition. That is, there are a large number of landlords who want to give lands on rent and there are also a large number of farmers who wish to get lands on rent.

8. **Order of cultivation:** Ricardo assumes an order of cultivation, i.e., the best land is cultivated first, and the next best is cultivated second and so on.

   The theory assumes that rent is a surplus above the cost of production and, therefore, rent does not enter into the price of the product.

9. **Marginal land:** Ricardo assumes the existence of the marginal land or no-rent land, that is , the land from which the price that it secures for its product is exactly equal to its cost of production. There will be no surplus from this land.

10. **Tendencies:** Ricardian theory assumes the operation of two tendencies – the tendency of diminishing returns in agriculture and the tendency towards an increase in population.

How does rent arise?

Ricardo explained the emergence of rent with the help of a newly discovered island where people go to settle down first. Suppose there are three grades of land 'A','B' and 'C' arranged in their order of fertility. 'A' is the most fertile land and 'C' is the least fertile one. Suppose equal does of inputs (labour, capital etc.,) are applied to these three grades of land. Let us further suppose that A grade land is cultivated first and the total yield form the A grade land is 1000 kg per hectare. If the price of the produce is Rs. 2 per kg., and the cost of cultivation is Rs.2,000. 'A' will be a marginal land.

Table

Rent as Differential Surplus

| Grade of Land	Cost of Cultivation	Production per hectare	Value of output per hectare price Rs. 2 (per kg).	Rent
A	2000	1000	2000	No rent – Marginal land

With the passage of time, the population of the island increases, consequently, the demand for agricultural produce also increases. So, B grade land is now brought under the plough. Now the price rises to Rs. 3 per kg. And the total yield of the B grade land is 800 kg. Per hectare. The cost of cultivation becomes Rs. 2,400.

Grade of Land	Cost of Cultivation	Production per hectare	Value of output per hectare price Rs. 3 (per kg).	Rent
A	2400	1000	3000	600
B	2400	1000	2400	Marginal land

Again, the population increases, still further. The 'C' grade land also is brought under cultivation. Here, the cost of cultivation becomes Rs. 3,000; the yield from the 'C' grade land is 600 kg. And the price per kg. Rises to Rs.5.

| Grade of Land	Cost of Cultivation	Production per hectare	Value of output per hectare price Rs. 5 (per kg).	Rent
A	3000	1000	5000	2000
B	3000	800	4000	1000
C	3000	600	3000	Marginal land

The following diagram illustrates the concept of rent as a surplus.
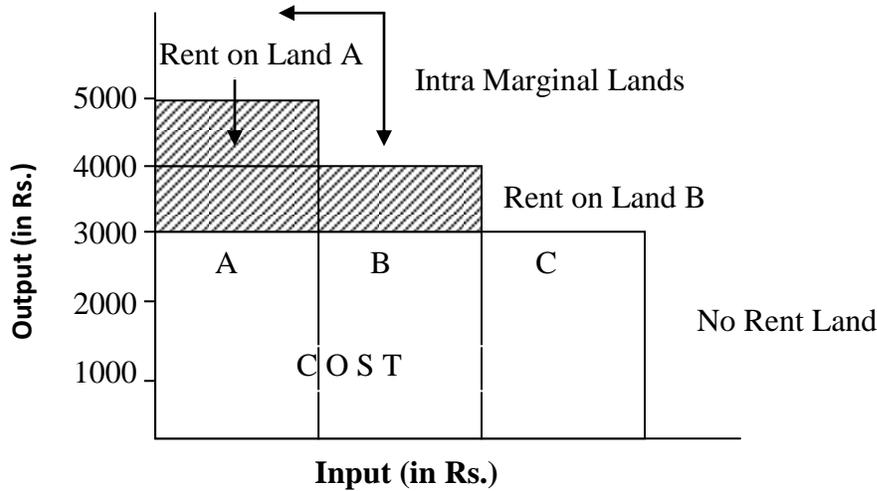
In the above diagram, the amounts of rent, earned by A and B grades of land are shown by the different shaded areas. C grade land just covers its cost. So, it is a 'No-Rent Land.' Hence, rent is a surplus between the production of the marginal and the intra-marginal lands.

Graphical Illustration of Ricardian Rent

The following three figures (A grade, B grade and C grade) illustrate the surplus arising in the superior A and B grades of land over the C grade of land, the yield from which covers just its cost of production. In all these figures, the curve AC is the average cost curve and the curve MC is the marginal cost curve.

| A Grade Land | B Grade Land | C Grade Land |
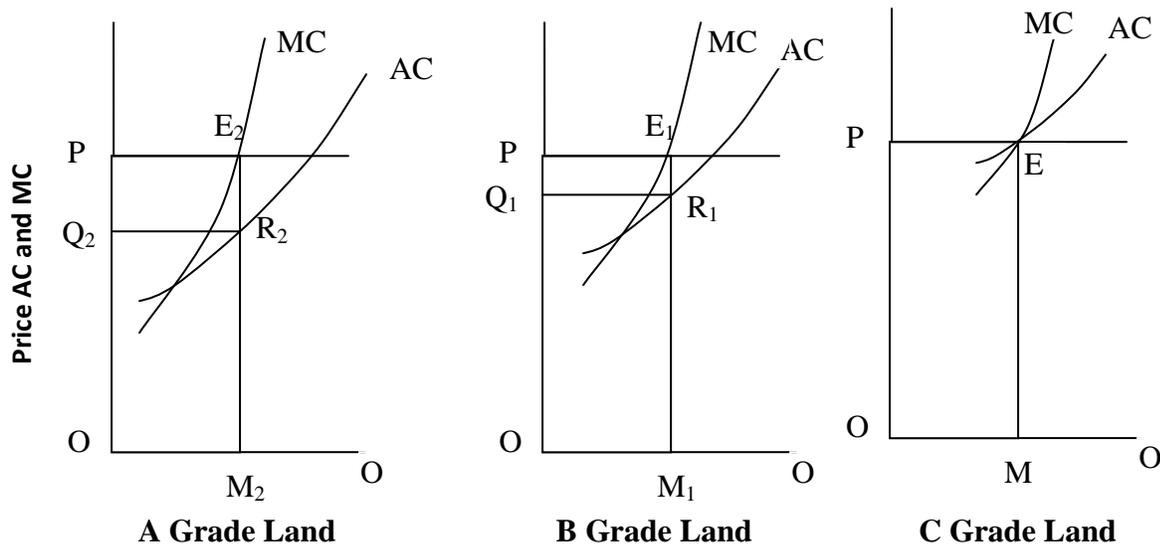
The prevailing prices are OP on the basis of the corn produced in the C grade land. The minimum average cost in the C grade land is ME. If C grade land is to be cultivated, the price of the produce must be equal to OP. C grade land produces OM units of corn. At, E, MC = price =

AC. Therefore, there is no surplus from the C grade land. At a price OP, B grade land attains equilibrium at the point E_1 and produces OM_1 units of corn. Since AC in B grade land is M1R1 it earns a surplus equal to the shaded area $PQ_1R_1E_1$. This is the rent for the B grade land. At price OP, A grade land enjoys a still larger surplus. A grade land attains equilibrium at E_2 and produces OM_2 units of corn. The surplus obtained by this land is shown by the shaded area is $PQ_2R_2E_2$. This is the rent for the A grade land.

Thus,

Rent in A grade land = $PQ_2R_2E_2$

Rent in B grade land = $PQ_1R_1E_1$

Rent in C grade land = Nil

MODERN THEORY OF RENT OR DEMAND AND SUPPLY THEORY OF RENT

Modern economists have provided a better explanation of the phenomenon of rent. According to modern economists, rent arises due to the relative scarcity of land in relation to its demand. It is contrary to the view of Ricardo who held that rent arises due to the differential fertilities of land. The rent of land is obviously determined by the demand for and the supply of land. This is the reason why the modern theory of rent is also known as the demand and supply theory of rent.

Demand for Land

The demand for land is a derived demand. It is derived from the demand for the products of land. If the demand for products rises, the demand for land will also rise correspondingly. If the demand for products falls the demand for land will also rises decrease. This will lead to a corresponding increase or decrease in rent. For example, if the population of a country increases, the demand for land will also increase along with it. Consequently, the demand for land will increase leading to an increased rent.

We have already seen under the marginal productivity theory that the demand for a factor depends upon its marginal productivity, i.e., marginal revenue productivity. The MRP is subject to the law of diminishing returns. This is the reason why the demand curve for land slopes downwards from the left to the right.

Supply of Land

The supply of land is fixed for the community as a whole, but individuals can increase their own supply by acquiring more land from others or decrease supply by parting with land. In spite of the many reclamation projects (the effect of which on the total supply is negligible) the supply of land remains practically fixed. It is a case of perfectly inelastic supply, which means that whatever may be rent, the supply remains the same. This is the reason why land has no supply price.

Interaction of Demand and Supply

In Figure, SS is the supply curve indicating fixed supply. DD is the total demand curve for land. Both the curves interest at point E and the rent is fixed at OR. If the rent is less than OR, the demand for land will increase and make the rent rise again to OR. If the rent rises above OR, then the demand for land will decrease, and bring the rent back to OR.
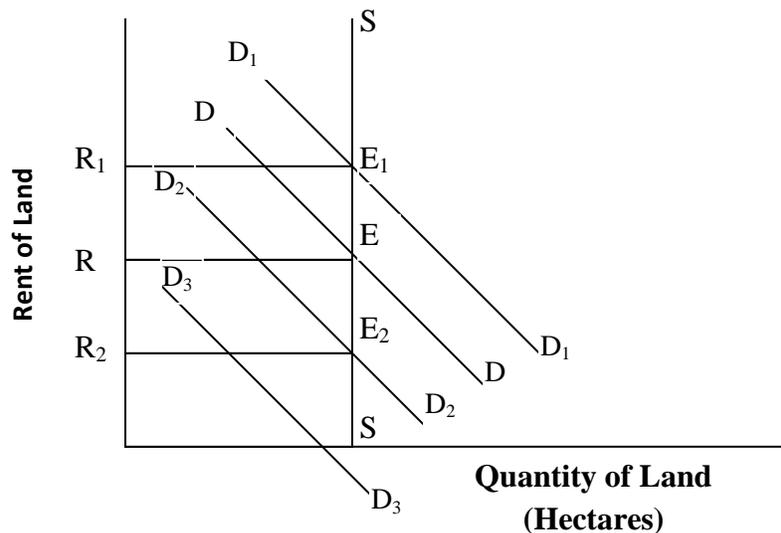
Suppose due to an increase in population the demand for land has increased from DD to D_1D_1. The supply curve will still be the same as SS. The new point of intersection will be E_1 and the corresponding rent will be OR_1. If demand falls to D_2D_2 then the point of intersection of the two curves will be E_2 and the rent will be OR_2. When the supply of land is plentiful in relation to its demand, the land will not command a price and it will be a free commodity. This situation occurred in the free land era of America history. This condition is shown by D_3D_3.

In the above discussion, we have assumed that land is homogeneous. But in actual life, there may be different qualities of land. In such a case, each quality will have a separate demand curve and they will command different rates. Hence, this demand-supply theory explains the differential rent also.

In conclusion, we can say that, like the remuneration for each factors of production, rent also is determined by its demand and supply. In other words, it is the scarcity in relation to demand that determines rent.

Rent in a particular Use

We have discussed above the total demand and the total supply of land for the community as a whole. Now, we shall discuss the demand and supply of land for a particular industry (firm) or for a particular use. The industry can get more supplies by offering more rent.
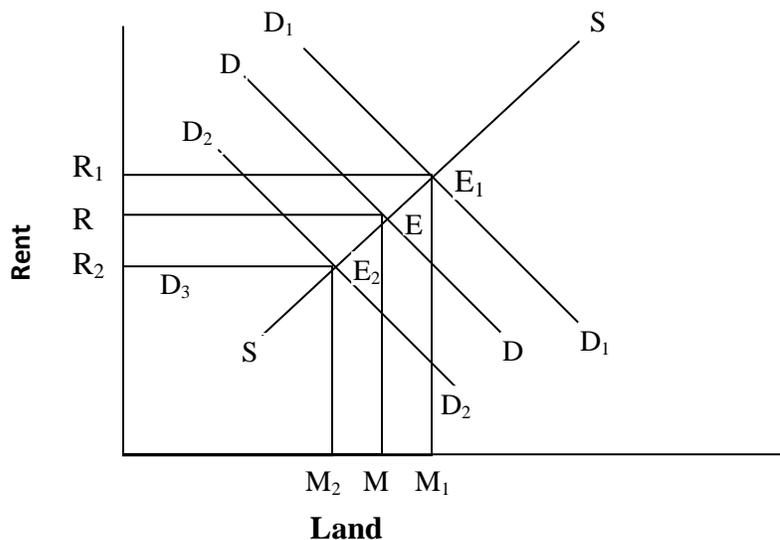
So from the individual or industry point of view, the supply curve will not be a vertical straight line. The supply curve will be elastic and it will be rising upwards from left to right as shown in the Figure.

In Figure, SS is the supply curve indicating that more will be available with increased rent. DD is the demand curve. The point of equilibrium is E and the corresponding rent is OR. At this rent OR, the firm uses OM quantity of land. Suppose, the demand increases to D_1D_1, the

new point of equilibrium is E_1 and the rent rises to OR_1 and the quantity demanded becomes OM_1. Here MM_1 quantity of land has been withdrawn from its other uses and put to this use. Similarly when the demand decreases to D_2D_2 the rent will come down to OR_2 and the quantity of land will come down to OM_2. Here MM_2 land has gone out of this particular use, since the rent has fallen.

Modern economists are of the view that what is true of land is equally true of the other factors of production also.

Transfer Earnings or Opportunity Costs

Modern economists also evolved the concept of transfer earnings or opportunity costs while explaining rent. The modern concept of rent is applicable to all the factors of production including land.

Economic rent is the payment to a factor over and above what is necessary to keep the factor in its current use. In other words, the difference between that a factor actually earns and what it could earn in its next best possible, alternative use. A few examples will help to explain the concept clearly.

Labour

Suppose Mr. Dhanaraj is a Bank Manager whose present salary is Rs.15,000. If he were to go to an alternative job, and if he again gets Rs.15,000; then he does not get any surplus over his transfer earnings. Here his present earnings just equals his transfer earnings and hence there is no element of rent in his present occupation. Now, imagine an extreme case where this manager does not have any alternative job at all, then the entire present income of the manager is a surplus over his transfer earnings (here transfer earning is zero). Suppose the manager has a number of alternative jobs with their incomes being Rs.12,500, Rs.12,000 and Rs.10,000 respectively. Among the various alternative jobs the manager will consider the next best alternative. As the next best alternative is Rs.12,500, the rent element in his present income is Rs.2,500 (Rs. 15,000 – 12,500).

Land

Suppose a piece of land is allowed to the cultivation of cotton by which the owner of land earns a sum of Rs.2,000. In this next best alternative use, say cultivation of onion, it can fetch only Rs.1,600. Now it earns Rs.400 more than its transfer earnings, which is a surplus, this is the economic measures of rent.

Capital

Suppose one is getting a 20 per cent interest in a private chit company on his capital. If the next best alternative investment is a fixed deposit in a commercial bank from which he can get only 13 per cent. Here, the present investment gives an excess of 7 per cent over its transfer earnings. This is economic rent.

Thus the concept of rent is applicable to all the factors of production.

In the words of Joan Robinson, "The essence of the conception of rent is the conception of a surplus earned by a particular part of a factor of production over and above the minimum earnings necessary to induce it to do its word".

What Determines the Size of Economic Rent?

The size of economic rent earned by a particular type of a factor depends upon the elasticity of supply of that factor and the way the particular type of factor is defined.

From the point of view of elasticity of supply, there are three possibilities.

1. When the supply is perfectly elastic.
2. When the supply is perfectly inelastic.
3. When the supply is imperfectly elastic.

1. When the Supply is Perfectly Elastic

If the supply of a factor of production is perfectly elastic, then the actual earnings will be equal to its transfer earnings because the price of the factor is fixed.

For example, under perfect competition, the supply of a factor of production for an individual firm is perfectly elastic.

In the above figure X-axis represents the units of labour and Y-axis represents the wage rate. Units of labour are assumed to be homogeneous. The demand for labour is DD and the supply of labour is SS and they intersect at point E. Now the wage per worker is OW= NE and the number of workers employed is ON.

Total remuneration = ONEW

Total transfer earnings = ONEW

Surplus of economic rent = Nil
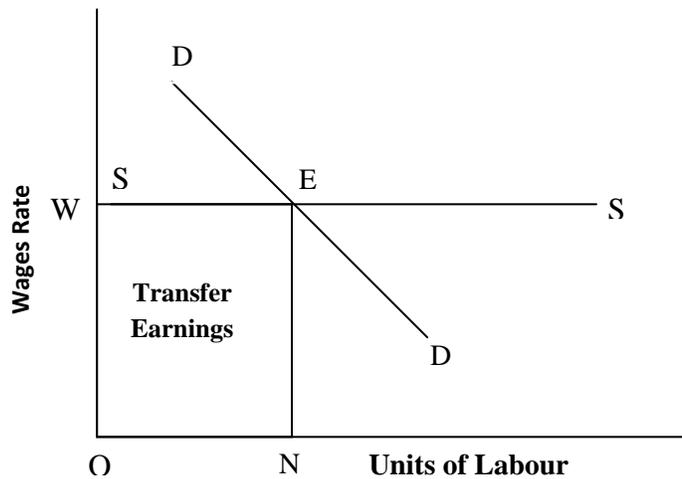
Thus, when the surplus of any factor is perfectly elastic, to a firm, or industry, the factor does not earn any rent.

2. When the Supply is Perfectly Inelastic

In the supply curve of a factor of production is perfectly inelastic, then its tranfer earnings will be zero. This is illustrated in the following Figure.

Suppose there is only one use for a particular plot of land. Since the land cannot be shifted from its current location and there is no alternative use for the land, nothing extra has to be paid to retain it in its current use.
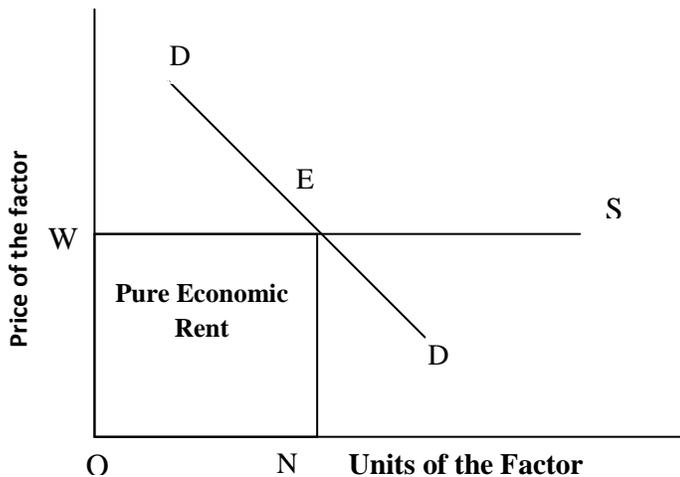
Total remuneration = ONEW

Total transfer cost = Nil

Surplus of economic rent   = ONEW

Thus the return for a factor whose supply is completely fixed is often referred to as pure economic rent.

3. When the Supply is Imperfectly Elastic

If the supply curve of a factor of production is elastic, but not perfectly elastic, then a part of the income(price) of the factor is rent.

Let us consider the supply of a particular kind of labour with a given skill in a particular industry. The workers may be heterogeneous from the point of view of other industries. Consequently, transfer earnings would also be different. The supply curve is upward sloping showing that additional workers will be available when higher wages are offered.
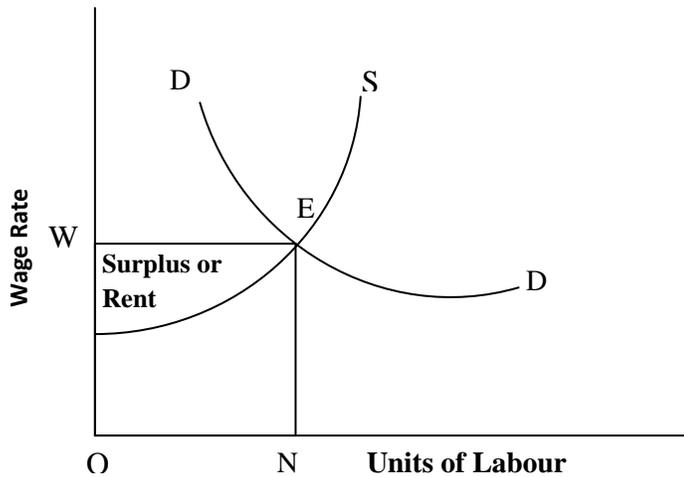
Figure is a hypothetical model of the supply and demand for labourers under perfect competition. The equilibrium point is E. The wage rate is equal to OW and the number of workers employed is ON. Since all workers are paid uniform wages, those workers with transfer earnings of less than the wage rate will earn surplus or economic rent.

The total amount received by the ON workers is the area OWEN. However, only 'N'th worker is getting his opportunity cost, those intra-marginal labourers or those to the left of him are getting more than their opportunity costs as represented by their total economic rent, namely, the triangular are SWE.

Total remuneration for On worker   = ONEW (ON * OW)

Total transfer earnings   = OSEN

Surplus of economic rent   = SWE

QUASI-RENT

The term quasi-rent, which literally means semi-rent, was introduced into economic literature by Marshall. It is an extension of the Ricardian concept of rent. In the words of Prof. K.N. Prasad "The concept is a fortuitous gain like 'Consumer's surplus." The basic dividing line between rent and quasi-rent is that while rent is applied to income from land and other free gifts of nature, quasi-rent is the income derived from man-made machines and appliances.

There are some factors of production, whose supply in the long-run is elastic, but in the short-run is inelastic. Marshall terms these factors as 'machines and other appliances made by man.' The factors like ships, houses, machines etc, are fixed in supply in the short-run. When the demand for them increase, their supply being fixed, they earn a surplus which is not rent but is similar to rent. Marshall preferred to call it quasi-rent. In other words, quasi-rent is earned during a period when the supply of man-made factors cannot be adjusted in response to an increase in the demand for them. Quasi-rent is a short-run concept. It vanishes with an increase in the supply of such inputs in the long-run.

Quasi-rent has also been defined as the excess of total revenue earned in the short run over and above the total variable cost.

QR=TR-TVC.

In the short-run, a firm under perfect competition must cove its prime or variable costs. Variable costs are payments for raw materials, fuels, depreciation associated with the use of the plant and equipment, most of the labour costs, excise taxes etc. The firm can continue to produce the product even if it is able to cover the cost just equal to AVC and none of its fixed cost (in the hope of recovering both the costs in the long period). If the price of the product is less than the AVC, the firm will shut-down its business and if the price of the product rises to more than the AVC, there will rise a surplus which is termed as quasi-rent. In the long-run the distinction between fixed costs and variable cost disappear and all costs become variable costs and so, the firm must cover both the costs; otherwise the firm will cease to exit. Since there is no fixed cost in the long-run,quasi-rent does not arise in the long-run.

Quasi-rent can be defined as "the short-run earnings of machines minus the short-run costs of keeping it in running order."
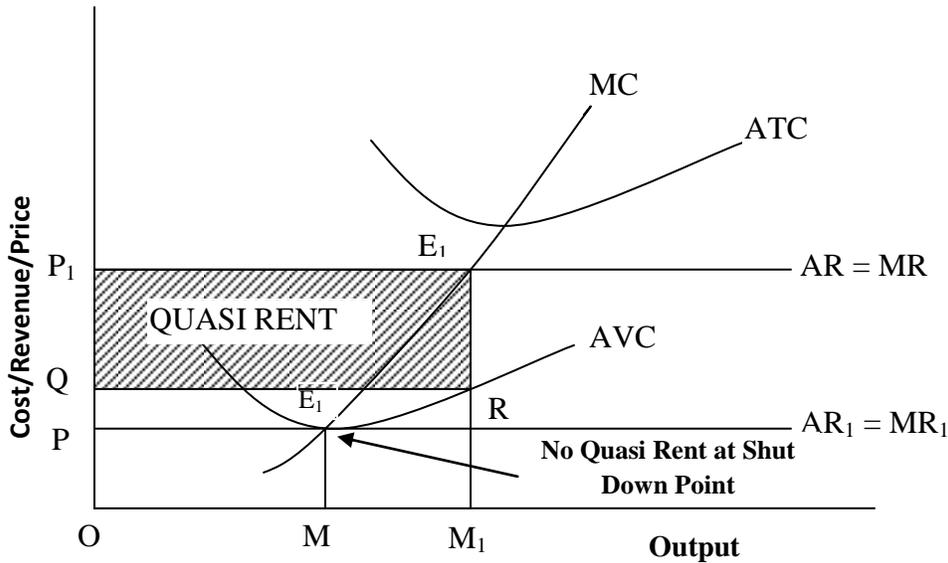
In Figure, suppose the market price is OP. At point E, MC becomes equal to the price. The output of the firm is OM. The price OP covers just the average variable costs. It is the critical shut-down point. Suppose the market price is OP_1. At point E_1, MC becomes equal to the price. The price OP_1 not only covers the average variable cost but also leaves a surplus. At OM_1 level of output, the average variable cost is M_1R. The price OP_1 (or M_1E_1) is greater than the average variable cost of M_1R.

Here, total receipts at OM_1 output   = $OM_1E_1P_1$

The total variable cost   = OM_1RQ

Therefore, quasi-rent   = $OM_1E_1P_1 - OM_1RQ$

                                    = QRE_1P_1

The quasi-rent of Marshall can be illustrated in many ways.

During the world war II, there was a sudden increase in the demand for shipping. But the supply of ships could not be increased overnight. Since there was acute shortage of shipping space during the war time, the freight charges went up. Not only the existing ships earned

enormous income, but old and discarded ships which were pressed in to service, also earned abnormal freights. Thus, the ships earned a surplus over their normal income. In the long period, new ships were constructed and shipping charges came down. Hence the quasi-rent earned by the ships in the initial periods of war, disappeared altogether.

Differences between Rent and Quasi-rent

Rent	Quasi-rent
1. Permanent phenomenon	A temporary phenomenon
2. Accrues to land and other free gifts of nature, whose supply is fixed in the short as well as in the long period.	Accrues to factors (other than land and other free gifts of nature) whose supply is inelastic in the short-run, but elastic in the long-run.
3. It is a payment to induce the owners to offer their factors in the market.	It is not a payment to induce a factor to enter into the market.
4. Rent does enter into the price.	Quasi-rent does not enter into the cost and it is price determined
5. Rent is the result of a differential surplus.	It is the results of the relative short term scarcity of a factor in relation to its demand.
6. It is a differential surplus of super marginal land over marginal land.	It is an extra income over the normal earnings.

WAGE THEORIES

INTRODUCTION

The term 'wages' means payments made for the services of labour. Labour can be either 'mental labour' or 'physical labour'. According to T.R. Turner, "A wage is a price; it is the price, paid by the employer to the worker on account of labour performed."

NOMINAL WAGE AND REAL WAGE

It is customary to distinguish between nominal wages and real wages.

Normal wages, also called money wages, refer to the amount of wages paid in money. For example, if Mr. X receives a sum of Rs. 2,000 per month, this amount is his nominal wage. Real wages mean conversion of money wages into real terms. It refers to the quantities of goods and services which can be bought with the money wage. But money wages do not reflect the real picture of the economic position of a worker.

FACTORS DETERMINNING REAL WAGES

The factors determining the real wages of a labourer are the following:

1. Level of Money Wage

Other things remaining the same, the higher the money wage rate, the higher will be the real wage rate. As money wages rise, real wages also tend to go up.

2. Purchasing Power of Money

Purchasing power of money refers to the quantity of goods and services which a unit of currency can buy. The purchasing power of money varies inversely with the price level. A rise in the general price level leads to a fall in the purchasing power of money and consequently a decline in real wages and vice versa.

One hundred rupees in 1950 had a much greater purchasing power than in 1997. The cost of living varies in different regions and though money wages may be high in cities like Delhi and Mumbai, the real wage may be far less than what it would be in rural areas for the same level of money wages.

3. Opportunities for Supplementary Earnings

Certain occupations provide opportunities for supplementary earnings. A bearer in a five star hotel has an opportunity to supplement his wage with the tips he gets from his customers. A peon in a college has no such possibility. To that extent the hotel bearer's real wage is higher. Likewise professors earn additional income by valuing answer papers or setting question papers or from tuition fees and so on.

4. Additional Facilities

A worker in addition to his money wage may also receive some payments in kind. These may be called fringe benefits. For example, workers in estates may be provided with rent-free quaters, subsidized food, free fuel and other facilities. Provident fund contributions and bonus during services and pension after retirement must be counted while computing real wages.

5. Extra work without Extra Payment

If workers are required to do extra work without compensation, their real wages will be less to that extend.

6. Nature of Employment

A worker's real wage also depends upon the regularity of his employment. Some jobs are permanent while some others are seasonal. In those occupations in which employment is regular or more secure, money wages may be lower but real wages may be higher. But irregular and insecure employments may carry higher money wages, but their real wages will be smaller. The wage covers a sort of a retaining fee for the time when the worker has nothing to do.

7. Strain of Work

Some occupations are risky, others are tiresome; some are healthier than others and so on. The work may be more pleasant or less pleasant, and so on. For instance, a pilot, or miner is paid a higher money wage than a clerk in a post office. All these things should be taken into account in estimating a person's real earnings.

8. Professional Expenses

A collge lecturer who is interested in keeping abreast of in the day-to-day developments of the world for efficient teaching has to spend a handsome amount on books and services; while an accountant in a bank getting same salary has no such expenses and to that extent the bank accountant's real wage is higher.

9. Cost of Professional Training

Some professional such as technicians, computer and electronic operators, scientists, doctors spend huge amounts of money and spend a number of years on their training. Therefore, in calculating their real wage, we must deduct the cost of their training from their money wage.

10. Future Prospects

The anticipation of promotion, better treatment and higher wage in future may induce a person to accept a job for a low wage. So while calculating the wage of two persons, one with a higher wage and the other with a lower wage, an allowance has to be made to the present value attached to the anticipated increased earnings in the future.

11. Social Status

A manager working in a private company and an I.P.S. Officer may be having the same scale of pay and other facilities, but the I.P.S. Officer has a social status which makes his real wage higher than that of the manager.

SUBSISTENCE THEORY OF WAGES

This is the oldest theory of wages, which was first given by physiocrats, a group of French economists and restated later by David Ricardo. Classical called it the natural law of wages. The subsistence theory is based on two important assumptions. Firstly, population increases at a faster rate and secondly food production is subject to the law of diminishing returns. In the words of Prof. K.N. Prasad, "Ricardian wage theory was a successful marriage of the Malthusian population theory and the Ricardian rent theory."

According to this theory, just as the value of a commodity under perfect competition is determined by its cost of production, the value of the commodity, labour, is determined by its cost of production, i.e., the minimum subsistence amount required for the support of the labourer

and his family in order to ensure a continuous supply of labour. In the long run, wages tend to become equal to the subsistence level. If at any time, the wages rise more than this subsistence level the workers are encouraged to marry and to have larger families. The larger supply of labour brings down wages again to the subsistence level. On the contrary, if wages fall deaths and miseries leading to a fall in the supply of labour. The decrease in the supply of labour in sthis situation, pushes up wages again to the subsistence level. In short, population is responsive to wages. Thus in the long-run, wages will tend to stabilise at the subsistence level. No wonder the French socialist, Ferdinand Lassalse called it the "Iron law" or the "Brazen law" of wages because of the assumed rigidity of the principle. The main implication of the subsistence theory is that trade unions are not powerful organizations to raise the wage rates, so that they are not needed. At the best, it can disturb the subsistence wage level in the short-run, but in the lond-run subsistence wage only will prevail. Professor Lewis, theory of economic development with unlimited supplies of labour is based on the assumption that in under developed countries the supply of labour is perfectly elastic at the existing subsistence wage rate.

Karl Marx, the father of scientific socialism, made the subsistence theory of wages the basis for his theory of capitalistic exploitation. Marx asserts that the growth of modern large scale industries and labour saving methods destroys the cottage and small-scale industries in a capitalistic system. The net result is the emergence of an industrial reserve army of unemployed people. Naturally the wage rent is prevented to rise above the subsistence level.

The subsistence theory may be applicable to a certain extent in under developed countries like India. In rural India the powerful landlords may be able to back-rent their tenants. In the context of the industrially advanced countries like America and England, the subsistence theory of wages has lost its relevance and significance completely.

The theory has been explained with the following Figure
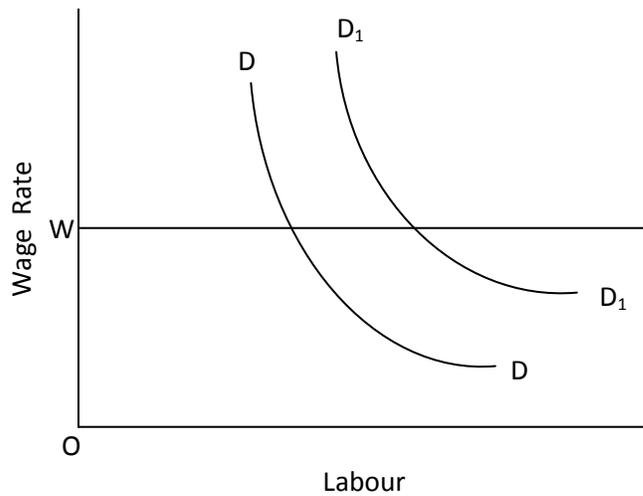
In the above diagram wage rate is measured along the vertical axis and labour along the horizontal axis. OW is the subsistence level of wages. Since the supply of labour is perfectly elastic, wage rate can neither fall below OW nor rise above OW. Though demand increases from DD to D_1D_1 wage rate remains the same at OW level.

Criticism of the Theory

1. Firstly, this theory assumes that population is income elastic. But this is not correct. It is nonsense to say that every increase in wage is cancelled by an increase in population. In reality when a labourer gets higher wages, he will try to improve his standard of living, rather than have more children.

2. Secondly, this theory is pessimistic and devoid of justice. It predicts a dark future to labourers and says that there is no possibility for the lot of the labourers to improve.

3. Thirdly, the theory ignores the efficiency of workers.

4. Fourthly, the theory fails to explain the existence of different wages in different occupations.

5. Fifthly, the theory is one-sided. It attempts to explain wages from the supply side of labour and the demand side is fully ignored.

6. Sixthly, the theory is applicable only in the long-run.

7. Seventhly, the theory ignores the power of the trade unions to increase the wages of workers.

Lastly, as Prof. Dewett points our the "subsistence minimum" is a very vague term. Does it refer to the minimum requirements of a modern scientific man or of a tribal savage?

MARGINAL PRODUCTIVITY THEORY OF WAGES

The marginal productivity theory of wages is an applicable of the general marginal productivity theory (discussed earlier).

The origin of the concept of marginal productivity can be traced in the works of Ricardo and West. The theory was put forth by Jevonus in the 19th century. It was latter developed by Wickstead, Warlas and J.B. Clark, among whom the credit for the systematic formation of the theory goes to Prof. Clark.

According to this theory, the wages of a labourer should be equal to his marginal productivity. In the short run, the wages may be more or less than marginal productivity, but in the long run the wages must equal the value of the marginal productivity of labour. The employer demands labour not for its own sake, but because labour is productive. Just as a consumer demands a commodity in the market on account of its utility to him, the producer also demands labour for its productivity. In the process of purchasing, a consumer does not pay a price more than the marginal utility of the commodity. In the same manner, an employer does not pay wages to workers in excess of their marginal productivity. Therefore in equilibrium

$$VMP_L = OW \text{ (price of labour)}$$

Where VMP_L = value of marginal product of labour

OW = Wages Rate

In the product market a firm's price output equilibrium is attained at the point where MC=MR. Likewise, in the factor market a firm attains equilibrium and maximum profit at the point where marginal cost of each factor is equal to its marginal revenue product. Thus at the point of equilibrium VM P_L= OW.
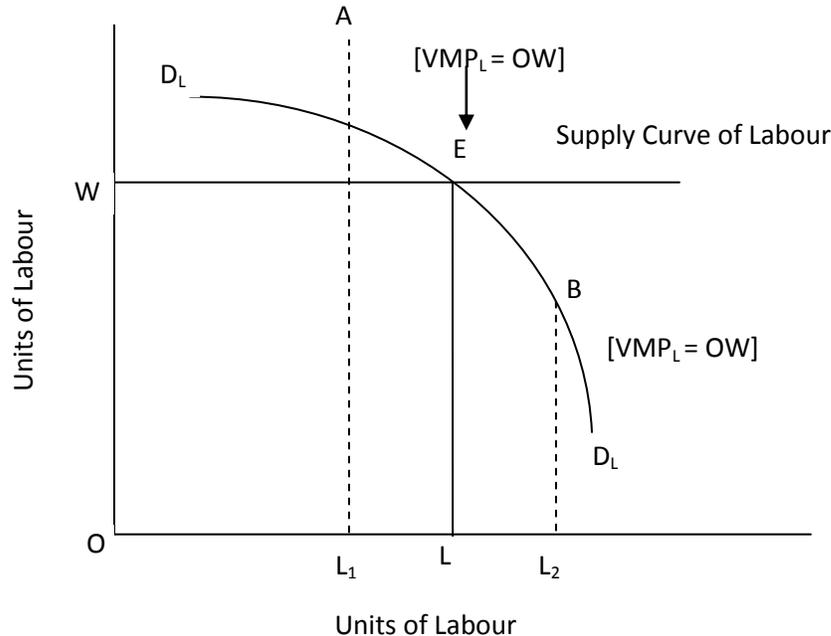
Here WS_L is the supply curve of labour which is horizontal because all labour units are homogeneous and there is perfect competition in the market. $D_L D_L$ is the VMP_L curve which is negative in slope because of the diminishing marginal productivity of labour. Point E is the equilibrium point where VMP_L = OW. Now the firm employs OL units of labour and pays OW wage.

At point A we find that

VMP_L > OW --- therefore, the firm can increase its profit by employing more units of labour. Though the rate of profit will be diminishing, the total profits will be increasing.

At point B, we find that

VMP_L < OW --- here the firm is incurring a loss. So it will benefit by reducing the units of labour. Thus in the long run VMP_L = OW must hold good.

Assumptions of the Theory

The theory rests on the following assumptions:

1. Perfect competition both in the labour and product markets.
2. There is free entry and exit of the firms.
3. There is full employment.
4. All the units of labour are homogeneous.
5. The law of diminishing returns is applicable to production.
6. The factors are divisible and substitutable.
7. It is possible to vary labour keeping other factors constant.

Criticism of the Theory

1. **The theory is Incomplete:** The theory gives importance only to the demand for labour. The supply side has been completely ignored. In reality wages are determined both by the demand for labour and the supply of labour.
2. **Based on Perfect Competition:** The theory is based on the assumption of perfect competition, both in the product market and in the factor market. But perfect competition is a myth, which is not found in the real world.
3. **Based on Full Employment:** The existence of unemployment may render this theory ineffective. In case of unemployment workers may accept a rate of wage that is less than the marginal revenue product.
4. **Long-Run:** According to critics, the theory offers an explanation only for the long-run. It throws no light on the determination of wages in the short run.
5. **Difficulty in Measuring Productivity:** According to critics like Hobson, it becomes difficult to find out the marginal productivity of labour when the production is being carried out on a large scale.
6. **Wage Differentials:** The theory fails to explain the existence of wage differentials. Wages differ from place to place, from person to person and from employment to employment.
7. **Productivity:** Professor Dobb argues that the demand for labour does not depent upon productivity but on the willingness of the capitalists to save, which depends on previous profits and on previous wage bargains.

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DISCOUNTED MARGINAL PRODUCTIVITY THEORY

</div>

The American economists, Taussig, have given a modified version of the marginal productivity theory of wages. He thinks that, capitalist production is a roundabout production and it takes a lond time to produce and sell the commodity. During this period the labourers have to be supported by an advance payment of wages. The employer deducts a certain

percentage from the value of the final output as a means of compensation. This deduction is made at the current rate of interest.

Recognizing the weakness of the theory, Taussig admits that this theory is "a dim and abstract one, remote from the problem of real life."

MODERN THEORY OF WAGES

Though marginal productivity theory of distribution provides a reasonable explanation of determination of wage, it is a one-sided theory. It does not take into consideration the supply side of labour which is equally important as that of demand. By giving equal importance to demand and supply aspects of labour, the modern theory provides a satisfactory explantion of wage determination. Aptly this theory is termed as the "Demand and Supply theory".

Although labour possesses certain unique peculiarities and cannot, therefore, ne regarded as a commodity, yet wages are largely determined by the interaction of the forces of demand and supply.

Demand for Labour

The demand for labour is a derived demand. It is derived from the commodities it helps to produce. If the demand for the product increases, the demand for labour required for making it also increase. Moreover it is ex-ante demand and not expost demand for the product that determines the demand for labour. The elasticity of demand for labour depends on the elasticity of demand for the product.

The demand for labour depends on the prices of the co-operative factors. Suppose the machines are costly, certainly more labour will be employed. Likewise the greater the demand for co-operating factors, the greater will be the demand for labour.

Still another factor influencing the demand for labour is the technical progress. For example, the introduction of computers reduces the demand for labour.

Apart from the factors discussed above, a fundamental factor determining the demand for labour is its productivity. Just as there is a demand price for commodities, there is also a demand price for labour. The demand price of labour depends upon the marginal productivity, i.e.,

marginal revenue product of labour. Since all labour units are assumed to be homogeneous, what is paid to the last labourer will be paid to all labourers. So long as the marginal revenue product of labour is more than the wage rent, it is, profitable to employ more labour, for it adds more to revenue than to costs. But the law of diminishing marginal productivity will operate when more and more labourers are employed. The employer will stop employing additional workers at the point at which the cost of employing a worker just equal the addition made by him to the value of the total net product.

Figure depicts the position of a firm regarding the demand for labour. When the wage is OP, the firm is in equilibrium at the point E and the demand for labour is ON. Similarly at OP_1 wage, the demand is ON_1 and at OP_2 wage, the demand is ON_2. Thus as the wage falls, the demand for labour will increase. The marginal revenue productivity curve of a factor is in fact the demand curve of the firm for that factor.

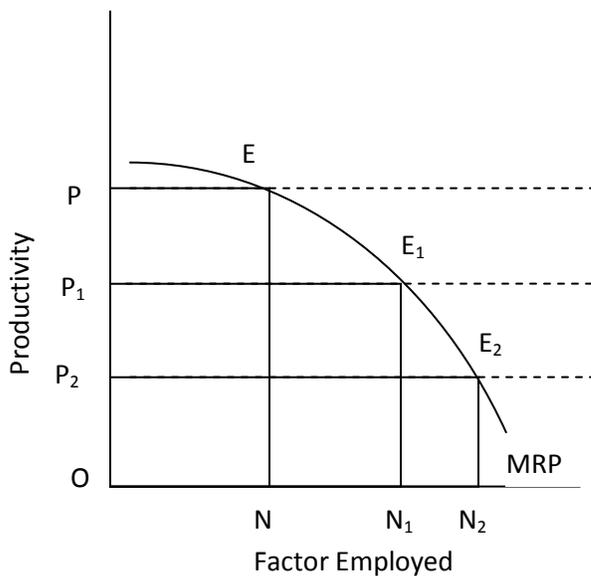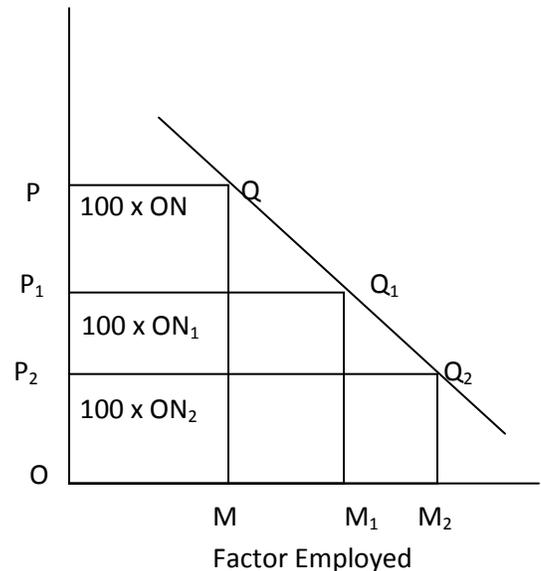FIG. A   FIG. B

The total demand curve of the industry is derived by the lateral summation of the marginal revenue productivity curves of all the individual firms. The industry's demand curve for the factor is DD. We know that the demand for the factor at OP price is ON units, at OP_1

price ON_1 units and at OP_2 price ON_2 units. If there are 100 firms in the industry the total demand for labour can be obtained by multiplying the individual firm's demand with 100.

Thus the industry's demand for labour is as follows:

At OP price $\quad\quad\quad\quad = ON * 100 = OM$

At OP_1 price $\quad\quad\quad\quad = ON_1 * 100 = OM_1$

At OP_2 price $\quad\quad\quad\quad = ON_2 * 100 = OM_2$

It may be seen that the curve slopes downwards from left to right because it is based on MRP curve which also slopes downwards.

Supply of Labour

By supply of labour we mean the number of men offered for work at various wage rates. Supply of labour may mean three things.

1. Supply of labour to a firm
2. Supply of labour to an industry and
3. Supply of labour to the entire economy.

1. Supply of Labour to a Firm

To a given firm under perfect competition, the supply of labour is perfectly elastic because at the current wage rate the firm can engage as many workers as it wants. The demand of the firm will constitute a very negligible fraction of the total supply of labour.

2. Supply of Labour to the Industry

To the industry as a whole the supply of labour is not infinitely elastic. If it wants more labour, it can attract labour from other industries by offering a higher wage rate. It can also work with the existing labour force by making them work overtime which in effect will imply an increase in labour supply.

3. Supply of Labour to the Entire Economy

The supply of labour to the entire economy depends upon economic, social and political factors, institutional factors, attitude of women towards work, working age, school and college age, and possibilities of part time employment, size and composition of the population, cost of

education, training, labour efficiency, sex distribution, attitude to marriage, size of the family, birth control, health and sanitation standards, mobility of labour etc.
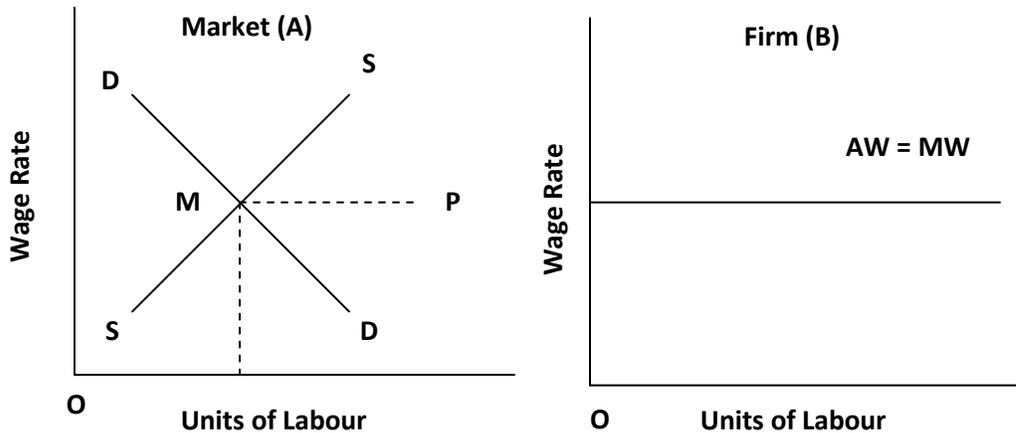
Determination of Wages

We have already discussed the demand and supply aspects of labour. The interaction of the two determines the wage rate. The figure illustrates demand and supply curves for the market and how the wages rate is determined.

In the above diagram market (Figure) wage is determined at ME. In this case no employer will like to pay more than OP wage (MW) and no worker will be prepared to accept less. The supply curve of labour for the individual firm will be horizontal. This represents the average wage (AW) and the marginal wage (MW) of labour for the firm.
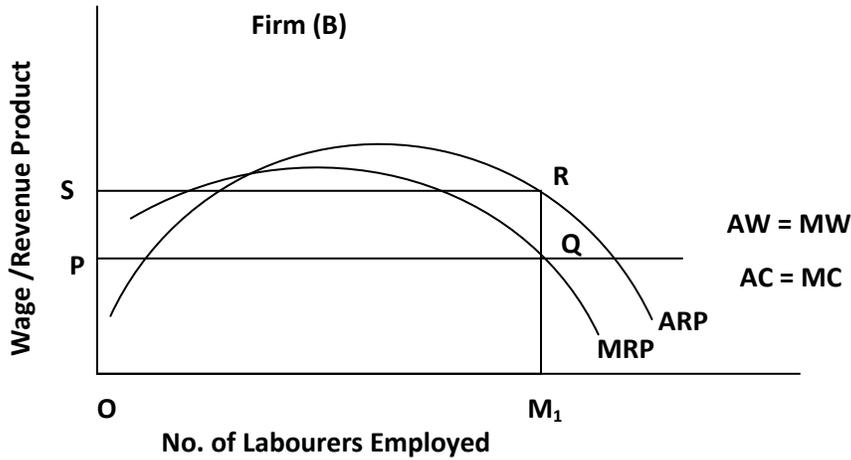
Relation between Wage and Productivity

In the long run under competitive conditions, wages will be equal to both the marginal revenue product and the average revenue product. If the wage rate is less than the average revenue product, the firms would be getting super normal profits in the short-run.
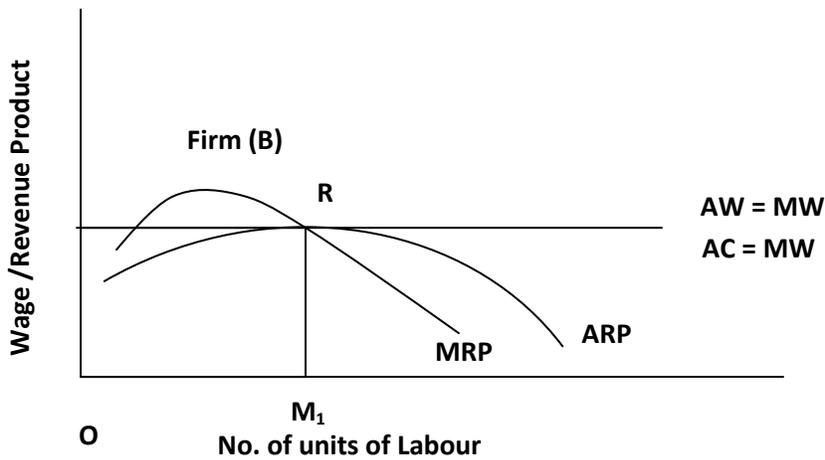
If the existing firms are earning super normal profits in teh short-run, new firms will enter into the industry and the demand for labour will increase which will push up the wage rate so as to be equal to the average revenue product.

On the country, if the existing wage rate is more than the average revenue product, the firm will be suffering losses in the short-run. As a result, some firms will leave the industry and the demand for labour will decrease which will lead to a decrease in the wage rate.
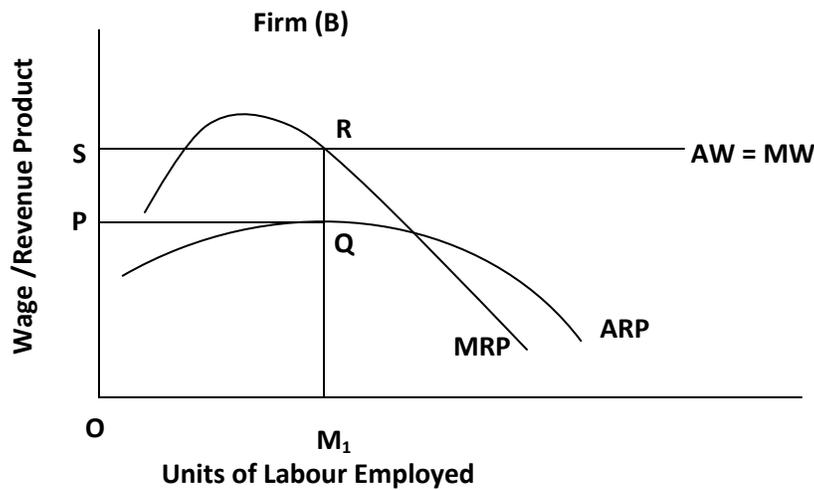
Firm (B)

Wage /Revenue Product

S ——————————————— R

P ——————————————— Q

AW = MW

AC = MC

ARP

MRP

O   M₁

No. of Labourers Employed

Long-run Equilibrium under Perfect Competition

Wage /Revenue Product

Firm (B)

R

AW = MW

AC = MW

MRP   ARP

O   M₁

No. of units of Labour

Thus in the long run under perfect competition

Wage = MRP = ARP

Firm (B)

Units of Labour Employed

The long-run equilibrium point is A and wage is OW where the firm is employing OM_1 units of labour. The wage rate OW is equal to marginal revenue product (MRP) and the average revenue product (ARP).

(A)

(B)

Units of Labour Employed
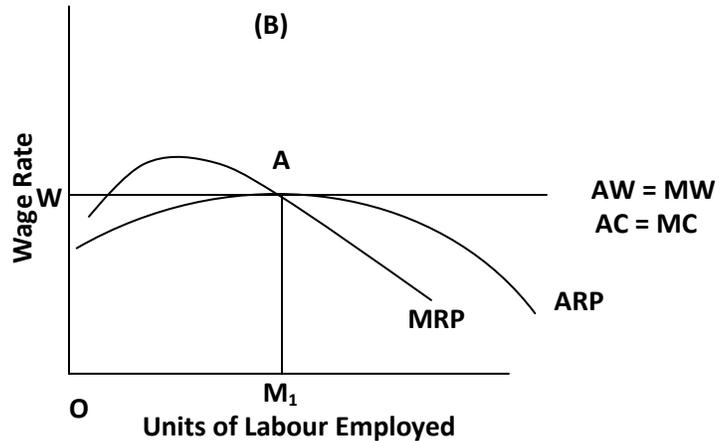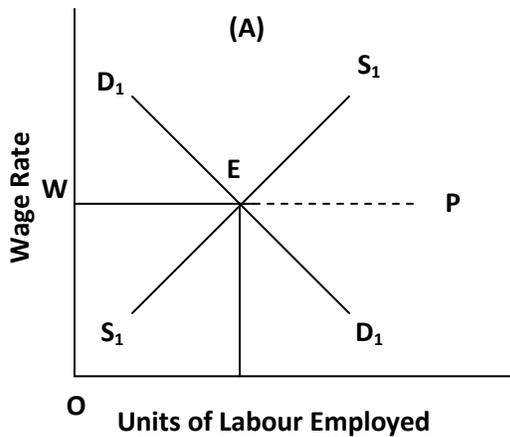
MODERN THEORY OF INTEREST

Keynesian Liquidity preference theory of interest gave undue weightage to the monetary factors in the determination of the rate of interest. This is in contrast to the classical theory which stressed \the importance of real factors. Neither the monetary factors, nor the real factors by themselves can determine the rate of interest. It is argued that like the classical theory of interest, the liquidity preference theory of Keynes is also indeterminate. An adequate theory must take into consideration both the monetary and real factors taht influence the interest rate.

Modern economists like J.R. Hicks and A.H. Hansen, have therefore made an attempt to provide us with a determinate theory of the rate of interest by reconciling both the monetary and real factors.

The modern theory has successfully combined the four variables – savings, investment, liquidity preference and money supply.

According to A.H. Hansen, "the neo-classical (loanable fund) formulation and the Keynesian formulation, taken together do supply us with an adequate theory of the rate of interest".

Professor Hick's theory of interest can be explained with the help of the IS and LM curves. The curve represents the equilibrium in the monetary sector.

The IS Curve

The IS curve is the locus of the various combinations of income and the rate of interest in which saving is equal to investment. This curve will reflect equilibrium in the goods market and can be derived from a family of saving curves in the following manner.

In figure we have drawn an investment curve II and a family of saving curves S_1, S_2, S_3 and S_4 corresponding to Y_1, Y_2, Y_3 and Y_4 levels of income respectively. If,

$Y_4 > Y_3 > Y_2 > Y_1$ then the position of savings curves will be in the order as shown in the diagram.

Since income is increasing, the saving schedule will shift towards the right. It is also clear from the diagram that as the saving curve shifts to the right (or as the income increase from Y_1 to Y_2, Y_3, Y_4 etc.) the rate of interest falls from r_4 to r_3 then to r_2 and so on. Thus there is an inverse relationship between the level of income and the rate of interest. This is shown in Figure

Saving and Investment   Income
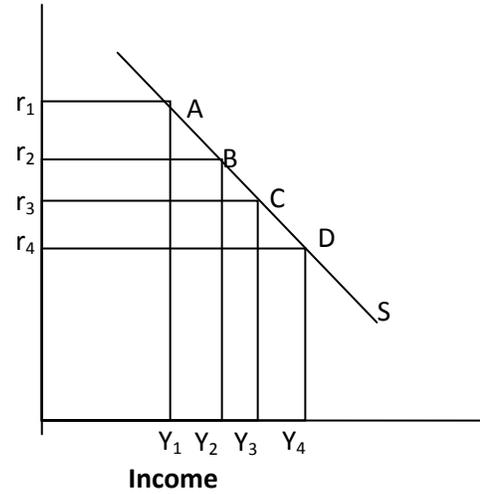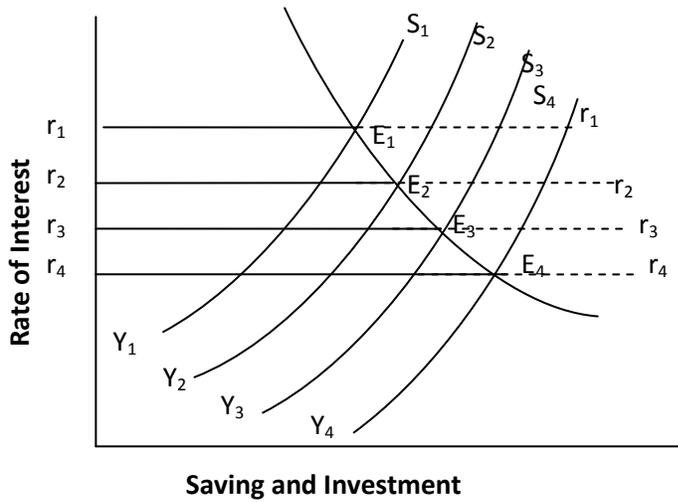
The LM Curve

The LM curve is derived from the liquidity preference theory. The LM curve is the locus of the various combinations of levels of income and rates of interest in which the demand for money is equal to the supply of money. The LM curve reflects the equilibrium in the money market and can be derived from a family of liquidity preference curves as shown Figure

Demand and supply of money   Income
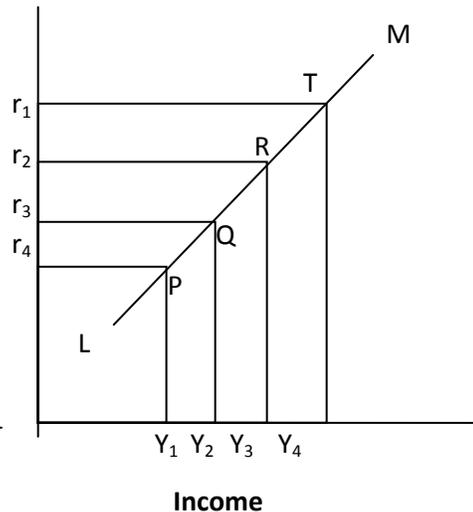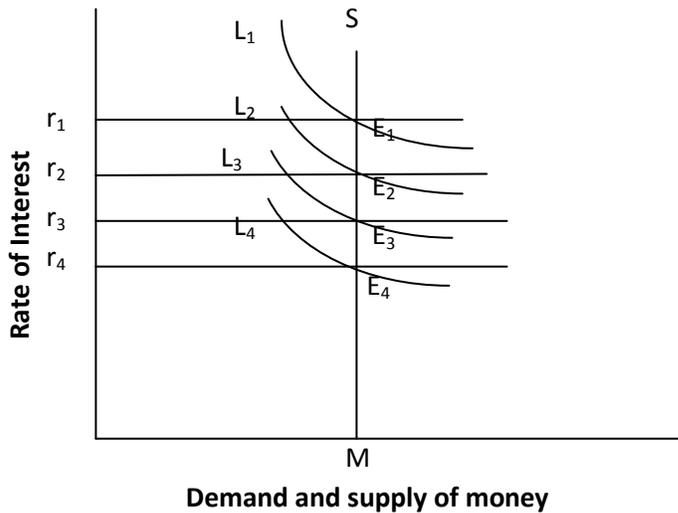
Let us suppose that income increase from Y_1 to Y_2, Y_3, Y_4 etc. As liquidity preference is a function of income, the liquidity preference shifts from L_1 to L_2, L_3, L_4 etc. As a result the rate of interest would increase from r1 to r_2, r_3, r_4 etc. Thus it is possible to draw a curve depicting the

relationship between income and rate of interest which equates the demand for the supply of money. This is shown Fig

Equilibrium

Now the IS and LM curves, taken together, can determine the equilibrium rate of interest as well as the equilibrium level of income simultaneously.

In Fig IS and LM curves intersect each other at the point E. Therefore OY and OR are the equilibrium levels of income and rate of interest respectively.
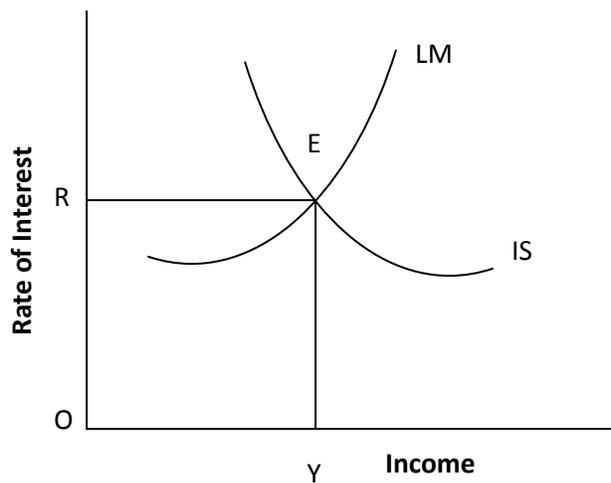
Changes or shifts in the IS or the LM curves or in both, change the equilibrium position and the rate of interest is determined accordingly.

Thus at the point of equilibrium

S = I and M = L

LIQUIDITY PREFERENCE THEORY OF INTEREST

In his magnum opus book "The General Theory of Employment, Interest and Money" Keynes gives a new idea about interest. Keynes points out that interest is purely a monetary phenomenon.

According to Keynes, interest is the reward for parting with liquidity for a specific period. Keynes defines interest as "the premium which has to be offered to induce people to hold their wealth in some form, other than hoarded money". In other words, interest is the opportunity cost of holding wealth.

A man with a given income has to make economic decision or calculations at two levels. At the first level, he decides how much to consume and how much to save out of his current income. At the second level, he decides how much of his savings he should invest in the form of liquid assets like bonds. The first level of decision depends upon the "marginal propensity to consume" and the second level depends upon "liquidity preference."

Meaning

Liquidity means power to convert assets into money. It is a measure of the ease and cheapness with which an asset may be exchanged for any other asset. Liquidity preference means the desire of the public to hold cash. Money is demanded because; it is the only perfectly liquid asset.

The desire to hold ready money arises out of three motives:

(i)   The transactions motive,

(ii)   The precautionary motive, and

(iii)   The speculative motive.

1. Transactions Motive

In the words of Alvin H. Hansen "The transactions motive relates to the need for cash for the current transactions of personal and business exchanges". Individuals hold cash in order "to bridge the interval between the receipt of income and its disbursement".

A person who gets his salary once a month must keep enough cash in his hands to meet payments of everyday transactions. Therefore a man has to keep a certain amount of money in liquid form to spend on food, health, clothing, bus fare, entertainment, education etc. This amount will depend upon the size of the individual's income, the interval at which his income is received and the methods of payments current in the locality.

The business exchanges also require cash "to bridge the interval between the incurring of costs and the receipt of sale proceeds". Keynes calls this motive as 'business motive.' The amount of money, under business motive depends upon the business turnover.

2. Precautionary Motive

The precautionary demand for money is for holding a reserve against unforeseen and contingent liabilities. People hold a certain amount of money to provide for the danger of unemployment, sickness, and accidents and for other more uncertain pursuits.

In the words of Stonier and Hague, "money held under the precautionary motives is rather like water kept in reserve in a separate tank".

Money held under this motive will depend on the circumstances under which a person lives, and his own nature. Like individuals, business concerns also face emergencies and have contingent and unforeseen liabilities; therefore they also keep a portion of their income in the form of reserve to meet sudden unforeseen expenditure.

According to Keynes, the transactions and precautionary motives are relatively interest-inelastic, but are highly income elastic. The amount of money held under these two motives (M_1) is a function (f) of the level of income (Y) and is expressed as $M_1 = f(Y)$.

3. Speculative Motives

The speculative motive relates to the desire of the people to hold resources in liquid form, with a view to take the advantages of market movements. According to Keynes, speculative motive is for "securing profit from knowing better than the market what the future will bring forth."

Individuals and firms hold liquid cash in order to take advantage of the price movements of income earning assets, known as bonds.

This tendency is the common feature of the stock exchange markets. In stock exchange markets, sales and purchase of shares, bonds and securities take place.

Sometimes, there will be an excessive purchase or excessive sale of securities in the stock exchange market. The tendency for excessive purchase of securities is known as the "Bullish sentiment" and the tendency for aggressive sale of securities is known as the "Bearish

sentiment." The person who joins hands in these tendencies are called the members of the 'Bull "brigade and the 'Bear' brigade respectively.

The amount of money held under the speculative motive depends upon the rate of interest. Bond prices and the rate of interest are inversely related to each other. Low bond prices are indicative of high interest rates and high bond prices reflect low interest rates. Let us suppose that an individual wants to purchase a bond of Rs. 1,000 which carries 4% interest. Now on this bond, he earns an income of Rs.40. When the rate of interest goes up to 5 per cent, to earn the same income of Rs. 40, an investment of Rs.800 will be sufficient. It means that bond prices decrease with an increase in the rate of interest and vice versa. This shows that when the rate of interest is high, people will have a desire to hold less money for speculative purposes. When the rate of interest decreases, the bond holders sell their bonds and hold liquid cash. It means that lower the rate of interest, greater will be the liquidity preference. Thus people will prefer to hold more or less cash depending on the future changes that are likely to take place in the prices of assets.

Thus higher the rate of interest, the lower will be the speculative demand for money and vice versa. Geometrically, it is a smooth curve which slopes downwards from left to right, indicating that more money will be held at a lower rate of interest. Algebraically, the speculative demand for money is expressed as $M_2 = f(r)$.

According to Keynes, Liquidity preference curve (LPC) becomes perfectly elastic at a certain rate of interest, such as OR_2. At a very low rate of interest people prefer to keep money in cash rather than lend it.

The argument is that at abnormally low interest rates virtually everyone would expect the interest rate to rise towards its normal level in the near future. In this situation, virtually, everyone would be expecting a fall in the price of bonds and therefore, capital losses are expected for bond holders.

The flat portion or the perfectly elastic portion of the liquidity preference curve is known as the liquidity trap.

Implications of Liquidity Trap

The concept of liquidity trap has certain important implications.

Firstly, the monetary policy is out of commission. It cannot influence the rate of interest by following a cheap money policy. In this extreme case, the velocity of circulation falls as all increases in the money supply are added to 'idle' balances and the monetary policy is helpless as it cannot cut down the interest rate any further.

Secondly, the rate of interest cannot fall to zero.

Lastly, the policy of a general wage cut cannot be effective in the perfectly elastic portion of the liquidity preference curve.

Total Demand for Money

Since, transactions and precautionary demand for money are income elastic, both can be lumped together. It is represented by M.

We know that $M_1 = f(y)$.

Likewise the speculative demand for money is expressed as M_2. $M_2 = f(r)$

The aggregate demand for money is $M = (M_1 + M_2)$ Therefore $M = f(y,r)$.

Supply of Money

Supply of money refers to the total quantity of money in the country for all practical purposes at any given time. The total supply of money consists of legal tender money and credit money or bank money. Money supply is a policy variable, and its supply is determined by the central bank of a country. At any particular point of time the supply of money is fixed. Given the supply of money, the rate of interest is determined by the demand for money.

Determination of Rent of Interest

According to Keynes the rate of interest is determined by the interaction of the forces of demand for and the supply of money. The determination of the rate of interest is illustrated by the Figure
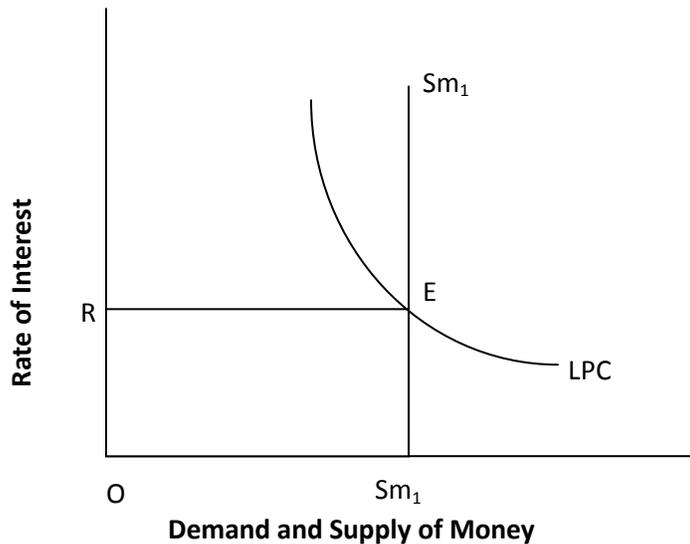

Money supply is shown by a vertical straight line SM. The downward sloping LPC represents the liquidity preference demand for money. The demand curve intersects the supply curve at point E. Thus OR is the equilibrium rate of interest.

A Change in Liquidity Preference

A shift in liquidity preference may also bring about changes in the rate of interest.

The supply of money remaining constant, a change in LPC changes the rate of interest. An upward shift of liquidity preference curve (LPC$_1$) raises the rate of interest to OR$_1$ given the money supply. On the other hand, the downward shift of liquidity preference curve (LPC$_2$) decreases the rate of interest to OR$_2$ given the supply of money.
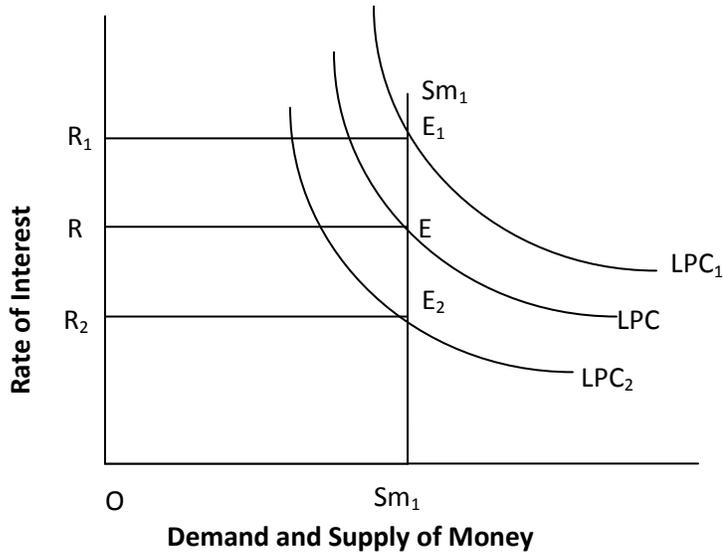
A Change in Money Supply

Given the liquidity preference, change in money supply alters the rate of interest.
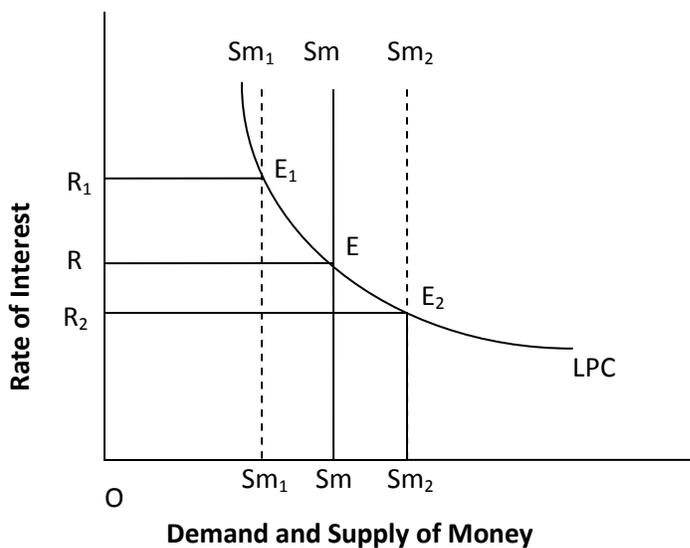
If the supply of money increases from Sm to Sm_2, the liquidity preference schedule remaining the same, the rate of interest will come down to OR_2. With a fall in money supply, Sm_1 on the other hand, the rate of interest will go up to OR_1.

Thus according to Keynes, interest is purely a monetary phenomenon.

Criticism of the Liquidity Preference Theory

The Liquidity Preference theory has several weakness. The theory has been heavily attacked by Hansen, Robertson, Hazlitt, Hutt and others.

1. College Bursar's Theory

According to Robertson Keynes assumption that all non-money financial assets are only bonds is an over simplification that makes the analysis unrealistic. A theory of money which insists on working everything through the bond market is a college bursar's theory.

2. Indeterminate

Keynes says that the liquidity preference and the supply of money determine the rate of interest. To find the rate of interest, we need to know the supply of money available for the speculative purpose, but that cannot be known unless we know the rate of interest.

In the words of Prof. Hansen, "Keynes criticism of the classical theory applies equally to his own theory".

3. Ignores 'Real' Factors Altogether

It is pointed out that the main fallacy in the Keynesian theory of interest is that it ignores the influence of real factors in determination the rate of interest. To Keynes, interest is a purely monetary phenomenon. Therefore, he fails to take into account thrift, marginal productivity of capital and abstinence which are needed for saving.

In the words of Robertson, the theory is "at best an inadequate and at worst a mosleading account of the whole matter."

4. No Liquidity without Saving

Keynes considers the rate of interest as the reward for parting with liquidity and not as a return for saving. Without previous saving there can be no liquidity to part with. In Jacob Viner's words, "Without saying there can be no liquidity to surrender. The rate of interest is the return for saving without liquidity."

5. Liquidity has not been Clearly Explained

In Keynes analysis, the term 'liquidity' has not been clearly explained. It is more confusing and less illuminating. It is not only vaguer but also self contradictory. Suppose a man having money in the form of time deposit or short term treasury bills is paid interest. In such a

case he is getting interest and possesses 'Liquidity' also. Hazlitt asks 'what becomes, then, of Keynes theory that interest is the 'reward' for parting with liquidity'?

6. Motives

According to Keynes the desire for liquidity arises due to three motives. But critics point out that in addition to the three motives mentioned by Keynes, there are several other motives which are not stressed by Keynes.

7. Changes in Money Supply

Keynes theory states that the rate of interest can be reduced by increasing the supply of money. The rate of interest will remain the same if the liquidity preference also increases in the same proportion.

8. Incomplete Theory

According to Prof. Hansen the rate of interest along with the level of income is determined by four factors:

(i) The investment function,

(ii) The consumption function,

(iii) The liquidity preference function, and

(iv) The quantity of money function.

Keynes takes only the liquidity preference function and the quantity of money function in explaining the phenomenon of interest and ignores the first two functions. Thus Keynes fails to provide an integrated and determinate theory of interest.

9. The Theory Ignores Long Period

Keynes theory furnishes an explanation of the rate of interest in the short run. It gives no clue to the rates of interest in the long run.

10. Existence of different interest rates

The theory also fails to explain why in the market one witness the co-existence of a number of interest rates.

11. Notion of Liquidity Trap

According to critics the notion of liquidity trap itself is wrong. They argue that in reality the liquidity preference schedule may be perfectly inelastic rather than elastic at a low rate of

interest. During the period of depression all expectations are extremely pessimistic. It is, therefore not correct to argue that expectation with regard to the rate of interest will be that it will go up.

12. Applicability in less Developed Countries

Keynesian theory of interest has little relevance to the underdeveloped countries.

LOANABLE FUNDS THEORY OF INTEREST

Lonable funds theory was developed independently by Knut Wicksell in Sweden, Sir Dennis Robertson in Britain and H.J. Davenport in the United States. Top honour, however, goes to Wicksell for both priority and profundity. Other notable contributors to this theory of interest are Ohlin, Pigou, Viner etc.

According to this theory, interest is the price paid for the use of loanable funds and as such, it is determined by the demand and supply of loanable funds. Demand for loanable funds is inversely related to the rate of interest, while the supply of loanable funds is positively related to the rate of interest.

There are several sources for both supply and demand of loanable funds which are discussed below.

Supply of Loanable Funds

The supply of loanable funds is derived from four sources, namely,

(a) Savings,
(b) Dishoarding,
(c) Bank Credit and,
(d) Disinvestment.

(a). Savings

Savings by individuals or households form the most important source of saving. Savings may be of two types, planned and unplanned. Planned saving is called ex-ante savings. The individual plans his savings before the actual expenditure takes place, and he sets aside a sum to

save money. The unplanned saving is known as ex-post savings. It is in this sense that Robertson has used the word savings. It is the difference between the income of the preceding period and the consumption of the present period. Savings depend on the level of income. But given the level of income, savings vary with the rate of interest.

Like individuals, business firm also save. The undistributed profits of a business frim constitute the corporate savings. Instead of approaching the loan market for loans, their own saving can be used for investment.

(b). Dishoarding

When the idle cash balances of the past income active balances in the present, and become available for investment, it is called dishoarding. If the rate of interest is low, dishoarding would be negligible. If the rate of interest becomes high more money will be dishoarded.

(c). Bank Money

Bank money is another component of the supply of loanable funds. Credit creation is one of the fundamental functions of the modern banks. Modern banks are compared to a factory manufacturing credit. Banks can increase or reduce loanable funds by the process of credit creation. Normally, banks will lend more money when the rate of interest rises.

(d). Disinvestment

Disinvestment is the opposite of investment. Disinvestment takes place when the stock of existing machines is allowed to wear out, without being replaced. Such a disinvestment takes place because of structural changes. When the rate of interest is high, some of the current capital may not produce a marginal revenue product to match this rate of interest. In this situation, a part of the revenue from the sale of products, instead of going into capital replacement flows into the market for loanable funds.

The total supply curve of loanable funds is obtained by the lateral summation of the four curves, savings(S), dishoarding (DH), disinvestment (DI) and bank money (BM).

Thus $S_L = S + DH + BM + DI$

The supply curves for loanable funds slopes upwards to the right showing that more will be supplied at higher rate of interest and vice versa. At higher rates of interest people hoard less money.

Demand for Loanable Funds

The demand for loanable funds arises mainly from three sources – investment, consumption and hoarding.

    (a) Investment demand,

    (b) Consumption demand

    (c) Demand for hoarding.

(a). Investment Demand

The bulk of the demand for loanable funds comes mainly from business concerns for investment purpose. Business firms demand loanable funds up to the point at which the expected net rate of return on capital goods becomes equal to the rate of interest. The demand for loanable funds for investment purposes is interest elastic and it varies inversely with the rate of interest.

(b) Consumption Demand

Consumers borrow mainly to finance the purchase of durable goods like automobiles, refrigerators, television sets, washing machines, room coolers etc. A low rate of interest encourages consumers to borrow more money funds.

(c). Demand for Hoarding

Hoarding signifies keeping idle cash balances. People prefer to hold money when they feel that the current rate of interest is not enough to induce them to part with their money and that in the near future they will be able to make better use of their hoarded balances.

By a horizontal summation of the three curves of investment (I), consumption (C) and hoarding (H) we get the demand curve, D_L for loanable funds.

Thus $D_L = I + C + H$

The demand curve for loanable funds slopes downwards to the right showing that more will be demanded at lower rates of interest and vice versa.

Determination of the Rate of Interest

According to the loanable funds theory, the equilibrium rate of interest is determined at a level where the demand for and the supply of loanable funds are equal.

$$S + DH + DI + BM = I + C + H$$

The determination of the rate of interest according to the loanable funds theory is illustrated with the help of Figure

FIGURE

In Figure S_L is the supply curve of loanable funds and D_L is the demand curve for loanable funds. The curves I, C and H refer to the components of demand and S, DH, BM and DI refer to the components of supply – their slopes indicating their relationship with the rate of interest.

The total demand curve D_L and the total supply curve S_L intersect each other at the point E. The equilibrium rate of interest is OR. At this rate, the loanable funds supplied are equal to the loanable funds demanded.

Criticism of the Theory

Prof. Robertson considers the loanable funds theory as a "common sense explanation" of the determination of the rate of interest. But the theory was the target of criticism for Lord J.M. Keynes and his followers.

1. Firstly, according to critics, this theory is simply an extension of the classical theory.
2. Secondly, the theory gives undue importance to the rate of interest on savings.
3. Thirdly, Keynes refutes the relationship between the rate of interest and investment as postulated by the theory. According to him, investment in an economy depends more upon the marginal efficiency of capital than upon the rate of interest.

4. Fourthly, critics have objected to the way the monetary factors have been combined with the real factors in the theory.

5. Fifthly, in modern times, the rate of interest is mainly an 'administered price' which is determined by the monetary authority of the country.

6. Sixthly, the theory assumes full employment of resources which is not correct.

7. Lastly, Prof. Alvin H. Hansen has criticised the theory as indeterminate.

SUPERIORITY OF LOANABLE FUNDS THEORY OVER THE CLASSICAL THEORY

The loanable funds theory is superior to the classical theory because of the following factors:

1. Firstly, the classical theory is a real theory of interest. It has neglected the monetary influences on interest. Loanable funds theory is superior to the classical theory, because it includes both monetary and real factors.

2. Secondly, the classical economists have failed to take note of bank credit which is a major determinant of the rate of interest.

3. Thirdly, the classical also do not consider the role of hoarding. By giving an important place to hoarding, the loanable funds theory brings us nearer to the Keynesian liquidity preference theory.

4. Lastly, in the classical approach, money is merely a 'veil' and a passive factor influencing the rate of interest. In the loanable funds approach, money acts as an active factor in the determination of the rate of interest. It is determined by the demand for and the supply of money.

PROFIT

INTRODUCTION

The share of income that the entrepreneurs receive in the process of distribution is known as profit.

Profit differs from the return on other factors, in three important aspects.

Firstly, profit may be negative whereas rents, wages and interests are always positive.

Secondly, profit fluctuates more than the other rewards. While wages and interest are adjusted over time, it is profit which feels the immediate impact of booms and slumps.

Thirdly, profit is a residual income while rents, wages and interests are contractual payments.

To get an accurate picture of profit, it is necessary to distinguish between gross profit and net profit.

Gross Profit and Net Profit

Gross profit is the surplus of total return to the entrepreneur after paying rent, for land, interest, for capital and wages, for the labourers employed. In ordinary parlance profit means only gross profit.

Net profit is the reward to the entrepreneur for his risk-taking function and his bargaining skill.

Gross profit is made of various constituents of which net profit is one. Gross profit comprises of

(1) Reward of the factors of production supplied by the entrepreneur himself.
(2) Charges of maintenance such as
      (i)   Depreciation charges and
      (ii)   Insurance charges
(3) **Extra personal gains:** It may take two forms (i) Monopoly gains and (ii) Windfall gains
(4) **Net Profit** : it is the reward for two main functions : (i) Reward for risk-taking and (ii) Reward for bargaining skill.

Therefore,

Gross Profit = Total revenue – Total explicit cost

Net Profit = Total revenue – (Total explicit cost + Total implicit cost)

= Gross Profit – Total implicit cost.

RENT THEORY OF PROFIT

This theory is associated with Francis Walker. Walker's treatment of profit is similar to the theory of rent as advanced by David Ricardo.

In the words of J.S. Mill "the extra gains which any producer obtains through superior talents of business or superior business arrangements are very much similar to rent."

Just as there are different grades of land, there are different grades of entrepreneurs. Just as rent arises on account of differences in fertility of land, profits arise on account of differences in ability. To use Walker's own words "Profit is the wage of entrepreneurs, which occurs to him on account of his special ability. Just as rent on superior lands is measured by the difference in the productivity of the marginal and intramarginal lands, in the same way the profits of the superior entrepreneurs are determined by the differences in the ability of the marginal and intra-marginal entrepreneurs. Like marginal lands, which yields no rent there exists marginal entrepreneurs get only wages of management. Profits are thus like rent and like rent, they do not enter into the price of the product.

Criticisms of the Rent Theory of Profit

(1) Though it is true that there are similarities between rent and profit, both are not identical in all aspects. Dissimilarities between the two concepts are more pronounced than the apparent similarities.

(2) The theory provides no explanation to the share of profits of the shareholders of joint-stock companies.

(3) According to critics, there cannot be a perfect similarity between rent and profit. Rents can never be negative while profits can be negative when the entrepreneur suffers losses.

(4) It is wrong to say that profit does not enter into the price of the commodity. This may be true only in the short period; but in the long period, profit must enter into price.

(5) Walker has explained surplus profit. He has nothing to say about other types of profit and the size of the profit.

(6) Profit is not always the reward for entrepreneurial ability. It may arise also on account of the monopoly power of the firm, favourable chances available to the entrepreneur etc.

(7) The concept of a no-profit entrepreneur is wrong. If, an entrepreneur earns no profit, he will leave the industry and try his luck elsewhere.

WAGE THEORY OF PROFIT

This theory was advanced by the American economists Prof. Taussing.

According to Taussing, "Profits are best regarded simply as a form of wages." The theory states that profit is also a form of wage which is given to the entrepreneur for the services rendered by him in the process of production. The theory has been criticised on the following grounds:

1. There are basic differences between wages and profits. Wages are fixed and are a stipulated income, while profits are uncertain and are residual incomes.

2. It is the entrepreneur who undertakes risks in any production process while the wage earner is free from undertaking any such risks.

3. The theory fails to explain the reason as to why the shareholders of a company receive profits while they do not put in any labour.

DYNAMIC THEORY OF PROFIT

J.B.Clark propounded his dynamic theory of profit in 1990. The distinction between a static and a dynamic economy is fundamental to this theory of profit. According to Clark, profits are exclusively the result of dynamic changes.

No Profit in a Static Economy

Clark defined profit as the difference between the selling price and cost. It is a surplus above costs. According to this theory, under static conditions in a stationary state where no change in demand and supply occur, profits do not arise. In a static, there is no increase in either population or capital, methods of production do not improve, the forms of industrial organisation do not change and the wants of the consumers do not multiply. In a static state, prices of goods

are equal to costs of production and there can be no profit. In a static society, since payments are made on the basis of marginal productivity, the total product will be distributed between wages and interest. In such an economy the share of profit is zero. The only income of the entrepreneur is his wages for management or for co-ordination, or for his routine work of supervision.

In the words of Prof. F.H. Knight, "In a static state each factor secures what it produce, and since the cost and the selling prices are always are always equal, there can be no profit beyond wage for the routine work of supervision."

Thus in a static economy everything is known and knowable. There is no risk and no uncertainly; and hence there no profits.

The long period competitive equilibrium is a good example of a static economy.

The long-run equilibrium is attained at point E where the price of the product OP (=ME) is equal to the cost of production which includes normal profits. So profit or loss does not exist in such a society.

Profit Arise in a Dynamic Economy

Clark says that our society is a dynamic one and changes take place in it every moment. He mentions "five generaric changes" which may occur in a dynamic economy to give rise to profit opportunities.

1. Changes in the size of population.
2. Changes in human wants
3. Changes in production techniques
4. Changes in the forms of industrial organisation
5. Changes in the supply of capital

The first two of these changes affect demand, while the last three changes affect the supply.

The changing world offers enormous opportunities to the farsighted and clever entrepreneurs who can anticipate a world of changes and adjust their activities accordingly and earn extra profits.

The world is dynamic due to two sets of factors.

(A) Internal

Internal factors are certain changes which the entrepreneur himselt brings about such as new discoveries, new inventions and new innovations.

(B) External

The external changes may take two forms:

(a) Regular changes like trade cycles which may affect profits.

(b) Irregular changes which may affect profits such as fire, earthquake,changes in national and international policies etc.

The changes are constantly taking place in dynamic economy and they create a divergence between price and cost, and thereby given rise to profits, positive or negative.

Criticism of the Dynamic Theory of Profit

This theory has been criticised on the following grounds:

1. The theory fails to make any difference in a change that is foreseen and one that is not unforeseen in advance. As Prof.Knight points out, it is not all types of dynamic changes that lead to profit. It is only those changes which cannot be foreseen that give rise to profits.

2. Profits may also emerge in the absence of Clark's five principal of dynamic changes.

3. Lastly, as Prof. Taussing ponts out, Clark's dynamic theory creates an artificial distinction between profits and wages of management.

RISK THEORY OF PROFIT

The risk theory of profit was propounded by an American economist, Prof. F.B. Hawley, in 1907. According to this theory, risk bearing is the most important function of the entrepreneur and profit is a reward for it. Risks are common in all types of production. Risks are both unpleasant and irksome. Therefore, no one would like to undertake risks unless he gets a reward

for it. The theory predicts a positive relationship between risk and profit. Higher the risk greater is the possibility of profit.

In Hawley's words "The profit of an undertaking, or the residue of the product after the claims of land, capital and labour are satisfied, is not the reward for management or co-ordination, but of risks and responsibilities that the undertaker subjects himself to."

Criticism of the Risk Theory of Profits

This theory has been criticised on the following grounds:

1. The theory disregards many other factors such as superior organizational ability, monopoly power etc., and just concentrates on risks.

2. According to Prof. Carver, profit is the reward for risk avoidance, rather than for risk-taking.

3. There can be no functional relationship between risk and profit. Those who undertake high risks in certain business may not necessarily earn high profits.

4. According to Prof. Knight, profit cannot be attributed to all types of risks. While predictable risks are insurable, unpredictable risks are not. In fact it is the uninsurable risk which is uncertain that gives rise to profit.

UNCERTAINTY – BEARING THEORY OF PROFIT

This theory was developed by the American economist, Prof. Knight in 1921. According to Prof. Knight, it is uncertainly-bearing rather than risk-bearing which is the most important function of the entrepreneur which leads to profit.

Knight made a distinction between risk and uncertainty. According to him, risks inherent in any business activity are of two kinds: (i) insurable and (ii) non-insurable. The distinction between insurable risks and non-insurable risks is a very important one and it is the real basis of the theory.

Insurable Risks

Insurable risks are those whose possibility of occurrence can be statistically calculated and can be insured against with an insurance company.

They are of two kinds.

1. Risks of loss property due to earthquake, fire, flood and other natural calamities; and

2. Risks of dishonestly such as loss due to theft, robbery, burglary etc.

Though it is not possible for the insurance company to predict which particular man will die or which specific firm will catch fire, it can tell very accurately how many men died or how many firm caught fire in a particular year. This fact enables the insurance company to fix the premium to be charged. The insurable risks are not the responsibility of the entrepreneur, because by paying the insurance premium he is absolved of the worry. The premium paid for insurance is included in the cost of production.

However, there remains an area of risks in which the probability of risk occurrence is not susceptible to measurement. He calls them 'uncertainly.' It is in this area that the responsibility of an entrepreneur is unique. In other words, uncertainly-bearing expects rare human abilities.

Non-Insurable Risks

The non-insurable risks are follows:

1. Competition Risks: Competition risks are those which arise when more rival firms enter into the industry.

2. Technical Risks: Technical risks arise from the possibility of machinery becoming obsolete due to the discovery of a new process. The old firms may not be in a position of follow the new process and may thus suffer a heavy loss.

3. Risks of Government Policy: Government policy regarding business activities undergoes a change over time, some of which cannot be accurately predicted. These may relate to price control, foreign trade policy, corporate taxation etc.

4. Business Cycle Risks: Business cycle risks occur when a major part of the business sector is in the grip of a recession. In such a case, the effective demand for the product may be reduced. Moreover the fall in prices may be higher than the decline in costs.

It is the lure of profits which induces the entrepreneurs to produce goods for an uncertain market. People who are both prepared to bear the risk and possess capital for investment earn profits. If his decisions are proved correct by the subsequent events, the entrepreneur makes profit, and vice-versa.

(i)The profits may arise as a result of decisions concerning the state of the market (ii) decisions which result in increasing the degree of monopoly (iii) decisions with respect to holding stocks that give rise to windfall gains when prices increase; and (iv) decisions taken to introduce new techniques or innovations that give rise to profits.

Criticism of Knight's Theory of Profit

1. Uncertainly bearing is not the only function of the entrepreneur, though it is an excretion of rare human qualities. There are other functions like co-ordination, innovation, etc., for which he gets profit.

2. Knight's uncertainly theory lacks scientific precision. According to Prof. Taussing, though certain risks are in the area of uncertainly many are not. For example, a person is betting in a horse race. If he has the knowledge of the age, training, rearing etc., of different horses and their jockeys, he would be operating in a region of risk. And if he does not have the knowledge about the horses and jockeys participating in the race, he would be regarded as operating in the area of uncertainly. But, if he has some knowledge about the horses and/or jockeys, it will be difficult to decide whether the person is operating in the area of risk or in the area of uncertainly.

3. The theory throws no light on monopoly profit. Monopoly firms earn profits not due to the presence of any uncertainly.

4. Moreover, the uncertainly element cannot be quantified to impute profit.

5. The theory assumes uncertainly bearing as an independent factor of production. But it depends upon the business ability of the entrepreneur. The more efficient an entrepreneur, lesser will be the uncertainly and vice versa.

6. Lastly, the theory fails to separate the two functions in modern business, namely, ownership and control. Nowadays ownership rests with the shareholders of the company and control lies in the hands of the salaried managers. Therefore, the concept of profit and the precise function of the entrepreneur have not been clearly explained in this theory.

INNOVATION THEORY OF PROFIT

This innovation theory of Profit was developed by Joseph A. Schumpeter. His theory of profit is more or less akin to the dynamic theory of profit. Instead of five "generic changes" of

Clark, Schumpeter resorts to innovations to explain the emergence of profits. According to this theory, innovation is a distinctive function of an entrepreneur for which he gets profit.

For example, Steven Jobs, the founder of Apple Computer Company became a millionaire in the course of a few years by introducing the Apple Computer in 1977.

Meaning of an Innovator

An innovator is a person with vision, originality and drive. The entrepreneur is one who innovates. Entrepreneurship and his Endeavour lies in introducing innovations. The entrepreneur is an aggressive innovator who introduces improved techniques of production or who alters the production function in other ways.

The entrepreneur may not be a scientist who invents new products or processes but the man who successfully introduces them in the production process. The person who undertakes the risk of introducing the idea in mass commercial use is the entrepreneur and it is he who gets the profit for it. The scientist or technician gets only a fixed sum or a percentage by way of royalty. Thus profit is due only to the entrepreneur.

The role of the entrepreneur is quite distinct from that of the capitalist. The entrepreneur innovates and does not undertake any risk. Risk taking is the function of the capitalist or the banks that provide credit. Thus profit is a reward for innovation rather than for risk-taking.

Meaning of Innovation

Any new measure or policy designed by the entrepreneur to reduce costs of production or to increase the demand for his product is known as innovation.

Innovations may be divided into two broad categories.

(i) Those innovations which reduce the cost of production

The cost of production may be reduced by the introduction of new machine new and cheaper techniques of production, exploitation of a new sourceof raw material, new and better methods of organising the firm etc.

(ii) Those innovations which change the demand or utility function

The utility or demand may be increased by the introduction of a new product, a new design in the market, attractive and efficient methods of advertisement, discovery of new markets for the product etc.

Whenever a new innovation is introduced, it reduces the cost of production below the existing price and results in the emergence of profit.

According to Schumpeter, profit are temporary in nature. A change is followed by another change. A new innovation gives profit to a particular firm. Soon this profit is wiped out because others imitate that innovation. Thus, there is a "swarn like appearance of entrepreneurial activity." So the profit "slips in time through their fingers and bestows itself on all members of the society." Profits are thus unstable and temporary. But it should be noted that when one source of innovational profit disappears some other new innovation may appear. Hence, innovational profits have a tendency to disappeared and reappear.

Criticism on Innovation Theory of Profit

The theory has been criticised on the following grounds:

1. A Special Case of Knight's Theory

According to critics, Schumpter's theory is nothing else than the uncertainly theory, for innovations are one of the cause for uncertainly, although a deliberately created uncertainly.

2. Role of Risk-bearing

The theory does not consider profit as the reward for risk-bearing. According to Schumpeter "The entrepreneur is never the risk-taker. The one who gives credit comes to grief if the undertaking fails." This is not true.

3. Relation between Innovation Ability and Profit is not Correct

According to Schumpeter the profit of an entrepreneur depends upon his ability to innovate and reduce the cost of production. But in actual practice, a number of ordinary businessmen obtain a lot of profit which is in no way correlated to their innovational capacity. The windfall gain and loss aspects have also been ignored by the theory.

4. Ignores the Long Period

The theory states that profit is a temporary phenomenon, because in the long run innovation gets itself reduced to that of a routine. Thus this theory fails to explain the determination of profit in the long run.

5. An Institutional Theory

The theory is not based upon economic factors. It elevates the position on an entrepreneur to that of an institution. Therefore, it is more sociological in nature than economics.

MARGINAL PRODUCTIVITY THEORY OF PROFIT

The chief exponents of the marginal productivity theory of profit are Edge worth, Chapamn, Stigler and Stonier and Hague. In simple terms, the theory states like the payment for other factors of production, the remuneration of the entrepreneur, i.e., profit will be determined by the marginal productivity of the entrepreneur.

But the real problem with regard to this theory is the difficulty of calculating the MRP of the entrepreneur. Since there is only one entrepreneur in a firm, the principle of marginal analysis may not be valid. But this difficulty can be avoided by taking an industry where the number of firms can be varied. As more and more firms enter into the industry, the marginal revenue productivity of entrepreneurship decrease. Thus, the slop of MRP curve (MRP curve)
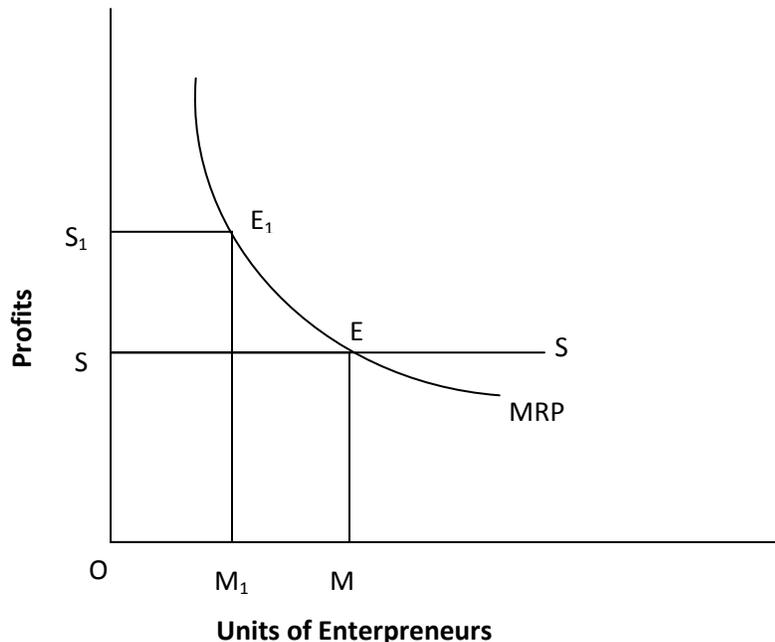
and supply curve intersect at point E where all entrepreneurs make normal profits OS (=EM) in the long run. In the short run, the number of entrepreneurs being OM_1 instead of OM, they make a supernormal profit of E_1M_1. But this theory is not a systematic theory.

Reference Book

1. D.Bose & Marimuthu, Micro Economics, Himalaya Publishing House, Mumbai, 2011.

2. Dewett. K.K. Modern Economic theory, Shyam Lal Chairtable Trust, Ram Nagar, New Delhi, 12th Revised Edition, 1981.

3. M.L. Seth, Micro Economics, Progress Publication, 1987.

4. Maria John Kennedy, N. Advanced Micro Economic Theory, Himalaya Publishing House, Mumbai 1st Edition, 1977.

5. Sundaram, K.P.M., Vaish, M.C. Micro Economic Theory, S.Chand & Company Ltd., 12th Edition, 1997.

6. Rmita Singh, Emerging trends in Micro Economics, ALP Books, New Delhi, 2011.

7. Jhingan, M.L. Modern Micro Economics, Vrindha Publication, 2006.

8. Sankaran.S. Micro Economics, Margham Publications, Publishers and Book Seller Madras, 7th Edition, 1990.

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