

Economic Theory

HIGHER SECONDARY - SECOND YEAR

Untouchability is a sin

Untouchability is a crime

Untouchability is inhuman



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FOREWORD

Academics, parents and the educational media have represented to the Government of Tamil Nadu to reform the Plus one and Plus two textbooks, which were introduced in the academic year 2005-06. Our beloved Chief Minister, who has always been evincing keen interest in educational development, immediately constituted a “Text Book Development Committee” under the Chairmanship of the Vice Chairman, State Planning Commission, Government of Tamil Nadu.

The Text Book Development Committee solicited opinion from Teachers, Lecturers and Professors from Higher Secondary Schools, Colleges and Universities, Chairpersons and authors of text books. After perusing the opinions, the Text Book Development Committee decided not to change the syllabi, but recommended suitable changes in the text books.

In particular, it was proposed to rewrite the economics textbook, and accepting this proposal, this Textbook is rewritten by experienced and efficient teachers.

We are pleased to place on record our sincere gratitude to our beloved Chief Minister. Our thanks are due to Hon’ble Minister for School Education, Secretary and Director, Department of School Education, Government of Tamil Nadu for their valuable support and suggestions.

We thank Teachers, Lecturers and Professors from Higher Secondary Schools, Colleges and Universities, Chairpersons, Reviewers and Authors of textbooks, non-teaching staff of Education, Department and State Planning Commission for their help at various stages in this endeavour.

We wish the students to learn and perform well in the examinations.

Prof M. Naganathan
Chairman
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PREFACE

An earnest attempt has been made in this book to present the elements of Economic Theory in a lucid form, without sacrificing the basic tenets and without overburdening the student and it is prepared in accordance with the syllabus prescribed for standard XII.

The Chairperson, the reviewers and the authors acknowledge with gratitude the confidence reposed in them by Dr. M. Naganathan, Vice-Chairman, State Planning Commission and Chairman, Textbook Development Committee. Posterity will be indebted to him for his deep perception of curriculum and syllabus from a broader sociological angle.

The Committee wishes to thank Dr. R. Srinivasan, Full-time Member of the State Planning Commission, for his abiding interest in the project, and for the encouragement and support he has given during the course of writing the book, for his helpful comments and suggestions and for his unfailing courtesy.

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The Chairperson wishes to place on record his deep appreciation of the Reviewers and authors of the book for their excellent cooperation and good team work with perfect understanding.

The Committee craves the indulgence of the readers for the errors that might have crept in inadvertently.

Suggestions for improvement are welcome.

Chairperson, Reviewers and Authors

CONTENTS

	Page No
1 Nature and Scope of Economics	1
2 Basic Economic Problems	33
3 Theory of Consumer Behaviour	47
4 Demand and Supply	77
5 Equilibrium Price	103
6 Production	117
7 Cost and Revenue	143
8 Market Structure and Pricing	161
9 Marginal Productivity Theory of Distribution	183
10 Simple Theory of Income Determination	205
11 Monetary Policy	229
12 Fiscal Policy	247

Chapter 1

Nature and Scope of Economics

Introduction

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.

Political economy is another name for economics. “Polis” in Greek means a State. The early writers used the term “Political Economy” for the management of the State. A person who runs a family is expected to make the best use of the income of the household. Similarly, the State is expected to get the maximum benefit for the society. Hence the term “Political Economy”.

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.

Definitions of Economics

We can have a good idea about the nature and scope of economics by studying some of the important definitions of economics. Some of the important definitions of economics are those of leading economists like Adam Smith, Alfred Marshall, Lionel Robbins and Samuelson.

Adam Smith's Definition (Wealth Definition)

Adam Smith (1723-90) defined economics as follows : "*Economics is the science of wealth*". He is the author of the famous book "*Wealth of Nations*" (1776). He 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.

We study about consumption, production, exchange and distribution of 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 over-emphasis 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 largescale 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”.

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 Cairncross 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.

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. As Robbins puts it. "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.*

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.

Main Divisions of Economics

There are four main divisions of economics. They are consumption, production, exchange and 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. So public finance has become an important branch of economics.

All the above divisions are interrelated. And they are dependent on each other.

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.

Production

Production refers to the creation of wealth. Strictly speaking, it refers to the creation of utilities. And utility refers to the ability of a good to satisfy a want. There are three kinds of utility. They are form utility, place utility and time utility. Production refers to all activities which are undertaken to produce goods which satisfy human wants. Land, labour, capital and organization are the four factors of production. In the sub-division dealing with production, we study about the laws which govern the factors of production. They include Malthusian Theory of population and the laws of returns. We also study about the localization of industries and industrial organization.

Exchange

In modern times, no one person or country can be self-sufficient. This gives rise to exchange. In exchange, we give one thing and take

another. Goods may be exchanged for goods or for money. If goods are exchanged for goods, we call it barter. Modern economy is a money economy. As goods are exchanged for money, we study in economics about the functions of money, the role of banks and we also study how prices are determined. We also discuss various aspects of international trade.

Distribution

Wealth is produced by the combination of land, labour, capital and organization. And it is distributed in the form rent, wages, interest and profits. In economics, we are not much interested in personal distribution. That is, we do not analyse how it is distributed among different persons in the society. But we are interested in functional distribution. As the four factors or agents of production perform different functions in production, we have to reward them.

Public Finance

Public finance deals with the economics of government. It studies mainly about the income and expenditure of government. So we have to study about different aspects relating to taxation, public expenditure, public debt and so on.

Conclusion

We may note that the subject of economics is divided into consumption, production, exchange, distribution, and public finance only for the sake of convenience.

We should not look at it in a rigid way. We must not consider them as watertight compartments. They are related to each other and they are interdependent also. For example, we cannot have consumption without production. The aim of production is creation of wealth. And we produce wealth not for its own sake but for the satisfaction of human wants. In other words, we produce goods because we want them for consumption. So the ultimate aim of production is promotion of human welfare. Production is means and consumption is the end. Generally, people produce goods for market. So exchange takes place. Exchange

is the connecting link between production and consumption. The economic welfare of people in a nation depends on how wealth is produced and on how it is distributed. If there is no proper distribution, it will result in inequalities of income and wealth. This, in turn, will affect consumption and production. So we find that all the divisions of economics are interrelated and interdependent.

Economics : positive or normative science ?

There is no need for us to ask the question whether economics is a positive science or normative science. Instead of that, we may look at it as a subject that has two parts, namely positive economics and normative economics. As Asimakopulos puts it, “positive economics can be defined as a body of systematized knowledge concerning what is, while normative economics tries to develop criteria for what ought to be”

Positive economics is mainly concerned with the description of economic events and it tries to formulate theories to explain them. But in normative economics, we give more importance to ethical judgements. Normative economics is concerned with the ideal rather than the actual situations.

Statements on economics may be classified into positive statements and normative statements. If there is disagreement over a statement, we can find out whether it is true or false by verifying facts. But when there is disagreement over a normative statement, we cannot settle the issue simply by appealing to facts. The questions, “what are the policies that the Government should follow to reduce unemployment ? what should it do to reduce inflation ? are all questions in positive economics. On the other hand, if we ask the question, “should the government be more concerned about unemployment than inflation ?”, then it is a normative one. Economists like Lionel Robbins believe that we must leave normative questions, such as what ought to be done to political and moral philosophy and that we must study and analyse only positive questions. Robbins tells that an economist as an economist has no business to pronounce judgements on the ethical aspects of economic

question. He feels that if normative considerations are taken into account, economics cannot be an exact science. But many economists differ from this view. They believe that as economics as a social science has to promote human welfare, we have to consider ethical issues in economics. Now, we have a new and important branch of economics known as “*welfare economics*”.

Economics in relation to other social sciences

Economics is a social science which deals with human wants and their satisfaction. It is related to other social sciences like sociology, politics, history, ethics, jurisprudence and psychology. For example, the economic development of a nation depends not only on economic factors but also on historical, political and sociological factors. Our country did not have much of economic progress during the British rule owing to historical reasons. Again, we had slow but steady economic growth in our country because of political stability. But in many other countries, there was no steady growth because of political instability. If there is one government today and another government tomorrow, there will not be economic development in that country.

We shall discuss, in some detail, economics in its relation to other social sciences.

Economics and Sociology

Sociology is the science of society. Social sciences like politics and economics may be considered as the branches of sociology. Sociology is a general social science. It attempts to discover the facts and laws of society as a whole. Sociology deals with all aspects of society. But economics deals only with the economic aspects of a society. It studies human behaviour in relation to scarce means and unlimited wants. For a student of sociology, social institutions like marriage, religion, political institutions and economic conditions are all important subjects for study. But in economics, we are interested in them only to the extent that they affect the economic life of a society. And we cannot properly understand the economic conditions of a society without

considering its sociological aspects. Though economics is a branch of sociology, we must look at it as a separate and distinct branch.

Economics and Politics

Both economics and politics are social sciences and there is a close connection between them. Politics is the science of the State or political society. It studies about man in his relation to the State.

The production and distribution of wealth are influenced to a very great extent by the government. We have economic planning in our country. And the main aim of planning is to increase the national income by increasing production and by a proper distribution of income.

The Planning Commission, which is an agency of the government, plays a vital role in it. Some of the important questions like nationalization, privatization and prohibition are all economic as well as political questions. Elections are fought often in many countries on economic issues. Unemployment, labour disputes are all economic issues. But government has to tackle them. The relationship between economics and politics is so great that the early economists described economics as political economy.

Sometimes, political ideas and institutions are influenced by economic conditions. For example, socialism was born of economic inequalities and exploitation in England during the industrial revolution. Karl Marx is considered as the Father of (scientific) socialism.

Economics and History

Economics and history are closely related. History is a record of the past events. In history, we survey economic, political and social conditions of the people in the past. To a student of history, love affairs, marriages and even murders of kings are important subjects of study. For example, the murder of Julius Caesar is important for a student of Roman history. In our country, the religious policy of Mughal emperors is important for a student of history. But we are interested in history only to the extent that it will help us in understanding economic problems of the past.

As students of economics, we are interested in things like taxation and other sources of revenue and standard of living in the past.

In economics, we make use of historical data to formulate economic laws. We make use of history in economics to study the material conditions of people in the past. There is a separate branch of economics known as “Economic History”.

We may say economics is the fruit of history and history in the root of economics:

“Economics without history has no root;

History without economics has no fruit”.

Economics and Ethics

Ethics is a social science. It deals with moral questions. It discusses the rules that govern right conduct and morality. It deals with questions of right and wrong. It aims at promoting good life.

There is connection between economics and ethics. While economics, according to Marshall, aims at promoting material welfare, ethics aims at promoting moral welfare. When we discuss economic problems, often we consider ethical issues. The government introduced prohibition in many states for ethical reasons, though there was heavy loss of revenue to it.

But Lionel Robbins strongly believes that an economist as an economist should not consider ethical aspects of economic problems. But many economists do not agree with him. They believe that economics cannot be dissociated from ethics. Even Marshall considered economics as a handmaid of ethics. He looked at economics as a study of means to better the conditions of human life.

Economics and Jurisprudence

Jurisprudence is the science of law. The economic progress of a nation depends to a great extent on its legal system. Good laws promote economic progress and bad laws act as an impediment to growth. For example, in the past when we welcomed foreigners to invest in our

country, they used to say our taxation was complex and not good. Of course, now things have improved. So we must have simple and clear laws in the fields of taxation and labour legislation to promote economic progress.

Economics and psychology

Psychology is the science of mind. It deals with all kinds of human behaviour. For example, we have child psychology, mob psychology, industrial psychology and criminal psychology. But economics studies one aspect of human behaviour. It studies human behaviour with reference to unlimited wants and limited means. Of late, psychology has become important in analyzing economic problems. To deal with labour problems, we must understand industrial psychology. And a good businessman must understand the psychology of buyers whenever he wants to change the price of his good. Many important laws of economics are based on psychology. For example, we have the law of diminishing marginal utility. It tells that the more and more of a thing you have, the less and less you want it.

Economics, mathematics and statistics

Among other sciences, economics is related to mathematics and statistics. Statistics is the science of averages. It is the science of counting. Many tables and diagrams used in economics are based on statistical analysis. Mathematical methods are largely used in modern economics.

Now we have a new science called *econometrics*. It makes use of statistics and mathematics in economics. The econometric society was founded in 1930, and the first Nobel prize in economics was awarded to Jan Tinbergen and Ragnar Frisch for their contribution to econometrics.

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 in 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.

Stocks and flows

Stocks and flows are basic concepts in economics. Stocks can be measured at a given point of time. A flow is a quantity that can be measured only in terms of a specified period of time. In other words, it has a time dimension. For example, wealth is a stock and income is a flow.

Micro economics and macro economics

Economic theory can be broadly divided into *micro economics* and *macroeconomics*. The term *micro* means small and *macro* means large.

In microeconomics, we deal with problems such as the output of a single firm or industry, price of a single commodity and spending on goods by a single household.

Macroeconomics studies the economic system as a whole. In it, we get a complete picture of the working of the economy. It is a study of the relations between broad economic aggregates such as total

employment, saving and investment. We may also say that macro economics is the theory of income, employment, prices and money. That is why macroeconomics is sometimes studied under the title "Income and Employment Analysis".

Economics as a science

We no longer ask the question whether economics is a science or an art. Science is a systematized body of knowledge. Just as physics and chemistry are sciences, economics is also a science. We observe facts, conduct experiments and make generalizations in physics and chemistry after testing the results. The same scientific methods are followed in economics also. Economics, like all other sciences, studies the relationship between cause and effect.

Sciences may be broadly divided into physical sciences and social sciences. Physics and chemistry are examples of physical sciences. Economics is a social science. It studies about a particular aspect of human behaviour. And human behaviour is full of complexity. It is not easy to study it. So economic science is not as precise and exact as the physical sciences.

But economics has a greater right to be considered as a science than other social sciences like politics or history because in economics we make use of money as a measuring rod of utility. It is true that it is only a rough measure but still it enables us to give concrete shape to the laws of economics. Sometimes, what we say in economics may not come true in real life. But this is the case with many other sciences. For example, we joke about weather forecasts. The weather report in the newspaper may say that there will be heavy rainfall on a particular day. But there might not be any rain at all on that particular day. On account of that, we cannot say that meteorology (the science of weather) is not a science. Similarly, if some economic laws do not come true, we cannot say that economics is not a science.

Methods of Economic Analysis

In economics, broadly we make use of two methods.

1. Deductive method and
2. Inductive method

The deductive method is also known as abstract method or analytical method. This method is based on a priori reasoning and conclusions are drawn from certain fundamental assumptions. Deduction method was very popular among the Greeks. Here is an example :

All men are mortal

Socrates is a man

Socrates is mortal

The deductive method moves from the general assumption to the specific application.

Ricardo, a classical economist, made use of the deductive method.

The inductive method moves from specific observations to generalization. It was Francis Bacon who advocated inductive method in scientific enquiry.

None of the above methods provides satisfactory system for solution of problems. So Darwin, who is famous for this theory of evolution, by introducing the concept of hypothesis, has combined deductive and inductive methods.

The important elements of Darwin's deductive-inductive method are

1. Identification of a problem
2. formulation of hypothesis (a hypothesis is an assumption or an intelligent guess)
3. collection, organization and analysis of data
4. formulation of conclusions
5. verification, rejection or modification of the hypothesis after testing it.

In the past, there was a debate among economists about the question which is the best method ? inductive or deductive ? But the controversy is not there now. Today, economists feel that both induction and deduction are necessary for the science, just as the right and the left foot are needed for walking.

Economic Laws

Like other social sciences, economics has its own laws. A law is a statement of what must happen given certain conditions. Every cause has a tendency to produce some result. For example, in Physics, we study that things fall to the ground because of gravitation. The law of gravitation is a statement of tendency. Similarly, the laws of economics are statements of tendencies. For example, according to the law of demand, when there is fall in the price of a good, the demand for it will expand. It means that there is a tendency among people to buy more when there is fall in the price of a good. Similarly, if price rises, they will buy less. Laws operate under certain conditions. If these conditions change, they will not operate. This is applicable to all sciences. When some economic laws do not operate, it means that the conditions have changed.

We may broadly classify sciences into physical sciences and social sciences. Physics and chemistry are examples of physical sciences. Economics, politics are examples of social sciences. The laws of physical sciences are exact. But the laws of economics are not as exact as the laws of physical sciences. For example, we have the law of gravitation. It is a simple and exact statement. But in economics, we deal with human beings and their behaviour with reference to economic activity. We cannot conduct experiments with human beings either within the laboratory or outside it. That is why economic laws cannot be as exact as the laws of physical sciences. We may also note that we study about average human behaviour in economics.

As economics deals with man and his behaviour, its laws are complex and inexact. That is why Marshall has said that "the laws of

economics are to be compared with the laws of tides rather than with the simple and exact law of gravitation”. The science of tides explains the tides rise and fall under the influence of the Sun and the Moon. Probably there will be high tide on a full moon night. It may be there or it may not be there. It is only a probability.

Similarly, economic laws also indicate probable trends. For example, when there is increase in the quantity of money, there may be increase in the price level. But we cannot say exactly by how much prices will rise. But economic laws are more exact than the laws of history and politics because economics make use of money as a measuring rod of utility. Though money is a rough measure, it gives a concrete shape to economic laws.

All economic laws are based on certain assumptions. Let us take the law of demand. It tells that “other things being equal”, when the price of a good falls, people will buy more of the good. By “other things being equal” we mean (1) that the income of the people remains the same, (2) that their tastes remain the same (3) that the prices of other goods remain the same, and (4) that no new substitute for the good is discovered. The law will hold good only when the above assumptions are fulfilled.

Sometimes, it is said that the laws of economics are hypothetical. That is, we make an hypothesis. Only after it is verified by facts and experiments and found true, it becomes a law. But many economic laws cannot be verified by experiment. That is why we say sometimes that economic laws are hypothetical.

The laws of physical sciences have universal application. But that is not generally the case with regard to economic laws. Of course, there are one or two exceptions. The Law of Diminishing Returns has universal application.

Importance of Economic Laws

Economic laws are of great importance in practical life. Some economic laws are applicable to all types of economic systems. They

have universal application. For example, we have the law of Diminishing Returns. There are other important laws such as the law of diminishing marginal utility and the law of demand.

Some economists believe that the quantity theory of money is valid under all economic systems – capitalism or socialism or mixed economy.

Let us take some important laws like the law of diminishing marginal utility, the law of demand, the law of diminishing returns and the Malthusian Theory of population and discuss their significance.

The law of diminishing utility is based on actual experience. It tells that the more and more of a thing you have, the less and less you want it. It explains the relationship between the price of a good and the satisfaction you get from it. During summer, generally, there will be fall in the price of mangoes because they are available in plenty. So there is diminishing utility. And as price is related to marginal utility, the price falls. Progressive taxation is based on the law of diminishing utility. As the income increases, the Government ask the rich to pay more taxes by increasing the rates of taxation for them. For it believes that as a man gets more and more money, he will get diminishing utility from it. So even if he parts with more money, the sacrifice will not be much in his case.

The law of demand is based on actual experience. In practice we find that when price falls, demand increases. Price falls when supply is more. When there is increase in the supply of a good, its marginal utility diminishes. A seller will try to sell more of his good by reducing its price slightly.

The law of diminishing marginal returns has universal application. In agriculture, it means that we cannot double the output by doubling labour and capital. The law applies to manufacturing industry also.

The Malthusian theory of population tells that population increases at a faster rate than food supply. It might not be an exact statement. But it was true in the case of most of the poor countries of the world until the Green Revolution. The Green Revolution helped in increasing

agricultural productivity. There is the problem of over–population in most of the poor countries of the world. That is why they spend huge amounts on family planning to reduce population growth. So, most of the laws of economics are of great practical importance.

Basic Concepts

Every science has its own language. Economics has its own language. There are certain terms which are used in a special sense in economics. So we must understand the meaning of some basic concepts like wealth, goods, income, value, price and market. If we do not understand their meaning properly, it may result in a lot of confusion.

Wealth

In ordinary speech, when we refer to wealth, we mean money. But in economics, it has a special meaning. It refers to those scarce goods which satisfy our wants and which have money value. We may consider anything that has money value as wealth in economics.

All economic goods have value–in–exchange. So wealth includes all economic goods. Wealth has been defined as “*stock of goods existing at a given time that have money value*”.

Characteristics of Wealth

The following are the characteristics of wealth :

1. *It must possess utility.* It must have the power to satisfy a want. As Marshall says “*they must be desirable*”.
2. *It must be limited in supply.* For example, air and sunshine are essential for life. We cannot live without them. But we do not consider them as wealth because they are available in large quantities. Such goods are known as free goods.
3. *Wealth should be transferable.* That is, it should be possible for us to transfer the ownership from one person to another.
4. *It must have money value.*

5. *It may be external.* For example, the goodwill of a company is external wealth.

Utility, scarcity and transferability are thus important characteristics of wealth.

Classification of Wealth

Wealth may be classified into a) personal wealth (individual wealth) b) social wealth (collective wealth), c) national wealth (a + b) and d) cosmopolitan wealth (e.g. ocean).

Goods

Anything that satisfies a human want can be considered as “good” in economics. In economics, the term “goods” refer to material and non-material things. Just as an apple or a chair is a good, music or the services of actors, musicians and teachers are some of the examples of goods.

Goods can be classified into *free goods and economic goods*. Goods like air and sunlight which are the gifts of nature are free goods. They are not scarce. So they do not command a price in the market. They are known as free goods. Economic goods command a price in the market. In other words, they have value-in-exchange. For, they are scarce in relation to demand. In this connection, we have to remember that what is a free good in one place can become an economic good in another place. It all depends on the supply of a good and the demand for it. For example, in some villages firewood is a free good. But in a town where we have to pay a price for it, it becomes an economic good. Similarly, water which is a free good becomes an economic good when there is scarcity of water.

Goods may be further classified into (1) consumers goods and (2) producers goods. Consumers goods satisfy our wants directly. They can be classified into (1) perishable goods (eg. vegetables, fish and music) and (2) durable goods (eg. a house, a car, a radio). Capital goods satisfy our wants indirectly. Machines that are used to make

machines are called capital goods. For example, car is a sort of machine. It is a consumers' good. But there must be some other machine to make a car. That machine is known as capital good or producer good. But what is a consumers' good in one place can become a producers' good in another place. For example, when electricity is used for lighting purposes at home, it is a consumers' good. But the same electricity when used in factories for industrial purposes, it becomes a producers' good.

Income

In economics, when we refer to income, generally we mean money income. According to Seligman, "Income in the economic sense, is the flow of satisfactions from economic goods". We know that all economic goods form wealth. The main source of income is wealth. For example, if you own a house, it is your wealth. If you get rent from it, it is your income. There are two points about income – time and amount.

There are two kinds of income – (1) money income and (2) Real Income. Generally people earn their incomes in the form of money.

Money income is also known as nominal income. But the standard of living of people of a country depends on their real income. Real income depends upon the purchasing power of money and that in turn depends on the price level. Real income refers to the command of a person over actual commodities and services. Just because money incomes of people increase, we cannot say they are better off. It all depends upon how many goods they can command.

Suppose, my money income is Rs. 10, and price of one kilo of rice is Rs. 10, then I can buy one kilo of rice or my income is worth of only one kilo of rice. In the next month, my money income is raised to Rs. 15, but the price of one kilo of rice is increased to Rs. 20. Now my income is worth only $\frac{3}{4}$ kilo of rice. Therefore, in spite of increase in money income, my real income has come down due to higher increase in price. *Real income is price adjusted money income.*

National Income : National income refers to the value of commodities and services produced by a country during a year.

Marshall defined national income as follows : "The labour and capital of a country acting on its natural resources produce annually a certain net aggregate of commodities, material and immaterial, including services of all kinds. This is true net annual income or revenue of the country, or the national dividend".

From the national income of a country, we can find out whether the country is rich or poor. And from the composition of national income, we can find out the relative importance of agriculture, industry and service sector in the economy.

We get per capita income [(i.e) income per person per year] by dividing national income by the population of the country.

$$\text{Per capita income} = \frac{\text{National Income}}{\text{Population}}$$

Value

The term "value" refers to the exchange qualities of a good. According to Marshall, "the term value, is relative and expresses the relation between two things at a particular place and time".

Value is of two kinds (1) value-in-use and (2) value-in-exchange. Although air, rain and sunshine have value-in-use, they do not have value-in-exchange. In economics, we are interested only in those goods which have value-in-exchange. For a good to have value-in-exchange, it must possess utility, it must be scarce in relation to demand and it must be possible for us to exchange it. In other words, all economic goods have value-in-exchange.

Value is generally measured in money and it is a relative term. The value of a thing changes according to time and situation. For example, ice has more value in summer than in winter.

Price

When value is expressed in money, it is called price. Generally, economists make no distinction between value and price. All prices are related to one another. They form the price system. The prices most familiar to us are the prices we pay for goods sold in market, that is, retail prices. Many payments like rent, wages and interest are also prices which we pay respectively to land, labour and capital. Price system plays a very important role in a capitalistic economy. Buyers express their desire for goods only through prices. Every price we pay for a good is a vote in favour of it. It is the price system that regulates the economic activity of a society.

Market

In the ordinary language, market refers to a place where goods are bought and sold. Thus Koyambedu market in Chennai refers to a place where vegetables are sold. In economics, market does not refer to any particular place in which goods are bought and sold. But it refers to buying and selling of a commodity. In a market a commodity is bought and sold under given conditions and there will be a number of buyers and sellers who will be in close touch with each other. For example, a fish market refers to buying and selling of fish; here both buyers and sellers are in close contact. According to Benham, "Market is any area over which the buyers and sellers are in close touch with one another either directly or through dealers, that prices obtainable in one part of market affect the prices paid in other parts".

Generally speaking, when we talk of markets, we refer to commodities that are bought and sold. But there are markets for things other than commodities. Thus there are labour markets, foreign exchange market, capital market and so on. For example, we may say the market for an actor, say 'X', is dull. So there may be a market for anything which has a price.

Classification of Markets : Markets may be classified according to space, time and the nature of competition. According to space,

markets are classified into local market (eg. vegetables, flowers), national market (e.g. sarees) and international market (e.g. steel, cotton, sugar, tea).

Markets can also be classified according to the type of competition. Thus, broadly we have perfect markets and imperfect markets.

Markets can also be classified into short period markets and long period markets according to time. If the period is short, demand plays an important role in the market and if the period is longer, supply plays an important role. Thus markets can be classified according to space, time and the nature of competition that prevails.

Importance of Economics

Economics has become one of the important branches of social sciences. It is of great practical value in our daily life. In pure sciences, we study the subject to arrive at the truth. But an economist is a social scientist. He studies the subject not only to know the truth for its own sake, but to find out a way for many economic and social problems of the society. "Knowledge for the sake of knowledge" is not the goal of an economist. Economics must be fruit-bearing. Of course, an economist has no readymade answer for immediate problems. But he can help the Government in making broad economic policies. According to Keynes, "the theory of economics does not furnish a body of settled conclusions immediately applicable to policy. It is a method, rather than a doctrine, an apparatus of the mind, a technique of thinking, which helps its possessor to draw correct conclusions".

Most of the problems of the modern State are economic in nature. So economists play an important role in the affairs of the State. During World War II, the German economy was damaged heavily. There was inflation, shortage of goods and mass unemployment. But the German economy recovered quickly by following the advice of an economist Ludwig Erhard. The German recovery is considered an economic miracle.

Similarly, J.M.Keynes, had great influence on the economic policies of the American government when it was in great economic trouble during the 1930s.

In economics, we study about things like prices, rent, wages, interest, profits and taxation. All these affect every person one way or the other. It has been rightly said, “you cannot be in any real sense a citizen, unless you are also in some degree an economist”.

EXERCISE

PART – A

I. Choose the correct answer

- 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
- In economics, we make use of
a) deductive method b) inductive method
c) both d) none

II. Fill in the blanks

- The term “micro” means _____
- Strictly speaking production refers to the creation of _____
- Exchange of goods for goods is known as _____
- Economics is a _____ science
- An example of cosmopolitan wealth is _____

III. 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

IV. Answer each one of the questions in a word or two :

- What is the other name for Economics ?
- What are the subjects that econometrics make use of ?
- What is the method that Ricardo made use of ?
- Give one or two examples of free goods.
- What is the other name for money income ?

PART B

Answer for each of the following questions should be about four or five lines

- State Alfred Marshall’s definition of economics
- What are the main divisions of economics ?
- Describe the relationship between economics, mathematics and statistics.

24. Distinguish between free goods and economic goods
25. Explain the difference between value-in-use and value-in-exchange.

PART C

Answer for each of the following questions should be about a page

26. State and examine the criticism against Adam Smith's wealth definition.
27. Distinguish between micro economics and macro economics.
28. Is economics a positive science or a normative science?
29. Write a note on static and dynamic concepts.
30. Discuss the methods of economic analysis.

PART D

Answer for each of the following questions should be about three pages

- 31) Examine Marshall's definition of economics.
- 32) Examine Lionel Robbins definition of economics.
- 33) Discuss the relationship between economics and other social sciences.
- 34) Discuss the nature and importance of economics laws.
- 35) Discuss the nature and scope of economics.

Chapter 2

Basic Economic Problems

Economics is the science of making choice under conditions of scarcity. What are the basic issues about which choices are to be made? Any society must make choices about three important problems. They are

1. What to produce and in what quantities ?
Food or weapons; if so, in what quantities ?
Is it more food and less weapons or vice versa ?
2. How shall goods be produced?
Electricity from thermal power or from hydro power ?
3. For whom shall the goods be produced ?
A few rich and many poor or most people in modest comfort ?

These three basic problems are interdependent. The society must make proper choice about them in order to meet the development aspirations of people satisfactorily. The above three questions are common to all economies but every economic system attempts to make its own choice. The nature of a particular choice in a particular society depends on its specific economic system.

Economic Systems

An economic system is a way of answering these basic questions. Different economic systems answer the above questions differently. An economic system refers to how the different economic elements will solve the central problems of an economy: what, how and for whom to produce. It refers to the production and distribution of goods and services within which economic activity takes place. It refers to the way different economic elements, individual workers and managers, productive organization such as factories or firms and government agencies are linked together to form an organic whole.

Economic system consists of various individuals and their institutions like banking institutions, educational institutions and economic institutions. The most general economic systems are:

1. Traditional Economy
2. Capitalist Economy
3. Socialist Economy
4. Mixed Economy

I. Traditional Economy

In traditional economy, the basic problems are solved by traditions and custom rules every aspect of behaviour. It produces exactly to its consumption requirements. It is a subsistence economy. There is not much of sales as there is only small scale production. The same product will be produced by every generation. The production techniques are traditional.

II. Capitalist Economy

A capitalist economy is an economic system in which the production and distribution of commodities take place through the mechanism of free markets. Hence it is also called as market economy or free trade economy. Each individual be it a producer, consumer or resource owner has considerable economic freedom. An individual has the freedom to buy and sell any number of goods and services and to choose any occupation. Thus a market economy has no central coordinator guiding its operation. But self-organization emerges amidst the functioning of market forces namely supply, demand and price. The salient features of capitalism are

1. **Right to Private Property:** Individuals have the right to buy and own property. There is no limit and they can own any amount of property. They also have legal rights to use their property in any way they like.
2. **Profit-Motive:** Profit is the only motive for the functioning of capitalism. Production decisions involving high risks are taken by

individual only to earn large profits. Hence, profit-motive is the basic force that drives the capitalist economy.

3. **Freedom of Choice:** The question ‘what to produce?’ will be determined by the producers. They have the freedom to decide. The factors of production can also be employed anywhere freely to get due prices for their services. Similarly consumers have the freedom to buy anything they want.
4. **Market Forces:** Market forces like demand, supply and price are the signals to direct the system. Most of the economic activities are centered on price mechanism. Production, consumption and distribution questions are expected to be solved by market forces.
5. **Minimal role of Government:** As most of the basic economic problems are expected to be solved by market forces, the government has minimal role in the economy. Their role will be limited to some important functions. They include regulation of market, defence, foreign policy, currency, etc.

Merits of Capitalist Economy

1. **Increase in productivity:** In a capitalist economy every farmer, trader or industrialist can hold property and use it in any way he likes. He increases the productivity to meet his own self-interest. This in turn leads to increase in income, saving and investment.
2. **Maximizes the Welfare:** It is claimed that there is efficiency in production and resource use without any plan. The self-interest of individual also promotes society’s welfare.
3. **Flexible System:** The shortages and surpluses in the economy are generally adjusted by the forces of demand and supply. Thus it operates automatically through the price mechanism.
4. **Non-interference of the State:** The State has a minimum role to play. There is no conflict between the individual interest and the society. The economic institutions function automatically preventing the interference of the government.

5. Low cost and qualitative products: The consumers and producers have full freedom and therefore it leads to production of quality products at low costs and prices.
6. Technological improvement: The element of competition under capitalism drives the producers to innovate something new to boost the sales and thereby bring about progress.

Disadvantages of Capitalist Economy

1. Inequalities: Capitalism creates extreme inequalities in income and wealth. The producers, landlords, traders reap huge profits and accumulate wealth. Thus the rich become richer and the poor poorer. The poor with limited means are unable to compete with the rich. Thus capitalism widens the gap between the rich and the poor creating inequality.
2. Leads to Monopoly: Inequality leads to monopoly. Mega corporate units replace smaller units of production. Firms combine to form cartels, trusts and in this process bring about reduction in number of firms engaged in production. They ultimately emerge as multinational corporations (MNCs) or transnational corporations (TNCs). They often hike prices against the welfare of consumer.
3. Depression: There is over-production of goods due to heavy competition. The rich exploit the poor. The poor are not able to take advantage of the production and hence are exploited. At another level, over-production leads to glut in the market and hence depression. This leads to economic instabilities.
4. Mechanisation and Automation: Capitalism encourages mechanization and automation. This will result in unemployment particularly in labour surplus economies.
5. Welfare ignored: Under capitalism, private enterprises produce luxury goods which give higher profits and ignore the basic goods required which give less profit. Thus the welfare of public is ignored.

6. Exploitation of Labour: Stringent labour laws are enacted for the exclusive profit-motive of capitalists. Fire and hire policy will become the order of the day. Such laws also help to exploit the labour by keeping their wage rate at its lowest minimum.
7. Basic social needs are ignored: There are many basic social sectors like literacy, public health, poverty, drinking water, social welfare, and social security. As the profit margin in these sectors is low, capitalists will not invest. Hence most of these vital human issues will be ignored in a capitalist system.

III. Socialist Economy

In a socialist economy, the means of production are owned and operated by the State. All decisions regarding production and distribution are taken by the central planning authority. Hence the socialist economy is also called as planned economy or command economy. The government plays an active role. Social welfare is given importance; hence equal opportunity is given to all. All such advantages have delivered high level of human development. Some of the most successful socialist economies are China, Cuba, Vietnam and North Korea. The following are the basic characteristic features of socialism.

1. Social Welfare Motive: In socialist economies, social or collective welfare will be the prime motive. Unlike capitalism, profit will not be the aim of policy making. The decisions will be taken keeping the maximum welfare of the people in mind. Thus social well-being of people will be the purpose of development.
2. Limited Right to Private Property: The right to private property is limited. All properties of the country will be owned by the State. That is, the ownership is collective in nature. Hence no individual can accumulate too much property as in the case of capitalism.
3. Central Planning: Most of the economic policy decisions will be taken by a centralized planning authority. Each and every sector of the economy will be directed by well designed planning.

4. **No Market Forces:** In a centralized planned system of development, market forces have only a limited role to play. Production, commodity and factor prices, consumption and distribution will be governed by development planning with welfare motive.

Merits of Socialist Economy

1. **Efficient use of resources:** The resources are utilized efficiently to produce socially useful goods without taking the profit margin into account. Production is increased by avoiding wastes of competition.
2. **Economic Stability:** Economy is free from business fluctuations. Government plans well and everything is well coordinated to avoid over-production or unemployment. There is stability because the production and consumption of goods and services are well regulated.
3. **Maximisation of Social Welfare:** All citizens work for the welfare of the State. Everybody receives his or her remuneration. The State concentrates on the production of basic necessities instead of luxury goods. The State provides free education, cheap and congenial housing, public health amenities and social security for the people.
4. **Absence of Monopoly:** The elements of corporation and monopoly are eliminated since there is absence of private ownership. The state is a monopoly but produces quality goods at reasonable price.
5. **Basic needs are met:** In socialist economies, basic human needs like water, education, health, social security, etc, are provided. Human development is more in socialist countries.
6. **No extreme inequality:** As social welfare is the ultimate goal, there is no concentration of wealth. Extreme inequality is prevented in socialist system.

Demerits of Socialism

1. **Bureaucratic Expansion:** A socialist economy is operated under a centralized command and control system. People here work out of fear of higher authorities. It does not give any initiative for the people to work hard.
2. **No Freedom:** There is no freedom of occupation. Allocation of factors of production is not done rationally. Jobs are provided by the State. Place of work is also provided by the State. The consumer's choice is very limited.
3. **Absence of Technology:** Work is monotonous and no freedom is given. Any change in the production process will alter the entire plan. Hence any innovation cannot be easily enforced. Everything is rigid and technological changes are limited.
4. **Absence of competition** makes the system inefficient.

IV. Mixed Economy

In a mixed economy, both public and private institutions exercise economic control. The public sector functions as a socialistic economy and the private sector as a free enterprise economy. All decisions regarding what, how and for whom to produce are taken by the State. The private sector produces and distributes goods and services. It manufactures consumer and capital goods in the interest of public welfare. A mixed economy possesses the freedom to hold private property, to earn profit, to consume, produce and distribute and to have any occupation. But if these freedoms affect public welfare adversely, they are regulated and controlled by the State. The main features of mixed economic system are:

1. **Co-existence of Public and Private Sectors:** In a mixed economy, both the public and the private sectors initiatives will be there. The most strategically and nationally important sectors of the economy will be reserved for the public sector. The rest will be left for private operation. While the public sector will have social welfare as the prime motive, the private sector will function with profit motive.

2. Consolidation of merits of Capitalism and Socialism: As seen above, both capitalism and socialism have merits and demerits. Mixed economy is expected to retain only the merits of the two systems. For instance, the government is expected to allow private investment, but the government also controls monopolies.
3. Planning: Economic planning is another important feature of the mixed economy. Planning will direct the relative roles of public and private sectors and their respective jurisdictions.

Merits of Mixed Economy

1. Efficient resource utilisation: The resources are utilized efficiently as good features of both capitalism and socialism coexist. If there is misallocation of resources, the State controls and regulates it. This ensures the efficient utilization of resources.
2. Prices are administered: The prices are not fixed always by forces of demand and supply. In the case of goods which are scarce, the prices are administered by the government and such goods are also rationed.
3. Social Welfare: In a mixed economy, planning is centralized and there is overall welfare. Workers are given incentives and reward for any innovations. There is social security provided to the workers. Inequalities of income and wealth are reduced.

Demerits of Mixed Economy

1. Lack of Co-ordination: The coordination between the public and private sectors is poor in a mixed economy. Public sector spends huge public resources for infrastructure. The private sector aims at profit maximization by using the infrastructure created by the public sector. But they lack social responsibility and fail to spend for public causes like health, education. The private sector also dislikes any restriction imposed on it by the government.

2. Red –tapism and delay by Public Sector: There is every chance that the public sector works inefficiently. There is too much of red-tapism and corruption leading to delays in decision-making and project implementation. They result in inefficiency and also affect production.
3. Economic Fluctuations: The mixed economies experience economic fluctuations. On the one hand, the private sector does not operate under very rigid conditions prescribed by the government. On the other hand, the public sector too does not operate under very rigid conditions enforced by the planned economy. The lack of policy coordination between private and public sector results in economic fluctuations.

Production Possibilities

Another important question about the basic economic problems is: How do we make choice in an economy?. At the individual level you must choose among alternatives like,

- whether to watch cricket highlights in T.V. or study for another extra hour;
- whether to buy a text book for Rs.50 or spend the money for a movie;
- whether to help your mother in shopping or play hockey during that time;

It is important to note that choices are made due to scarcity. If there is no scarcity, there would be no need to choose. Similarly as choice must be made from alternatives, it involves comparison of cost and benefit.

Opportunity Cost

When you choose a particular alternative, the next best alternative must be given up. For example, if you choose to watch cricket

highlights in T.V., you must give up an extra hour study. The choice of watching cricket in T.V. results in the loss of the next best alternative-an extra hour study instead. Thus by watching T.V., you have forgone the opportunity of scoring an extra five or ten marks in examination.

Thus the “opportunity cost” is the cost of something in terms of an opportunity forgone (and the benefits that could be received from that opportunity). In other words, the opportunity cost of an action is the value of next best alternative forgone. The consideration of opportunity costs is one of the key differences between the concepts of ‘economic cost’ and ‘accounting cost’. Choices are mostly made on the basis of opportunity cost.

Production Possibility Curve

Like the individuals, a society as whole has limited resources. It has to decide what to produce with the limited resource. It has to make choice about the quantity of different commodities. Choice emanates from scarcity. Thus our choice is always constrained or limited by scarcity of our resources. Suppose we have enough resources we can produce all that we want.

All such choices can be made with help of production possibility curve. The production-possibility curve separates outcomes that are possible for the society to produce from those which cannot be produced subject to the available resources.

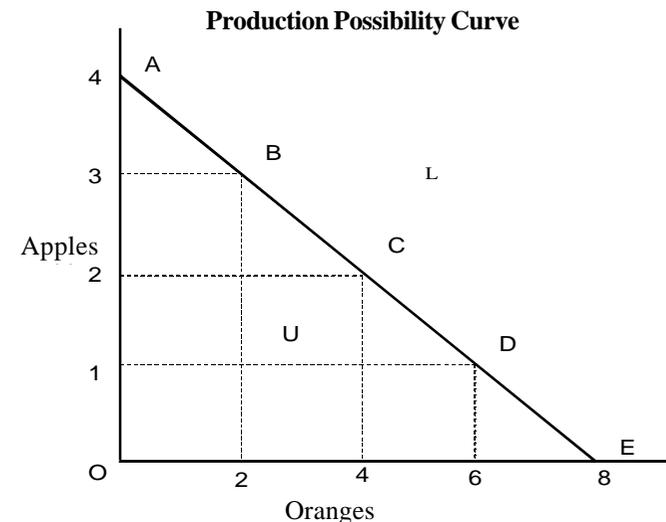
Let us consider an economy with only so many people, so many industries, so much of electricity and natural resources in deciding what shall be produced and how these resources are to be allocated among thousands of different possible commodities. How many industries are to produce steel? How much electricity to be provided for agriculture; how much for industries?. Whether to provide free electricity to farmer or not? Theses problems are complicated. Therefore, to simplify let us assume there are only two goods to be produced - apples and oranges.

Table 2.1 Production Possibility Schedule

Production Possibility Schedule Possibilities	Quantity of Apples	Quantity of Oranges
A	4	0
B	3	2
C	2	4
D	1	6
E	0	8

In the above schedule A and E are possibilities where the economy either produces 100 percent of apples or 100 percent of oranges alone. But the production possibility curve assumes the production of two goods in different combinations. Possibilities A, B,C ,D and E are such that the economy produces 4 units of apples and 0 units of oranges in possibility A, 3 units of apples and 2 units of orange in possibility B, 2 units of apples and 4 units of oranges in possibility C, 1 unit of apple and 6 units of oranges in possibility D, 0 unit of apples and 8 units of oranges in possibility E.

Figure 2.1



Thus we see that if we are willing to have more of oranges, we should be willing to sacrifice more of apples. For instance, to reach possibility C from B, the economy produces 2 units more of oranges by sacrificing 1 unit of apples. A full employment economy must always in producing one good be giving up something of another. This assumes of course, that at least some resources can be transferred from one good to another.

Such choice of one particular alternative involves opportunity cost of foregoing the other. Hence, the decisions of the society will be based on the comparison of costs and benefits of each alternative. In doing so, both the monetary and social cost and benefit should be the basis of any choice. Thus the one that gives the maximum benefit at minimum cost to the whole society should be the best choice. We can picture the production possibility schedule by drawing a smooth curve (Figure 2.1).

Units of oranges are measured horizontally and that of apples on the vertical axis. The curve A and E depict the various possible combinations of the two goods - A, B, C, D, and E. Thus a list of all the possible combinations of apples and oranges makes up production possibilities. The production possibility curve is also known as transformation curve or production possibility frontier. This curve shows the rate of transformation of one product into the other when the economy moves from one possibility point to the other.

All possible combinations lying on the production possibility curve show the combinations of the two goods that can be produced by the existing resources. Any combination lying inside the production curve such as U in the figure indicates that resources are not being fully employed in the best-known way. Any point outside the production possibility frontier, such as L implies that the economy does not have adequate resources to produce this combination. But a shift outside the production possibility frontier certainly indicates economic development. This is possible by technological advancement and increase in supply of factors of production.

**EXERCISE
PART A**

I. Choose the correct answer

1. The basic economic problems are common to

a) Capitalism	b) Socialism
c) Mixed economy	d) All the above
2. Traditional economy is a

a) Subsistence economy	b) Market economy
c) Command economy	d) Monetary economy
3. The basic force that drives the capitalist economy is

a) Planning	b) Technology
c) Government	d) Profit – motive
4. In a socialist economy, all decisions regarding production and distribution are taken by :

a) Market forces	b) Central planning authority
c) Customs and traditions	d) Private sector.
5. Redtapism and corruption lead to

a) Inefficiency of production	b) Inequality of income and wealth
c) Absence of technology	d) Efficient use of resources

II. Fill in the blanks

- 6) In a traditional economy, basic problems are solved by _____ and _____.
- 7) Most of the economic activities of capitalism are centered on _____
- 8) Production possibility curve is also known as _____
- 9) The prime motive of socialist economy is _____
- 10) Under mixed economy, the economic control is exercised by _____ and _____ sectors.

III. Match the following :

- | | |
|----------------------|-----------------------------|
| 11. Minimum cost | a. next alternative forgone |
| 12. opportunity cost | b. socialism |

- 13. private property c. supply, demand and price
- 14. Bureaucratic expansion d. Maximum benefit
- 15. Market forces e. Laissez faire economy

IV. Answer each one of the questions in a word or two

- 16. Is traditional economy a subsistence economy ?
- 17. What is the basic force that drives a capitalist economy ?
- 18. What is the result of over-production ?
- 19. Name any two successful socialist economies.
- 20. Is there planning under mixed economy ?

PART – B

Answer for each of the following questions should be about four or five lines

- 21. What are the basic issues of any society ?
- 22. Name the important general economic systems ?
- 23. List the basic features of socialism.
- 24. Is India a mixed economy ?
- 25. What is opportunity cost ?

PART – C

Answer for each of the following questions should be about a page

- 26. Write a note on traditional economy.
- 27. Explain the salient features of capitalism.
- 28. What are the merits of socialist economy.
- 29. What are the merits and demerits of a mixed economy?
- 30. Explain ‘opportunity cost’ with an example.

PART – D

Answer for each of the following questions should be about three pages

- 31. What is capitalism ? Explain its advantages and disadvantages.
- 32. Explain features, merits and demerits of socialism.
- 33. Explain ‘mixed economy’ in detail.
- 34. Describe the ‘production possibility curve’ with a suitable diagram.

Chapter 3

Theory of Consumer Behaviour

Introduction

The existence of human wants is the basis of all economic activity in a society. All desires, tastes and motives of human beings are called wants in economics.

1. Wants may arise due to elementary and psychological causes. The wants for food, clothing and housing are elementary and psychological.
2. Wants may arise due to social causes. As members of society, we may require a particular type of dress and food.
3. Wants arise due to customs and habits like drinking tea and chewing.
4. Wants may arise due to advertisements.

In the early stages of civilisation, wants of men were few and simple. With advancement of civilisation, wants have become unlimited and also complex. Man tries to satisfy most of his wants through economic activity. Since the resources are limited, he has to choose between urgent wants and not so urgent wants. A systematic survey of this process is called consumption. Consumption means using up of goods and services in the satisfaction of human wants. The economics of consumption is related to a study of nature of wants and the behaviour of demand.

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.
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.

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.
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.
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'.
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.
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.

Classification of Wants

In Economics, wants are classified into three categories, viz., Necessaries, Comforts and 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.

Significance of Necessaries, Comforts and Luxuries

The classification of goods and services into necessities, comforts and luxuries are only relative in their concept. They are not absolute concepts. What is 'comfort', to one may be a 'necessity' to another and a 'luxury' to a third man. A motorcar is necessary for a businessman and a doctor. It is a luxury for a student. What is necessary for a man in town may be a luxury for a villager. These classifications depend on the income of a person, his social status, his tastes and preferences.

Concept of Utility: Marshallian Approach

There are two basic approaches to the study of consumer demand theory. The first approach is the utility approach. It involves the use of measurable (cardinal) utility to study consumer behaviour. Marshall is the chief exponent of the utility approach to the theory of demand. It is known as cardinal utility analysis or marginal utility analysis or Marshallian utility analysis. The second approach is the indifference curve approach which uses the idea of comparable utility (ordinal utility). J.R.Hicks and R.G.D.Allen introduced the indifference curve approach.

Concept of Utility

In the ordinary language, 'utility' means 'usefulness'. In Economics, utility is defined as the power of a commodity or a service to satisfy a human want.

Utility is a subjective or psychological concept. The same commodity or service gives different utilities to different people. For a vegetarian, mutton has no utility. Warm clothes have little utility for the people in hot countries. So utility depends on the consumer and his need for the commodity.

Total Utility

Total Utility refers to the sum of utilities of all units of a commodity consumed. For example, if a consumer consumes ten biscuits, then the total utility is the sum of satisfaction of consuming all the ten biscuits.

Marginal Utility

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

Thus

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

Where

MU_n = Marginal Utility of 'nth' commodity.

TU_n = Total Utility of n units.

TU_{n-1} = Total Utility of n-1 units.

Relationship between Marginal Utility and Total Utility

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

Law of Diminishing Marginal Utility

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*”.

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

Suppose Mr X is hungry and eats apple one by one. The first apple gives him great pleasure (higher utility) as he is hungry; when he takes the second apple, the extent of his hunger will reduce. Therefore he will derive less utility from the second apple. If he continues to take additional apples, the utility derived from the third apple will be less than that of the second one. In this way, the additional utility (marginal utility) from the extra units will go on decreasing. If the consumer continues to take more apples, marginal utility falls to zero and then becomes negative.

Tables 3.1

Total and Marginal utility schedule

Units of apple	Total utility	Marginal utility
1	20	20
2	35	15
3	45	10
4	50	5
5	50	0
6	45	-5
7	35	-10

Figure: 3.1

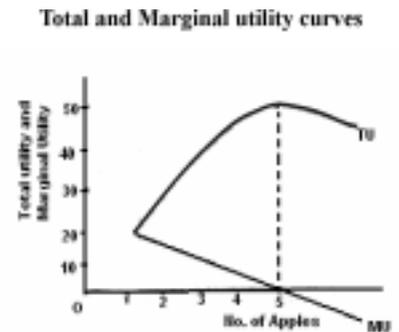


Table 3.1 gives the utility derived by a person from successive units of consumption of apples.

From Table 3.1 and figure 3.1 it is very clear that the marginal utility (addition made to the total utility) goes on declining. The consumer derives 20 units of utility from the first apple he consumes. When he consumes the apples continuously, the marginal utility falls to 5 units for the fourth apple and becomes zero for the fifth apple. The marginal utilities are negative for the 6th and 7th apples. Thus when the consumer consumes a commodity continuously, the marginal utility declines, reaches zero and then becomes negative.

The total utility (sum of utilities of all the units consumed) goes on increasing and after a certain stage begins to decline. When the marginal utility declines and it is greater than zero, the total utility increases. For the first four units of apple, the total utility increases from 20 units to 50 units. When the marginal utility is zero (5th apple), the total utility is constant (50 units) and reaches the maximum. When the marginal utility becomes negative (6th and 7th units), the total utility declines from 50 units to 45 and then to 35 units.

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.

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.

LAW OF EQUI-MARGINAL UTILITY

The idea of equi-marginal principle was first mentioned by H.H.Gossen (1810-1858) of Germany. Hence it is called Gossen's second Law. Alfred Marshall made significant refinements of this law in his '*Principles of Economics*'.

The law of equi-marginal utility explains the behaviour of a consumer when he consumes more than one commodity. Wants are unlimited but the income which is available to the consumers to satisfy all his wants is limited. This law explains how the consumer spends his limited income on various commodities to get maximum satisfaction. The law of equi-marginal utility is also known as the law of substitution or the law of maximum satisfaction or the principle of proportionality between prices and marginal utility.

Definition

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

Assumptions

1. The consumer is rational so he wants to get maximum satisfaction.
2. The utility of each commodity is measurable.
3. The marginal utility of money remains constant.
4. The income of the consumer is given.
5. The prices of the commodities are given.
6. The law is based on the law of diminishing marginal utility.

Explanation of the law

Suppose there are two goods X and Y on which a consumer has to spend a given income. The consumer being rational, he will try to spend his limited income on goods X and Y to maximise his total utility or satisfaction. Only at that point the consumer will be in equilibrium.

According to the law of equi-marginal utility, the consumer will be in equilibrium at the point where the utility derived from the last rupee spent on each is equal.

Symbolically the consumer will be in equilibrium when

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = MU_m$$

Where MU_x = Marginal utility of commodity X

MU_y = Marginal utility of commodity Y

P_x = Price of commodity X

P_y = Price of commodity Y

MU_m = Marginal utility of money.

$\frac{MU_x}{P_x}$ and $\frac{MU_y}{P_y}$ are known as marginal utility of money expenditure.

They explain the marginal utility of one rupee spent on commodity X and the marginal utility of one rupee spent on commodity Y

Let us illustrate the law of equi marginal utility with the help of the following table:

Table No 3.2

Marginal utility of Goods X and Y

Units	MU_x (units)	MU_y (units)
1	50	36
2	45	32
3	40	28
4	35	24
5	30	20
6	25	16
7	20	12
8	15	8

Table 3.3

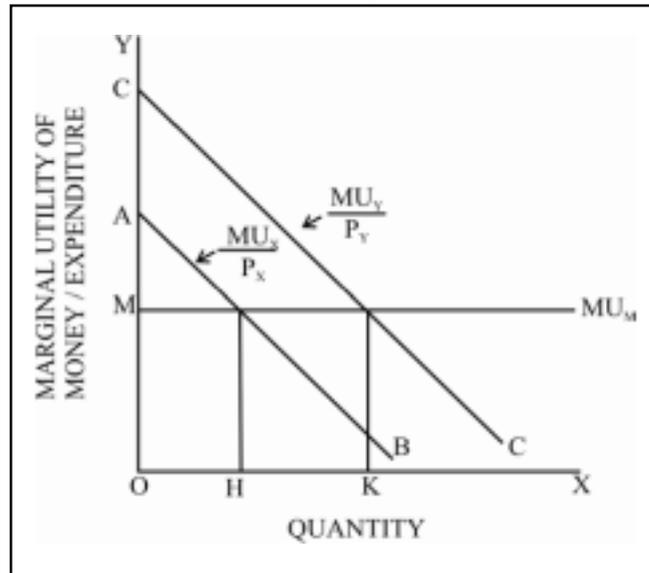
Marginal utility of money expenditure

Units	$\frac{MU_x}{P_x}$ (units)	$\frac{MU_y}{P_y}$ (units)
1	10	9
2	9	8
3	8	7
4	7	6
5	6	5
6	5	4
7	4	3
8	3	2

Suppose the marginal utility of money is constant at Re 1 = 5 units, the consumer will buy 6 units of commodity 'x' and 5 units of commodity 'y'. His total expenditure will be (Rs 5 x 6) + (Rs 4 x 5) = Rs 50/- on both commodities. At this point of expenditure his satisfaction is maximised and therefore he will be in equilibrium.

Figure 3.2

Consumer's Equilibrium



Consumer's equilibrium is graphically portrayed in fig. 3.2. Since marginal utility curves of goods slope downward, curves depicting $\frac{MU_x}{P_x}$ and $\frac{MU_y}{P_y}$ will also slope downward. Taking the income of a consumer as given, let his marginal utility of money be constant at OM utils in Fig. 3.2. $\frac{MU_x}{P_x}$ is equal to OM (the marginal utility of money) when OH amount of good x is purchased; $\frac{MU_y}{P_y}$ is equal to OM when OK quantity of good Y is purchased. Thus, when the consumer is buying OH of X and OK of Y, then

$$\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = MU_m$$

Therefore, the consumer will be in equilibrium when he buys OH of X and OK of Y. No other allocation of money expenditure will yield greater utility than when he buys OH of X and OK of Y. Suppose the money income of the consumer falls. Then the new marginal utility of money will be equal to OM; then the consumer will increase the purchases of good X and Y to OH and OK respectively.

Limitations of the Law

The law of equi-marginal utility bristles with the following difficulties.

1. Indivisibility of Goods

The theory is weakened by the fact that many commodities like a car, a house etc. are indivisible. In the case of indivisible goods, the law is not applicable.

2. The Marginal Utility of Money is Not Constant

The theory is based on the assumption that the marginal utility of money is constant. But that is not really so.

3. The Measurement of Utility is not Possible

Marshall states that the price a consumer is willing to pay for a commodity is equal to its marginal utility. But modern economists argue that, if two persons are paying an equal price for given commodity, it does not mean that both are getting the same level of utility. Thus utility is a subjective concept, which cannot be measured, in quantitative terms.

4. Utilities are Interdependent

This law assumes that commodities are independent and therefore their marginal utilities are also independent. But in real life commodities are either substitutes or complements. Their utilities are therefore interdependent.

5. Indefinite Budget Period

According to Prof. K.E. Boulding, indefinite budget period is another difficulty in the law. Normally the budget period is assumed to be a year. But there are certain commodities which are available in several succeeding accounting periods. It is difficult to calculate marginal utility for such commodities.

In conclusion, we may say all prudent and rational persons are expected to act upon the law consciously or unconsciously. As Chapman puts it,

“We are not, of course compelled to distribute our incomes according to the law of substitution or equi-marginal expenditure, as a stone thrown into the air is compelled, in a sense to fall back to the earth, but as a matter of fact, we do in a certain rough fashion, because we are reasonable.”

Importance

According to Marshall, “the applications of this principle extend over almost every field of economic activity.”

1. It applies to consumption

Every rational human being wants to get maximum satisfaction with his limited means. The consumer arranges his expenditure in such a

way that, $\frac{MU_x}{P_x} = \frac{MU_y}{P_y} = \frac{MU_z}{P_z}$ so that he will get maximum satisfaction.

2. It applies to production

The aim of the producer is to get maximum output with least-cost, so that his profit will be maximum. Towards this end, he will substitute one factor for another till

$$MP_1 / P_1 = MP_c / P_c = MP_n / P_n$$

3. Distribution of Earnings Between Savings and Consumption

According to Marshall, a prudent person will endeavour to distribute his resources between his present needs and future needs in such a way that the marginal utility of the last rupee put in savings is equal to the marginal utility of the last rupee spent on consumption.

4. It applies to distribution

The general theory of distribution involves the principle of substitution. In distribution, the rewards to the various factors of production, that is their relative shares, are determined by the principle of equi-marginal utility.

5. It Applies to Public Finance

The principle of ‘Maximum Social Advantage’ as enunciated by Professors Hicks and Dalton states that, the revenue should be distributed in such a way that the last unit of expenditure on various programmes brings equal welfare, so that social welfare is maximised.

6. Expenditure of Time

Prof. Boulding relates Marshall’s law of equi-marginal utility to the expenditures of limited time, i.e. twenty-four hours. He states that a person should spend his limited time among alternative uses such as reading; studying and gardening, in such a way that the marginal utility from all these uses are equal.

Consumer’s surplus

The concept of consumer’s surplus was first mentioned by J.A.Dupuit, a French engineer – economist in 1844. Marshall developed the concept in his work ‘Principles of Economics’ (1890).

Consumer’s surplus is experienced in commodities which are highly useful but relatively cheap. For example, newspaper, salt, match box, postage stamp etc. For these commodities, we are ready to pay more than what we actually pay, if the alternative is to go without them. The extra satisfaction a consumer derives is called consumer’s surplus.

Suppose a consumer wants to buy a shirt. He is willing to pay Rs 250 for it. But the actual price is only Rs 200. Thus he enjoys a surplus of Rs 50. This is called consumer's surplus.

Definition

Marshall defines Consumer's surplus as follows:

“The excess of price which a person would be willing to pay rather than go without the thing, over that which he actually does pay, is the economic measure of this surplus of satisfaction. It may be called consumer's surplus.”

Assumptions

1. Cardinal utility, that is, utility of a commodity is measured in money terms.
2. Marshall assumes that there is definite relationship between expected satisfaction (utility) and realized satisfaction (actual).
3. Marginal utility of money is constant.
4. Absence of differences in income, tastes, fashion etc.
5. Independent goods and independent utilities.
6. Demand for a commodity depends on its price alone; it excludes other determinants of demand.

Measurement

Consumer's Surplus for a single commodity is measured as follows:

Consumer's surplus = Potential price – Actual price

Potential price is the price which a consumer is willing to pay for a commodity and actual price is the price which the consumer actually pays for that commodity.

Table 3.4

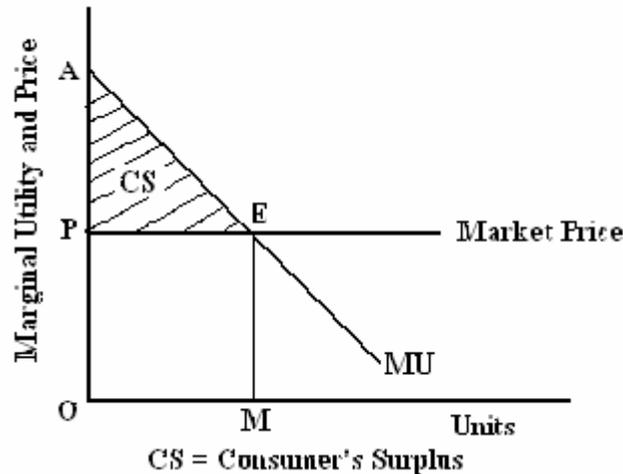
Measurement of Consumer's Surplus

Units	Marginal Utility	Price of the units (in Rs)	Consumer's surplus
(i)	(ii)	(iii)	(iv) (ii-iii)
1	50	10	40
2	40	10	30
3	30	10	20
4	20	10	10
5	10	10	0
	150	50	100

Consumer's surplus is determined by the potential price of the commodity purchased and the actual price in the market price. Thus the consumer's surplus is the difference between the sum of marginal utilities (i.e. the total utility) minus the total money spent (price multiplied by quantity purchased) on the commodity. This can be illustrated by a table.

In the above table, we have assumed that the market price of the commodity is Rs10/- (column 3). Column 2 gives the marginal utility. Marginal utility explains the price which a consumer is willing to pay for the unit of the commodity. As more and more units of a commodity is purchased, the marginal utility declines. Therefore the price, which the consumer is willing to pay, also decreases. The difference between marginal utility (potential price) and the market price (actual price) gives the consumer's surplus. Thus from the table consumer's surplus for each unit is the difference between Marginal Utility (column 2) minus market price (column 3). The consumer's surplus for all the units can be calculated as total utility minus the total amount spent on the

commodity i.e. consumer's surplus = Rs 150 – 50 = Rs 100. Consumer's surplus can be illustrated with a diagram by taking units of the commodity on the x-axis and the utility and price on the y-axis.



In the figure 3.3, MU is the marginal utility curve. OP is the price and OM is the quantity purchased. For OM units, the consumer is willing to pay OAEM. The actual amount he pays is OPEM. Thus consumer's surplus is OAEM – OPEM = PAE (the shaded area).

A rise in the market price reduces consumer's surplus. A fall in the market price increases the consumer's surplus.

Criticism

Two major criticisms against the Marshallian concept of Consumer's Surplus are

- (a) Marshall assumed that utility is measurable, but utility is immeasurable, because it is psychological in nature;
- (b) The Marshallian assumption of marginal utility of money remaining constant is unrealistic.

This contribution of the great economist Marshall, has perhaps provoked the most caustic of criticisms from various economists.

Marshall assumed that utility is measurable. But J.R.Hicks says that utility is not measurable, because it is a psychological phenomenon.

1. Marshall assumed that there's no interpersonal differences. But it will change with regard to tastes, preferences, status etc.
2. Marshall assumed that there is constancy of marginal utility of money. But it is unrealistic. Marginal utility of money increases with the fall in the stock of money.

Importance of Consumer's Surplus

Consumer's Surplus is useful to the Finance Minister in formulating taxation policies. It is also helpful in fixing a higher price by a monopolist in the market, based on the extent of consumer's surplus enjoyed by consumers.

Consumer's Surplus enables comparison of the standard of living of people of different regions or countries. This comparison helps to distinguish consumption levels between the people, who are living in rich countries and poor countries. For example, a middleclass person in New York enjoys more consumers' surplus than a similar person in Chennai. Alfred Marshall has stated that a middle class person in a modern city enjoys more consumer's surplus than a king of the Medieval Ages.

Indifference Curve Approach

Marshall's demand analysis is based on the cardinal measurement of utility. The approach is criticised for two reasons.

- (i) Utility is a psychological phenomenon and
- (ii) It cannot be measured.

Hence, the indifference curve approach based on ordinal ranking preference was evolved. Vilfred Pareto, Wicksteed and Slutsky developed this approach. Two noted English economists Prof. J.R. Hicks and Prof. Allen provided a refined version of indifference curve approach. According to Hicks and Allen, utility cannot be measured. It can only be ranked or ordered. The consumer can rank his preference very easily and say which is better than the other.

The concept of scale of preference has been explained by indifference curve. An indifference curve shows different combinations of two commodities, which give the consumer an equal satisfaction.

Definition

An indifference curve is the locus of different combinations of two commodities giving the same level of satisfaction.

Assumptions of indifference curve analysis

1. The consumer is rational. So, he prefers more goods to less goods.
2. He purchases two goods, X and Y only.
3. The price that a consumer pays for a commodity indicates the level of utility derived by him.
4. His income remains constant
5. His tastes, preferences, habits remain unchanged.

Indifference Schedule

An indifference schedule is a statement of various combinations of two commodities that will equally be accepted by the consumer. The various combinations give equal satisfaction to the consumer. Therefore he is indifferent between various combinations.

Let us assume that the consumer buys two commodities - bananas and biscuits. Then the indifference schedule will be:

Table 3.5 Indifference Schedule

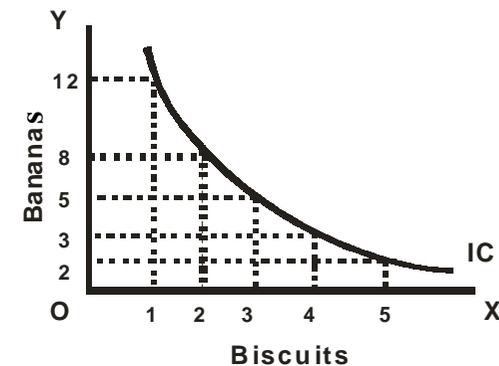
Combination (Good X)	Biscuits (Good Y)	Bananas
A	1	12
B	2	8
C	3	5
D	4	3
E	5	2

From the above schedule it can be understood that while the number of biscuits is increasing, the number of bananas is decreasing so that the level of satisfaction is the same for all the combinations. Therefore the consumer is indifferent between the combinations A, B, C, D and E.

Indifference curve

The data in the indifference schedule can be represented in the graph with one commodity on the X-axis and another commodity in the Y-axis. The various combinations of the two commodities are plotted and joined to form a curve called indifference curve. In the figure IC is an indifference curve showing combinations of the two commodities given in the schedule.

Figure 3.5 Indifference Curve

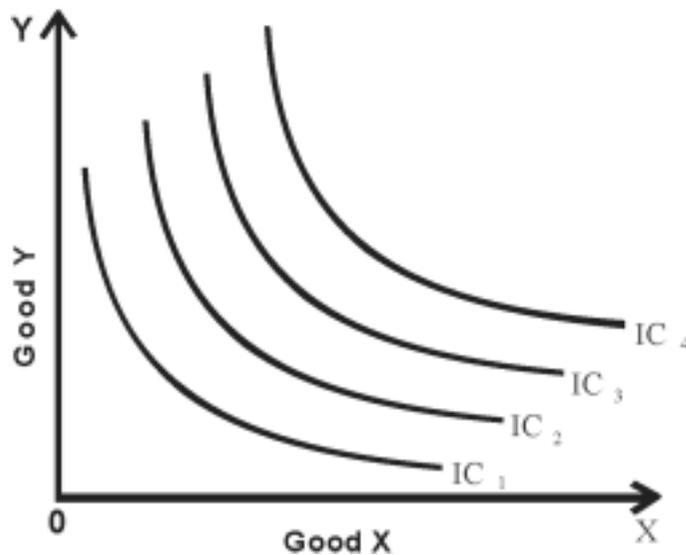


All the points on this curve give equal level of satisfaction to the consumer. Indifference curve is otherwise called 'iso-utility curve'.

Indifference Map

Indifference Map is a group of indifference curves for two commodities showing different levels of satisfaction. In this indifference map, it should be clearly understood that a higher indifference curve denotes higher level of satisfaction and a lower indifference curve represents lower level of satisfaction. Being rational, the consumer will always choose a higher indifference curve to get maximum satisfaction, other things being equal.

Figure 3.6 : Indifference Map



Properties of an Indifference curve

1. Indifference curves slope downwards to the right
2. Indifference curves are convex to the origin
3. No two indifference curves can ever cut each other.

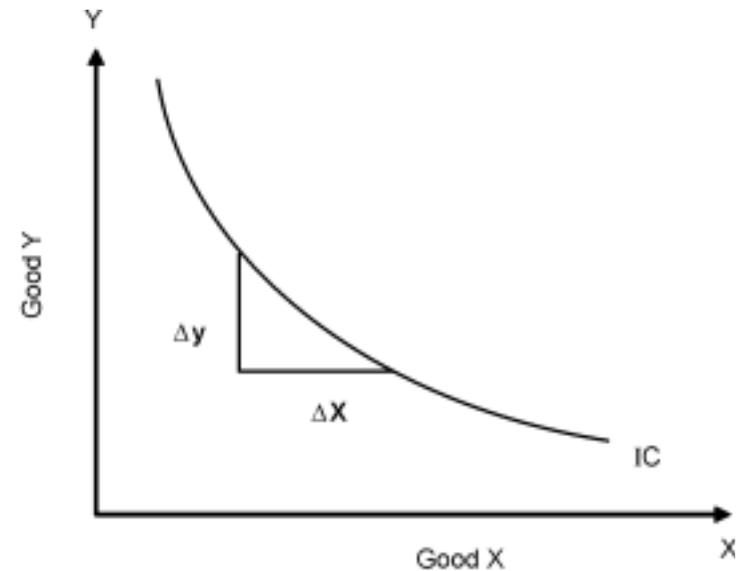
All indifference curves slope downwards from left to right

The downward slope of indifference curve must be attributed to the fact that the consumer in substituting good X by good Y, increases the amount of Y and reduces the amount of X. If the indifference curve were horizontal line running parallel to X axis then the combination which it represents is the same amount of Y but more and more of X. In that case, the satisfaction from the combination will not be equal. For the same reason, it can be said that indifference curve will not be vertical.

All indifference curves are convex to the origin

This is because of the operation of a principle known as 'Diminishing Marginal Rate of Substitution'. The indifference curves are based on this principle. If they are concave to the origin, then it will mean that MRS is increasing. Indifference curve cannot be straight line except when the goods are perfect substitutes.

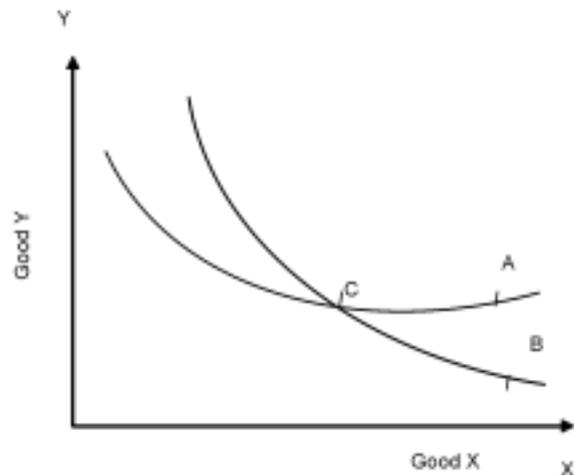
Figure 3.7 : Indifference curves slopes downwards



Marginal rate of substitution between X and Y refers to the amount of commodity Y to be offered in exchange for one unit of X commodity. The MRS goes on diminishing as consumer goes on substituting X for Y.

The third assumption is that no two indifference curves can ever cut each other. But in Figure 3.8 we find two indifference curves do cut each other.

3.8 : No two indifference curves intersect each other



Point A which is on indifference curve 2 represents a higher level of satisfaction to the consumer than at point B which is on indifference curve 1. But point C lies on both curves. That means, two levels of satisfaction A and B which are unequal have become equal. That cannot be accepted. So indifference curves can never cut each other.

These are the three assumptions about the shape of an indifference curve.

Consumer's Equilibrium through Indifference Curve Analysis

As a consumer has a limited income, he spends it in such a manner so as to obtain maximum level of satisfaction. He will attain equilibrium

when he gets maximum satisfaction from his expenditure on different goods. Under the utility analysis explained earlier, a consumer gets maximum satisfaction when marginal utilities from his different purchases are equal. We can also explain the equilibrium of the consumer with the help of the indifference curve analysis. For our analysis, we have to make the following assumptions.

- The consumer has before him an indifference map for a pair of goods say, tea and biscuits. This map represents the preferences of the consumer for the two goods. It is assumed that his scales of preferences remain constant at a given time.
- The consumer has a fixed amount of money to spend on the two goods. It is assumed that he will spend the amount on both the goods and not save any part of it.
- The prices of these goods are given in the market and are assumed to be constant.
- The consumer is assumed to act rationally and maximise his satisfaction.

A consumer's indifference map for good X and good Y is given in figure 3.6; it represents four scales of preferences of a consumer for the two goods. Indifference curves to the right represent higher satisfaction. The consumer would like to choose a combination of good X and good Y, which will be on the highest indifference curve. But his choice will depend upon his income and the price of the two goods.

To understand the extent of purchase of the goods with the given prices and income of the consumer, budget line is important.

Budget line of the consumer

Suppose that the consumer has Rs.20 to spend on tea and biscuits, which cost 50 paise and 40 paise respectively. The consumer has three alternative possibilities before him.

- He may decide to buy tea only, in which case he can buy 40 cups of tea.
- He may decide to buy biscuits only, in which case he can buy 50 biscuits.
- He may decide to buy some quantity of both the goods, say 20 cups of tea (Rs.10) and 25 biscuits (Rs.10) or 12 cups of tea (Rs.6) and 35 biscuits (Rs.14), and so on. (Total amount = Rs.20).

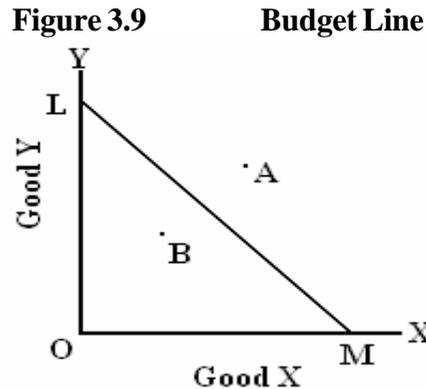
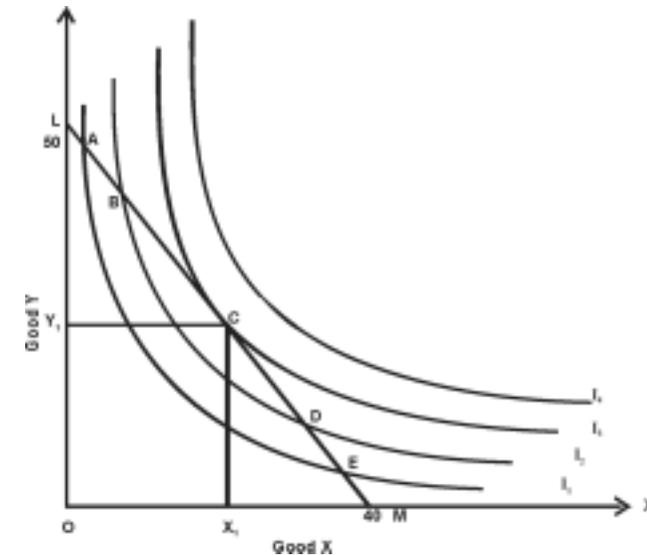


Figure 3.9 shows the above three possibilities. The line LM represents maximum amount of biscuits (50) and to tea (40 cups), which the consumer can buy with his income of Rs.20. The line LM shows that the consumer cannot choose any combination beyond this line because his income does not permit him. Nor would he like to choose a combination below this line; say, B, as it will not represent the maximum satisfaction.

Line LM is known as the budget line since it represents the various amounts the consumer can buy with his income; it is also known as the price-ratio line or simply the price line since its slope represents the ratio of prices of the two goods (i.e., OM of Good X = OL of good Y).

Figure 3.10 : Consumer's Equilibrium



The consumer gets the maximum possible satisfaction from his given income at point C on the indifference curve I_3 . At this point, he buys a combination of OX_1 amount of Good X and OY_1 amount of Good Y. Any other possible combination of the two goods will either yield lesser satisfaction or will not be unobtainable at present prices, with the given amount of income of the consumer.

At the point of equilibrium (point C) the price-line LM is tangential to the indifference curve I_3 . At point C, the indifference curve and the price-line have the same slope. Now the slope of the indifference curve represents the marginal rate of substitution; and the budget line shows the ratio of prices between the two goods. At point C the marginal rate substitution between the two goods as indicated by the slope of the indifference curve I_3 and the ratio of prices between the two goods as indicated by the price-line LM are equal. This point, therefore, indicates the ideal combination between the two commodities, giving the consumer the highest satisfaction possible with his limited income. At this point, therefore the consumer is in equilibrium.

The fundamental condition of equilibrium is that the marginal rate of substitution of commodity X for commodity Y should be equal to the ratio of prices between the two goods. Therefore, the condition for equilibrium is $MRS_{xy} = P_x / P_y$

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

5. 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 Diminishing Marginal Utility
28. Bring out the importance of Law of Diminishing 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.

Chapter 4

Demand and Supply

Demand for a commodity refers to the desire backed by ability to pay and willingness to buy it. If a person below poverty line wants to buy a car, it is only a desire but not a demand as he cannot pay for the car. If a rich man wants to buy a car, it is demand as he will be able to pay for the car. Thus, desire backed by purchasing power is demand.

The demand for any commodity mainly depends on the price of that commodity. The other determinants include price of related commodities, the income of consumers, tastes and preferences of consumers, and the wealth of consumers. Hence the demand function can be written as

$$D_x = F(P_x, P_s, Y, T, W)$$

where D_x represents demand for good x

P_x is price of good X

P_s is price of related goods

Y is income

T refers to tastes and preferences of the consumers

W refers to wealth of the consumer.

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.

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.

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.

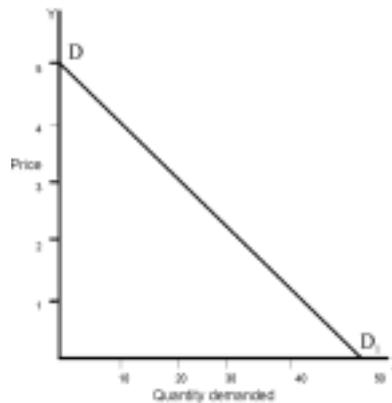
Demand Schedule and Demand curve

Table 4.1 is a hypothetical demand schedule of an individual consumer. It shows a list of prices and corresponding quantities demanded by an individual consumer. This is an individual demand schedule.

Table 4.1 Demand Schedule

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

Figure 4.1 Demand Curve



Demand Curve

The demand schedule can be converted into a demand curve by measuring price on vertical axis and quantity on horizontal axis as shown in Figure 4.1.

In Figure, 4.1 DD_1 is the demand curve. The curve slopes downwards from left to right showing that, when price rises, less is demanded and vice versa. Thus the demand curve represents the inverse relationship between the price and quantity demanded, other things remaining constant.

Why does the demand curve slope downwards?

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.

Individual demand and market demand schedules

Individual demand schedule tells the quantities demanded by an individual consumer at different prices.

Table 4.2 : Individual demand schedule for oranges

Price of oranges (Rs.)	Quantity of oranges
5	1
4	2
3	3
2	4
1	5

It is clear from the schedule that when the price of orange is Rs.5/- the consumer demands just one orange. When the price falls to Rs.4 he demands 2 oranges. When the price falls further to Rs 3, he demands 3 oranges. Thus, when the price of a commodity falls, the demand for that commodity increases and vice versa.

Market demand schedule

A demand schedule for a market can be constructed by adding up demand schedules of the individual consumers in the market. Suppose that the market for oranges consists of 2 consumers. The market demand is calculated as follows.

Table 4.3 Demand Schedule for two consumers and the Market Demand Schedule

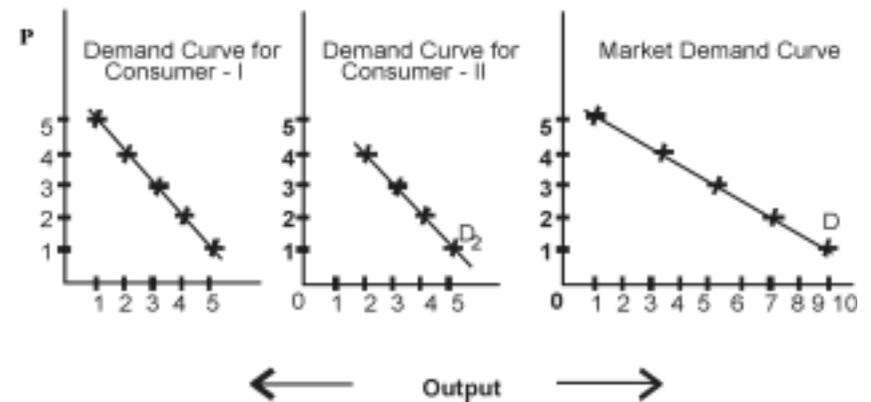
Price of Oranges (in Rs)	Quantity demanded		
	Consumer I	Consumer II	Market Demand
5	1	-	1
4	2	1	3
3	3	2	5
2	4	3	7
1	5	4	9

Market demand curve

The market demand also increases with a fall in price and vice versa.

In Figure 4.2, the quantity demanded by consumer I and consumer II are measured on the horizontal axis and the market price is measured on the vertical axis. The total demand of these two consumers i.e. $D_1 + D_2 = DD_M$ - the market demand curve - also slopes downwards just like the individual demand curve. Like normal demand curves, it is convex to the origin. This reveals the inverse relationship.

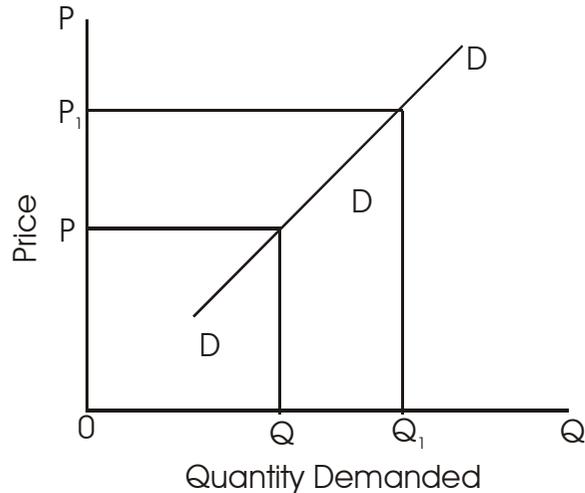
Figure 4.2 Individual Demand and Market Demand Curves



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 as shown in figure 4.3.

Figure 4.3



When the price increases from OP to OP_1 , quantity demanded also increases from OQ to OQ_1 and vice versa. DD is the exceptional or abnormal demand curve. The following is the list of few exceptions to the law of demand.

(1) Veblen Effect

Veblen has pointed out that there are some goods demanded by very rich people for their social prestige. When price of such goods rise, their use becomes more attractive and they are purchased in larger quantities. Demand for diamonds from the richer class will go up if there is increase in price. If such goods were cheaper, the rich would not even purchase.

(2) Giffen Paradox

Sir Robert Giffen discovered that the poor people will demand more of inferior goods if their prices rise and demand less if their prices fall. Inferior goods are those goods which people buy in large quantities when they are poor and in small quantities when they become rich. For

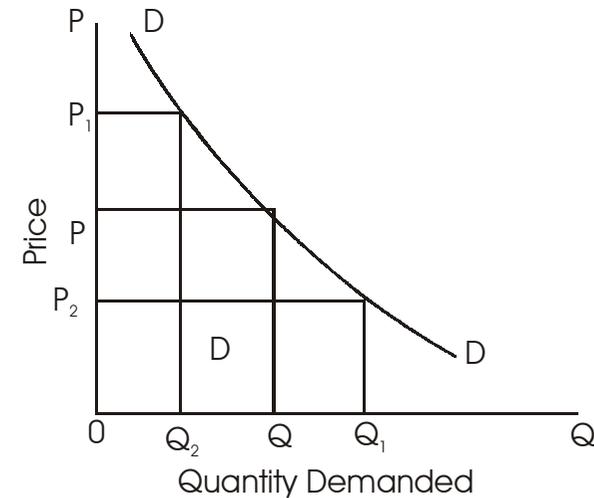
example, poor people spend the major part of their income on coarse grains (e.g. ragi, cholam) and only a small part on rice. When the price of coarse grains rises, they will buy less rice. To fill up the resulting gap, more of coarse grains have to be purchased. Thus, rise in the price of coarse grains results in the increase in quantity of coarse grains purchased. This is called 'Giffen Paradox'. In these cases, the law of demand has an exception.

Changes in demand

Extension and contraction of demand

The demand curve does not change its position here. When change in demand for a commodity is entirely due to a change in its price, it is called extension or contraction of demand. The extension or contraction in demand are movements on or along the given demand curve. It is shown in figure 4.4.

Figure 4.4

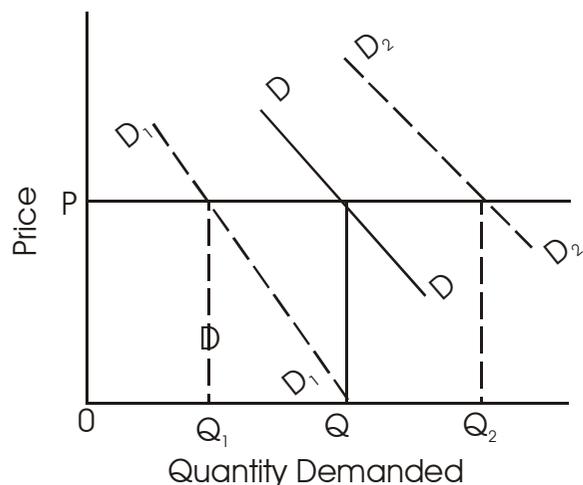


When the price of a good is OP , demand is OQ . If the price of good falls to OP_2 , demand expands to OQ_1 . Thus extension in demand is QQ_1 . On the other hand, when the price of good rises to OP_1 , demand contracts to OQ_2 . Thus contraction in demand is QQ_2 .

Shifts in demand or Increase and decrease in demand

One of the basic assumptions of economic theory is 'other things being equal'. Other things are income, tastes, population, government policy, technology, price of related goods etc. Change in such factors will bring about increase or decrease in demand. In figure 4.5, the increase in demand is shown by the shifts of the demand curve to the right from DD to D_2D_2 . The decrease in demand is shown by the shift to the left from DD to D_1D_1 . The increase and decrease in demand are shifts in the demand curves.

Figure 4.5 Shifts in Demand



Factors determining demand

1. 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.

2. 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.

3. 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.

4. 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.

5. 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.

6. 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.

7. 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.

8. State of business

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

9. 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.

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

1. Price elasticity of demand

“The degree of responsiveness of quantity demanded to a change in price is called price elasticity of demand”

$$\text{Price elasticity of demand} = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in price}}$$

Symbolically,

$$e_p = \frac{\Delta Q / Q}{\Delta P / P} = \frac{\Delta Q}{Q} \times \frac{P}{\Delta P}$$

Δ - change
P - price
Q - quantity

Measurement of price elasticity of demand

Important methods for calculating price elasticity of demand are

- 1) Percentage method
- 2) Point method or slope method
- 3) Total outlay method
- 4) Arc method

1. Percentage method

This is measured as the relative change in demand divided by relative change in price (or) percentage change in demand divided by percentage change in price.

$$\text{Formula is } e_p = \frac{\% \Delta q}{\% \Delta p}$$

For example, the price of rice rises by 10% and the demand for rice falls by 15%

Then $e_p = \frac{15}{10} = 1.5$

This means that the demand for rice is elastic.

If the demand falls to 5% for a 10% rise in price, then $e_p = 5/10 = 0.5$. This means that the demand for rice is inelastic. Thus there are five measures of elasticity.

- a) Elastic demand, if the value of elasticity is greater than 1
- b) Inelastic demand, if the value of elasticity is less than 1
- c) Unitary elastic demand, if the value of elasticity is equal to 1.
- d) Perfectly inelastic demand, if the value of elasticity is zero.
- e) Perfectly elastic demand, if the value of elasticity is infinity.

Graphical illustration

All the five measures are illustrated in the following figures 4.6 to 4.10 respectively.

Figure 4.6 Elastic demand curve

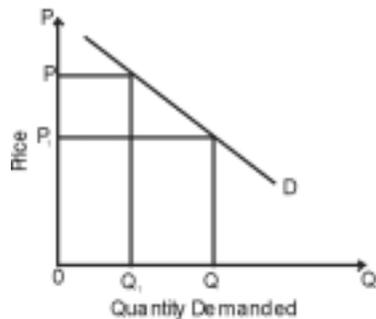


Figure 4.7 Inelastic demand curve

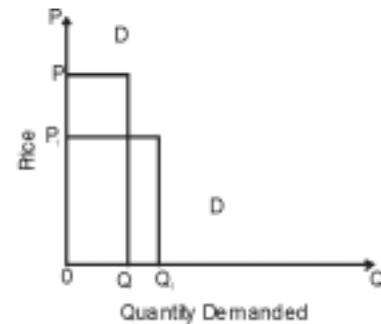


Figure 4.8 Unitary elastic demand curve

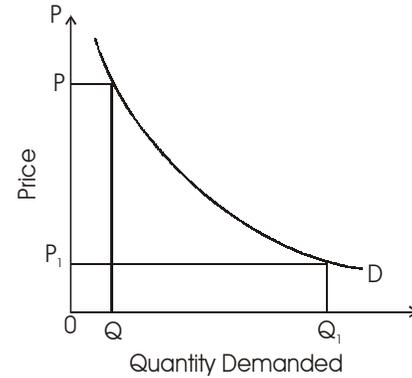


Figure 4.9 Perfectly inelastic demand curve

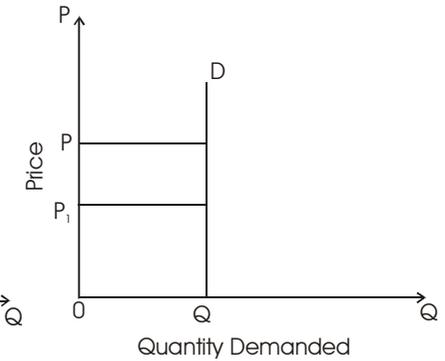
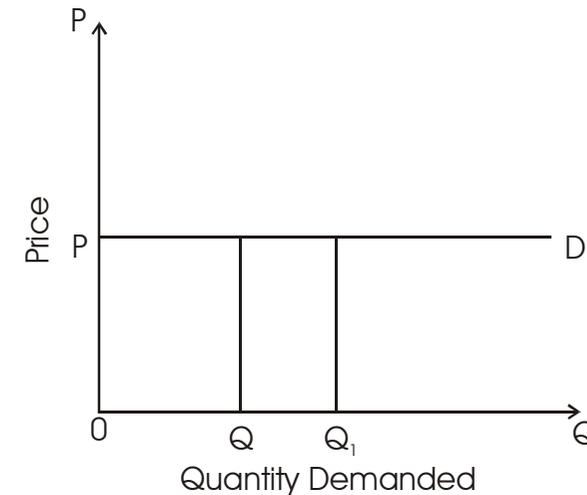


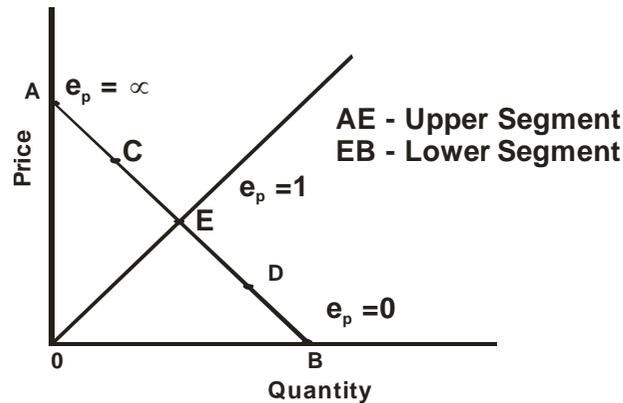
Figure 4.10 Perfectly elastic demand curve



2. Point method

We can calculate the price elasticity of demand at a point on the linear demand curve. Formula to find out e_p through point method is,

Figure 4.11



$e_p = \frac{\text{Lower segment of the demand curve}}{\text{Upper segment of the demand curve}}$

For example, in figure 4.11, the length of the demand curve AB is 4 cm

Exactly at middle point of AB demand curve,

$$1) e_p \text{ at point } e \quad e_p = \frac{EB}{EA} = \frac{2}{2} = 1 \quad \therefore e_p = 1$$

2) e_p at point D = (middle point of EB portion of demand curve)

$$\frac{DB}{DA} = \frac{1}{3} = 0.3 \quad e_p < 1$$

3) e_p at point c (middle point of EA portion of demand curve)

$$\therefore e_p = \frac{CB}{CA} = \frac{3}{1} = 3 \quad e_p > 1$$

$$4) e_p \text{ at point } B = \frac{0}{AB} = \frac{0}{4} = 0$$

(o by anything is zero, a mathematical principle) $\therefore e_p = 0$

$$5) e_p \text{ at point } A = \frac{AB}{0} = \frac{4}{0} = \infty$$

(Anything by zero becomes infinity a mathematical principle) \therefore

$$e_p = \infty$$

3. Total outlay method:

We can measure elasticity through a change in expenditure on commodities due to a change in price.

1. Demand is elastic, if total outlay or expenditure increases for a fall in price ($e_p > 1$).
2. Demand is inelastic, if total outlay or expenditure falls for a fall in price ($e_p < 1$).
3. Elasticity of demand is unitary, if total expenditure does not change for a fall in price ($e_p = 1$).

The results are tabulated in Table 4.6:

Changes in price	Types of elasticity of demand		
	$e_p = 1$	$e_p < 1$	$e_p > 1$
fall in price	Total outlay remains constant	Total outlay falls	Total outlay rises
rise in price	Total outlay remains constant	Total outlay rises	Total outlay falls

4) Arc method

Segment of a demand curve between two points is called an Arc. Arc elasticity is calculated from the following formula

$$E_p = \frac{q_1 - q_2}{Q_1 + q_2} \div \frac{P_1 - P_2}{P_1 + P_2}$$

$$= \frac{\Delta q}{Q_1 + q_2} \div \frac{\Delta P}{P_1 + P_2}$$

Where

ΔQ = change in quantity demanded

ΔP = change in price of the commodity

P_1 = original price

P_2 = New price

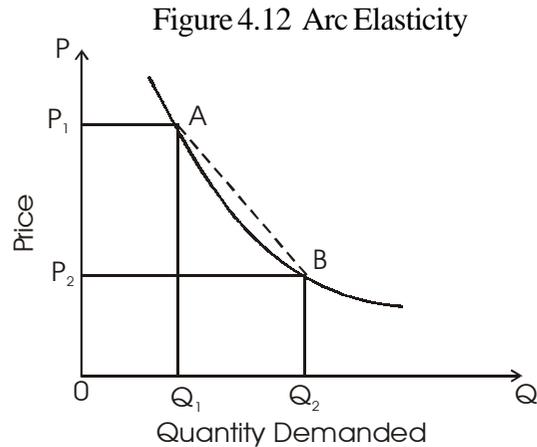
Q_1 = original quantity

Q_2 = new quantity

$$= \frac{\Delta q}{Q_1 + q_2} \times \frac{P_1 + P_2}{\Delta P}$$

$$= \frac{\Delta q}{\Delta P} \times \frac{P_1 + P_2}{Q_1 + q_2}$$

Arc elasticity formula should be used when the change in price is somewhat large.



In figure 4.12 we can measure arc elasticity between points A and B on the demand curve; we will have to take the average prices of OP_1 and OP_2 and average of the two quantities demanded (original and the new).

Income elasticity of demand

Income elasticity of demand is the degree of responsiveness of demand to the change in income.

$$e_y = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in income}}$$

Symbolically $e_y = \frac{\Delta q}{q} \div \frac{\Delta y}{y}$ where q and y stand for quantities demanded and income respectively.

$$= \frac{\Delta q}{q} \times \frac{y}{\Delta y}$$

Δ means change

Cross-elasticity of demand

The responsiveness of demand to changes in prices of related goods is called cross-elasticity of demand (related goods may be substitutes or complementary goods). In other words, it is the responsiveness of demand for commodity x to the change in the price of commodity y.

$$e_c = \frac{\text{Percentage change in the quantity demanded of commodity X}}{\text{Percentage change in the price of commodity y}}$$

$$e_c = \frac{\Delta q_x}{\Delta p_y} \times \frac{p_y}{p_x}$$

The relationship between x and y commodities may be substitutive as in the case of tea and coffee (or) complementary as in the case of pen and ink.

Measures of cross-elasticity of demand

- Infinity - Commodity x is nearly a perfect substitute for commodity y
- Zero - Commodities x and y are not related.
- Negative - Commodities x and y are complementary.

Factors determining elasticity of demand: The elasticity of demand depends on 1. nature of the commodity, 2. uses of commodity, 3. existence of substitutes, 4. postponement of demand, 5. amount of money spent, 6. habits and 7. range of prices of commodity.

Importance of Elasticity of demand

1. Price discrimination

If the demand for a product has different elasticities in different markets, then the monopolist can fix different prices in different markets. This price discrimination is possible due to different price elasticities.

2. Levy of taxes

The government will get higher revenue if tax is increased on goods having inelastic demand. Conversely, the government, will get lower revenue if tax is increased on goods having elastic demand.

3. International Trade

Terms of trade refer to the rate at which domestic commodities are exchanged for foreign commodities. The terms of trade will be favourable to a country if its exports enjoy inelastic demand in the world market.

4. Determination of volume of output

Volume of goods and services must be produced in accordance with the demand for the commodity. When the demand is inelastic, the producer will produce more goods to take the advantage of higher prices. Hence the nature of elastic and inelastic demand helps in the determination of the volume of output.

5. Fixation of wages for labourers

If the demand for workers is inelastic, efforts of trade unions to raise wages of the workers will be successful. On the other hand, if the demand for labour is elastic, they may not succeed in increasing the wage rate by trade union activity.

6. Poverty in the midst of plenty

The concept of elasticity of demand explains the paradox of poverty i.e. poverty in the midst of plenty. For example, bumper crop of food grains should bring agricultural prosperity but if the demand for food grains is inelastic, the agriculturist will be the loser if low price is paid.

LAW OF SUPPLY

Supply means the goods offered for sale at a price during a specific period of time. It is the capacity and intention of the producers to produce goods and services for sale at a specific price.

The supply of a commodity at a given price may be defined as the amount of it which is actually offered for sale per unit of time at that price.

The law of supply establishes a direct relationship between price and supply. Firms will supply less at lower prices and more at higher prices. "Other things remaining the same, as the price of commodity rises, its supply expands and as the price falls, its supply contracts".

Supply schedule and supply curve

A supply schedule is a statement of the various quantities of a given commodity offered for sale at various prices per unit of time. With the help of the supply schedule, a supply curve can be drawn.

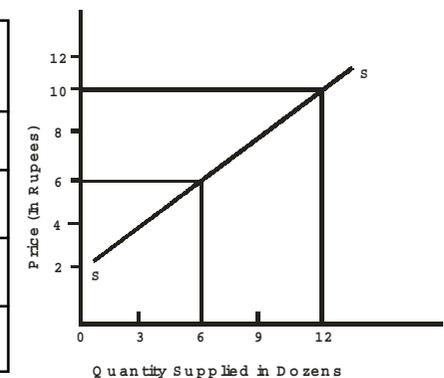
Individual supply schedule and curve

Individual supply schedule is a list of prices and quantities of a given commodity offered for sale by an individual seller or producer.

Table 4.7 Supply Schedule of A

Price (in Rs.)	quantity supplied in dozens
4	3
6	6
8	9
10	12

Figure 4.13 Supply Curve



It is seen that when the price is Rs.4 three dozens are offered for sale. As the price increases, the quantity supplied also increases.

With the help of the supply schedule, we can construct supply curve. On the basis of the schedule, supply curve SS is drawn. It has a

positive slope. It moves upward to the right. The price of the product and quantity supplied are directly related to each other.

Market supply schedule and curve

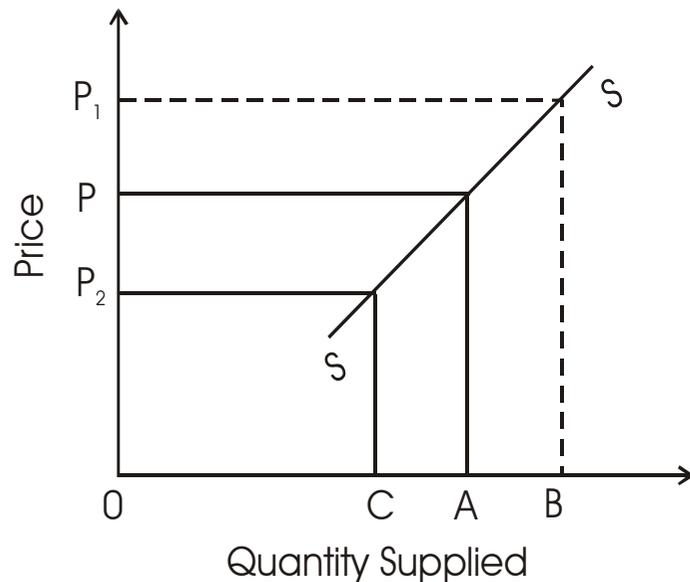
By adding up the quantity supplied at various prices by all sellers in the market, we can get market supply schedule.

Market supply curve is the lateral summation of the individual supply curves of all the producers in the market.

Movement along the supply curve or expansion and contraction of supply curve

When more units are supplied at a higher price, it is called 'expansion of supply'. When fewer units are supplied at a lower price, it is called 'contraction in supply'. It is illustrated in figure 4.14.

Figure 4.14



When the price is OP , OA is supplied. When price increases to OP_1 , the producer will supply OB units. The movement from OA to OB shows the expansion in supply.

Original price is OP and original supply is OA . When price falls to OP_2 the producer will supply OC units. The supply has contracted from OA to OC .

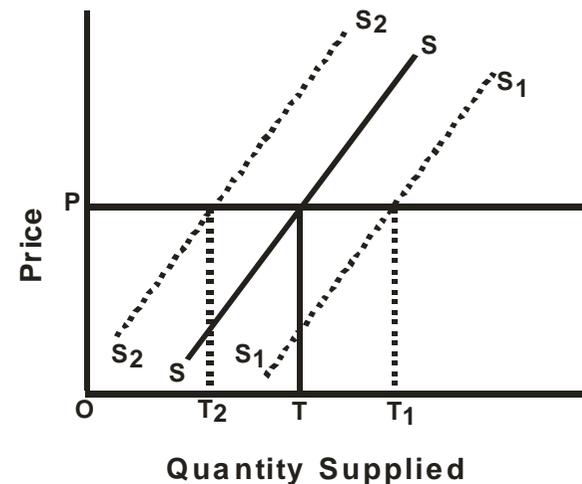
Shifts in supply (or) increase or decrease in supply

Increase or decrease in supply causes shifts in the supply curve. A shift in the supply curve is due to a change in other factors i.e., other than the price of the commodity. It is explained in the figure 4.15.

At price OP , SS is the supply curve before the change in other factors. $S_1 S_1$ shows an increase in supply because at the same price OP or TE more is offered for sale i.e. OT_1 .

$S_2 S_2$ shows decrease in supply because at the same price OP or TE , less is offered for sale i.e. OT_2 .

Figure 4.15



Factors determining supply

1. Production technology

State of production technology affects the supply function. If advanced technology is used in the country, large scale production is possible. Hence supply will increase. Old technology will not increase the supply.

2. Prices of factors

When the prices of factors rise, cost of production will increase. This will result in a decrease in supply.

3. Prices of other products

Any change in the prices of other products will influence the supply. An increase in the price of other products will influence the producer to shift the production in favour of that product. Supply of the original product will be reduced.

4. Number of producers or firms

If the number of producers producing the product increases, the supply of the product will increase in the market.

5. Future price expectations

If producers expect that there will be a rise in the prices of products in future, they will not supply their products at present.

6. Taxes and subsidies

If tax is imposed by the government on the inputs of a commodity, cost of production will go up. Supply will be reduced. When subsidy is given to the producer, it will encourage them to produce and supply more. Subsidy means a part of the cost of a commodity will be borne by the government.

7. Non-economic factors

Non-economic factors like, war, political climate and natural calamities create scarcity in supply.

Elasticity of Supply

The law of supply tells us that quantity supplied will respond to a change in price. The concept of elasticity of supply explains the rate of change in supply as a result of change in price. It is measured by the formula mentioned below

$$\text{Elasticity of supply} = \frac{\text{Proportionate change in quantity supplied}}{\text{Proportionate change in price}}$$

$$e_p = \frac{\Delta q_s / q_s}{\Delta p / p}$$

Where q represents the amount supplied, p represents price, Δ - a change.

Elasticity of supply may be defined as “the degree of responsiveness of change in supply to change in price on the part of sellers”.

Types of elasticity of supply

There are five types of elasticity of supply.

1. Perfectly elastic supply

The coefficient of elasticity of supply is infinity. (e_s is ∞). For a small change or no change in price, there will be infinite amount of supply. (SS_1 in Figure 4.16)

2. Relatively elastic supply

The coefficient of elastic supply is greater than 1 ($e_s > 1$). Quantity supplied changes by a larger percentage than price. (SS_2 in figure 4.16)

3. Unitary elastic supply

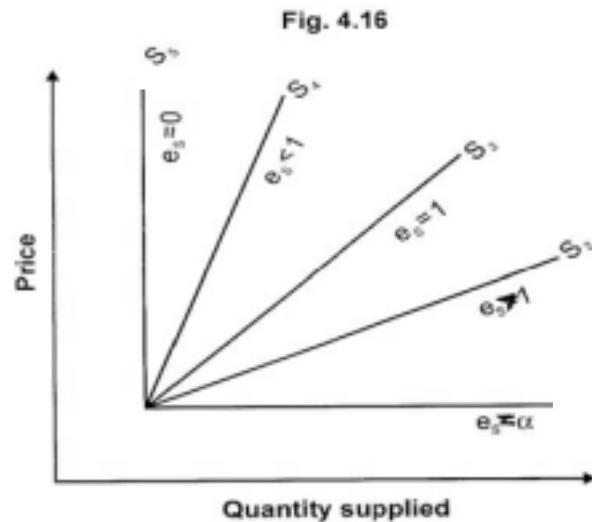
The coefficient of elastic supply is equal to 1 ($e_s = 1$). A change in price will cause a proportionate change in quantity supplied. (SS_3 in figure 4.16)

4. Relatively inelastic supply

The coefficient of elasticity is less than one ($e_s < 1$). Quantity supplied changes by a smaller percentage than price. (SS_4 in figure 4.16)

5. Perfectly inelastic supply

The coefficient of elasticity is equal to zero ($e_s = 0$). A change in price will not bring about any change in quantity supplied. (SS_5 in figure 4.16)



Factors determining elasticity of supply

The following factors will influence the elasticity of supply

1. Changes in cost of production
2. Behaviour pattern of producers
3. Availability of facilities for expanding output.
4. Supply in the short and long period.

EXERCISE

PART A

I. Choose the correct answer

1. Demand for a commodity depends on
 - a) Price of that commodity
 - b) Price of related goods
 - c) Income
 - d) All the above

2. Law of Demand establishes

- a) inverse relationship between price and quantity
- b) Positive relationship between price and quantity
- c) Both
- d) None

3. Increase in demand is shown by

- a) Movement along the same demand curve
- b) Shifts of the demand curve
- c) The highest point on the demand curve
- d) Lowest point on the demand curve

4. The degree of response of demand to change in price is

- a) Income elasticity of demand
- b) Cross – elasticity of demand
- c) Price elasticity of demand
- d) All the above.

5. Factors determining supply are :

- a) Production technology
- b) Prices of factors of production
- c) Taxes and subsidies
- d) All the above

II. Fill in the blanks

1. The demand curve slopes downwards due to _____
2. Adding up of individual consumers schedule is _____
3. Goods that are demanded for their social prestige come under _____ effect.
4. The concept of elasticity of demand was introduced by _____
5. The rate of change of supply to a change in price is _____

III. Match the following

11. Positive relationship of a) substitutes price and demand
12. Tea and coffee b) inelastic demand
13. Segment between two points c) X and Y are not related
14. $E_d > 1$ d) Veblen effect
15. Cross-elasticity is zero e) Arc

IV. Answer in a word or two

16. What is the basic assumption of economic theory ?
17. How does the demand change during boom and depression ?
18. Give the formula for point method
19. What is income elasticity of demand ?
20. When the demand for labour is inelastic, can a trade union raise wages ?

PART B

Answer the following questions in about four or five lines

21. What is demand ?
22. Enumerate the determinants of demand
23. Why does the demand curve slope downwards ?
24. Write a note on Giffen Paradox
25. What are the types of elasticity of demand ?

PART C

Answer the following questions in about a page

26. Explain the expansion and contraction in demand and shifts in demand.
27. Explain the types of elasticity of demand.
28. Give the importance of elasticity of demand.
29. Explain the law of supply with a suitable diagram.
30. What is elasticity of supply and explain its types with a diagram ?

PART D

Answer for each question should be about three pages

31. Discuss the law of demand.
32. Explain the methods of measurement of price elasticity of demand in detail.

Chapter 5

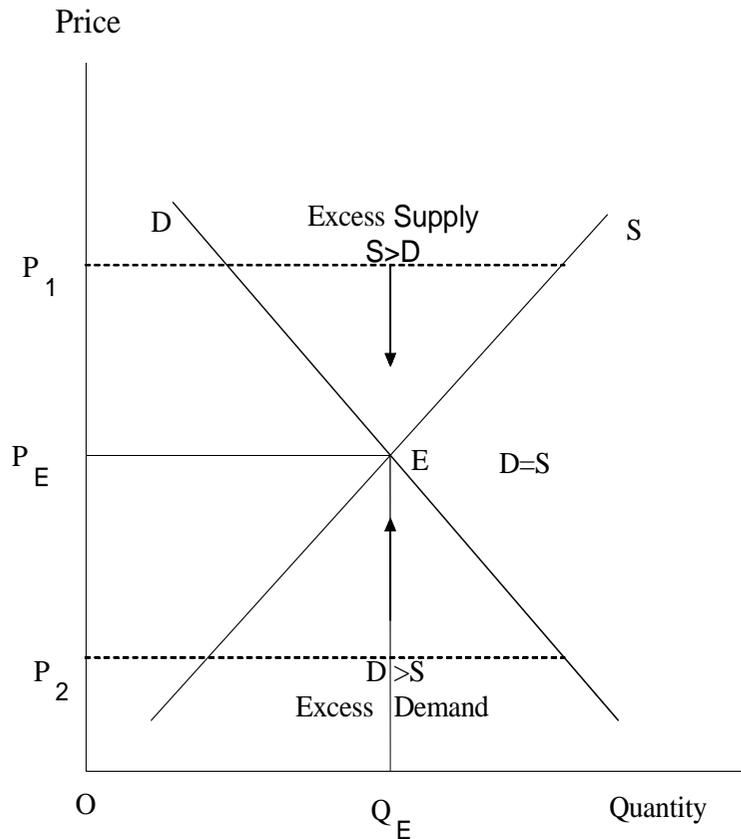
Equilibrium Price

We have discussed in the last chapter demand and supply. The demand curve reflects the price-quantity relationship and exhibits the different pairs of price-quantity preferred by the consumers. Similarly the supply curve exhibits the preferences of firms for different pairs of price-quantity. The preferences of consumers (buyers) and firms (sellers) are opposed to each other. It is also evident enough from the shape of demand and supply curves. What will be the actual price charged and quantity sold in a particular market?

There is only one price at which the preferences of sellers and buyers meet together. At that point the quantity demanded of a commodity by the buyer is equivalent to the quantity the seller is willing to sell. This price is called as the equilibrium price and it occurs at the point of intersection of the supply curve and the demand curve. In other words, equilibrium refers to a particular pair of prices and quantity. The supply and the demand will be in balance in equilibrium.

Equilibrium in general is defined as the state of rest or balance from which there is no tendency for change. In economics, equilibrium normally refers to equilibrium in a market. Even if there is any change, the original equilibrium position will be restored by market forces. The concept of equilibrium is also applied to describe and understand other sub-systems of the economy like agriculture, industry, growth and distribution.

Figure 5.1
Equilibrium Price



- P - price
- Q - quantity of good
- S - supply
- D - demand
- P_E - equilibrium price (or price of market balance)
- $D > S$ - Excess of demand - when $P < P_E$
- $S > D$ - Excess of supply - when $P > P_E$

Market equilibrium can also be illustrated with help of Figure 5.1. Equilibrium price is P_E . At price P_E , the quantity demanded is equal to quantity supplied, $D=S$. At other prices, there is no equality between quantity demanded and quantity supplied. In both the cases either the consumer or the firms are dissatisfied and tend to change the price.

At any price above the equilibrium price (P_E), supply is greater than demand ($S > D$). Thus there is excess supply. When price is high, buyers prefer to reduce their purchase. But sellers prefer to sell more as price is high. These contrasting behaviours of buyers and sellers result in excess supply in the market which is the difference between the quantities demanded and quantity supplied. As sellers cannot sell all of the quantity at the high price, some of them may reduce price to sell the excess stocks.

For instance, price “discounts” are advertised by sellers in the name of ‘annual stock clearance’ sales. When one seller offers discount, the other sellers also follow suit by cutting their prices. As a result, the market price as a whole will decline till the excess supply is sold and equilibrium is ($D=S$) restored.

Similarly, if the price is below the equilibrium price P_E , there will be excess demand, $D > S$. In this case some of the buyers may try to bid up the price to buy some more quantity when supply is less. This may also encourage sellers to supply more. For instance, buying cinema tickets off the counter (called as tickets in black) by paying a higher price than the actual price.

Thus, in both cases, the actions of buyers and sellers will move the price either upwards or downwards and eliminate the excess demand or excess supply. Such actions also restore the demand-supply balance to attain the market equilibrium. At equilibrium price, there is no force to change the price or quantity demanded of a commodity.

Figure 5.1 illustrates the market in equilibrium at the equality between demand and supply. In case of any deviation from the

equilibrium price, the direction of price movement is shown by the arrow marks. When there is excess supply, price has a downward tendency. In the case of excess demand, price has an upward tendency. At equilibrium, price is stable because there is no tendency for change as $D=S$.

Shift in Demand and Supply

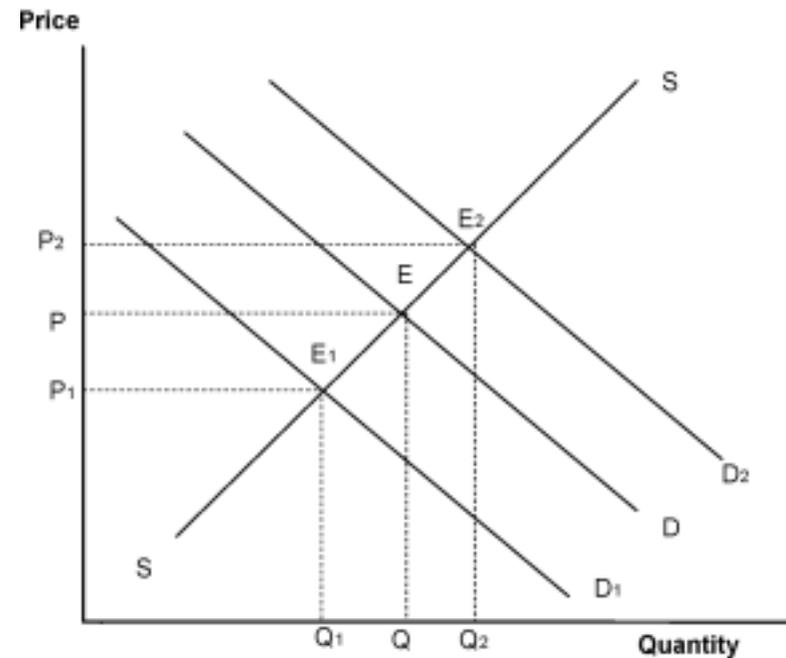
The market equilibrium attained above is temporary. It cannot be retained for a long period. It is because demand and supply conditions keep changing frequently. Such changes occur due to many variables other than price. These changes occur independently of price. We will see the causes and nature of such changes that influence demand and supply.

We have already seen that price is the main factor affecting demand and supply keeping 'other things' constant. What are the 'other things'? Suppose, those 'other things' are not constant but changing, what will happen to demand and supply? Note that any change in these determinants of demand and supply will shift the demand curve and supply curve. These shifts will also bring new equilibrium.

Shift in Demand

The 'other things' that affect demand are also called as the determinants of demand. They include income of the consumer, tastes, prices of substitutes and many more. Changes in these determinants will change demand independently of price. If income of the consumer increases, they will buy more irrespective of the price. Similarly a fall in income will bring a fall in demand even if there is no change in price.

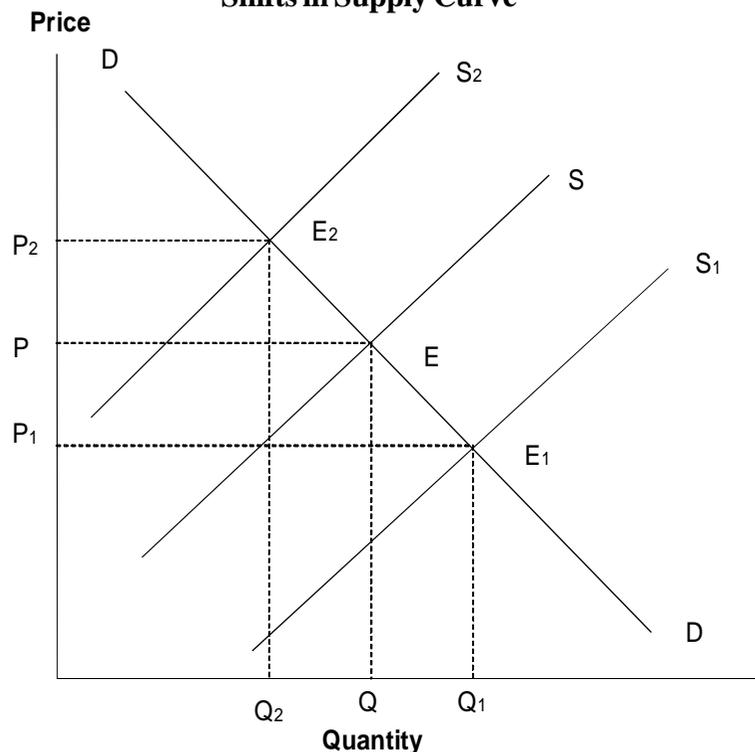
Figure 5.2
Shifts in Demand Curve



In Figure 5.2, D is the original demand curve with equilibrium price P and quantity Q. Any change in the determinants of demand like income and tastes will shift the demand curve. For instance, a fall in the income of consumer shifts the demand curve D to D_1 and the new equilibrium would be at point E_1 . Similarly, any increase in income shifts the demand curve from D to D_2 . The equilibrium also moves from point E_1 to E_2 .

Note the distinction between changes in quantity demanded and change in demand. Changes in quantity demanded occur only when there is change in the price. Thus the change in the price-quantity schedule brings movements on the demand curve whereas the changes in the other determinants (namely income, tastes, prices of substitutes, etc) shift the demand curve as a whole.

Figure 5.3
Shifts in Supply Curve



Shifts in Supply

As seen earlier, the supply curve shows the relationship between the price and quantity supplied keeping the ‘other things’ constant. The ‘other things’ which affect supply include number of sellers in the market, factor prices, etc. These factors affect quantity supplied independently of price.

Price is the major determinant of supply. However, a fall in the price of factor (s) of production (land and labour) will reduce the cost of production. This in turn will encourage the firms to supply more. This will cause the shift of supply curve from its original level of S to new level of S_1 . On the other hand, an increase in factor price will

increase the cost of production and the supply curve will shift from S to S_2 . In these two situations S_1 and S_2 , equilibrium point also moves from E to E_1 or E_2 respectively.

Just like demand, the distinction between the change in quantity supplied and change in supply needs to be noted. A change in the quantity supplied occurs only due to change in price whereas the change in the ‘determinants’ of supply such as factor price will shift the entire supply curve and a new equilibrium will be attained. Such shifts will take place independently of price.

Time Periods and Price Fixation

Time Element

Time element plays an important role in economics. Modern economists divide time periods into short period and long period. The equilibrium price acquired above is valid only for a particular time period. Any change in demand and supply over a period of time will shift the demand and supply curves and different equilibrium will be obtained.

For instance, the flexibility of a firm in adjusting its production to meet the change in demand depends on the nature of its inputs. There are two types of inputs namely fixed inputs and variable inputs.

The fixed input is one whose quantity cannot be adjusted in a limited time period. Heavy machinery, buildings and capital equipments are such fixed inputs and they may need more time for installation or replacement.

However, variable inputs like labour, raw materials and electricity can be changed quickly to change the supply until the full plant capacity is reached. Now it is possible to distinguish between short period and long period. The short period for a firm is the time period during which at least one of the inputs is fixed input. The long period is the time period during which all the inputs are variable inputs.

The specific duration of the short period and long period will vary from firm to firm. A small *Bonda* stall on the roadside pavements can

change all the inputs even within a single day, because all inputs are easily variable. The seller can install one more stove, use more oil and other ingredients of *Bonda* within a day to meet any sudden increase in demand. Hence, for him the duration of long period can even be a single day. On the other hand, installation of a specialized machinery for the Ariyalur cement plant may take years, because the production, transportation, installation require a long period of time.

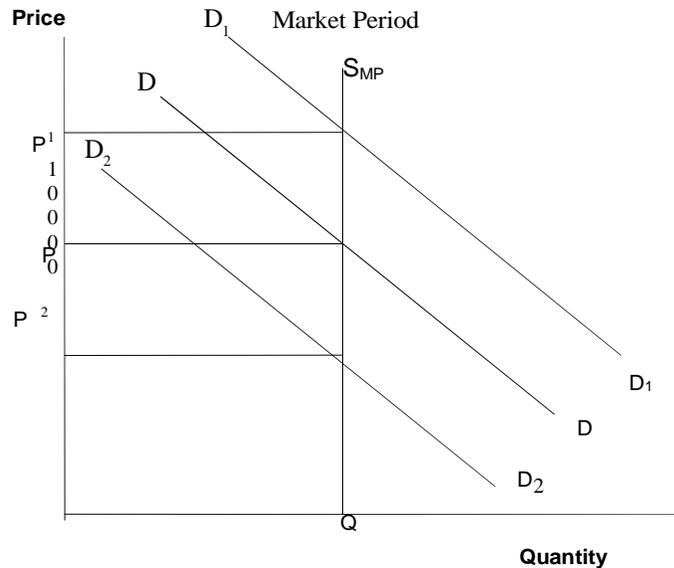
Price Fixation in the Short Period

Alfred Marshall introduced time element in the determination of equilibrium and divided them into market period, short period and long period.

Market Period

Market period is the period during which the ability of the firms to affect any changes in supply in response to any change in demand is extremely limited or almost nil. Thus supply is more or less fixed in the market period without any change. However, the demand may vary during this period.

Figure 5.4



The equilibrium price will be determined according to the changes in demand, given the fixed supply. Figure 5.4 explains the equilibrium price in market period.

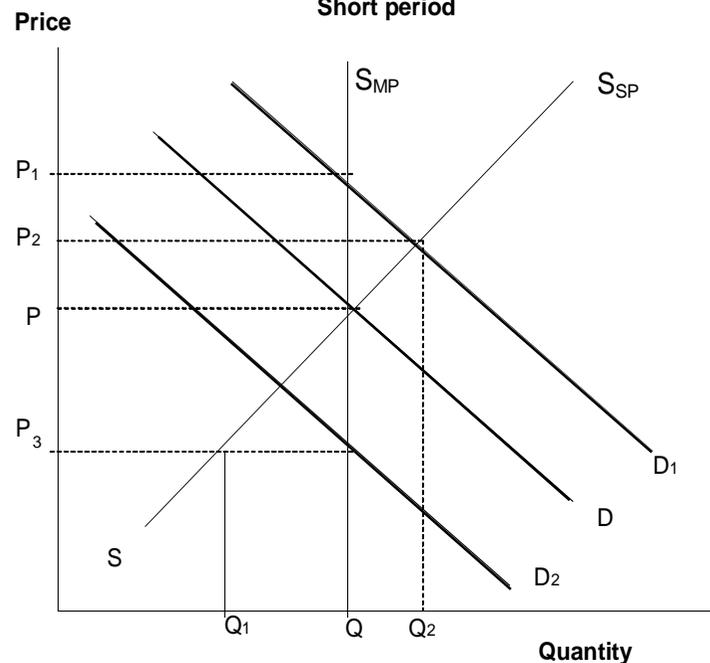
As the supply is fixed in the market period, it is shown as a vertical line S_{MP} . It is also called as inelastic supply curve. When demand increases from DD to D_1D_1 , price increases from P to P_1 . Similarly, a fall in demand from DD to D_2D_2 pull the price down from P to P_2 . The market for perishables can be a good illustration. The demand for plantain fruits increases during the festival season, so the prices will naturally go up as the supply cannot be increased immediately to meet the demand. Thus, demand determines the equilibrium price in the market period.

Short period

As mentioned earlier short period is the one during which at least one of the factors will be a fixed input and the supply will be adjusted by changing the variable inputs. The equilibrium price will be determined by adjusting supply (within the plant capacity) according to the changes in demand (Figure 5.5)

S_{SP} is elastic implying that supply can be increased by changing the variable input. Note that the corresponding increase in price from P to P_1 for a given increase in demand from D to D_1 is less than that of the market period. It is because, increase in demand is partially met by the increase in supply from q to q_1 . Thus during the short period both demand and supply exert their influence on price and the equilibrium price is determined accordingly.

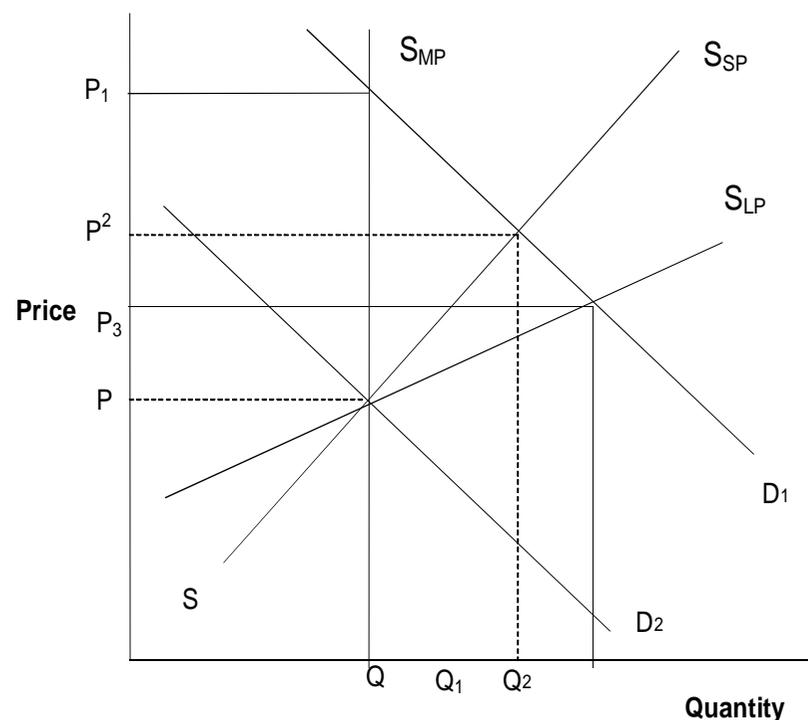
Figure 5.5
Short period



Long Period

In the long period supply can be changed by changing all the inputs (both the fixed and variable inputs). Any amount of change in demand will be met by changing the supply, to the extent of changing the plant, machinery and the quantum of technology. In figure 5.6, the long period supply curve S_{LP} is more elastic and flatter than that of the S_{SP} . This implies the greater extent of flexibility of the firms to change the supply. The price increases from P to P_2 in response to an increase in demand from D to D_1 and it is less than that of the market period (P_1) and short period (P_2). It is because the increase in demand is fully met by the required increase in supply. Hence, supply plays a significant role in determining the lower equilibrium price in the long run.

Figure 5.6
Long Period



- S_{MP} - supply curve of the market period
- S_{SP} - supply curve of the short period
- S_{LP} - supply curve of the long period

EXERCISE

PART A

I. Choose the correct answer

1. At the point of equilibrium
 - a) Only one price prevails
 - b) Quantity demanded = quantity supplied
 - c) The demand curve intersects the supply curve
 - d) All the above
2. Above the equilibrium price
 - a. $S < D$
 - b. $S > D$
 - c. $S = D$
 - d. none
3. Changes in quantity demanded occur
 - a. Only when price changes
 - b. Due to change of taste
 - c. both
 - d. None
4. The time element in price analysis was introduced by
 - a. J.R. Hicks
 - b. J.M. Keynes
 - c. Alfred Marshall
 - d. J.S. Mill

5. In the long period
 - a. All factors change
 - b. Only variable factor changes
 - c. Only fixed factor changes
 - d. Variable and fixed factors remain constant.

II. Fill in the blanks

6. _____ is the major determinant of supply
7. Agriculture, industry, growth and distribution are the _____ of the economy.
8. At _____ price, there is no tendency to change the price or quantity.
9. Modern economists divide time periods into _____ and _____
10. The supply curve in the market period is a _____ line.

III. Match the following

- | | |
|------------------------------|-------------------------------|
| 11. Equilibrium | a. Annual stock clearance |
| 12. Excess demand | b. More elastic |
| 13. Price discount | c. Pair of price and quantity |
| 14. Long period supply curve | d. $D > S$ |
| 15. Short period price | e. Demand and supply. |

IV. Answer in a word or two

16. What is equilibrium in general ?
17. What are the determinants of shift in demand curve ?
18. Who has introduced the time element ?
19. Give an example for fixed input ?
20. Is supply fixed in the market period ?

PART B

Answer the following questions in about four or five lines

21. What is equilibrium price ?
22. Distinguish between change in demand and shift in demand.
23. What are the determinants of shift in supply ?
24. Differentiate the short period from the long period.
25. Write a short note on market period.

PART C

Answer the following questions in about a page

26. Explain the shift in demand with the help of a diagram.
27. Explain the shift in supply with diagram.
28. How is the equilibrium price determined in the market period ?
29. Explain with a help of diagram how demand and supply exert influence on price in the short period.
30. Describe the flatter long run supply curve.

PART D

Answer for each question should be about three pages

31. Analyse the determination of equilibrium price with a diagram.
32. Explain with a suitable diagram
 - a. Market price
 - b. Short period price
 - c. Long period price

Chapter 6

Production

Meaning of Production

Production in Economics refers to the creation of those goods and services which have exchange value. It means the creation of utilities. These utilities are in the nature of form utility, time utility and place utility. Creation of such utilities results in the overall increase in the production and redistribution of goods and services in the economy. Utility of a commodity may increase due to several reasons.

Form Utility

If the physical form of a commodity is changed, its utility may increase. For instance, the utility of cotton increases, if it is converted into clothes. The other examples are processing of paddy into rice, wheat into flour and butter into ghee.

Place Utility

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

Time Utility

If the commodity is stored for future usage, its utility may increase. During rainy season, water is stored in reservoirs and it is used at a later time. This increases the utility of that stored water. Agricultural commodities like paddy, wheat, oilseeds, pulses are stored for the regular uses of consumers throughout the year.

Possession Utility

Commodities in the transaction process, change from one person to another person. Commodities in the hands of producers have some utility and by the time they reach consumers through the traders their utility is increased. Such utility due to possession or transfer of ownership

of the commodity is called, possession utility. For example, paddy in the hands of producers, i.e. farmers has less utility compared to that of the rice in the hands of consumers.

Factors of production

Human activity can be broken down into two components, production and consumption. When there is production, a process of transformation takes place. Inputs are converted into an output. The inputs are classified and referred to as land, labour, and capital. Collectively the inputs are called factors of production.

When the factors of production are combined in order to produce something, a fourth factor is required. Goods and services do not produce themselves but need some conscious thought process in order to plan and implement manufacture. This thought process is often called entrepreneurship or organisation.

Factors of production refer to those goods and services which help in the productive process.

Kinds of factors of production

Factors of production are broadly classified into primary factors and derived factors. Man (Labour) acts upon Nature (Land) to produce goods and services and wealth. These two factors (Land and Labour) are naturally given and without them no goods can be produced. These are called primary factors.

Capital and organisation are derived from the primary factors of production, and are called derived factors of production. These derived factors of production, when combined with the primary factors of production, raise total production.

According to the traditional classification, there are four factors of production. They are Land, Labour, Capital and Organisation.

Land

Land as a factor of production refers to all those natural resources or gifts of nature which are provided free to man. It includes within itself several things such as land surface, air, water, minerals, forests, rivers, lakes, seas, mountains, climate and weather. Thus, 'Land' includes all things that are not made by man.

Characteristics or Peculiarities of land

- (i) Land is a free gift of nature
- (ii) Land is fixed (inelastic) in supply.
- (iii) Land is imperishable
- (iv) Land is immobile
- (v) Land differs in fertility and situation
- (vi) Land is a passive factor of production

As a gift of nature, the initial supply price of land is zero. However, when used in production, it becomes scarce. Therefore, it fetches a price, accordingly.

Labour

Labour is the human input into the production process. Alfred Marshall defines labour as 'the use or exertion of body or mind, partly or wholly, with a view to secure an income apart from the pleasure derived from the work'.

Characteristics or Peculiarities of labour

- (i) Labour is perishable.
- (ii) Labour is an active factor of production. Neither land nor capital can yield much without labour.
- (iii) Labour is not homogeneous. Skill and dexterity vary from person to person.
- (iv) Labour cannot be separated from the labourer.

- (v) Labour is mobile. Man moves from one place to another from a low paid occupation to a high paid occupation.
- (vi) Individual labour has only limited bargaining power. He cannot fight with his employer for a rise in wages or improvement in work-place conditions. However, when workers combine to form trade unions, the bargaining power of labour increases.

Labour can assume several forms. Digging earth, breaking stones, carrying loads comprise simple labour operations but labour also covers highly qualified and skilled managers, engineers and technicians.

Division of Labour

The concept ‘Division of Labour’ was introduced by Adam Smith in his book ‘An Enquiry into The Nature and Causes of Wealth of Nations’.

Meaning of Division of Labour

Division of Labour means dividing the process of production into distinct and several component processes and assigning each component in the hands of a labour or a set of labourers, who are specialists in that particular process.

For example, a tailor stitches a shirt in full. In the case of garment exporters, cutting of cloth, stitching of hands, body, collars, holes for buttons, stitching of buttons, etc., are done independently by different workers. Therefore, they are combining the parts into a whole shirt.

A tailor may stitch a maximum of four shirts a day. In the case of garment exports firm, it may stitch more than 100 shirts a day. Thus, division of labour results in increased production.

Division of Labour and Market

It is stated “Division of Labour is limited by the extent of market”. When markets for a commodity grows from local to national and national to international, producers of that commodity divide and subdivide the processes of its production into finer and finer divisions of labour. Each

sub-division is assigned to a particular set of specialist workers. As a result, production rises enormously.

Merits of Division of Labour

1. Division of labour improves efficiency of labour when labour repeats doing the same tasks.
2. Facilitates the use of machinery in production, resulting in inventions. e.g. More’s telegraphic codes.
3. Time and materials are put to the best and most efficient use.

Demerits of Division of Labour

The demerits of Division of Labour are:

1. Repetition of the same task makes labour to feel that the work is monotonous and stale. It kills the humanity in him.
2. Narrow specialisation reduces the possibility of labour to find alternative avenues of employment. This results in increased unemployment.
3. Kills the growth of handicrafts and the worker loses the satisfaction of having made a commodity in full.

Capital

Capital is the man made physical goods used to produce other goods and services. In the ordinary language, capital means money. In Economics, capital refers to that part of man-made wealth which is used for the further production of wealth. According to Marshall, “Capital consists of those kinds of wealth other than free gifts of nature, which yield income”.

Money is regarded as capital because it can be used to buy raw materials, tools, implements and machinery for production. The terms capital and wealth are not synonymous. Capital is that part of wealth which is used for the further production of wealth. Thus, all wealth is not capital but all capital is wealth.

Forms of Capital

1. Physical Capital or Material Resources
2. Money Capital or Monetary Resources, and
3. Human Capital or Human Resources

1. Physical Capital

All man-made physical assets like plant and machinery, tools, buildings, roads, dams and communication, etc., are the various forms of physical capital.

Characteristics of Physical capital

- (a) It is an asset which has a specific life period.
- (b) Physical capital asset can be used in production again and again. As a result, it undergoes wear and tear or depreciation.
- (c) When used in production, it gives a series of annual income flows called annuities, during its life period.

Accumulation of more and more physical capital is called physical capital formation

2. Money Capital

The investment that is made in the form of money or monetary instruments is called money capital. A household saves its income in the form of bank deposits, shares and securities or other monetary instruments. These are the sources of money capital.

3. Human Capital

Human capital refers to the quality of labour resources, which can be improved through investments in education, training, and health. Higher the investments in human capital, higher will be the productivity.

Characteristics of capital

- (i) Capital is a passive factor of production
- (ii) Capital is man-made

- (iii) Capital is not an indispensable factor of production, i.e. Production is possible even without capital
- (iv) Capital has the highest mobility
- (v) Supply of capital is elastic
- (vi) Capital is productive
- (vii) Capital lasts over time (A plant may be in operation for a number of years)
- (viii) Capital involves present sacrifice (cost) to get future benefits.

Organisation or entrepreneurship

An entrepreneur is a person who combines the different factors of production (land, labour and capital), in the right proportion and initiates the process of production and also bears the risk involved in it. The entrepreneur is also called 'organiser'. Entrepreneurship is risk taking, managerial, and organizational skills needed to produce goods and services in order to gain a profit. In modern times, an entrepreneur is called 'the changing agent of the society'. He is not only responsible for producing the socially desirable output but also to increase the social welfare.

Functions of an Entrepreneur

1. Identifying Profitable Investible Opportunities

Conceiving a new and most promising and profitable idea or capturing a new idea available in the market is the foremost function of an entrepreneur. This is known as identifying profitable investible opportunities.

2. Deciding the size of unit of production

An entrepreneur has to decide the size of the unit – whether big or small depending upon the nature of the product and the level of competition in the market.

3. Deciding the location of the production unit

A rational entrepreneur will always locate his unit of production nearer to both factor market and the end-use market. This is to be done in order to bring down the delay in production and distribution of products and to reduce the storage and transportation cost.

4. Identifying the optimum combination of factors of production

The entrepreneur, after having decided to start a new venture, takes up the task of hiring factors of production. Further, he decides in what combinations he should combine these factors so that maximum output is produced at minimum cost.

5. Making innovations

According to Schumpeter, basically an entrepreneur is an innovator of new markets and new techniques of production. A new market increases the sales volume whereas a new cost cutting production technique will make the product cheaper. This will in turn increase the volume of sales and the profit.

6. Deciding the reward payment

The factors used in production have to be rewarded on the basis of their productivity. Measuring the productivity of the factors and the payment of reward is the crucial function of an entrepreneur.

7. Taking Risks and facing uncertainties

According to Hawley, a business is nothing but a bundle of risks. Products are produced for future demand. The future is uncertain. The investments are made in the present. This is the serious risk in production. One who is ready to accept the risk becomes a successful entrepreneur. A prudent entrepreneur forecasts the future risks scientifically and take appropriate decision in the present to overcome such risks. According to Knight one of the important functions of entrepreneur is uncertainty-bearing.

Production Function

The functional relationship between inputs and outputs is known as production function. Inputs refer to the factor services which are used in production i.e. land, labour, capital and enterprise. Output refers to the volume of goods produced. Given technical conditions, the production function shows how a certain amount of inputs will result in the production of a certain amount of output of a commodity. The production function is given as

$$Q = f(x_1, x_2, x_3 \dots x_n) \text{ in which}$$

Q is the quantity produced during a given period of time and $x_1, x_2, x_3 \dots x_n$ are the quantities of different factors used in production. The production function explains how the output can be maximised with the help of given inputs.

To understand the different stages of the production functions, it is essential to understand the relationship between (i) Marginal Product and Total Product and (ii) Marginal Product and Average Product (Refer Table 6.1 and Figure 6.1)

Relationship between Marginal Product and Total Product

- (i) When marginal product is positive, the total product increases
 - a. When marginal product increases, the total product will be increasing at an increasing rate
 - b. When marginal product remains constant, the total product will be increasing at a constant rate
 - c. When marginal product decreases but is positive, the total product will be increasing at a decreasing rate
- (ii) When marginal product is zero, the total product reaches the maximum and remains constant
- (iii) When marginal product is negative, the total product decreases.

Production function may be classified into two:

1. Short-run production function which is studied through Law of Variable Proportions
2. Long-run production function which is explained by Returns to Scale

Short-run production function - The law of variable proportions

The law examines the relationship between one variable factor and output, keeping the quantities of other factors fixed.

Definition

As the proportion of one factor in a combination of factors is increased, after a point, first the marginal and then the average product of that factor will diminish.

Assumptions of the law

The law is based on the following assumptions

- (i) Only one factor is made variable and other factors are kept constant.
- (ii) This law does not apply in case all factors are proportionately varied. i.e. where the factors must be used in rigidly fixed proportions to yield a product.
- (iii) The variable factor units are homogenous i.e. all the units of variable factors are of equal efficiency.
- (iv) Input prices remain unchanged
- (v) The state of technology does not change or remains the same at a given point of time.
- (vi) The entire operation is only for short-run, as in the long-run all inputs are variable.

Three stages of law

The behaviour of the output when the varying quantity of one factor is combined with a fixed quantity of the other can be divided into three stages. They are

Table 6.1 Stages of Law of Variable Proportions

Fixed factor Machine	Variable factor labour	Total product in units	Average product in units	Marginal product in units	Stages
1	2	3	4	5	
1+	1	10	10	10	Increasing Returns
1+	2	22	11	12	
1+	3	36	12	14	
1+	4	52	13	16	
1+	5	66	13.2	14	Decreasing Returns
1+	6	76	12.6	10	
1+	7	80	11.4	4	
1+	8	82	10.2	2	
1+	9	82	9.1	0	
1+	10	78	7.8	-4	Negative Returns

LAW OF VARIABLE PROPORTIONS

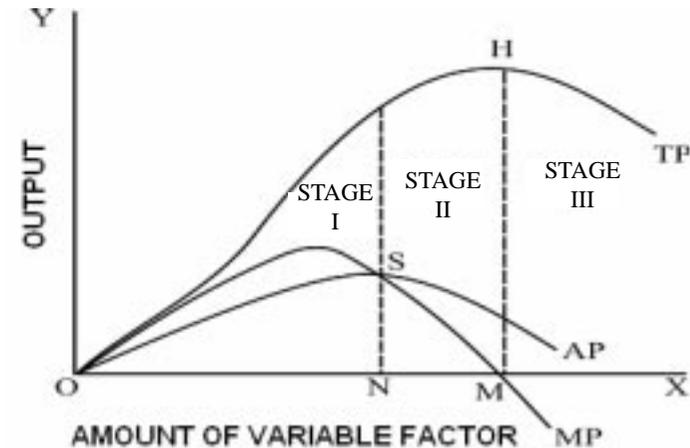


FIGURE 6.1

- (i) Increasing returns stage
- (ii) Decreasing returns stage
- (iii) Negative returns stage

The three stages could be better understood by the following Table 6.1 and figure 6.1

Stage I: Stage of increasing returns

Stage I ends where the average product reaches its highest (maximum) point. During this stage, the total product, the average product and the marginal product are increasing. It is notable that the marginal product in this stage increases but in a later part it starts declining. Though marginal product starts declining, it is greater than the average product so that the average product continues to rise.

Stage II: Stage of decreasing returns

Stage II ends at the point where the marginal product is zero. In the second stage, the total product continues to increase but at a diminishing rate. The marginal product and the average product are declining but are positive. At the end of the second stage, the total product is maximum and the marginal product is zero.

Stage III: Stage of negative returns

In this stage the marginal product becomes negative. The total product and the average product are declining.

The stage of Operation

In stage I the fixed factor is too much in relation to the variable factor. Therefore in stage I, marginal product of the fixed factor is negative. On the other hand, in stage III the marginal product of the variable factor is negative. Therefore a rational producer will not choose to produce in stages I and III. He will choose only the second stage to produce where the marginal product of both the fixed factor and variable factor are positive. At this stage the total product is maximum. The particular point at which the producer will decide to produce in this

stage depends upon the prices of factors. The stage II represents the range of rational production decisions.

Long-run production function - Returns to Scale

In the long run, all factors can be changed. Returns to scale studies the changes in output when all factors or inputs are changed. An increase in scale means that all inputs or factors are increased in the same proportion.

Three phases of returns to scale

The changes in output as a result of changes in the scale can be studied in 3 phases. They are

- (i) Increasing returns to scale
- (ii) Constant returns to scale
- (iii) Decreasing returns to scale

Increasing returns to scale

If the increase in all factors leads to a more than proportionate increase in output, it is called increasing returns to scale. For example, if all the inputs are increased by 5%, the output increases by more than 5% i.e. by 10%. In this case the marginal product will be rising.

Constant returns to scale

If we increase all the factors (i.e. scale) in a given proportion, the output will increase in the same proportion i.e. a 5% increase in all the factors will result in an equal proportion of 5% increase in the output. Here the marginal product is constant.

Decreasing returns to scale

If the increase in all factors leads to a less than proportionate increase in output, it is called decreasing returns to scale i.e. if all the factors are increased by 5%, the output will increase by less than 5% i.e. by 3%. In this phase marginal product will be decreasing.

Table 6.2 Returns to scale

S.No	Scale	Total product	Marginal Product	Phases
1	1 machine + 1 labour	4	4	I
2	2 machine + 2 labour	10	6	Increasing returns
3	3 machine + 3 labour	18	8	
4	4 machine + 4 labour	28	10	
5	5 machine + 5 labour	38	10	
6	6 machine + 6 labour	48	10	II Constant returns
7	7 machine + 7 labour	56	8	III Decreasing returns
8	8 machine + 8 labour	62	6	

Figure 6.2 RETURNS TO SCALE

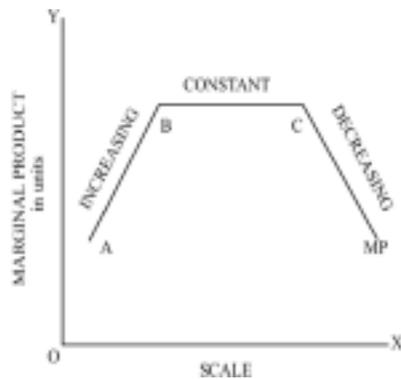


Figure 6.2 explains the different phases of returns to scale. When marginal product increases (AB), total product increases at an increasing rate. So there is increasing returns to scale. When Marginal Product remains constant (BC), Total Product increases at a constant rate and this stage is called constant returns to scale. When Marginal Product decreases (CMP), Total Product increases at a decreasing rate and it is called decreasing returns to scale.

Difference between Short run (Laws of returns) and Long run (Returns to scale) Production function

	Laws of returns	Returns to scale
1.	Short run Production function	Long run Production function
2.	Only one factor is varied and all other factors are kept constant	All the factors are varied
3.	Factor proportions are changed	Factor proportions are not changed. The Scale changes.
4.	Law does not apply when the factors must be used in fixed proportions to produce a product.	Law does apply when the factors must be used in fixed proportions to produce a product.
5.	Increasing returns are due to the indivisibility of factors and specialisation of labour. Diminishing returns are due to non-optimal factor proportion and imperfect elasticity of substitution of factors.	Increasing returns to scale are due to economies of scale while diminishing returns to scale are due to diseconomies of scale.

Production function through Iso-quants

The isoquant analysis helps to understand how different combinations of two or more factors are used to produce a given level of output. Considering two factors of production, (capital and labour) the following table 6.3 shows various combinations of capital and labour that help a firm to produce 1000 units of a product.

Table 6.3 : Production with two variable inputs

Combination	Units of capital	Units of Labour	Output in units
A	1	12	1000
B	2	8	1000
C	3	5	1000
D	4	3	1000
E	5	2	1000

From the above table, it is clear that all combinations with different quantities of labour and capital result in the same level of production of 1000 units.

Isoquant Curve

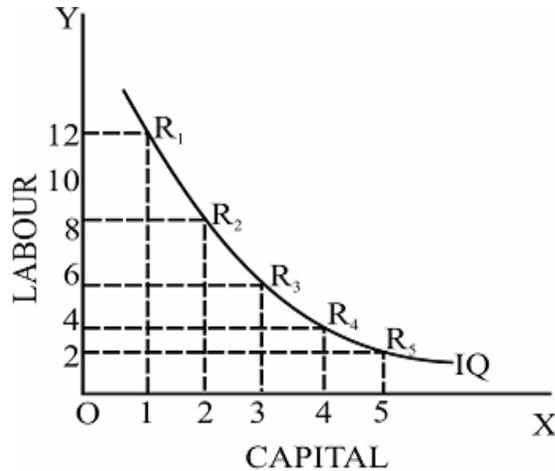


FIGURE 6.3

The two axes measure the quantities of labour and capital and the curve IQ shows the different combinations that produce 1000 units of output. Each of the points R₁, R₂, R₃, R₄ and R₅ on the curve shows a capital-labour combination that can produce 1000 units of output. Therefore the curve is known as an equal product curve or an isoquant curve.

Thus an isoquant or isoproduct curve represents different combinations of two factors of production that yield the same level of output.

Characteristics of an isoquant

1. The isoquant is downward sloping from left to right i.e. it is negatively sloped.
2. An isoquant is convex to the origin because of the diminishing marginal rate of technical substitution. Marginal rate of technical substitution of factor X (capital) for factor Y (labour) may be defined as the amount of factor Y (labour) which can be replaced by one unit of factor X (capital), the level of output remaining unchanged.

$$MRTS_{CL} = \frac{\Delta L}{\Delta C}$$

MRTS can be calculated using the above formula

Combination	Units of capital	Units of Labour	MRTS _{CL}
A	1	12	
B	2	8	4
C	3	5	3
D	4	3	2
E	5	2	1

Thus the marginal rate of technical substitution is always declining. Hence the isoquant is always convex to the origin. The slope of the isoquant represents marginal rate of technical substitution.

- Higher the isoquant, higher will be the level of output produced. A set of isoquants which represents different levels of output is called “*isoquant map*”. In the isoquant map, the isoquants on the right side represent higher levels of output and vice versa.

Figure 6.4 Isoquant map

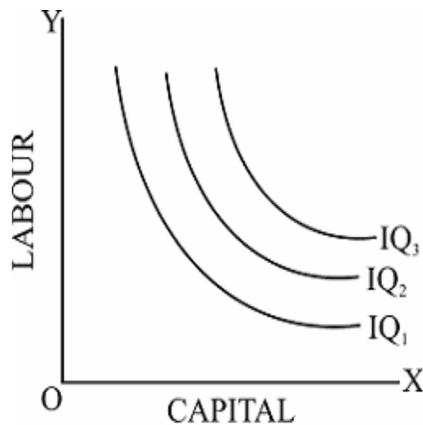
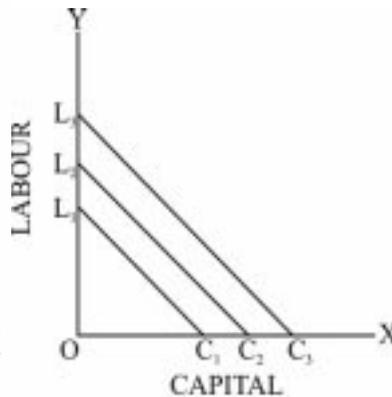


Figure 6.5 Iso cost lines



Isocost Line

The isocost line plays an important role in determining the combination of factors that the firm will choose for production. An isocost line is defined as locus of points representing various combinations of two factors, which the firm can buy with a given outlay. Higher isocost lines represent higher outlays (total cost) and lower isocost lines represent lower outlays.

The isocost line depends on two things :

- Prices of the factors of production and
- the total outlay, which a firm has to make on the factors of production. Given these two, the isocost line can be drawn. The

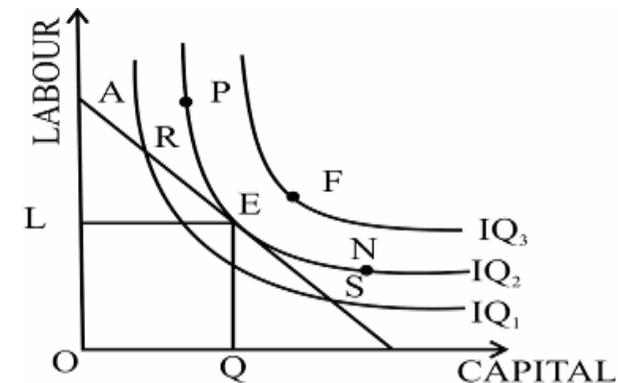
slope of the isocost line is equal to the ratio of the prices of two factors. Thus the slope of the isocost line is given as

$$\text{Slope of isocost line} = \frac{\text{Price of factor X (Capital)}}{\text{Price of factor Y (Labour)}}$$

Producer's Equilibrium

A rational producer always tries to achieve largest volume of output from a given factor-expenditure outlay on factors such that these factors are combined in an optimal or most efficient way. The producer maximises his profits and produces a given level of output with least combination of factors. This level of cost combination of factors will be optimum for him.

Figure 6.6 Producers' Equilibrium



In figure 6.6, E is the point of equilibrium, where isoquant IQ_2 is tangential to isocost line at AB. Given budget line AB, points ‘P’, ‘N’ and ‘F’ are beyond the reach of the producer and points ‘R’ and ‘S’ on isoquant IQ_1 give less output than the output at the point of equilibrium ‘E’ which is on IQ_2 . The amount spent on combinations R, E, S is the same as all the three points lie on the same isocost line. But the output produced at point E is higher as E lies on a higher isoquant. Given the isocost line and the series of isoquants (isoquant-map), a producer will

choose that level of output, where a given isocost line is tangential to the highest possible isoquant.

Thus the producer is in equilibrium at point E where the isoquant is tangential to the isocost line. At this point, the slopes of the isoquant and the isocost line are equal. Thus at the equilibrium point the marginal rate of technical substitution is equal to the price ratio of factors. Hence, the condition for producers' equilibrium is

$$MRTS_{xy} = P_X/P_Y$$

At this point of equilibrium, the combination E (that is OL of labour and OQ of capital) is called least cost

The Cobb – Douglas Production Function

The simplest and the most widely used production function in economics is the Cobb-Douglas production function. It is a statistical production function given by professors C.W. Cobb and P.H. Douglas.

The Cobb-Douglas production function can be stated as follows

$$Q = bL^a C^{1-a} \text{ in which}$$

- Q = Actual output
- L = Labour
- C = Capital
- b = number of units of Labour
- a = Exponent* of labour
- 1-a = Exponent* of Capital

According to the above production function, if both factors of production (labour and capital) are increased by one percent, the output (total product) will increase by the sum of the exponents of labour and capital i.e. by (a+1-a). Since a+1-a=1, according to the equation, when the inputs are increased by one percent, the output also increases

* Exponent – a raised figure or symbol that shows how many times a quantity must be multiplied by itself. For example in a⁴ - 4 is the exponent

by one percent. Thus the Cobb Douglas production function explains only constant returns to scale. This is mainly because the addition of $Q = bL^a C^b$

In the above production function, the sum of the exponents shows the degree of “returns to scale” in production function.

- a + b > 1 : Increasing returns to scale
- a + b = 1 : Constant returns to scale
- a + b < 1 : Decreasing returns to scale

Large Scale Production – Kinds of Economies

Economies of Scale

‘Economies’ mean advantages. Scale refers to the size of unit. ‘Economies of Scale’ refers to *the cost advantages due to the larger size of production*. As the volume of production increases, the overhead cost will come down. The bulk purchase of inputs will give a better bargaining power to the producer which will reduce the average variable cost too. All these advantages are due to the large scale production and these advantages are called economies of scale.

There are two types of economies of scale

a) Internal economies of scale; b) External economies of scale

a) Internal Economies of Scale

‘Internal economies of scale’ are the advantages enjoyed within the production unit. These economies are enjoyed by a single firm independently of the action of the other firms. For instance, one firm may enjoy the advantage of good management; another may have the advantage of more up-to-date machinery. There are five kinds of internal economies. They are

1. **Technical Economies:** As the size of the firm is large, the availability of capital is more. Due to this, a firm can introduce up-to-date technologies; thereby the increase in the productivity becomes possible. It is also possible to conduct research and development which will help to increase the quality of the product.
2. **Financial Economies:** It is possible for big firms to float shares in the market for capital formation. Small firms have to borrow capital whereas large firms can buy capital.
3. **Managerial Economies:** Division of labour is the result of large scale production. Right person can be employed in the right department only if there is division of labour. This will help a manager to fix responsibility to each department and thereby the productivity can be increased and the total production can be maximised.
4. **Labour Economies:** Large Scale production paves the way for division of labour. This is also known as specialisation of labour. The specialisation will increase the quality and ability of the labour. As a result, the productivity of the firm increases.
5. **Marketing Economies:** In production, the first buyer is the producer who buys the raw materials. As the size is large, the quantity bought is larger. This gives the producer a better bargaining power. Also he can enjoy credit facilities. All these are possible because of large scale production. Buying is the first function in marketing.
6. **Economies of survival:** A large firm can have many products. Even if one product fails in the market, the loss incurred in that product can be managed by the profit earned from the other products.

b) External economies of scale

When many firms expand in a particular area – i.e., when the industry grows – they enjoy a number of advantages which are known

as external economies of scale. This is not the advantage enjoyed by a single firm but by all the firms in the industry due to the structural growth. They are

- a) Increased transport facilities
- b) Banking facilities
- c) Development of townships
- d) Information and communication development

All these facilities are available to all firms in an industrial region.

Diseconomies of Scale

The diseconomies are the disadvantages arising to a firm or a group of firms due to large scale production.

Internal Diseconomies of Scale

If a firm continues to grow and expand beyond the optimum capacity, the economies of scale disappear and diseconomies will start operating. For instance, if the size of a firm increases, after a point the difficulty of management arises to that particular firm which will increase the average cost of production of that firm. This is known as internal diseconomies of scale.

External Diseconomies of Scale

Beyond a certain stage, too much concentration and localisation of industries will create diseconomies in production which will be common for all firms in a locality. For instance, the expansion of an industry in a particular area leads to high rents and high costs. These are the external diseconomies as this affects all the firms in the industry located in that particular region.

EXERCISE

PART - A

I. Choose the correct answer

1. Production refers to
 - a. destruction of utility
 - b. creation of utilities
 - c. exchange value
 - d. None
 2. The initial supply price of land is
 - a. Zero
 - b. Greater than one
 - b. Less than one
 - d. Equal to one
 3. Labour cannot be separated from
 - a. Capital
 - b. labourer
 - c. profit
 - d. organization
 4. reward paid to capital is
 - a. interest
 - b. profit
 - c. wages
 - d. rent
 5. A successful entrepreneur is one who is ready to accept
 - a. Innovations
 - b. Risks
 - c. deciding the location of the production unit
 - d. none.
- #### II. Fill in the blanks
6. Land and labour are called _____ factors
 7. An enquiry into the nature and causes of wealth of nations was written by _____

8. _____ is limited by the extent of market.
9. _____ is man-made physical goods used to produce other goods.
10. The functional relationship between inputs and output is known as _____

III. Match the following

- | | |
|--------------------------------|-------------------|
| 11. Entrepreneur, an innovator | a. Cobb – Douglas |
| 12. Division of labour | b. Hawley |
| 13. Production function | c. Schumpeter |
| 14. bundle of risks | d. Marshall |
| 15. Exertion of body or mind | e. Adam Smith |

IV Answer in a word or two

16. Who is the changing agent of the society ?
17. How do internal economies arise ?
18. What is other name for isoquant ?
19. Give the condition for producer's equilibrium ?
20. State the Cobb-Douglas production function.

PART - B

Answer the following questions in about four or five lines

21. Name the types of utility.
22. Define labour.
23. What is meant by division of labour?

24. What are the forms of capital ?
25. What is production function ? and what are its classification ?

PART - C

Answer the following questions in about a page

26. Explain the merits and demerits of division of labour.
27. Describe the characteristics of capital.
28. What are the functions of entrepreneur?
29. Distinguish between laws of returns and returns to scale.
30. Explain the producer's equilibrium by using isoquants.

PART - D

Answer for each question should be about three pages

31. What is land and what are the peculiarities of land ?
32. What are the characteristics of labour ?
33. Explain the three phases of 'Return to scale'
34. Write a note on 'Cobb-Douglas' production function
35. Explain the law of variable proportions.
36. What are isoquants ? Describe their characteristics.
37. Describe the kinds of economies of scale.

Chapter 7

Cost and Revenue

Cost

The term 'cost of production' means expenses incurred in the production of a commodity. This refers to the total amount of money spent on the production of a commodity. The determinants of cost of production are: the size of plant, the level of production, the nature of technology used, the quantity of inputs used, managerial and labour efficiency. Thus the cost of production of a commodity is the aggregate of prices paid for the factors of production used in producing a commodity.

Cost function

The cost function expresses a functional relationship between costs and output that determine it. Symbolically, the cost function is

$$C = f(Q)$$

where

$$C = \text{Cost}$$

$$Q = \text{Output}$$

Cost concepts and classifications

Money cost and Real cost

Money cost or nominal cost is the total money expenses incurred by a firm in producing a commodity.

It includes

- (i) Cost of raw materials
- (ii) Wages and salaries of labour

- (iii) Expenditure on machinery and equipment
- (iv) Depreciation on machines, buildings and such other capital goods
- (v) Interest on capital
- (vi) Other expenses like advertisement, insurance premium and taxes
- (vii) Normal profit of the entrepreneur.

Real cost is a subjective concept. It expresses the pains and sacrifices involved in producing a commodity. The money paid for securing the factors of productions is money cost whereas the efforts and sacrifice made by the capitalists to save and invest, by the workers in foregoing leisure and by the landlords constitute real costs.

Opportunity Cost

The opportunity cost of any good is the next best alternative good that is sacrificed. For example a farmer who is producing wheat can produce potatoes with the same factors. Therefore the opportunity cost of a quintal of wheat is the amount of output of potatoes given up.

Accounting Cost and Economic cost

Accounting cost or explicit cost

Accounting costs or explicit costs are the payments made by the entrepreneur to the suppliers of various productive factors. The accounting costs are only those costs, which are directly paid out or accounted for by the producer i.e. wages to the labourers employed, prices for the raw materials purchased, fuel and power used, rent for the building hired for the production work, the rate of interest on the borrowed capital and the taxes paid.

Economic cost

The economic cost includes not only the explicit cost but also the implicit cost. The money rewards for the own services of the entrepreneur and the factors owned by himself and employed in production are known as implicit costs or imputed costs. The normal return on money capital

invested by the entrepreneur, the wages or salary for his own services and rent of the land and buildings belonging to him and used in production constitute implicit cost. Thus Economic cost = Explicit cost + Implicit cost.

It may be pointed out that the firm will earn economic profits only if it is making revenue in excess of economic cost.

$$\text{Economic profit} = \text{Total Revenue} - \text{Economic Costs.}$$

Private cost and social cost

Private cost is the cost incurred by a firm for production. It includes both implicit costs and explicit costs.

Social costs are those costs, which are not borne by the producing firm but are incurred by others in society. For example, when an oil refinery discharges its waste in the river causing water pollution, such a pollution results in tremendous health hazards which involve costs to the society as a whole

Fixed cost and variable cost

Fixed cost and variable cost are helpful in understanding the behaviour of costs over different levels of output.

Meaning of Fixed and Variable factors and costs

Fixed and variable factors are with reference to short run production function.

Short run is a period of time over which certain factors of production cannot be changed, and such factors are called fixed factors. The costs incurred on fixed factors are called fixed costs. The factors whose quantity can be changed in the short run are variable factors, and the costs incurred on variable factors are called variable costs.

Fixed costs are those which are independent of output, that is, they do not change with changes in output. These costs are a 'fixed' amount, which must be incurred by a firm in the short run whether the

output is small or large. E.g. contractual rent, interest on capital invested, salaries to the permanent staff, insurance premia and certain taxes.

Variable costs are those costs, which are incurred on the employment of variable factors of production whose amount can be altered in the short run. Thus the total variable costs change with the level of output. It rises when output expands and falls when output contracts. When output is nil, variable cost becomes zero. These costs include payments such as wages of labour employed, prices of raw materials, fuel and power used and the transport costs.

Total cost

Total cost is the sum of total fixed cost and total variable cost.

$$TC = TFC + TVC \text{ where}$$

$$TC = \text{Total cost}$$

$$TFC = \text{Total Fixed cost}$$

$$TVC = \text{Total variable cost}$$

It should be noted that total fixed cost is the same irrespective of the level of output. Therefore a change in total cost is influenced by the change in variable cost only.

The relationship between total fixed cost, total variable cost and total cost will be clear from the Figure 7.1.

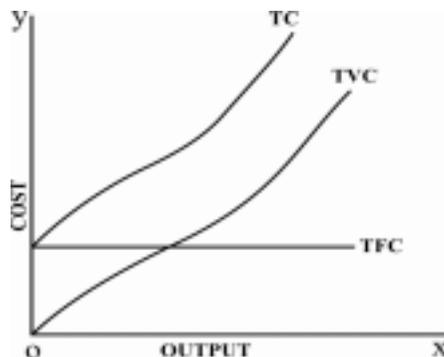


FIGURE 7.1

Short run average cost curves

Average Fixed Cost (AFC)

The average fixed cost is the fixed cost per unit of output. It is obtained by dividing the total fixed cost by the number of units of the commodity produced.

$$\text{Symbolically } AFC = TFC / Q$$

$$\text{Where } AFC = \text{Average fixed Cost}$$

$$TFC = \text{Total Fixed cost}$$

$$Q = \text{number of units of output produced}$$

Suppose for a firm the total fixed cost is Rs 2000 when output is 100 units, AFC will be Rs 2000/100 = Rs 20 and when output is 200 units, AFC will be Rs 2000/200 = Rs 10/- Since total fixed cost is a constant quantity, average fixed cost will steadily fall as output increases; when output becomes very large, average fixed cost approaches zero.

Average Variable cost (AVC): Average variable cost is the variable cost per unit of output. It is the total variable cost divided by the number of units of output produced.

$$AVC = TVC / Q$$

$$\text{Where } AVC = \text{Average Variable Cost}$$

$$TVC = \text{Total Variable Cost}$$

$$Q = \text{number of units of output produced}$$

Average variable cost curve is 'U' Shaped. As the output increases, the AVC will fall upto normal capacity output due to the operation of increasing returns. But beyond the normal capacity output, the AVC will rise due to the operation of diminishing returns.

Average Total Cost or Average Cost : Average total cost is simply called average cost which is the total cost divided by the number of units of output produced.

$$AC = TC / Q \text{ where}$$

AC = Average Cost

TC = Total Cost

Q = number of units of output produced

Average cost is the sum of average fixed cost and average variable cost. i.e. $AC = AFC + AVC$

Table 7.1 Calculation of Average Fixed, Average variable and Average Total Cost

Units of output 1	TFC 2	TVC 3	TC 2 ÷ 1 4	AFC 3 ÷ 1 5	AVC 5 ÷ 6 6	AC 7
0	120	0	120	-	0	-
1	120	100	220	120	100	220
2	120	160	280	60	80	140
3	120	210	330	40	70	110
4	120	240	360	30	60	90
5	120	400	520	24	80	104
6	120	540	660	20	90	110
7	120	700	820	17.14	100	117.14
8	120	880	1000	15	110	125

The average cost is also known as the unit cost since it is the cost per unit of output produced. The following figure shows the shape of AFC, AVC and ATC in the short period.

Short run average cost curves

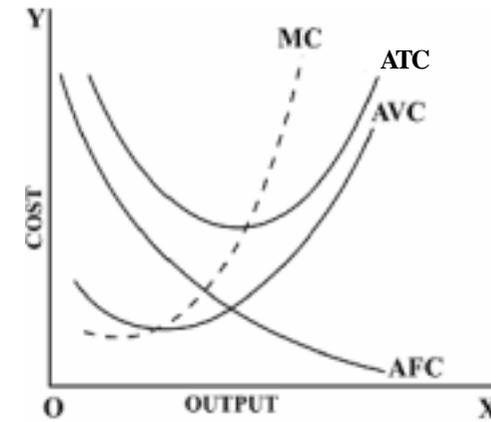


FIGURE 7.2

From the figure 7.2, it can be understood that the behaviour of the average total cost curve depends on the behaviour of AFC and AVC curves. In the beginning, both AFC and AVC fall. So ATC curve falls. When AVC curve begins rising, AFC curve falls steeply i.e. fall in AFC is more than the rise in AVC. So ATC curve continues to fall. But as output increases further, there is a sharp increase in AVC, which is more than the fall in AFC. Hence ATC curve rises after a point. The ATC curve like AVC curve falls first, reaches the minimum value and then rises. Hence it has taken a U shape.

Marginal Cost

Marginal cost is defined as the addition made to the total cost by the production of one additional unit of output.

Table 7.2 Computation of marginal cost

Output (units)	Total cost (Rs)	Marginal Cost (Rs)
0	200	-
1	300	100
2	390	90
3	470	80
4	570	100
5	690	120
6	820	130
7	955	135
8	1100	145

For example, when a firm produces 100 units of output, the marginal cost would be equal to the total cost of producing 100 units minus the total cost of producing 99 units. Suppose the total cost of producing 99 units is Rs 9,000 and the total cost of producing 100 units is Rs 10,000 then the marginal cost will be Rs 10,000 – Rs 9,000 = Rs 1,000. The firm has incurred a sum of Rs 1,000 in the production of one more unit of the commodity. Symbolically

$$MC_n = TC_n - TC_{n-1} \text{ where}$$

$$MC_n = \text{Marginal cost}$$

$$TC_n = \text{Total cost of producing } n \text{ units}$$

$$TC_{n-1} = \text{Total cost of producing } n-1 \text{ units}$$

The marginal cost curve is given below

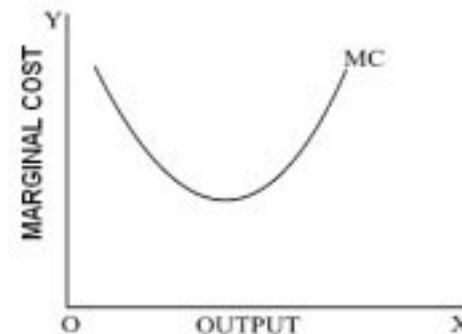


FIGURE 7.3

The marginal cost curve is ‘U’ shaped. The shape of the cost curve is determined by the law of variable proportions. If increasing returns (economies of scale) is in operation, the marginal cost curve will be declining, as the cost will be decreasing with the increase in output. When the diminishing returns (diseconomies of scale) are in operation, the MC curve will be increasing as it is the situation of increasing cost.

Relationship between short-run average and short-run marginal cost curves

The relationship between the marginal and the average cost is more a mathematical one rather than economic.

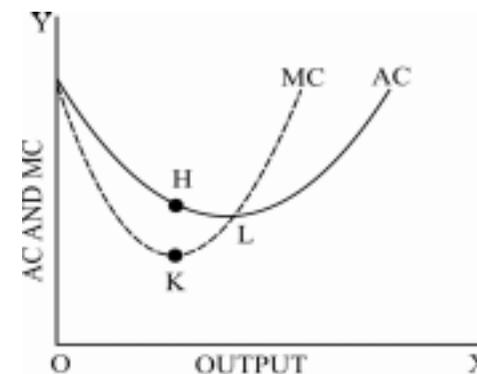


FIGURE 7.4

The relationship can be given as follows:

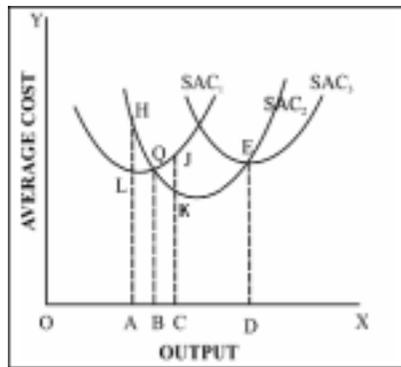
- 1) When marginal cost is less than average cost, average cost is falling
- 2) When marginal cost is greater than the average cost, average cost is rising
- 3) The marginal cost curve must cut the average cost curve at AC's minimum point from below. Thus at the minimum point of AC, MC is equal to AC.

Long run Average Cost Curve (LAC)

In the long-run all factors are variable. Therefore the firm can change the size of the plant (capital equipment, machinery etc) to meet the changes in demand. A long-run average cost curve depicts the functional relationship between output and the long-run cost of production.

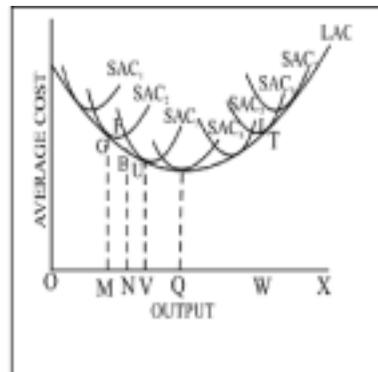
Long-run average cost curve

Figure 7.5



The Long run Average Cost (LAC) Curve is based on the assumption that in the long run a firm has a number of alternatives with regard to the scale of operations. For each scale of production or plant size, the firm has an appropriate short-run average cost (SAC) curve.

Figure 7.6



The pattern of these short-run average cost curves is shown in Figure 7.5. We have assumed that technologically there are only three sizes of plants – small, medium and large. SAC_1 is relevant for a small size plant, SAC_2 for a medium size plant and SAC_3 for a large size plant. In the short period, when the output demanded is OA , the firm will choose the smallest size plant. But for an output beyond OB , the firm will choose medium size plant as the average cost of small size plant is higher for the same output ($JC > KC$). For output beyond OD , the firm will choose large size plant (SAC_3). In the short-run, the firm is tied with a given plant but in the long-run, the firm moves from one plant to another. As the scale of production is changed, a new plant is added. The long-run cost of production is the least possible cost of production of any given level of output, when all inputs become variable, including the size of the plant.

The long run average cost curve is called ‘planning curve’ of a firm as it helps in choosing a plant on the decided level of output. The long-run average cost curve is also called envelope curve as it supports or envelops a group of short-run cost curves (Figure 7.6). From the figure we can understand that the long run average cost curve initially falls with increase in output and after a certain point it rises making a boat shape.

CONCEPTS OF REVENUE

The amount of money, which the firm receives by the sale of its output in the market, is known as its revenue.

Total Revenue

Total Revenue refers to the total amount of money that a firm receives from the sale of its products.

Mathematically $TR = PQ$ where TR = Total Revenue; P = Price; Q = Quantity sold. Suppose a firm sells 1000 units of a product at the price of Rs 10 each, the total revenue will be $1000 \times \text{Rs } 10 = \text{Rs } 10,000/-$

Average Revenue

Average revenue is the revenue per unit of the commodity sold. It is calculated by dividing the total revenue by the number of units sold.

$$AR = TR / Q \text{ Where}$$

$$AR = \text{Average Revenue}$$

$$TR = \text{Total Revenue}$$

$$Q = \text{Quantity sold}$$

$$\text{Eg: Average Revenue} = \frac{\text{Rs } 10,000}{1000} = \text{Rs } 100 \text{ /-}$$

Thus average revenue means price of the product.

Marginal Revenue

Marginal Revenue is the addition made to the total revenue by selling one more unit of a commodity.

For example, if 10 units of a product are sold at the price of Rs 15 and 11 units are sold at Rs 14/-, the marginal revenue will be:

$$\begin{aligned} MR_n &= TR_n - TR_{n-1} \\ &= \text{Rs } (11 \times 14) - \text{Rs } (10 \times 15) \\ &= \text{Rs } 154 - 150 \\ &= \text{Rs } 4/- \end{aligned}$$

Relationship between AR and MR curves

When the average revenue (price) remains constant, the marginal revenue will also remain constant and will coincide with the average revenue.

Table 7.3 Constant AR and MR

No.of units Sold	Price or AR (Rs)	TR (Rs)	MR (Rs)
1	10	10	10
2	10	20	10
3	10	30	10
4	10	40	10
5	10	50	10
6	10	60	10

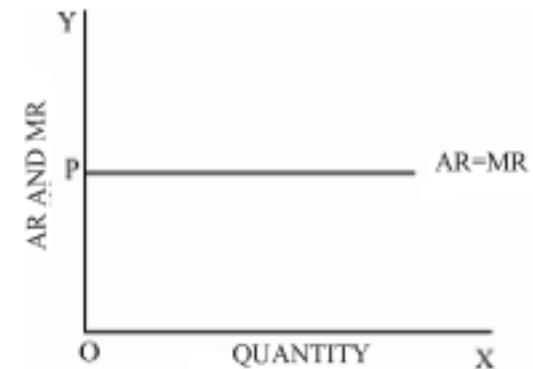


Figure 7.7

A firm can sell large quantities only at lower prices. In that case, the average revenue (price) of the product falls. When AR falls MR will also fall. But fall in MR will be more than the fall in the AR. Hence the marginal revenue curve will lie below the average revenue curve (Fig 7.8)

Table 7.4 Downward sloping AR and MR

No. of units Sold	Price or AR (Rs)	TR (Rs)	MR (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

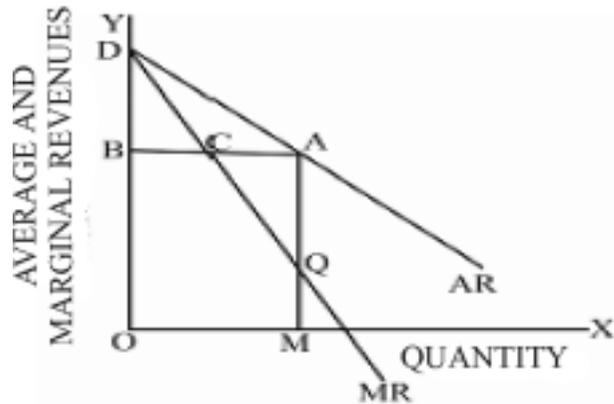


Figure 7.8

Measurement of Profit

A firm's profit may be defined as the difference between its total revenue and its total cost i.e. Profit = Total Revenue – Total Cost

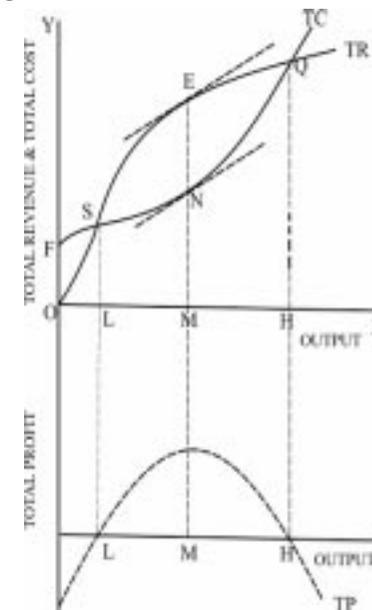
The aim of any firm is to maximise its profit i.e. to maximise the positive difference between the Total Revenue (TR) and Total Cost (TC). At that point the producer will be in equilibrium.

Table 7.5 Maximising Profits

Output (units)	Total Revenue(Rs)	Total Cost (Rs)	Total Profit(Rs)
1	40	45	-5
2	80	70	10
3	130	90	40
4	175	105	70
5	210	130	80
6	240	155	85
7	265	200	65
8	285	255	30
9	290	270	20
10	300	310	-10

From Table 7.5 it can be understood the firm will earn maximum profit of Rs 85 when it produces 6 units of output. Thus the firm will be in equilibrium by producing 6 units of output.

Figure 7.9 : Maximisation of Profit



Its profit is the maximum at OM level of output where the distance between the TR curve and the TC curve is the maximum. When the firm produces OL level of output, and OH level of output, total revenue just equals total cost ($TR = TC$). At these points, the firm is making neither profits nor losses. Thus the points S and Q are called Break-even points.

EXERCISE

PART - A

I. Choose the correct answer

1. real cost is
 - a) pain and sacrifice
 - b) subjective concept
 - c) efforts and foregoing leisure
 - d) All the above
2. Economic cost includes explicit cost and
 - a) implicit cost
 - b) social cost
 - c) fixed cost
 - d) money cost
3. social costs are those costs
 - a) not borne by the firms
 - b) incurred by the society
 - c) health hazards
 - d) all of these
4. Average fixed cost is obtained by dividing
 - a) TC/Q
 - b) TFC/Q
 - c) TVC/Q
 - d) None
5. Marginal revenue is the least addition made to the
 - a) average revenue
 - b) Total production
 - c) Total revenue
 - d) none

II. Fill in the blanks

- a. Money cost is also called _____
- b. Economic profit is the difference between total revenue and _____
- c. the distinction between the fixed and variable factors is possible only in _____
- d. Total cost is the sum _____
- e. The marginal cost curve is _____ shaped

III. Match the following

- | | |
|-------------------------------------|----------------------|
| 11. Average cost | a) planning curve |
| 12. TC | b) $TC_n - TC_{n-1}$ |
| 13. The long run average cost curve | c) $TR - TC$ |
| 14. MC_n | d) cost per unit |
| 15. Profit | e) $TFC + TVC$ |

IV. Answer in a word or two

16. When average revenue remains constant what will be M.R. ?
17. What is Marginal Revenue ?
18. What is break-even point ?
19. What is an envelope curve ?
20. How will you calculate AC ?

PART - B

Answer the following questions in about four or five lines

21. Bring out the distinction between short run and long run.
22. Define opportunity cost.
23. What are economic costs ?
24. Define marginal cost ?
25. Mention the relationship between MC and AC

PART - C

Answer the following questions in about a page

26. Give a note on long run average cost curve.
27. Explain the relationship between AR and MR curve
28. Explain the short run average cost curves
29. Explain the marginal cost with suitable illustration.
30. Explain the relationship between SAC and SMC.

PART - D

Answer for each question should be about three pages

31. Explain various costs incurred by the firm.
32. Explain TC, AC and MC curves.
33. Explain TR, AR and MR curves.
34. Explain the measurement and maximization of profit with diagram.

Chapter 8

Market Structure and Pricing

Meaning and Definition of Market

Market generally means a place or a geographical area, where buyers with money and sellers with their goods meet to exchange goods for money. In Economics market refers to a group of buyers and sellers who involve in the transaction of commodities and services.

Characteristics of a market

1. Existence of buyers and sellers of the commodity.
2. The establishment of contact between the buyers and sellers. Distance is of no consideration if buyers and sellers could contact each other through the available communication system like telephone, agents, letter correspondence and Internet.
3. Buyers and sellers deal with the same commodity or variety. Since the market in economics is identified on the basis of the commodity, similarity of the product is very essential.
4. There should be a price for the commodity bought and sold in the market.

Classification of Markets

A) Market according to Area

Based on the extent of the market for any product, markets can be classified into local regional, national and international markets.

Local Market

A local market for a product exists when buyers and sellers of commodity carry on business in a particular locality or village or area

where the demand and supply conditions are influenced by local conditions only. E.g. Perishable goods like milk and vegetables and bulky articles like bricks and stones.

National Market

When commodities are demanded and supplied throughout the country, there is national market e.g. wheat, rice or cotton

Regional Market

Commodities that are demanded and supplied over a region have regional market.

Global Market

When demand and supply conditions are influenced at the global level, we have international market. e.g. gold, silver, cell phone etc.

On the basis of demand and supply, this geographical classification is made. With improved transport facilities and communications, even goods of local markets can become international goods.

B) Market according to time

Marshall classified market based on the time element. In economics “time” does not mean clock time. It means only the division of time based on extent of adjustability of supply of a commodity for a given change in its demand. The major divisions are very short period, short period and long period.

Very Short Period

Very short period refers to the type of competitive market in which the supply of commodities cannot be changed at all. So in a very short period, the market supply is perfectly inelastic. The price of the commodity depends on the demand for the product alone. The perishable commodities like flowers are the best example.

Short-period

Short period refers to that period in which supply can be adjusted to a limited extent by varying the variable factors alone. The short period

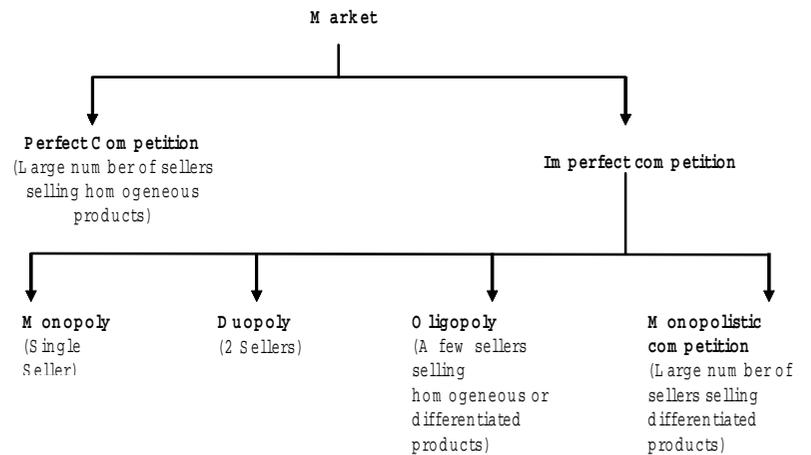
supply curve is relatively elastic. The short period price is determined by the interaction of the short-run supply and demand curves.

Long Period

Long period is the time period during which the supply conditions are fully able to meet the new demand conditions. In the long run, all (both fixed as well as variable) factors are variable. Thus the supply curve in the long run is perfectly elastic. Therefore, it is the demand that influences price in the long period.

C) Market according to competition

These markets are classified according to the number of sellers in the market and the nature of the commodity. The classification of market according to competition is as follows.



Perfect Competition

Perfect competition is a market situation where there are infinite number of sellers that no one is big enough to have any appreciable influence over market price.

Features and Conditions of perfect competition

1. Large number of buyers and sellers

There are a large number of buyers and sellers in a perfect competitive market that neither a single buyer nor a single seller can influence the price. The price is determined by market forces namely the demand for and the supply of the product. There will be uniform price in the market. Sellers accept this price and adjust the quantity produced to maximise their profit. Thus the *sellers in the perfect competitive market are price-takers and quantity adjusters.*

2. Homogeneous Product

The products produced by all the firms in the perfectly competitive market must be homogeneous and identical in all respects i.e. the products in the market are the same in quantity, size, taste, etc. The products of different firms are perfect substitutes and the cross-elasticity is infinite.

3. Perfect knowledge about market conditions

Both buyers and sellers are fully aware of the current price in the market. Therefore the buyer will not offer high price and the sellers will not accept a price less than the one prevailing in the market.

4. Free entry and Free exit

There must be complete freedom for the entry of new firms or the exit of the existing firms from the industry. When the existing firms are earning super-normal profits, new firms enter into the market. When there is loss in the industry, some firms leave the industry. The free entry and free exit are possible only in the long run. That is because the size of the plant cannot be changed in the short run.

5. Perfect mobility of factors of production

The factors of productions should be free to move from one use to another or from one industry to another easily to get better

remuneration. The assumption of perfect mobility of factors is essential to fulfil the first condition namely large number of producers in the market.

6. Absence of transport cost

In a perfectly competitive market, it is assumed that there are no transport costs. Under perfect competition, a commodity is sold at uniform price throughout the market. If transport cost is incurred, the firms nearer to the market will charge a low price than the firms far away. Hence it is assumed that there is no transport cost.

7. Absence of Government or artificial restrictions or collusions

There are no government controls or restrictions on supply, pricing etc. There is also no collusion among buyers or sellers. The price in the perfectly competitive market is free to change in response to changes in demand and supply conditions.

Nature of Revenue curves

Under perfect competition, the market price is determined by the market forces namely the demand for and the supply of the products. Hence there is uniform price in the market and all the units of the output are sold at the same price. As a result the average revenue is perfectly elastic. The average revenue curve is horizontally parallel to X-axis. Since the Average Revenue is constant, Marginal Revenue is also constant and coincides with Average Revenue. AR curve of a firm represents the demand curve for the product produced by that firm.

Short run equilibrium price and output determination under perfect competition

1. Since a firm in the perfectly competitive market is a price-taker, it has to adjust its level of output to maximise its profit. The aim of any producer is to maximise his profit.
2. The short run is a period in which the number and plant size of the firms are fixed. In this period, the firm can produce more only by increasing the variable inputs.

3. As the entry of new firms or exit of the existing firms are not possible in the short-run, the firm in the perfectly competitive market can either earn super-normal profit or normal profit or incur loss in the short period.

Super-normal Profit

When the average revenue of the firm is greater than its average cost, the firm is earning super-normal profit.

Short-run equilibrium with super-normal profits

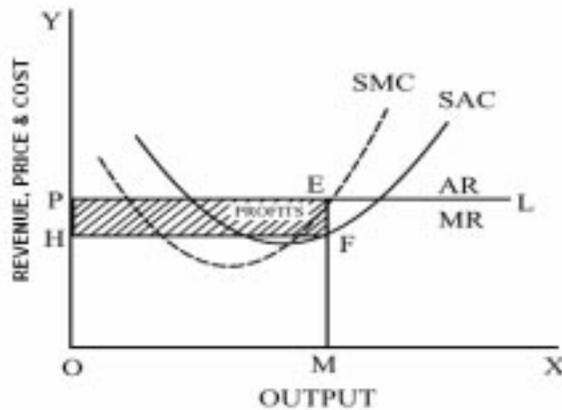


FIGURE 8.1

In figure 8.1, output is measured along the x-axis and price, revenue and cost along the y-axis. OP is the prevailing price in the market. PL is the demand curve or average and the marginal revenue curve. SAC and SMC are the short run average and marginal cost curves. The firm is in equilibrium at point 'E' where $MR = MC$ and MC curve cuts MR curve from below at the point of equilibrium. Therefore the firm will be producing OM level of output. At the OM level of output ME is the AR and MF is the average cost. The profit per unit of output is EF (the difference between ME and MF). The total profits earned by the firm will be equal to EF (profit per unit) multiplied by OM or HF (total output). Thus the total profits will be equal to the area HFEP. HFEP is the supernormal profits earned by the firm.

Long run equilibrium, price and output determination

In the long run, all factors are variable. The firms can increase their output by increasing the number and plant size of the firms. Moreover, new firms can enter the industry and the existing firms can leave the industry. As a result, all the existing firms will earn only normal profit in the long run.

If the existing firms earn supernormal profit, the new firms will enter the industry to compete with the existing firms. As a result, the output produced will increase. When the total output increases, the demand for factors of production will increase leading to increase in prices of the factors. This will result in increase in average cost.

On the other side, when the output produced increases, the supply of the product increases. The demand remaining the same, when the supply of the product increases, the price of the product comes down. Hence the average revenue will come down. A fall in average revenue and the rise in average cost will continue till both become equal. ($AR = AC$). Thus, all the perfectly competitive firms will earn normal profit in the long run.

Figure 8.2 represents long run equilibrium of firm under perfect competition. The firm is in equilibrium at point S where $LMC = MR = AR = LAC$. The long run equilibrium output is ON. The firm is earning just the normal profit. The equilibrium price is OP. If the price rises above OP, the firm will earn abnormal profit, which will attract new firms into the industry. If the price is less than OP, there will be loss and the tendency will be to exit. So in the long run equilibrium, OP will be the price and marginal cost will be equal to average cost and average revenue. Thus the firm in the long run will earn only normal profit. Competitive firms are in equilibrium at the minimum point of LAC curve. Operating at the minimum point of LAC curve signifies that the firm is of optimum size i.e. producing output at the lowest possible average cost.

Long run equilibrium of the firm

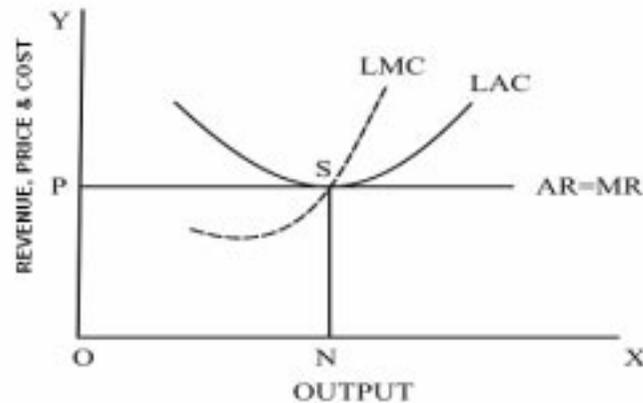


FIGURE 8.3

Advantages of perfect competition

1. There is consumer sovereignty in a perfect competitive market. The consumer is rational and he has perfect knowledge about the market conditions. Therefore, he will not purchase the products at a higher price.
2. In the perfectly competitive market, the price is equal to the minimum average cost. It is beneficial to the consumer.
3. The perfectly competitive firms are price-takers and the products are homogeneous. Therefore it is not necessary for the producers to incur expenditure on advertisement to promote sales. This reduces the wastage of resources.
4. In the long run, the perfectly competitive firm is functioning at the optimum level. This means that maximum economic efficiency in production is achieved. As the actual output produced by the firm is equal to the optimum output, there is no idle or unused or excess capacity.

Monopoly

Monopoly is a market structure in which there is a single seller, there are no close substitutes for the commodity it produces and there are barriers to entry.

Characteristics of Monopoly

1. **Single Seller:** There is only one seller; he can control either price or supply of his product. But he cannot control demand for the product, as there are many buyers.
2. **No close Substitutes:** There are no close substitutes for the product. The buyers have no alternatives or choice. Either they have to buy the product or go without it.
3. **Price:** The monopolist has control over the supply so as to increase the price. Sometimes he may adopt price discrimination. He may fix different prices for different sets of consumers. A monopolist can either fix the price or quantity of output; but he cannot do both, at the same time.
4. **No Entry:** There is no freedom to other producers to enter the market as the monopolist is enjoying monopoly power. There are strong barriers for new firms to enter. There are legal, technological, economic and natural obstacles, which may block the entry of new producers.
5. **Firm and Industry:** Under monopoly, there is no difference between a firm and an industry. As there is only one firm, that single firm constitutes the whole industry. .

Causes for Monopoly

1. **Natural:** A monopoly may arise on account of some natural causes. Some minerals are available only in certain regions. For example, South Africa has the monopoly of diamonds; nickel in the world is mostly available in Canada and oil in Middle East. This is natural monopoly.

2. **Technical:** Monopoly power may be enjoyed due to technical reasons. A firm may have control over raw materials, technical knowledge, special know-how, scientific secrets and formula that enable a monopolist to produce a commodity. e.g., Coco Cola.
3. **Legal:** Monopoly power is achieved through patent rights, copyright and trade marks by the producers. This is called legal monopoly.
4. **Large Amount of Capital:** The manufacture of some goods requires a large amount of capital or lumpiness of capital. All firms cannot enter the field because they cannot afford to invest such a large amount of capital. This may give rise to monopoly. For example, iron and steel industry, railways, etc.
5. **State:** Government will have the sole right of producing and selling some goods. They are State monopolies. For example, we have public utilities like electricity and railways. These public utilities are undertaken by the State.

Price and Output Determination

A monopolist like a perfectly competitive firm tries to maximise his profits.

A monopoly firm faces a downward sloping demand curve, that is, its average revenue curve. The downward sloping demand curve implies that larger output can be sold only by reducing the price. Its marginal revenue curve will be below the average revenue curve.

The average cost curve is 'U' shaped. The monopolist will be in equilibrium when $MC = MR$ and the MC curve cuts the MR curve from below.

In figure 8.4, AR is the Average Revenue Curve and MR is the Marginal revenue curve. AR curve is falling and MR curve lies below AR. The monopolist is in equilibrium at E where $MR = MC$. He produces OM units of output and fixes price at OP. At OM output, the average revenue is MS and average cost MT. Therefore the profit per

unit is $MS - MT = TS$. Total profit is average profit (TS) multiplied by output (OM), which is equal to HTSP. The monopolist is in equilibrium at point E and produces OM output at which he is earning maximum profit. The monopoly price is higher than the marginal revenue and marginal cost.

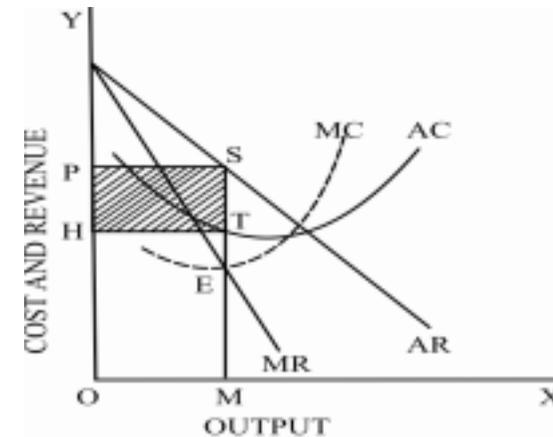


FIGURE 8.4

Advantages

1. Monopoly firms have large-scale production possibilities and also can enjoy both internal and external economies. This will result in the reduction of costs of production. Output can be sold at low prices. This is beneficial to the consumers.
2. Monopoly firms have vast financial resources which could be used for research and development. This will enable the firms to innovate quickly.
3. There are a number of weak firms in an industry. These firms can combine together in the form of monopoly to meet competition. In such a case, market can be expanded.

Although there are some advantages, there is a danger that monopoly power might be misused for exploiting the consumers.

Disadvantages

1. A monopolist always charges a high price, which is higher than the competitive price. Thus a monopolist exploits the consumers.
2. A monopolist is interested in getting maximum profit. He may restrict the output and raise prices. Thus, he creates artificial scarcity for his product.
3. A monopolist often charges different prices for the same product from different consumers. He extracts maximum price according to the ability to pay of different consumers.
4. A monopolist uses large-scale production and huge resources to promote his own selfish interest. He may adopt wrong practices to establish absolute monopoly power.
5. In a country dominated by monopolies, wealth is concentrated in the hands of a few. It will lead to inequality of incomes. This is against the principle of the socialistic pattern of society.

Methods of Controlling Monopoly

1. **Legislative Method:** Government can control monopolies by legal actions. Anti-monopoly legislation has been enacted to check the growth of monopoly. In India, the Monopolies and Restrictive Trade Practices Act was passed in 1969. The objective of this Act is to prevent the unwanted growth of private monopolies and concentration of economic power in the hands of a small number of individuals and families.
2. **Controlling Price and Output:** This method can be applied in the case of natural monopolies. Government would fix either price or output or both.
3. **Taxation:** Taxation is another method by which the monopolistic power can be prevented or restricted. Government can impose a lump-sum tax on a monopoly firm, irrespective of its level of output. Consequently, its total profit will fall.

4. **Nationalisation:** Nationalising big companies is one of the solutions. Government may take over such monopolistic companies, which are exploiting the consumers.
5. **Consumer's Association:** The growth of monopoly power can also be controlled by encouraging the formation of consumers associations to improve the bargaining power of consumers.

Comparison between Perfect Competition and Monopoly

The main aim of firms both under monopoly and perfect competition is to maximise profit. In both the market forms, the firms are in equilibrium at the output level where $MC = MR$. The differences are as follows:

Perfect Competition	Monopoly
1. Average revenue curve is a horizontal straight line parallel to X axis. Marginal revenue is equal to average revenue and price	Both average revenue curve and marginal revenue curve are downward falling curves. Marginal revenue is less than average revenue and price.
2. At the equilibrium, $MC = MR = AR$. That is price charged is equal to marginal cost of production	At the equilibrium, $MC = MR < AR$ that is price charged is above marginal cost
3. The firm in the long run comes to equilibrium at the minimum point or the lowest point of the long run average cost curve. The firm tends to be of optimum size operating at the minimum average cost.	Even in the long run equilibrium the firm will be operating at a higher level of average cost. The firm stops short of optimum size.
4. Equilibrium can be conceived only under increasing cost and not under decreasing or constant cost conditions	Equilibrium situation is possible at increasing, decreasing or constant cost conditions.
5. The firm can earn only normal profit in the long run and may earn super profit in the short run	But monopoly firm earns super normal profit both in short run and long run
6. Price will be lower and the output is larger	Price is higher and the output will be smaller

Price Discrimination

Price discrimination means the practice of selling the same commodity at different prices to different buyers. If the monopolist charges different prices from different consumers for the same commodity, it is called price discrimination or discriminating monopoly.

Definition

Price discrimination may be defined as “*the sale of technically similar products at prices which are not proportional to marginal cost*”. For example, all cinema theatres charge different prices for different classes of people.

Conditions of Price Discrimination

Price discrimination is possible only if the following conditions are fulfilled.

1. The demand must not be transferable from the high priced market to the low priced market. If rich people do not buy the high-priced deluxe edition of the book, but wait for the low-priced popular edition to come out, then personal discrimination will fail.
2. The monopolist should keep the two markets or different markets separate so that the commodity will not be moving from one market to the other market. If it is possible to buy the product in the cheaper market of the monopolist and sell it in the dearer market, there can never be two prices for the commodity. If the industrial buyer of cheap electricity uses it for domestic consumption, then trade discrimination will fail.

The above two conditions are essential to adopt price discrimination.

Monopolistic Competition

Monopolistic competition, as the name itself implies, is a blending of monopoly and competition. Monopolistic competition refers to the market situation in which a large number of sellers produce goods which are close substitutes of one another. The products are similar but not

identical. The particular brand of product will have a group of loyal consumers. In this respect, each firm will have some monopoly and at the same time the firm has to compete in the market with the other firms as they produce a fair substitute. The essential features of monopolistic competition are product differentiation and existence of many sellers.

The following are the examples of monopolistic competition in Indian context.

1. Shampoo - Sun Silk, Clinic Plus, Ponds, Chik, Veltette, Kadal, Head and Shoulder, Pantene, Vatika, Garnier, Meera
2. Tooth Paste - Binaca, Colgate, Forhans, Close-up, Promise, Pepsodent, Vicco Vajradanti, Ajanta, Anchor, Babool.

Characteristics of Monopolistic Competition

(i) Existence of Large Number of firms: Under monopolistic competition, the number of firms producing a commodity will be very large. The term ‘very large’ denotes that contribution of each firm towards the total demand of the product is small. Each firm will act independently on the basis of product differentiation and each firm determines its price-output policies. Any action of the individual firm in increasing or decreasing the output will have little or no effect on other firms.

(ii) Product differentiation: Product differentiation is the essence of monopolistic competition. Product differentiation is the process of altering goods that serve the same purpose so that they differ in minor ways.

Product differentiation can be brought about in various ways. Product differentiation is attempted through (a) physical difference; (b) quality difference; (c) imaginary difference and (d) purchase benefit difference. It may be by using different quality of the raw material and different chemicals and mixtures used in the product. Difference in workmanship, durability and strength will also make product

differentiation. Product differentiation may also be effected by offering customers some benefits with the sale of the product. Facilities like free servicing, home delivery, acceptance of returned goods, etc. would make the customers demand that particular brand of product when such facilities are available. Product differentiation through effective advertisement is another method. This is known as sales promotion. By frequently advertising the brand of the product through press, film, radio, and TV, the consumers are made to feel that the brand produced by the firm in question is superior to that of other brands sold by other firms.

(iii) Selling Costs: From the discussion of ‘product differentiation’, we can infer that the producer under monopolistic competition has to incur expenses to popularise his brand. This expenditure involved in selling the product is called selling cost. According to Prof. Chamberlin, selling cost is “the cost incurred in order to alter the position or shape of the demand curve for a product”. Most important form of selling cost is advertisement. Sales promotion by advertisement is called non-price competition.

(iv) Freedom of entry and exit of firms: Another important feature is the freedom of any firm to enter into the field and produce the commodity under its own brand name and any firm can go out of the field if so chosen. There are no barriers as in the case of monopoly

Monopolistic competition presupposes that customers have definite preferences for particular varieties or brand of products. Hence pricing is not the problem but product differentiation is the problem and competition is not on prices but on products.

Thus in monopolistic competition, the features of monopoly and perfect competition are partially present.

Determination of Equilibrium price and output under monopolistic competition

The monopolistic competitive firm will come to equilibrium on the principle of equalising MR with MC. Each firm will choose that price

and output where it will be maximising its profit. Figure 8.5 shows the equilibrium of the individual firm in the short period.

Short Period Equilibrium of a Monopolistic competitive firm with Profit

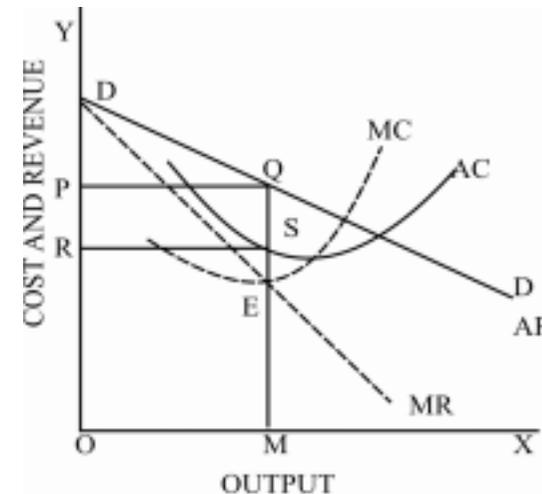


FIGURE 8.5

MC and AC are the short period marginal cost and average cost curves. The sloping down average revenue and marginal revenue curves are shown as AR and MR. The equilibrium point is E where $MR = MC$. The equilibrium output is OM and the price of the product is fixed at OP. The difference between average cost and average revenue is SQ. The output is OM. So, the supernormal profit for the firm is shown by the rectangle PQSR. The firm by producing OM units of its commodity and selling it at a price of OP per unit realizes the maximum profit in the short run.

The different firms in monopolistic competition may be making either abnormal profits or losses in the short period depending on their costs and revenue curves.

In the long run, if the existing firms earn super normal profit, the entry of new firms will reduce its share in the market. The average revenue of the product will come down. The demand for factors of production will increase the cost of production. Hence, the size of the profit will be reduced. If the existing firms incur losses in the long-run, some of the firms will leave the industry increasing the share of the existing firms in the market. As the demand for factors becomes less, the price of factors will come down. This will reduce the cost of production, which will increase the profit earned by the existing firm. Thus under monopolistic competition, all the existing firms will earn normal profit in the long run.

Wastages of Monopolistic competition

- 1. Unemployment:** Under monopolistic competition, the firms produce less than optimum output. As a result, the productive capacity is not used to the fullest extent. This will lead to unemployment of resources.
- 2. Excess capacity:** Excess capacity is the difference between the optimum output that can be produced and the actual output produced by the firm. In the long run, a monopolistic firm produces an output which is less than the optimum output that is the output corresponding to the minimum average cost. This leads to excess capacity which is regarded as waste in monopolistic competition.
- 3. Advertisement:** There is a lot of waste in competitive advertisements under monopolistic competition. The wasteful and competitive advertisements lead to high cost to consumers.
- 4. Too Many Varieties of Goods:** Introducing too many varieties of a good is another waste of monopolistic competition. The goods differ in size, shape, style and colour. A reasonable number of varieties would be desirable. Cost per unit can be reduced if only a few are produced.
- 5. Inefficient Firms:** Under monopolistic competition, inefficient firms charge prices higher than their marginal cost. Such type of

inefficient firms should be kept out of the industry. But, the buyers' preference for such products enables the inefficient firms to continue to exist. Efficient firms cannot drive out the inefficient firms because the former may not be able to attract the customers of the latter.

Oligopoly

Oligopoly refers to a form of imperfect competition where there will be only a few sellers producing either homogenous or differentiated products.

Characteristics of Oligopoly

- 1. Interdependence:** The most important feature of oligopoly is interdependence in decision - making. Since there are a few firms, each firm closely watches the activities of the other firm. Any change in price, output, product, etc., by a firm will have a direct effect on the fortune of its rivals. So an oligopolistic firm must consider not only the market demand for its product, but also the possible moves of other firms in the industry.
- 2. Group Behaviour:** Firms may realise the importance of mutual co-operation. Then they will have a tendency of collusion. At the same time, the desire of each firm to earn maximum profit may encourage competitive spirit. Thus, co-operative and collusive trend as well as competitive trend would prevail in an oligopolistic market.

Price Rigidity: Another important feature of oligopoly is price rigidity. Price is sticky or rigid at the prevailing level due to the fear of reaction from the rival firms. If an oligopolistic firm lowers its price, the price reduction will be followed by the rival firms. As a result, the firm loses its profit. Expecting the same kind of reaction, if the oligopolistic firm raises the price, the rival firms will not follow. This would result in losing customers. In both ways the firm would face difficulties. Hence the price is rigid.

Type of Market	Number of Sellers	Number of Buyers	Nature of Product	Entry conditions	Size of Market for Each Firm	Degree of Monopoly Power	Price	Price Policy of the Firm	Price Elasticity of Demand for Individual firm
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Perfect competition	Large	Large	Homogenous	Free	Very small	Nil	Uniform and low	Price taker	Infinite
Monopoly	One	Large	Unique (with no close substitute)	Strong barriers to entry	Large	Absolute	Very high	Price maker	Very low
Bilateral Monopoly	One	One	Homogenous	Free	Large	Depends upon the relative powerfulness of seller and buyer	Prevailing price depends upon the relative powerfulness of seller and buyers		
Monopolistic Competition	Many	Large	Differentiated (but, close substitutes)	Free	Small	Limited	Moderate	Some control over price depending on consumer's brand loyalty	High
Oligopoly (Pure or differentiated)	Few	Large	Homogenous or differentiated	Entry barriers due to dominance by few firms or due to product differentiation	Large	Considerable	High	Considerable control over the prices (prices tend to be rigid)	Low
Duopoly (pure or differentiated)	Two	Large	Homogenous or differentiated	Entry barriers due to dominance by these firms or due to product differentiation	Large	Considerable	High	Considerable control over the prices	Low

EXERCISE PART A

I. Choose the correct answer

- Perfect competition is a market situation where we have a single seller
 - a single seller
 - two sellers
 - large number of sellers
 - few sellers
- A firm can achieve equilibrium when its
 - MC = MR
 - MC = AC
 - MR = AR
 - MR = AC
- The firm and industry are one and the same under
 - perfect competition
 - duopoly
 - oligopoly
 - monopoly
- Under perfect competition, the demand curve is
 - Upward sloping
 - horizontal
 - downward sloping
 - vertical
- Most important form of selling cost is
 - Advertisement
 - Sales
 - Homogeneous product
 - None

II. Fill in the blanks

- Under perfect competition, the firms are producing _____ product.
- When the Average revenue of the firm is greater than its average cost, the firm is earning _____
- The perfect competitive firms are _____
- Monopoly power achieved through patent right is called _____
- Firms realize the importance of _____ under oligopoly.

Match the following

- | | |
|--------------------------|--------------------|
| 11. Global market | a. E.H. Chamberlin |
| 12. Consumer sovereignty | b. Coco Cola |
| 13. South Africa | c. Gold and silver |

14. Technical monopoly d. perfect competition
15. monopolistic competition e. diamond

Answer in a word or two

16. What is an industry?
17. Who undertakes the public utilities?
18. How does the government control monopoly?
19. What is the essential feature of monopolistic competition?
20. In which year the MRTP Act was passed?

PART B

Answer the following questions in about four or five lines

21. What are the characteristics of a market?
22. Classify the market based on competition.
23. Mention any three benefits of perfect competition.
24. What are the conditions of price discrimination?
25. Define price discrimination with an example.

PART C

Answer the following questions in about a page

26. Briefly explain the classification of markets.
27. Explain the features of perfect competition.
28. What are the methods of controlling monopoly?
29. Write a note on 'product differentiation'.
30. Describe the wastes of monopolistic competition.

PART D

Answer for each question should be about three pages

31. How is the price and output determined in the short run under perfect competition?
32. Define monopoly. What are the characteristics and causes of monopoly?
33. Explain the price and output determination under monopoly.
34. Explain the advantages and disadvantages of monopoly.
35. Differentiate the perfect competition from monopoly.
36. Explain the price and output determination under monopolistic competition.

Chapter 9

Marginal Productivity Theory of Distribution

The marginal productivity theory of distribution is the general theory of distribution. The theory explains how prices of various factors of production are determined under conditions of perfect competition. It emphasizes that any variable factor must obtain a reward equal to its marginal product.

There is no fundamental difference between the mechanism of determination of factor prices and that of prices of commodities. Factor prices are determined in markets under the forces of supply and demand. But there is one difference. While the demand for commodities is direct demand, the demand for factors of production is derived demand. For example, there will be demand for workers engaged in construction industry (e.g. masons) only when there is demand for housing.

According to the marginal productivity theory of distribution, in a perfectly competitive market (for products and inputs), each factor will be paid a price equal to the value of its physical product. Though the theory is applicable to all factors of production, we may illustrate it with reference to labour.

A firm will go on employing more and more units of a factor until the price of that factor is equal to the value of the marginal product. In other words, each factor will be rewarded according to its marginal productivity. The marginal productivity is equal to the value of the additional product which an employer gets when he employs an additional unit of that factor. We assume that the supply of all other factors remain constant.

We shall give a simple illustration of the marginal productivity theory of distribution by making use of labour.

The aim of a firm is maximization of profit. It will hire a factor as long as it adds more to total revenue than to total cost. Thus a firm will hire a factor upto the point at which the marginal unit contributes as much to total cost as to total revenue because total profit cannot be further increased.

The condition of equilibrium in the labour market is

$$MC_L = VMPL$$

Where MC_L = Marginal cost of labour

$VMPL$ = Value of marginal product of labour.

Or $W = VMPL$

Where W = wages of labour

Note : It is assumed that a firm can employ any amount of labour under a given wage rate as the supply of labour is assumed to be unlimited in a competitive market.

Diagrammatic Illustration of wage determination in a competitive market

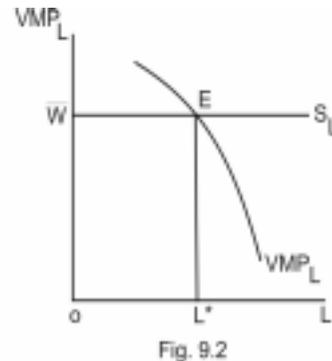
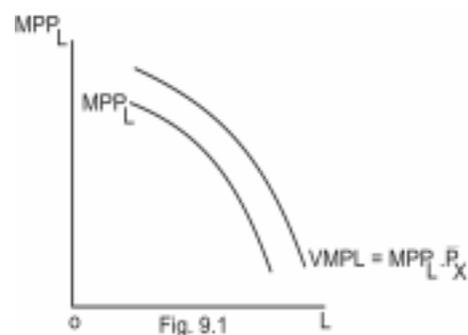


Figure 9.1 describes

MPP_L = Marginal physical product (of labour) curve

$VMPL$ = Value of marginal product curve

$VMPL = MPP_L \cdot P_X$ ($VMPL$ = Marginal physical product of labour multiplied by price of the commodity)

Note : P (The price is assumed to be constant under conditions of perfect competition)

In fig. 9.2, the equilibrium of the firm is shown by E . This is so because to the left of L^* , each unit of labour costs less than the value of its product ($VMPL > W$). Hence the firm will make more profit by hiring more workers. To the right of $VMPL < W$. Hence, the profits of the firm will be reduced. So profits will be maximum when $VMPL = W$.

It follows from the above discussion that the demand curve of a firm for a single variable factor (e.g. labour) is its value of marginal product curve.

Thus the productivity of the marginal unit of a factor determines the rate that is to be paid to all units of the factor. The employer adopts the principle of substitution and combines land, labour and capital in such a way that the cost of production is minimum. Then the reward for each factor is determined by its marginal productivity. The marginal productivity theory of distribution has been used to explain the determination of rent, wages, interest and profits. That is why, it is called general theory of distribution.

Assumptions of the theory

The marginal productivity theory is based on the following assumptions.

1. There is perfect competition.
2. All units of a factor are homogeneous. It means that one unit of a factor is the same as the other.
3. Factors can be substituted for each other. That is, all factors are interchangeable.
4. The theory is based on the law of diminishing returns as applied to business. The law of diminishing returns tells that if you go on employing more and more units of a factor, its marginal returns will diminish. So a firm, when it comes to know that the increase in a certain factor is resulting in diminishing returns, the firm will

substitute it with some other factor. Thereby, it will try to reduce the cost of production.

Criticism of the theory

The following are some of the points of criticism against the marginal productivity theory of distribution.

1. Every product is a joint product and its value cannot be separately attributed to either labour or capital. Again, it is rather difficult to measure the “productivity” of certain categories of labour like doctors, lawyers and teachers who render services.
2. The theory takes into account only the factors operating on the side of demand by ignoring the supply side. For example, when there is scarcity of a factor, it is paid much more than the normal price.
3. The theory is based on the assumption of perfect competition and full employment. But in the real world, we have only imperfect competition; we do not have perfect competition.
4. In practice, it is rather difficult to vary the use of the factors of production.
5. The theory does not carry with it any ethical justification. If we accept the theory, it means that factors get the value of what they produce. For example, workers in a firm may get low wages not because their productivity is low but because there might be exploitation of labour. Hence we should not make use of this theory to justify the existing system of unequal distribution.

We may note that in spite of the above points of criticism against the theory, it explains the role of productivity in the determination of factor prices. In the words of Marshall, “the doctrine throws into clear light one of the causes that govern wages”.

Rent

In ordinary language, “rent” refers to any periodic payment made for the use of a good. For example, when we live in someone’s house, we pay rent. This rent is contract payment. The contract rent includes besides the payment made for the use of land, interest on the capital invested in the house, wages and profit. But classical economists like Ricardo referred by “rent” to the payment made for the use of agricultural land. Rent arises because of the peculiar characteristics of land. The supply of land is inelastic and it differs in fertility. Rent arises because of differences in fertility. Those lands which are more fertile than others get rent.

The Ricardian theory of Rent

Ricardian theory of rent is one of the earliest theories of rent. It is named after Ricardo, a great classical economist of the 19th century.

According to Ricardo, “rent is 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”. So rent is payment made for the use of land for its original powers. Ricardo believed that rent arose on account of differences in the fertility of land. Only superior lands get rent. Rent is a differential surplus.

Rent may also arise on account of situational advantage. For example, some lands may be nearer to the market. The producer can save a lot of transport costs. Even if all lands are equally fertile, lands which enjoy situational advantage will earn rent.

Ricardo explained his theory by taking the example of colonization. If some people go and settle down in a place, first they will cultivate the best lands. If more people go and settle down, the demand for land will increase and they will cultivate the second-grade lands. The cost of production will go up. So the price of grain in the market must cover the cost of cultivation. In this case, the first grade land will get rent. After some time, if there is increase in population, even third grade lands will be cultivated. Now, even second grade lands will get rent and

first grade lands will get more rent but the third grade land will not get rent. It is known as no - rent land. According to Ricardo, rent is price determined, that is, it is determined by price of the grains produced in the land. He also believed that rent is high because price is high and not the other way round. Ricardo came to the conclusion that rent did not enter price because there are some no - rent or marginal lands. As the produce of no-rent land gets a price, Ricardo argued that rent did not enter price.

In figure 9.3, grades of land are shown along the X axis and the output up the y – axis. The shaded area in the diagram indicates rent. In this case, grade I and grade II lands get rent. The grade III land will not get rent.

Diagrammatic Illustration of Ricardian theory of Rent.

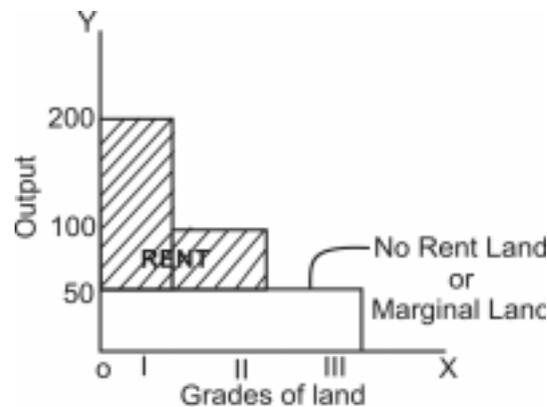


Fig. 9.3

Criticism of the Ricardian Theory of Rent

Ricardo tells that only the best lands are cultivated first. There is no historical proof for this.

1. According to Ricardo, land has “original and indestructible powers”. But the fertility of land may decline after some time because of continuous cultivation.

2. Ricardo believed that rent is peculiar to land alone. But many modern economists argue that the rent aspect can be seen in other factors like labour and capital. Rent arises whenever the supply of a factor is inelastic in relation to the demand for it.
3. Ricardo is of the view that rent does not enter the price of the commodity produced in it. But rent enters the price from the point of view of a single firm.
4. Ricardian theory does not take note of scarcity rent.
5. It is based on perfect competition. Only under perfect competition, there will be one price for a good. But in the real world, we have imperfect competition.

Though there are some criticisms against the Ricardian theory, we may note it tells that because of increasing pressure on land, we have to cultivate inferior lands.

Modern Theory of Rent

In the modern theory of rent, the term rent refers to “payments made for factors of production which are in imperfectly elastic supply”. By this definition, rent is applied to other factors like labour and capital. In other words, rent does not apply to land alone. Just as land differs in fertility, men differ in their ability. For example, a surgeon with a rare skill may earn a lot of income. There is an element of rent in it. In fact, we have a theory of profits known as “Rent theory of profits”.

Marshall has introduced the concept of “Quasi-rent” with regard to machines and other man-made appliances. So the modern view is that rent can be applied to all factors of production. Whenever, the supply of a factor is inelastic in relation to the demand for it, rent arises.

To explain rent, modern economists also make use of the term transfer earnings. Transfer earnings refer to the amount that a factor could earn in its best paid alternative employment. It represents the opportunity cost of its present employment. Any payment in excess of this amount is a surplus above what is necessary to retain the factor in

its best-paid employment and so is rent. Thus, any payment in excess of transfer earnings is economic rent. If a popular south Indian Cinema actor who is normally paid, say Rs. two crores, gets an offer to act in a Hindi film for Rs. three crores, his transfer earnings are Rs. two crores. Rs. one crore may be considered as economic rent for acting in the Hindi film. So the main point about the modern theory of rent is that rent is not peculiar to land alone. The rent aspect can be seen in other factor incomes as well.

Quasi-Rent

According to Marshall, 'Quasi-rent is the income derived from machines and other appliances for production by man'.

There are some machines and other man-made appliances (e.g. boats) whose supply may be inelastic in the short run in relation to the demand for them. For example, when there is large increase in demand for fish during a season, the demand for boats will increase. But you cannot increase their supply over night. So they will earn some extra income over and above the normal income they receive. This, Marshall calls Quasi-rent. Quasi-rent will disappear, when once the supply of boats increases.

Wages

Introduction

Wages are the reward for labour. There are two main kinds of wages. (1) money wages and (2) real wages. Money wages are also known as nominal wages. Real wages refer to the commodities and services which the money wages command. They depend mainly on the purchasing power of money, which in turn depends upon the price level. The standard of living of workers in a country depends upon the real wages. Further, a farm worker may get low money wages. But if he gets free board and lodging, we must take that also into account while considering real wages.

Theories of wages

There are many theories of wages. Some of the early theories of wages are : 1. The Subsistence Theory of wages ; 2. The Standard of Living Theory ; 3. The Wages Fund Theory ; 4. The Residual Claimant Theory

Some of the important recent theories of wages are

1. The Marginal productivity theory of wages ;
2. The Market theory of wages and
3. The Bargaining theory of wages.

Early theories of wages

1. The subsistence theory of wages : According to this theory, the wages that are paid to a worker must be just enough to cover his bare needs of subsistence. If the workers are paid less than the subsistence wage, there will be starvation and death and it will result in shortage of supply of labour.

Criticism : The main criticism against the theory is that it is based on the assumption that an increase in wages will result in an increase in population. Man is different from an animal. Besides bare needs, he needs some comforts. This theory does not take note of that. And it is one sided. It ignores the forces operating on the side of demand. This theory is based on bad ethics.

2. The standard of living theory : This theory tells that wages depend upon the standard of living of workers.

Criticism : There is no doubt that the standard of living theory is an improvement on the subsistence theory. It is true that there is relationship between standard of living and wages. But it is rather difficult to say which is the cause and which is the result.

3. The Wages Fund Theory : According to Wages Fund Theory, "wages depend upon the proportion between population and capital". The term "capital" in the context refers to the fund set apart for payment of wages. And the word 'population' refers to

workers. If the supply of workers increases, wages will fall and vice versa.

Criticism : The theory assumes that an increase in wages will result in an increase in population. But there is no direct relationship between the two. Further, it tells that if wages rise, profits will fall. This is not correct because during periods of good trade, both wages and profits will rise.

4. The Residual Claimant Theory : According to this theory, wages “equal the whole product minus rent, interest and profits” (Walker). In other words, the theory tells that wages are paid out of the residue that is left over after making payment for rent, interest and profits.

Criticism : The main criticism against the theory is that it considers wages as residual payment. But wages are in the nature of advance payment and they have to be paid first. Normally, profits are taken at the end.

Recent Theories of wages

1. The Marginal productivity theory of wages : The marginal productivity theory of wages is only an application of the marginal productivity theory of distribution, which is a general theory of distribution. The theory explains how wages are determined under conditions of perfect competition. According to the marginal productivity theory, wages will be equal to the value of the marginal product of labour.

As an employer goes on employing more and more units of labour, its marginal product will fall because of the law of diminishing marginal returns. So he will employ labour upto the point where the wages he pays are equal to the value of the marginal product of labour. All units are assumed to be uniform. So the productivity of the marginal unit of labor determines the rate at which wages are to be paid to all units of labour.

Criticism : 1. Every product is produced by the joint effort of all factors of production. It is rather difficult to measure the productivity of each factor in terms of the product produced. The difficulty is more in

measuring the marginal productivity of those who render services (eg. doctors, actors and lawyers) ; 2. it is based on the assumption of perfect competition. But in the real world, we have only imperfect competition ; 3) under monopoly, wages will be lower than the marginal product of labour because there is exploitation of labour ; 4) wages are in the nature of advance payment. So an employer will deduct some amount to cover the interest on capital and pay the workers wages which are lower than their marginal product. So wages are the discounted marginal product of labour 5). The theory should not be used to justify the low wages in an economy and the inequalities of incomes. Wages might be low because of exploitation of labour. In spite of the above criticism, “the doctrine throws into clear light the action of one of the causes that govern wages”. (Marshall).

The Market Theory of Wages

The market theory looks at wages as the price of labour. Like all other prices, wages are determined by the market forces of supply and demand.

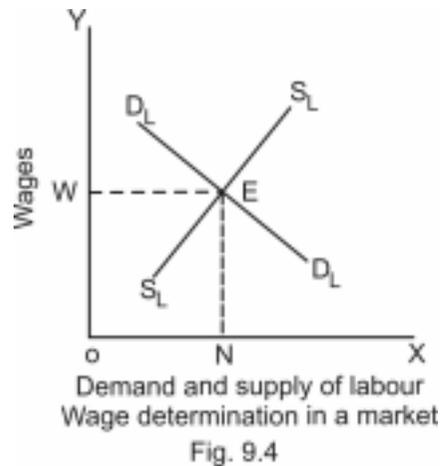
The supply of labour generally refers to the total number of people available for employment. Some types of labour require long periods of training. During that long period, workers have to sacrifice their earnings. We have to take note of the foregone earnings while estimating the cost of labour which determines its supply.

The demand for labour

Demand for labour is a derived demand. Modern production is carried on largely on the basis of anticipation of demand for goods. During good trade, demand for labour will be more. Again, if capital is cheap, the employer will try to substitute capital for labour. When there is increase in investment, there will be increase in demand for labour.

In a competitive labour market, equilibrium will be established at the wage that equates the demand for labour with the supply of labour.

Diagrammatic illustration of determination of wages in a market



In fig. 9.4, D_L curve represents demand for labour and S_L curve represents supply of labour. Demand for and supply of labour are presented along the X axis and wages are represented up the Y axis. Wages are determined (OW) at that point (E) where the demand for labour is equal to the supply of labour (ON)

If demand for labour is high relative to its supply, wages will be high and vice versa. On the supply side, there are many imperfections. There is geographical immobility of labour. There may be shortage in the supply of certain categories of labour (eg. doctors, engineers). In some industries, the supply of labour is controlled by trade unions.

The Bargaining Theory of Wages

The bargaining theory of wages takes note of the influence of trade unions on wages through collective bargaining. According to the theory, the level of wages in an industry depends on the bargaining strength of the trade union concerned. The strength of a trade union depends upon many things like the size of its membership, the size of its “fighting fund”, and its ability to cause dislocation in the industry and the economy through strike. During periods of full employment and good trade, trade unions

will be in a strong position and during depression marked by bad trade and mass unemployment, trade unions will be in a weak position.

A trade union may increase wages by restricting the supply of labour. For example, it may insist that only members of a trade union should be employed. This is known as closed shop policy. It may threaten that it will go on strike if a minimum wage is not paid.

Interest

Interest is the price paid for the use of capital. This is ‘net interest’ or ‘pure interest’. A good example of pure interest is the interest we get on some government securities. It may be regarded as net interest. Gross interest, includes besides net interest, other things such as reward for risk, remuneration for inconvenience and payment for services. Thus gross interest covers trade risks and personal risks. For example, when a money lender lends money to an Indian farmer, he charges high rate of interest because there is the risk of non - payment of the amount borrowed. There are trade risks and personal risks. Generally, people prefer to have cash balances. This is known as liquidity preference. When you lend money to someone, you cannot get it for sometime. And that is inconvenience. So to compensate it, one must be paid some extra income. So, gross interest includes compensation for all the above things besides net interest.

Theories of Interest

Some of the theories of interest are (1) The Abstinence or Waiting Theory of Interest ; 2. The Agio Theory and Time Preference Theory ; 3. The Marginal Productivity Theory ; 4. Saving and Investment Theory (The classical theory) 5. Loanable Funds Theory and 6. The Liquidity Preference Theory

According to the Abstinence theory of Nassau Senior, interest is the reward for abstaining from the immediate consumption of wealth,. When people save, they abstain from present consumption. That involves some sacrifice. To make them save, interest is offered as a reward. But Marshall preferred the word, “waiting” to “abstinence”.

The “Agió” theory of interest of Bohm-Bawerk tells that as the present carries a premium (agio) over the future, and as people prefer present consumption to future consumption, we have to pay a price for them by way of compensation. And that is interest. The time preference theory of Irving Fisher is more or less the same as Agio theory of interest. The marginal productivity theory of distribution is nothing but the application of the marginal productivity theory of distribution. It tells that interest tends to equal the marginal productivity of capital.

The classical theory of interest tells that the rate of interest is determined by the supply of capital which depends upon savings and the demand for capital for investment. The theory is based on the assumption that there is a direct relationship between the rate of interest, savings and direct relationship between interest and investment. The classical economists believed that savings would increase when the interest rates were high, and investment would increase with a fall in interest rate. And the equilibrium between saving and investment was brought about by the rate of interest.

Loanable funds theory (Neo – classical theory) of Interest

The loanable funds theory was developed by Knut Wicksell, Dennis Robertson and others. The loanable funds theory is wider in its scope than the classical theory of interest. The term “loanable funds” includes not only saving out of current income but also bank credit, dishoarding and disinvestments. But by saving, the classical economists referred only to saving out of current income. We know now that bank credit is an important source of funds for investment.

In the classical theory, saving was demanded only for investment. But according to loanable funds theory, the demand for funds arose, not only for investment but also for hoarding wealth.

The classical theory regarded interest as a function of saving and investment, ($r = f(S, I)$) But, according to loanable funds theory, the rate of interest is a function of four variables, i.e $r = f(I, S, M, L)$ where r is the rate of interest, I = investment, S = saving, M = bank credit and L = desire to hoard or the desire for liquidity.

Diagrammatic Illustration of Loanable funds theory of interest.

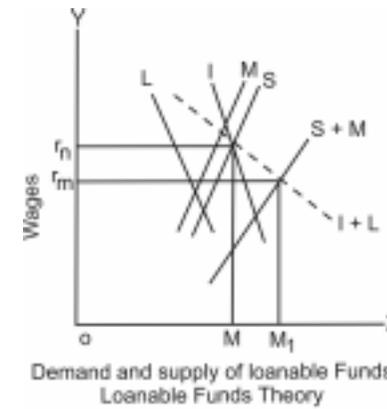


Fig. 9.5

In Fig. 9.5 The Curve ‘S’ represents savings, the curve ‘M’ represents bank credit (including dishoarded and disinvested wealth). The curve S + M represents total loanable funds at different rates of interest.

On the demand side, the curve I represents demand for investment. The curve L represents demand for idle cash balances or to hoard money. The curve I + L represents the total demand for loanable funds at different rates of interest. The market rate of interest r_m is determined by the intersection of S + M curve and I + L curve. The aggregate demand for loanable funds is equal to the aggregate supply of loanable funds at this rate of interest. In the classical theory, r_n which may be called the natural rate of interest is determined by the intersection of I and S curves. That is, when the rate of interest is r_n , the demand for investment is equal to the supply of savings.

Criticism : There is no doubt that loanable funds theory is an improvement over the classical theory of interest. It has been criticized on the ground that it assumes that saving is a function of the rate of interest ; 2. it ignores the influence of the changes in the level of investment on employment, income and on savings.

Liquidity preference theory (Keynesian theory) of interest.

Generally people prefer to hold a part of their assets in the form of cash. Cash is a liquid asset. According to Keynes, interest is the reward for parting with liquidity for a specified period of time. In other words, it is the reward for not hoarding.

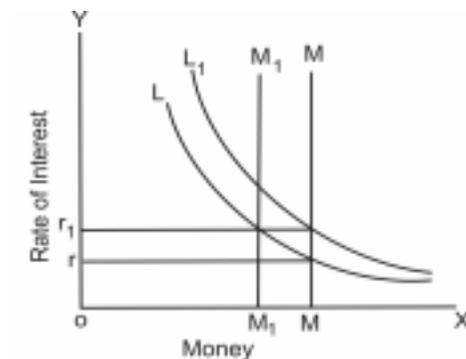
According to Keynes, people have liquidity preference for three motives. They are 1. Transaction motive; 2. Precautionary motive; and 3. Speculative motive.

The transaction motive refers to the money held to finance day to day spending. Precautionary money is held to meet an unforeseen expenditure.

Keynes defines speculative motive as “the object of securing profit from knowing better than the market what the future will bring forth.” Of the three motives, speculative motive is more important in determining the rate of interest. Keynes believed that the amount of money held for speculative motive would vary inversely with the rate of interest.

Keynes was of the view that the rate of interest was determined by liquidity preference on the one hand and the supply of money on the other.

Diagrammatic Illustration of Liquidity preference Theory of interest



Liquidity Preference Theory of Interest
Fig. 9.6

In fig. 9.6 Liquidity preference is shown by L and the supply of money is represented by M and the rate of interest is indicated by r. Rate of interest is determined by the intersection of L and M curves. There will be increase in the rate of interest to r_1 , when there is increase in demand for money to L_1 or by a decrease in the supply of money to M_1 .

Criticism : Keynesian theory is a general theory of interest and it is far superior to the earlier theories of interest. But critics say that Keynes has over - emphasized liquidity preference factor in the theory of interest. Moreover, only when a person has savings, the question of parting with liquidity arises. In the words of Jacob Viner, “without saving, there can be no liquidity to surrender. The rate of interest is the return for “saving without liquidity””.

Profits

Profits are the reward for organization or entrepreneurship. Risk-taking and uncertainty-bearing are the main functions of an entrepreneur. So we may consider profit as the reward for the above functions.

Gross Profit : Generally when we speak of profit, we refer to the difference between the total expenses of producing a good and the total revenue from it. But this is gross profit.

Gross Profit and Net Profit : Gross profit includes besides net profit other things such as the interest on capital, rent of land, wages of management and some extra income on account of the monopoly position of a firm. It also includes some chance gains (windfall profits). While considering net profit ‘or’ pure profit, we have to deduct all the above things from gross profit. Net profit is the reward for risk - taking and uncertainty - bearing which are the main functions of an entrepreneur. The monopolist is the sole seller of a commodity for which there are no substitutes. As he controls the supply, it is possible for him to make huge profits. And this is known as monopoly profit.

Normal profit and super normal profit (excess profit)

Pure profit (net profit) can be divided into normal profit and supernormal profit. Normal profit is the minimum necessary to guarantee that an entrepreneur will continue to bear uncertainty and run the firm. That part of pure profit which is in excess of normal profit is excess or surplus profit or supernormal profit. Though firms under perfect competition may make surplus profits in the short run, it will disappear in the long run. Only a monopoly can earn excess profits indefinitely.

The early economists made no distinction between interest and profits because they considered the capitalist and the entrepreneur as one and the same person. The entrepreneur need not necessarily be the owner of capital. It is leadership rather than ownership that is important in the case of an entrepreneur. Today, organization has become a distinct factor of production. Profits differ from other incomes in three ways. First, it is a residual income. Second, there may be wide fluctuations in profits and sometimes, they may be negative. That is, there may be losses. We cannot think of negative wages. Third, profits are uncertain.

Theories of Profit

Some of the important theories of profit are (1) the rent theory of profits (2) The marginal productivity theory of profits ; (3) The wages theory of profits ; (4) the dynamic theory of profits ; (5) the innovation theory of profits (6) the risk theory of profits, and (7) the uncertainty – bearing theory of profits.

Rent theory of profits

1. Prof Walker is the author of the rent theory of profits. In his view, profits are the “rent of ability” and they are similar to rent. Rent arises because of differences in fertility of land. Similarly profits arise because of differences in ability. That is why it is called the “rent of ability”. The main criticism against this theory is that it

explains only why there are differences in profits. It does not answer the fundamental question why there are profits as such.

2. The Marginal productivity theory of profits : The theory is an application of the general theory of distribution. According to this theory, under perfect competition, profits will be equal to the value of the marginal product of organization. We can apply all the criticisms against marginal productivity theory to this theory also.
3. The wages theory of Profits : According to Prof. Taussig, profits are not different from wages. Profits, are the wages of the entrepreneur for his special ability. Profits are the wages of management. The criticism against the theory is that we can speak of negative profits (losses) but we cannot speak of negative wages. Organization is a distinct factor of production. And it is different from labour.
4. The Dynamic Theory of profits: Prof. Clark is the author of this theory. According to him, profits are the result of dynamic changes in society. Clark has defined profits as the excess of the prices of goods over their costs. Some of the important changes relate to the size of population, supply of capital, production techniques, industrial organization and human wants. Though the dynamic theory is one of the modern theories of profits, “it overlooks the fundamental question of the difference between a change that is foreseen a reasonable time in advance and one that is unforeseen”.
5. Innovation theory of profits: According to Schumpeter, profits are the reward for innovations. An innovation is something more than an invention. An invention becomes an innovation only when it is applied to industrial processes. Innovation includes introduction of new goods, or new methods of production and opening new market. And innovations are introduced by the entrepreneur. Change and economic development take place because of his

activities. So he gets profits for innovations. The criticism against the theory is that though innovation is an important factor in the emergence of profits, it cannot be the only factor. It ignores the risk-bearing function of the entrepreneur.

6. The Risk - bearing theory of profits :- According to Prof. Hawley, profits are the reward for an entrepreneur for risk- taking. Risk - taking is an important function of an entrepreneur. Risk-taking and profit-making go together. The main criticism against this theory is that it does not make distinction between known risks and unknown risks. Known risks (eg. theft, fire) can be insured against. We may say that profits are the reward for taking unknown risks. For there is a lot of uncertainty about such risks.
7. The uncertainty-bearing theory of profits : Professor Knight is the author of the uncertainty - bearing theory of profits. He is of the view that “profit is the reward not for risk - bearing but uncertainty-bearing”. His main point is that there is risk because future is uncertain. And uncertainty - bearing is an essential function of an entrepreneur.

The entrepreneur can insure known risks. But unknown risks (eg. competition risks, risks of government action) cannot be insured against. These risks are uncertain. The entrepreneur earns profits because uncertainties are borne by him. The criticism against the theory is that uncertainty - bearing alone is not the only function of an entrepreneur.

Conclusion : The main defect with all the above theories is that they stress only one or two functions of the entrepreneur. In addition to risk-taking and uncertainty-bearing, the entrepreneur performs a number of other functions. And he deserves reward in the form of profits.

EXERCISE

PART - A

Part – I

I. Choose the correct answer

1. Rent is the price paid for the use of

a) Capital	b) Organisation
c) Labour	d) Land
2. Profits are the reward for

a) land	b) capital
c) labour	d) organisation
3. The demand for labour is

a) effective demand	b) direct demand
c) derived demand	d) elastic demand.
4. The author of the concept of quasi – rent is

a) Adam Smith	b) Marshall
c) Ricardo	d) Samuelson
5. The author of liquidity preference theory is

a) J.M. Keynes	b) Marshall
c) Samuelson	d) Knight

II. Fill in the blanks

6. Marginal productivity theory is the _____theory of distribution.
7. Marginal productivity theory is based on the assumption of _____ competition.
8. Transfer earnings refer to _____ cost
9. Money wages are also known as _____ wages
10. Organization is done by the _____

III. Match the following

- | | |
|--------------------------------|-------------|
| 11. Residual claimant theory | a) Marshall |
| 12. Waiting theory of Interest | b) Walker |
| 13. Loanable Funds Theory | c) Hawley |

14. Dynamic Theory of profit d) Neo-classical theory
15. Risk-bearing theory of profit e) Clark

IV Answer each one of the questions in a word or two

16. According to Ricardio, do all lands get rent ?
17. Even if all lands are equally fertile, can rent arise ?
18. Who is the author of Agio theory of interest ?
19. Who is the author of the rent theory of profits ?
20. What is the name of Schumpeter's theory of profits ?

PART - B

Answer for each of the following questions should be about four or five lines.

21. What are the assumptions of marginal productivity theory of distribution ?
22. What is "Transfer earnings"?
23. Distinguish between real wages and money wages.
24. What is standard of living theory of wages?
25. What are the three motives of liquidity preference ?

PART - C

Answer for each of the following questions should be about a page.

26. Discuss Marshall's theory of Quasi-rent.
27. Write a note on the subsistence theory of wages.
28. Discuss the Abstinence or Waiting theory of interest.
29. Briefly describe the dynamic theory of profits.
30. Explain Schumpeter's theory of profits.

PART - D

Answer for each question should be about three pages.

31. Discuss marginal productivity theory of distribution.
32. Examine Ricardian theory of rent.
33. Describe Loanable funds theory of interest.
34. Discuss Keynesian theory of interest.
35. Profit is the reward for risk-taking and uncertainty - bearing.

Chapter 10

Simple Theory of Income Determination

Adam Smith (1723-90), Thomas Malthus (1766-1834), David Ricardo (1772-1823), and Jean-Baptist Say (1767-1832) were the most prominent classical economists. Their thinking on the macro economic issues (such as income and unemployment) has mostly been shaped by their time and circumstances of 18th and 19th centuries. But their ideas have also influenced the thinking of subsequent generations.

Their idea of how free market would solve unemployment was widely accepted until the Great Depression of 1930s. The Great Depression crippled the free enterprise economies of US and UK with high level of unemployment and glut in the market. J.M. Keynes (1883-1964), after having examined the depression, had revolutionized the macro economic thinking through his writings. His ideas have made greater impact on governments and their role in solving unemployment until recent times. His ideas underlie all modern macro economic theories.

Classical Theory of Full Employment

The classical economists believed that the productive capacity of a country decides how much to be produced. An economy produces as much as it can. It assumes the existence of full employment. It has not thought of unemployment of any factor of production, particularly labour. The confidence that market makes it possible to sell everything that is produced is based upon Say's law. Say's Law of market is a denial of the possibility of general over-production or mass unemployment deficiency of aggregate demand in a free economy.

Say's Law of Market

J. B. Say, a French economist, propounded his law of markets in his book, "Treatise on Political Economy" (1803). His law can be summarized as "supply creates its own demand". This means that production of every good generates sufficient income to ensure that there is enough demand for the goods produced.

Every production which brings goods to market does so only in order to exchange them for other goods. It precisely states that whatever be the level of output, and the income created by that will necessarily lead to an equal amount of spending and hence deficiency of aggregate demand cannot occur. Hence, Say rejected the view that there could be general over-production and mass unemployment. Only full employment prevails in the economy. He made the following assumptions.

1. All incomes of the households are spent on consumption of goods and services.
2. There is no government activity (no taxation, public spending, price control etc.).
3. It is a closed economy i.e. no relationship with other economies.

Whatever is produced represents the demand for another product. Additional supply is additional demand. Thus Say's analysis is carried on in terms of barter. However, introduction of money in no way affects the process. In fact, money-based economy is more efficient than barter economy. It is true that sometimes, misdirected production may result in temporary over-supply of a particular product in a particular industry. Say himself admits this fact. But this disequilibrium disappears by the operation of the self-adjusting market forces. But general over-production or unemployment is impossible according to Say.

The essential aspects of Say's Law can be summarized as:

1. Economy is self-adjusting
2. No general over-production or unemployment is possible
3. All idle resources are fully employed
4. There is economic interdependence between nations
5. Flexible wage rate prevails in the economy
6. Flexible rate of interest prevails in the economy
7. Money is simply a veil
8. It helps international trade and
9. No government interference is essential

Criticism of Say's Law

Keynes has clearly exposed the weakness of Say's law. In 1936, Keynes brought about a revolution in economic theory attacking Say's law. In 1930's, Great Depression and its effects showed that the classical theory of employment was wrong and its foundation, the Say's Law was unacceptable. Keynes launched a vigorous attack on the Say's Law. The main points of criticism of the law are:

1. Great Depression made Say's law unpopular
2. All incomes earned are not always spent on consumption
3. Similarly whatever is saved is not automatically invested
4. The Law was based on wrong analysis of market
5. It suffers from the fallacy of aggregation
6. Aggregate supply and aggregate demand are not always equal
7. Rate of interest is not the equilibrating factor

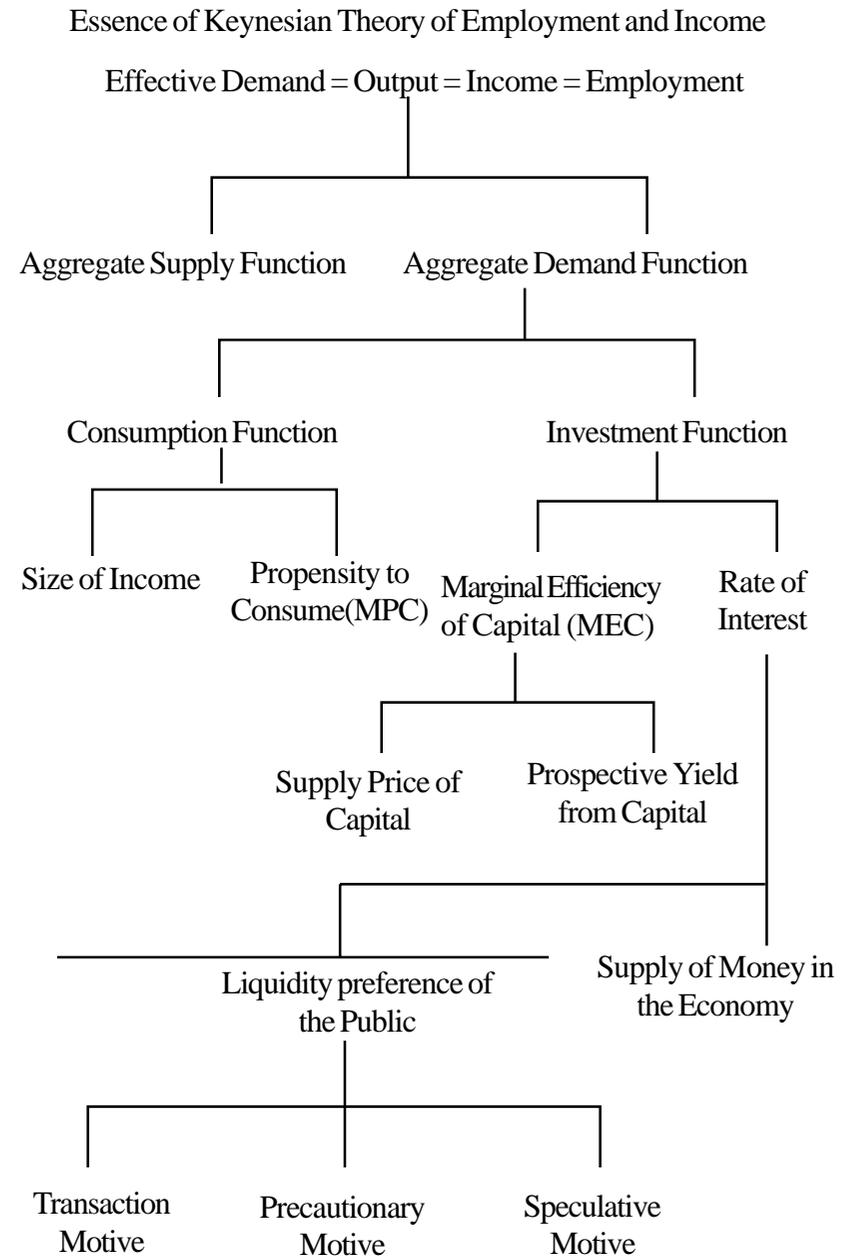
8. Capitalist system is not self-adjusting always
9. Perfect competition is an unrealistic assumption
10. Money is a dominant force in the economy
11. The law is applicable only for long period
12. Say's law holds goods only in a barter economy

Say's law has no validity and use now, critics point out. However, the classical theory relied on Say's law to assure that there would always be full-employment as a result of equality between aggregate demand and aggregate supply. In short there cannot be deficiency of aggregate demand. Even if there is any unemployment, the market mechanism would restore full employment.

Keynesian Theory of Income Determination

Keynes is considered to be the greatest economist of the 20th century. He wrote several books. However, his 'The General Theory of Employment, Interest and Money' (1936) won him everlasting fame in economics. The book revolutionized macro economic thought. Keynesian economics is called the Keynesian revolution.

The central problem in macro economics is the determination of income and employment of a nation as a whole. That is why modern economists also call macro economics as the theory of income determination. Keynes brings out all the important aspects of income and employment determination and Keynesian economics itself can be called macro economics. He attacked the classical economics and effectively rejected the Say's Law, the very foundation of the classical theory. He believed that in the short run, the



level of income of an economy depends on the level of employment. The higher the level of employment, higher will be the level of income.

A perusal of the basic ideas of Keynes can be clearly understood from the brief summary in the flow chart. Total income depends on total employment which depends on effective demand which in turn depends on consumption expenditure and investment expenditure. Consumption depends on income and propensity to consume. Investment depends upon the marginal efficiency of capital and the rate of interest.

The Principle of Effective Demand

The principle of effective demand occupies a key position in the Keynesian theory of employment. Effective demand is the ability and willingness to spend by individuals, firms and government. The level of output produced and hence the level of employment depends on the level of total spending in the economy.

Keynes used ‘aggregate demand and aggregate supply approach’ to explain his simple theory of income determination. The term ‘aggregate’ is used to describe any quantity that is a grand total for the whole economy.

Aggregate demand is the total demand for all commodities (goods and services) in the economy. Aggregate supply is the total of commodities supplied in the economy. These two factors are called by Keynes as aggregate demand function (ADF) and the aggregate supply function (ASF).

Keynes made it clear that the level of employment depends on aggregate demand and aggregate supply. The equilibrium level of income or output depends on the relationship between the aggregate demand curve and aggregate supply curve. As Keynes was interested in the immediate problems of the short run, he ignored the aggregate supply function and focused on aggregate demand. And he attributed unemployment to deficiency in aggregate demand.

It is important to note that all demand is not effective. According to Keynes, effective demand is that point where the ADF and ASF are

equal. ASF represents cost and ADF represents receipts. Cost must not exceed receipt. When the entrepreneurs find that their receipts are less than their costs, they will stop offering employment to new workers. So long as their receipts are higher than the costs, they will increase employment as they can increase their profits by offering more and more employment.

As already mentioned, the point of intersection between the two curves shows the maximum possible employment. According to Keynes, the level of employment depends on total demand and unemployment results as a consequence of a fall in total demand. If unemployment is to be averted, the remedy lies in increasing the effective demand.

Aggregate Demand

The total expenditure of an economy can be divided into four categories of spending. They are consumption expenditure (C), investment expenditure (I), government expenditure (G) and net expenditure on trade or net exports that is, exports minus imports, (X-M). The aggregate demand is the sum total of all such spending. Hence the aggregate demand function is represented as

$$AD = C + I + G + (X - M) \quad \dots \quad (1)$$

This function shows that the aggregate demand is equal to the sum of expenditure respectively on consumption (C), Investment (I), Government spending (G) and net exports (X-M). Thus aggregate demand is the total value of all planned expenditure of all buyers in the economy. It is the total demand for goods and services in the economy (Y) in a specific time period. Moreover, the aggregate demand is known as the amount of commodities people want to buy.

In the economy, as one man’s expenditure is another man’s income, the total expenditure of the economy must be equivalent to the total income. That is Total income (Y) = Total expenditure (AD). Since Y = AD, equation (1) can be written as

$$Y = AD = C + I + G + (X - M) \\ \text{or } Y = C + I + G + (X - M) \quad \dots \quad (2)$$

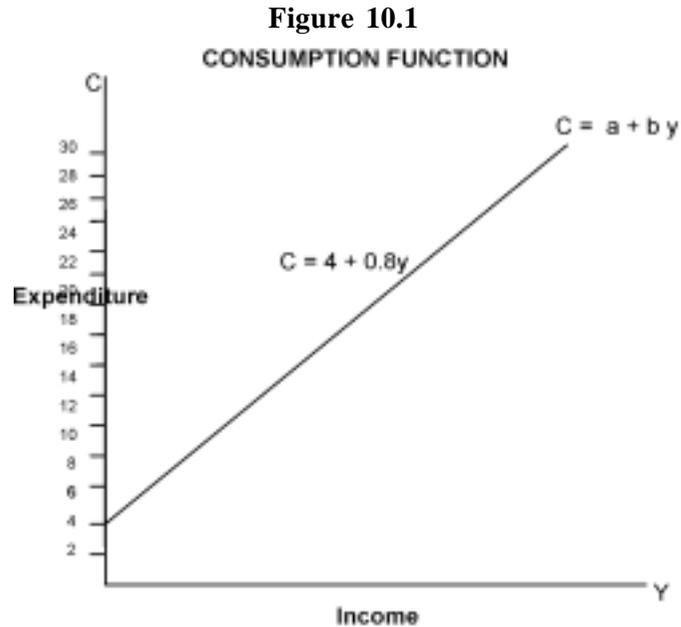
Keynes gives all attention to the ADF. This aspect was neglected by economists for over 100 years. Assuming that ASF is constant, the main basis of Keynesian theory is that employment depends on aggregate demand which itself depends on two factors :

1. Propensity to consume (Consumption function)
2. Inducement to invest (Investment function).

Consumption Function

People spend most of their income on commodities. Some spend their income fully and some others spend a portion and keep the rest for saving. How much the community as a whole spends and saves? It is about the relationship between income and consumption.

The term ‘consumption function’ explains the relationship between income and consumption. A function is the link between two or more variables. The proportion of income spent on actual consumption at different levels of income is called propensity to consume.



Keynes made it clear that there is a direct relation between income and consumption. Consumption function or propensity to consume is the ratio that measures the functional relationship between income and consumption. In mathematical form the relation can be expressed as,

$$C = a + b y \quad \dots \quad (2)$$

$$C = 4 + .8Y$$

Thus a consumption function is generally described in terms of the linear equation $Y = a + bY$ where the constant ‘a’ is the amount of autonomous consumption and slope (b) is MPC. The rate of change in consumption due to change in income depends on the MPC.

Equation (2) simply says that consumption (C) depends on income (Y). The + sign indicates that as income increases, obviously consumption will also increase. But the rate of increase in consumption will be little less than that of the rate of increase in income. It is because some unspent portion of the income will be saved. This aspect is made clear in the Keynes law of consumption. He points out, “the psychology of the community is such that when real income is increased, aggregate consumption is increased, but not so much as income”. Keynes also made it clear that in the short run, the consumption function is stable because consumption habits of the people are more or less stable in short period.

All these points or the income-consumption relationship can also be expressed in Figure 11.1. The vertical axis shows the spending on consumption indicated by C and the horizontal axis shows income or output indicated by Y. The straight line consumption function CC is defined in terms of equation $C = 4 + .8Y$.

The consumption curve CC is a short run curve. In this case consumption takes place even when income is zero. In equation (2) 4 is the level of initial consumption when income is zero and it is not affected by income. Even when income is zero, people spend some minimum level either by gift or borrowing. This consumption which is not related to income is called as autonomous consumption. That is the reason why curve C starts from 4 on the vertical axis.

In equation (2) .8 indicates that 80 per cent of additional income is spent on consumption and it is called as marginal propensity to consume (MPC). Thus MPC is the ratio of change in consumption to change in income. In other words, MPC is the rate of change in propensity to consume.

$$\text{MPC} = \frac{\text{Change in consumption}}{\text{Change in income}}$$

$$\text{Or MPC} = \frac{\Delta C}{\Delta Y}$$

Where ΔC - Change in consumption and ΔY - Change in income

The slope of the consumption function or any other straight line is measured by dividing the vertical change by horizontal change. The symbol Δ represents a change. Or slope can also be calculated as

$$\text{Slope} = \frac{\text{Vertical change}}{\text{Horizontal change}}$$

The propensity to consume is assumed to be stable in the short run. Therefore out of the given income how much will be spent depends on the slope of the curve.

In our case, .8 indicates that out of every additional income earned eighty per cent will be spent for consumption keeping the rest for saving. In short, consumption function relates the amount of consumption to level of income. Thus consumption of an economy depends upon the level of income. When the income of an economy rises, consumption also rises and vice versa. Suppose people spend more in an economy in relation to their income, their MPC will be more.

Keynesian Law of Consumption implies the following three aspects. Thus the concept of consumption function plays a vital role in Keynesian income determination.

- 1) Increase in income and increase in consumption are not at the same proportion. Consumption function is positive but less than one.

- 2) An increase in income is shared between consumption and saving.
- 3) Increase in income will not cause rise in consumption and saving at the same time. If the rate of increase in savings rises, the rate of increase in consumption will fall.

Saving Function

The portion of the income not spent on consumption is saving. Saving is consumption forgone. If saving rises, consumption will fall. According to Keynes, the level of saving in the economy, like consumption, depends basically on income. The relationship between saving and income can mathematically be expressed as in equation (3) and that is called as saving function.

$$S = -a + by$$

$$S = -4 + .2Y \quad \dots \quad (3)$$

Where S – Saving ; Y - Income; -a – dis-savings.

Marginal Propensity to Save (MPS) is the ratio of change in saving to a change in income. Thus it is the rate of change in the propensity to save.

$$\text{Or MPC} = \frac{\Delta S}{\Delta Y}$$

Where ΔS - Change in saving and ΔY - Change in income

With an increase income, if MPC tends to fall, MPS will tend to rise. If MPC remains constant, MPS also will remain constant. Thus income consists of consumption and saving.

$$\text{Hence} \quad Y = C + S$$

$$\text{Or} \quad \text{MPC} + \text{MPS} = 1$$

$$\text{MPS} = 1 - \text{MPC} \text{ or}$$

$$\text{MPC} = 1 - \text{MPS}$$

In an economy where people spend less of their additional income, MPC will be less and the CC curve will be less steep. Note that the

constant (-a) is dis-saving because it is autonomous consumption which is unrelated to income. The autonomous consumption will become zero in the long run. That is, households cannot consume without income in the long run. Hence in the long run, the consumption purely depends upon income and the curve C starts from origin.

Other Determinants of Consumption

Though income is the most important factor that has greater influence on consumption, there are other factors which influence the propensity to consume. They are:

1. Income distribution
2. Size and nature of wealth distribution
3. Age distribution of population
4. Inflation or price level
5. Government policies
6. Rate of interest
7. Expectations about price, income, etc.
8. Advertisements
9. Improvement in the living standard
10. Changes in cultural values

As discussed earlier, aggregate demand consists of two parts (if you ignore government and external trade) namely consumption function and investment function. However, consumption function or MPC remains constant in the short run. Hence, Keynes placed greater emphasis on investment function.

Investment Function

Investment has a specific meaning in economics. It means additions to the existing productive capacities (stock of fixed capital and

inventories). They include fixed equipments, machinery, building, raw materials, replacement due to depreciation, etc. It lays down the basis for future production. Investment is the key structural component of total spending or aggregate spending.

By investment, Keynes means real investment and not financial investment. Investment is the addition to real capital assets. It does not mean the purchase of bonds or shares which are financial investment. The distinction between consumption and investment is fundamental in Keynesian theory. Importance of investment as a component of aggregate demand rises due to the fact that it is another major component.

Consumption is a stable function of income. So it was not possible to change aggregate demand by changing consumption expenditure as it depends on income. Keynes found that investment is an autonomous expenditure determined independently of the level of income. He found it to be the major cause for the variation and instability in income and employment. The worldwide depression of 1930s was also caused by a fall in investment.

Determinants of Investment

According to Keynes, employment depends on investment. Employment fluctuates on account of fluctuations in investment. Therefore, we must discuss what determines the amount of investment. Investment spending is determined by

1. Expectations of future profitability or business confidence and
2. Rate of interest

Firms invest either from their own profits or by borrowing. Households having saving, have to decide whether to invest the money for profit or lend/deposit for interest. If the expected profit is higher than the rate of interest, then the households will invest. Otherwise they will lend or deposit their money for interest. Firms who invest their own profit will also decide in the same manner. Suppose the firms borrow

for investment, then they have to pay interest for that. Hence, firms will invest borrowed money only when the expected profit is high enough to pay the interest and the cost of initial capital.

Thus, in all the above cases, the decision to invest will be based on the rate of interest and business confidence. Of these two, business confidence or expectations about future profitability has got greater significance than the rate of interest. This is because rate of interest is stable in the short run. The expectations about profitability involves several considerations of the future about which there cannot be any certainty. Bleak prospects will lead to a reduction of investment and it will affect employment and vice versa.

Savings and Investment

Another important concept in this regard is savings. It is directly connected with investment. Saving and investment are the basic economic activities of an economy. Saving is inevitable for capital formation and economic growth. Saving itself has nothing to do with economic growth unless savings are properly mobilized and effectively channelised and invested to enhance capital stock to increase production and wealth of the economy. Thus aggregate savings and investment are equal.

But they may not be always in equilibrium. The classical economists believed that savings were automatically invested. They thought the decisions to save and the decisions to invest were made by the same persons. But Keynes argued that saving and investment were made by different persons for different reasons and were influenced by different factors. Thus, sometimes savings might exceed investment. When this happened, there would be deficiency of aggregate demand and general unemployment.

Keynes thought the gap between S and I could be filled by government intervention either directly by increasing government expenditure or indirectly by actions influencing the supply of money

Thus $S = I$

Therefore $Y = C + I$

Or $Y = C + S$

Rate of interest: Liquidity Preference Theory

Any business move has to take into consideration a vital factor which influences the current supply of money, namely interest. The rate of interest is another major determinant that influences aggregate investment. In fact, the Keynesian theory of employment begins with the rate of interest. Interest affects investment and employment. Keynes propounded his famous liquidity preference theory of interest to explain the necessity, justification and importance of interest. The concept of liquidity preference is a remarkable contribution of Keynes. According to Keynes, the rate of interest is “the reward for parting with liquidity for a specified period”.

Liquidity preference refers to the cash holdings of the people. Liquidity means cash. Why do people hold cash? It is because money is the most liquid asset and people prefer to keep their wealth in the form of cash. Keynes gives three motives for the liquidity preference of the people. They are

- 1) Transaction motive
- 2) Precautionary motive and
- 3) Speculative motive

In order to carry on day-to-day transactions, people prefer to keep cash. It is governed by the transaction motive. To meet unforeseen expenditure like sudden medical expenses, people hold cash. It is determined by precautionary motive. To take advantage of market movements of prices of bonds, shares, etc. people keep cash and in this case the speculative motive determines their cash holdings. ‘Speculative motive refers to the object of securing profit from knowing better than the market what the future will bring forth’ (Keynes).

Liquidity preference depends on rate of interest. Higher the rate of interest, people would like to take advantage and so will part with their cash. Therefore we can say that higher the rate of interest, lower will be the liquidity preference of the people. On the other hand, lower the rate of interest, higher will be the liquidity preference.

According to Keynes, the liquidity preference is more stable as it depends on human habits which remain same. Liquidity preference relates to the demand for money. It is important to note that it influences the demand side in determining the price of capital. The other side is the supply of money which depends on government monetary policy, and credit creation by commercial banks.

Briefly stated, the Keynesian investment function gives immense importance to the rate of interest. If the rate of interest remains constant, then investment increases with an increase in the business confidence about the future.

Simple Income Determination

According to Keynes, the level of income of a country in the short run will change as a result of change in employment. The level of employment depends on aggregate demand and aggregate supply. The equilibrium level of income depends on the balance between aggregate demand and aggregate supply. Full employment prevails when there is equality between these two. Thus the model can be used to show the determination of income, output and employment.

Assumptions

Keynes made the following assumption to explain income determination in a simple way.

1. There are only two sectors viz. consumers (C) and firms (I).
2. Government influence on the economy is nil. In other words government expenditure (G) is zero. As there is no taxation, all personal income will become disposable income.

3. The economy is a closed one without any influence of foreign trade (X-M) that is, X-M is zero.
4. Wages and prices remain constant.
5. There are unemployed resources and hence less than full employment equilibrium prevails.
6. There is no variation in the rate of interest.
7. Investment is autonomous and it has no effect on price level or rate of interest.
8. The consumption expenditure is stable.

Due to the first three assumptions the basic equation

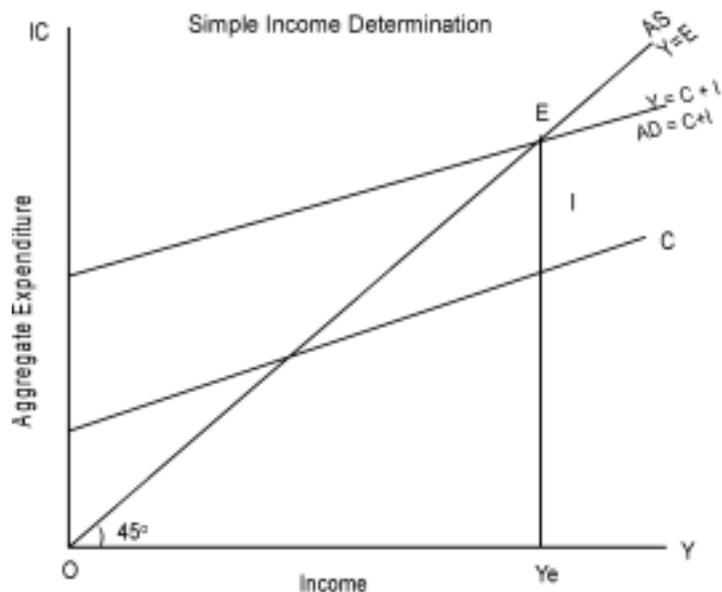
$$Y = C + I + G + X - M$$

has been reduced to $Y = C + I$

In Figure 10.2, vertical axis measures total or aggregate demand (or aggregate expenditure). Horizontal axis measures income and output. You have learnt in National Income lesson (Plus One) that in the aggregate economy, income, expenditure and output are equal. Hence they are measured in the same axis.

Aggregate supply is the total value of all commodities that the firms intend to supply (produce). This purely depends on available technology, resources (material and human), efficiency of labour, etc. Most of these factors change only in the long run and remain constant in the short run. As the aggregate supply curve represents equality of total income and output, the 45-degree line is drawn from the origin representing AS curve. The 45-degree line divides the quadrant into two equal halves with equal distance from the two axes. Every point on the line indicates equal amount of income, output and expenditure ($Y = E$). The importance of this is that if any other line intersects the 45-degree line, the point of intersection will show an equal amount of income, output and expenditure.

Figure 10.2



Aggregate demand represents the total expenditure on consumption and investment (or total expenditure). The aggregate demand (expenditure) curve is the combination of consumption and investment function. In Figure 10.2, C represents consumption function. When investment is added, it becomes C+I. The value of investment is shown by the vertical distance between C and C+I curves.

Thus Aggregate Expenditure (AD) = C + I

Equilibrium occurs at the point of intersection of aggregate demand and aggregate supply. At point E the planned total spending (or aggregate demand) by consumers (C) and investors (I) is equal to the total amount of national income (Y = C + I). The equilibrium level of output also determines the equilibrium level of employment. Hence, at point E, we get equilibrium level of income, output and employment.

The equilibrium level of employment need not correspond to full employment. If any of the components of aggregate demand rises at each level of income, for example, because government increases its

expenditure, that shifts the entire AD line upward. This raises equilibrium income and output. Similarly, if any one component of AD falls, that shifts the line downward and lowers equilibrium output.

Multiplier: Ultimate determinant of Income and Employment

We have dealt with the immediate determinants of income and employment namely, consumption spending and investment spending (C+I). Among them autonomous consumption and investment are not related to income. The ultimate determinant of income and employment is the multiplier. Any increase in investment increases income manifold due to multiplier effect. Thus the concept of multiplier expresses the relationship between an initial investment and the final increment in the GNP. That is, the magnified or amplified effect of initial investment on income is called as the multiplier effect. It is measured by the ratio of change in equilibrium income to change in expenditure.

$$\text{Multiplier (K)} = \frac{\text{change in equilibrium income}}{\text{change in expenditure}}$$

$$\text{Or } K = \frac{\Delta Y}{\Delta I}$$

whereas ΔY - change in equilibrium income; ΔI - change in expenditure

Thus, K is the co-efficient that shows the number of times at which income increased due to increase in investment. K can also be calculated by another way.

$$K = \frac{1}{\text{MPS}} \quad \text{where MPS} = \text{marginal propensity to save}$$

or

$$K = \frac{1}{1 - \text{MPC}} \quad \text{where MPC} = \text{marginal propensity to consume.}$$

Government Spending

We have discussed the simple income determination only with two kinds of expenditure. One is consumption expenditure (C) to produce consumer goods. Second is investment expenditure (I) to produce capital goods. The third component is the public expenditure (G) made by government. It is made to produce public goods like literacy, public health, child nutrition, social welfare and many more for the collective well-being of the society.

The classical economists held the view that government was unproductive. Keynes rejected their idea and argued that government activities (taxing and spending) strongly influence the level of economy. Taxation and public spending can be used to achieve macro goals like growth and economic stability. Such usage is called fiscal policy.

Keynes proved that fiscal policy is more effective in recovering economies from depression. Public expenditure can be used to increase effective demand during depression. The injection of money in the economy will generate demand and this will increase investment and employment. Thus public expenditure will put back the economy again on its growth path.

Many countries have adopted his policy suggestions and recovered from the Great Depression of 1930s. Since then the role of government and fiscal policy became important in macroeconomic management.

Principle of Acceleration

According to the theory of multiplier, the increase in investment generates manifold increase in income. Such increases in income increases consumption. The initial increase in demand automatically gathers momentum. The available productive capacities will be exhausted fully. This in turn encourages more investment to meet the expanding demand.

As the existing productive capacity would not be enough to meet the expanding demand, productive capacities will be expanded by new investments.

Thus the level of investment depends upon the rate of change in income and the resultant change in consumption. This is what called as the principle of accelerator. According to this principle, net investment is positively related to changes in income.

The theory of multiplier states the effect of investment upon the level of income. The principle of accelerator states that the effect of an increase in income upon the level of investment.

Money and Interest

Keynes represented a monetary theory of interest. It is known as the liquidity preference theory of interest. Interest, according to Keynes, is payment for the use of money. The demand for money (liquidity preference) and the supply of money, determine the rate of interest. The essence of the Keynesian theory of liquidity preference is that the quantity of money, along with the state of liquidity preference determines the rate of interest.

Keynes made it clear that interest is not the reward for savings as assumed by the classical writers. The rate of interest is the “reward for parting with liquidity for a period”. In other words, the rate of interest is largely determined by the attitude of the people to part with liquidity if their liquidity preference is strong.

EXERCISE

Part - A

I Choose the correct answer

- The macro economic thinking was revolutionized by
 - David Ricardo
 - J.M. Keynes
 - Adam Smith
 - Malthus
- The Classical Theory assumed the existence of
 - Unemployment
 - Disguised unemployment
 - Full employment
 - Under-employment
- The central problem in Macro Economics is
 - Income and employment
 - Price and Output
 - Interest and Money
 - None
- To explain the simple theory of income determination, Keynes used
 - Consumption and Investment
 - Aggregate demand and aggregate supply
 - Production and Expenditure
 - All the above

- The marginal propensity to consume
 - $\Delta S/\Delta Y$
 - $C/y \cdot \Delta P/\Delta Q$
 - $\Delta P/\Delta Q$
 - $\Delta C/\Delta Y$

II. Fill in the blanks

- The term consumption function explains the relationship between _____ and _____
- _____ is the ratio of change in saving to a change in income.
- The worldwide depression of 1930s was also caused by a _____
- _____ refers to the cash holdings of the people.
- The magnified effect of initial investment on income is called _____ effect.

III. Match the following

- | | |
|----------------------|---|
| 11. Aggregate Demand | a) Vertical Change
Horizontal Change |
| 12. Slope | b) $C + S$ |
| 13. K | c) $C + I + G + (X-M)$ |
| 14. Y | d) Liquidity Preference |
| 15. Keynes | e) $\frac{1}{1-MPC}$ |

IV Answer in a word or two

- What crippled the free enterprise economies of US and UK?
- State J.B. Say's Law of Market.

18. Who is the author of the “General Theory of Employment, Interest and Money”?
19. Name the point of intersection of Aggregate Demand and Aggregate Supply
20. Give the formula for Multiplier

Part – B

Answer the following questions in about four or five lines

21. What are the assumptions of Say’s law of markets?
22. What is effective demand?
23. Give the factors on which the aggregate demand depends.
24. What are the three motives of liquidity preference theory?
25. Write a note on multiplier.

Part – C

Answer the following questions in about a page

26. What are the criticisms of Say’s Law?
27. Draw the flow chart to depict the essence of Keynes theory.
28. Describe the consumption function with a diagram
29. What are the determinants of consumption other than income?
30. What are the assumptions of Keynes’ Simple Income Determination?

Part – D

Answer for each question should be about three pages

31. Critically examine J.B.Say’s Law of Markets.
32. Write a note on Aggregate Demand and Aggregate Supply.
33. Describe the simple theory of income determination with a suitable diagram.

Chapter 11

Monetary Policy

Introduction

Before we study monetary policy, we shall study about the nature and functions of money. Money has become so important that the modern economy is described as money economy. Modern economy cannot work without money. Even in the early stages of development, the need for exchange arose. But exchange took place first in the form of barter. Barter is the direct exchange of goods for goods. It is a system of trading without the use of money. In the past when wants of men were a few and simple, the barter system worked well. But as days passed by, it was found to be unsuitable. It had many difficulties. For example, barter requires double coincidence of wants. That is, a person must have what the other person wants and vice versa. And this is not always possible. For instance, if a person who has a cow wants a horse in exchange, the other person must have it and he must need a cow. Otherwise exchange cannot take place. Again, there is the difficulty of storage. Money serves as a store of value. In the absence of money, a person has to store his wealth in the form of commodities and they cannot be stored for a long period. For some commodities are perishables and some will lose their value.

2. Functions of Money

Money has overcome the difficulties of barter. Crowther, has defined money as “anything that is generally acceptable as a means of exchange (i.e, as a means of settling debts) and that at the same time acts as a measure and as a store of value”. An important point about this definition is that it regards anything that is generally acceptable as money. Thus money includes coins, currency notes, cheques, bills of exchange, credit cards and so on. That is why prof. Walker has said: “money is that which money does”. By this, he has referred to the functions of money. Money performs many functions in a modern

economy. The most important functions of money are given in the form of a couplet quoted below :-

“Money is a matter of functions four
A medium, a measure, a standard, a store”.

Thus, money, is a medium of exchange, a measure of value, a store of value and a standard of deferred payments.

- 1. Medium of exchange :** The most important function of money is that it acts as medium of exchange. Money is accepted freely in exchange for all other goods. Barter system is very inconvenient. So the introduction of money has got over the difficulty of barter.
- 2. Measure of value :** Money acts as a common measure of value. It is a unit of account and a standard of measurement. Whenever we buy a good in the market we pay a price for it in money. And price is nothing but value expressed in terms of money. So we can measure the value of a good by the money we pay for it. Just as we use yards and metres for measuring length and kilograms for measuring weights, we use money for measuring the value of goods. It makes economic calculations easy.
- 3. Store of value :** A man who wants to store his wealth in some convenient form will find money admirably suitable for the purpose. It acts as a store of value. Suppose the wealth of a man consists of a thousand cattle. It is rather difficult for him to preserve his wealth in the form of cattle. But if there is money, he can sell his cattle, get money for that and can store his wealth in the form of money.
- 4. Standard of deferred payments :** Money is used as a standard for future (deferred) payments. It forms the basis for credit transactions. Business in modern times is based on credit to a large extent. This is facilitated by the existence of money. In credit, since payment is made at a future date, there must be some medium which will have as far as possible the same exchange power in the future as at present. If credit transactions were to be carried on

the basis of commodities, there would be a lot of difficulties and it will affect trade.

Money, to be used as a medium of exchange, must be universally acceptable. All people must accept a thing as money. Or, the Government should give it legal sanction. And for performing the other two functions, that is, to be used as a store of value and standard of deferred payments, money should have stability of value. In other words, the value of money should not change often.

Importance of Money : Money is one of the most fundamental inventions of mankind “Every branch of knowledge has its fundamental discovery. In mechanics, it is the wheel, in science fire, in politics the vote. Similarly in economics, in the whole commercial side of Man’s social existence, money is the essential invention on which all the rest is based (Crowther).

Money is indispensable in an economy whether it is capitalistic or socialistic. Price mechanism plays a vital role in capitalism. Production, distribution and consumption are influenced to a great extent by prices, and prices are measured in money. Even a socialist economy, where the price system does not play so important a role as under capitalism, cannot do without money. For a while, the socialists talked of ending the money, i.e, abolishing money itself, because they considered money as an invention of the capitalists to suppress the working class. But later on they found that even under a system of planning, economic accounting would be impossible without the help of money.

In the early stages of civilization, different people used different things as money. Cattle, tobacco, shells, wheat, tea, salt, knives, leather, animals such as sheep, horses and oxen and metals like iron, lead, tin and copper have been used as money. Gradually precious metals such as gold and silver replaced other metals such as iron, copper and bronze as money. And now paper is used as money. We may describe one more form of money, that is, bank deposits which go from person to person by means of cheques.

Money supply

The Reserve Bank of India (RBI) is the central bank of our country. It manages the monetary system of our country. It has classified the money supply of our country into four components.

They are :

$M_1 =$ Currency with the public. It includes coins and currency notes + demand deposits of the public. M_1 is also known as narrow money ;

$M_2 =$ M_1 + post office savings deposits ;

$M_3 =$ M_1 + Time deposits of the public with the banks. M_3 is also known as broad money ; and

$M_4 =$ M_3 + total post office deposits.

Note : Besides savings deposits, people maintain fixed deposits of different maturity periods with the post office.

Reserve Money

Reserve Money (RM) may be considered as Government money. (In this context, the Reserve Bank of India (RBI) is also taken as Government). Reserve money is the cash held by the public and the banks.

It is composed of

C = currency with the public in circulation

OD = other deposits of the public with the RBI (OD) (The public regard their deposits with the RBI as cash or money) and

CR = cash reserves of banks. Cash reserves are composed of two parts :- They are (1) cash reserves with banks themselves and (2) Bankers deposits with RBI.

Thus,

Reserve Money (RM) = C+ OD + CR

We may note that the simple theory of money supply states that supply of money (M) is an increasing function of reserve money (RM). In other words, as Reserve Money changes, supply of money also changes.

The Reserve money is also called high powered money on account of its great influence on money supply.

Fiat Money : Currency notes in circulation are normally referred to as fiat money. For example, one Rupee notes issued by the Government of India is Fiat money.

The notes issued by the RBI are usually referred to as bank notes. They are in the nature of promissory notes.

Monetary Policy

The basic goals of macroeconomic policy in most of the countries are full employment, price stability, rapid economic growth, balance of payments equilibrium and economic justice. Economic justice refers to equitable distribution of income. The government tries to achieve the goals through macroeconomic policy. Macroeconomic policy can be broadly divided into monetary policy and fiscal policy. Of course, the government follows other policies such as industrial policy, agricultural policy, tariff policy and so on. But we limit our discussion only to monetary policy and the fiscal policy. In the present chapter, we shall study the monetary policy with reference to our country.

“Monetary policy is policy that employs the central bank’s control over the supply and cost of money as an instrument for achieving the objectives of economic policy” (Edward Shapiro).

Instruments of Monetary Policy

Roughly we may say that monetary policy is credit control policy. The instruments of credit control can be broadly divided into :

- (1) Quantitative credit control measures ; and
- (2) Selective credit control measures.

Quantitative credit control instruments include bank rate policy, variation of cash reserve ratios and open market operations.

1. Bank Rate : The Bank rate is the minimum rate at which the central bank of a country will lend money to all other banks. Suppose, there is too much of money in circulation. Then the central bank should take some money out of circulation. It can do it by increasing the bank rate. When the bank rate goes up, the rates charged by other banks go up. The belief is that if the rate of interest goes up, businessmen will be discouraged to borrow more money and producers will borrow less money for investment. Generally, to control inflation, the central bank will increase the bank rate.

2. Variation of cash Reserve Ratios : The ability of a commercial bank to create credit depends upon its cash reserves. The central bank of a country has the power to vary the cash reserve ratios. During inflation, to check the sharp rise in commodity prices and to control credit, the central bank can make use of this weapon.

3. Open Market Operations : In India, the open market operations have been conducted in Central Government securities and State Government securities. The success of open market operations as a weapon of credit control, depends mainly on (i) the possession by the central bank of adequate volume of securities ; (2) the presence of well developed bill (securities) market ; and (3) stability of cash reserve ratios maintained by commercial banks. These things are missing to a great degree in India. So, open market operations have not become a powerful weapon of credit control in our country. They have been largely used in India more to assist the Government in its borrowing operations rather than controlling credit.

Selective credit controls

Selective credit controls can play an important role in an under-developed money market with a planned economy. Unlike the instruments of quantitative credit control, the selective instruments affect the types of credit extended by commercial banks. They not only prevent

flow of credit into undesirable channels, but also direct the flow of credit into useful channels. The Reserve Bank of India had started applying the selective credit controls since 1955.

The weapons of selective credit controls include (a) Fixing minimum margin of lending or for purchase of securities. (For example, shares or commodities like foodgrains and raw materials which are in short supply). In this case, the central bank specifies the fraction of the purchase price of securities that must be paid in cash. Unlike general controls, selective controls make it possible for the central bank to restrain what is regarded as an unhealthy expansion of credit. (eg. for financing the purchase of securities or automobiles) ;

- b) Ceiling on the amount of credit for expansion and
- c) Different rates of interest will be charged to encourage certain sectors and to discourage certain other sectors. In our country, the last weapon has been used especially, to encourage exports, agricultural production and production in small scale and cottage industries sector.
- d) The central bank will persuade the commercial banks to follow certain policies through moral suasion.

Conclusion : Monetary policy is usually effective for controlling inflation. But during the Great Depression of 1930s, it was found to be ineffective. So Keynes suggested a bold and dynamic fiscal policy to tackle the problems of mass unemployment and bad trade characterized by falling prices and deficiency in aggregate demand. But since 1970s, the world has been facing the problem of stagflation marked by stagnation and lack of demand on the one hand and inflation on the other. In the case of stagflation, both monetary policy and fiscal policy are found to be ineffective. So incomes policy such as voluntary restraint on wages by employees, and on prices by producers have been suggested as a complement to the monetary policy and the fiscal policy.

In India, the usual methods of credit control are not operative in an effective manner. The main reasons for the ineffectiveness of the

monetary policy of the RBI is this. Two main conditions essential for the success of the credit policy are the dependence of the money market upon commercial banks and dependence of the commercial banks on the central bank for their funds. Both these conditions have been only partially fulfilled in India. That is why, the credit control measures of RBI have not been totally effective in India. Not only that, in recent times unaccounted money (black money) has been used for financing speculative dealings.

Monetary Transmission

The transmission mechanism tells that monetary policy affects income through the interest rate and investment. It is the process by which money supply affects income. Let us suppose that the government follows cheap money. The central bank, for example, may reduce the bank rate. This will result in a fall in the market rate of interest. Then the investment will go up. This, in turn, will increase employment and income. The increase in money supply can also be caused by variation of cash reserve ratios and open market operations.

Diagrammatic representation of Transmission Mechanism

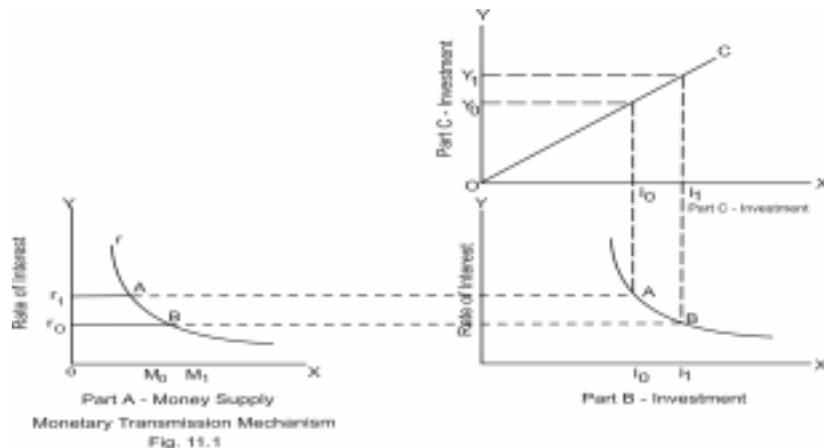


Fig. 11.1 illustrates how transmission mechanism works. Part A of the diagram tells that when there is a fall in the rate of interest from r_1 to r_0 , money supply increases from M_0 to M_1 . As a result of the fall in the rate of interest and increase in the supply of money, investment increases from I_0 to I_1 as shown in Fig. 9.1 (b). The increase in investment results in increase in income from Y_0 to Y_1 , as shown in fig. 11.1(c)

Many modern economists argue that this view of transmission mechanism is rather narrow. They say that like investment, consumption may vary with the interest rate. The classical economists assumed that consumption is inversely related to the rate of interest. If we accept that view, a fall in the interest rate will cause an increase in consumption. Since consumption is a component of aggregate demand, aggregate demand increases. This in turn, will increase the equilibrium level of income. If both consumption and investment increase, income will increase by a greater amount than if only investment increases.

The monetary economists further argue that monetary policy may also affect income by altering net private wealth.

Net Private wealth may be defined as society's capital stock, money supply, and government debt (government debt includes treasury bills, notes and bonds). And consumption is positively related to net private wealth. If the nominal money supply increases and price level is constant, the real money supply increases. Since it is a component of net private wealth, wealth increases, and in turn consumption increases. When consumption increases, aggregate demand increases and the equilibrium level of income increases. It may be noted that wealth and consumption increase without regard to changes in the rate of interest. It follows that monetary policy is effective even in the liquidity trap. According to Keynes, liquidity trap refers to a situation in which an increase in the money supply does not result in a fall in the interest rate but merely in an addition to idle balances.

Dear Money

When there is inflation in a country, the central bank tries to control it by following dear money policy. The term “Dear Money” refers to a phase or policy when interest rates are high.

Cheap Money

“Cheap Money” denotes a phase in which loans are available at low rates of interest or a policy which creates this situation. Cheap money policy is followed by a central bank during a period of depression to increase the supply of money so as to stimulate investment.

Value of money

By “Value of Money” we mean the purchasing power of money. The purchasing power of money depends upon the price level. A general rise in the price level indicates a fall in the value of money and a general fall in prices indicates a rise in the value of money.

The Quantity Theory of Money and the Equation of Exchange

The Quantity Theory of Money was formulated by Irving Fisher. In its original form, the quantity theory states, “prices always change in exact proportion to changes in the quantity of money. If the amount of money is doubled, prices double. If the amount of money is halved, prices fall to half their original level”. The main point about the quantity theory is that price level changes because of changes in the quantity of money.

Equation of Exchange : The quantity theory of money has been put forward in the form of an equation known as the “Equation of Exchange”. It is also known as Fisher’s equation. The equation of exchange states that if ‘M’ is the amount of money, ‘V’ is the velocity of circulation of money, ‘P’ is the price level and ‘T’ is the volume of trade, then $MV = PT$ (or $P = MV/T$)

This is known as the equation of exchange. Velocity of circulation (V) refers to the number of times that each unit of money is used during a given period. The equation tells when the supply of money increases, other things being equal, there will be a rise in the price level. That means a fall in the value of money. For example, when ‘M’ is doubled, ‘P’ will be doubled.

Now a days, a large proportion of money consists of cheques, bills and other forms of credit instruments. So some economists are of the opinion that the above types of money should be taken into account while considering the quantity of money. So the Equation of Exchange has been modified as follows :-

$PT = MV + M^1V^1$ where M^1 is the total amount of all forms of cheques, bills and other instruments of credit in circulation and V^1 is the velocity of circulation of M^1 (credit instruments) The main criticism against the quantity theory of money is that it is based on the assumption of full employment. But if full employment is not there and if there are unemployed resources, an increase in the quantity of money will not generally increase prices. Again, during depression, all prices fall. Even if the quantity of money is increased at that time, prices will not rise. In spite of the above criticism, we may note that the quantity theory of money is a statement of tendency and it indicates in a crude way the relationship between prices and the quantity of money.

Changes in price level may be influenced by many things other than the quantity of money such as Government’s monetary policy and fiscal policy, the supply of goods in the given period, the volume of trade, changes in the incomes of the people and effective demand for goods. One way of studying about changes in prices is to study about inflation and deflation.

Inflation and Deflation

The terms ‘inflation’ and ‘deflation’ are not easy to define. Different economists have defined them in different ways. Crowther has given us

the most simple and useful definition of these terms. According to Crowther, “Inflation is a state in which the value of money is falling, i.e, prices are rising”. So it is generally regarded that during a period of inflation, the price level will rise. It is also described as a situation where too much money chases too few goods resulting in an abnormal increase of price level. Shapiro has defined inflation as “a persistent and appreciable rise in the general level of prices”. And Harry Johnson has defined it as a “sustained rise in prices”. However, we should remember one important point. That is, there can be inflation even without a rise in the price level. This is known as ‘*Repressed Inflation*’. Usually this happens during a war period. On account of many controls and rationing that exist during wartime, prices will be kept under check. But the moment controls are withdrawn, prices will go up. So the real test of inflation is neither an increase in the amount of money nor a rise in prices, but the appearance of abnormal profits. Whenever businessmen and producers make huge profits, it is a sign of inflation.

Types of Inflation

1. Demand – Pull Inflation : It is loosely described as “too much money chasing too few goods”. This refers to the situation where general price level rises because the demand for goods and services exceeds the supply available at the existing prices.

Creeping or Persistent inflation : Since the end of world War II, i.e. since 1945, there has been a tendency for prices and wages to push one another upwards. This situation has been described as creeping or persistent inflation.

Runaway or Galloping or Hyper – Inflation

This is a serious type of inflation. For example, it was experienced in Germany after World War I and in Hungary and China after World War II. In this situation, prices rise to a very great extent at high speed and high prices have to be paid even for cheap things. And money

becomes quite worthless and new currency has to be introduced. This situation is known as galloping inflation or hyper-inflation.

2. Cost – Push Inflation

Cost – push inflation is induced by rising costs, including wages, so that rising wages and other costs push up prices. We can also speak of wage inflation or price inflation when we mean increase in wages or prices.

Bottleneck Inflation : This refers to inflation that results from shortages, imbalances and rising marginal costs as full employment output is approached.

Profit – Push Inflation - Just as trade unions manage to push up wages, oligopolists and monopolists will raise prices more than enough to cover increase in costs with the aim of making monopoly profits.

Generally during war and in the post- war period, there will be inflation. This is so because during war, the incomes of people increase. But there will be shortage of goods and there may be rationing, control and things like that. So during the post - war years, people who have been forced to save money will spend. That is, demand for all sorts of goods will increase during that period but supply will not increase so fast as that. This leads to inflation. Inflation occurs during war because the one great aim at that time is that of winning the war. Since modern wars are so expensive, the Government has to depend upon created money to finance war. This leads to inflation. And inflation breeds inflation. It means that inflation leads to inflation. During a period of inflation, prices will be high. Since prices are high, workers will demand high wages. High wages result in high costs. High costs in turn lead to high prices. Thus it forms a vicious circle. “Wages force up prices ; prices force up wages”. This is the *inflationary spiral*. “Deficit financing” is another cause of inflation. This applies particularly to underdeveloped countries with planned economies. Inflationary trends can be noticed also during the boom period of a trade cycle.

Since inflation has many evils, every government tries to check it. Inflation has destroyed many economies. For example the inflation that took place in 1923 in Germany destroyed her economic system. Inflation can be checked by some or all of the following measures.

- (1) Increased taxation (2) By reducing government expenditure on capital projects. (In India, this measure has been suggested to check inflation. Many capital projects proposed in our Third Five Year Plan were either suspended or dropped completely. (3) Restrictions on imports. (4) Rationing and (5) Price controls. Sometimes a “wage freeze” is recommended to check inflation. That is, trade unions will be requested not to ask for an increase in wages during a given period. The success of the above measures in tackling inflation depends upon the efficiency of the government in implementing the measures.

Deflation : Crowther, defines deflation as a “state in which the value of money is rising, i.e., prices are falling”. Both inflation and deflation refer to the movement of prices. Deflation is the opposite of inflation. Generally inflation is a period characterized by rising activity and employment. But during deflation, there will be bad trade and unemployment. During deflation, since prices fall faster than costs, there will be heavy losses for producers and businessmen. There will not be profits in any branch of economic activity. So there will be a fall in investment. This results in unemployment. Both inflation and deflation are evils. There is nothing much to choose between them. While rising prices can be checked to some extent by the monetary policy of the government, the latter is of little help in raising the price level during deflation. It does not work. That is why during such periods, modern economists suggest that the State must play an active role in the economic field and step up economic activity by undertaking a series of public works programmes. “Wage-cut” is sometimes recommended as a remedy for depression. But it is not a correct solution. It will only make matters worse.

Effects of changes in prices

Changes in prices affect different sections of the community in different ways. They affect production and distribution too.

1. Effects on production

If prices are rising, it will stimulate production. Under a capitalistic system, production is carried on mainly for profits. During a period of rising prices (inflation), there will be abnormal profits. This increases production. So manufacturers and businessmen gain during inflation. Producers and businessmen gain during inflation. Producers gain by inflation because during that period prices rise faster than costs. So they make huge profits. But if inflation becomes hyper-inflation, it may end in a crash. On account of the rapid fall in the value of money, profits which are in the form of money may become worthless. And there will be a “flight from currency”. Inflation may become an important cause of “violent revolutions and economic chaos”.

In a period of falling prices, businessmen incur huge losses because prices fall faster than costs. And there will be little scope for investment. This results in unemployment on large scale. There will be business depression. During depression, money may be cheaply available, prices of materials will be low, men will be available for work but there will be no investment, no employment, no incomes and no demand for goods. Such a situation has been described as ‘poverty in the midst of plenty.’ The Great Depression of 1930s is a case in point.

2. Effects on Distribution

- a) *Business class* : During inflation, manufacturers and businessmen make huge profits. Of course, during deflation, they make losses.
- b) *Fixed income groups* : People in fixed income groups are hit hard in times of inflation. The incomes of wage earners and salaried

people such as teachers, clerks and judges do not increase as fast as prices. Even retired people getting pension are also affected during inflation.

Wage earners and salaried – people gain during a period of falling prices. But it is not a real gain because many people will lose their jobs during deflation. Unemployment is a worse evil than rising prices.

- c) *Investors* : people who have invested their money in “gilt edged” securities (government securities) will get only fixed income. So their position is like those in the fixed income group. But those who have shares in companies will make profits during a period of rising prices and lose during a period of falling prices. In Germany, thousands of middle class families were ruined during the inflation because all their lifetime savings were reduced to nothing by the tremendous rise in prices. If the value of money falls continuously, it becomes unsuitable as a store of value. People will not save at all.
- d) *Rentiers* : Rentiers gain during deflation and lose during inflation. But the gain during deflation is only a temporary feature.

It can be seen from the above discussion that violent changes in prices are a bad thing. Both inflation and deflation are great evils. “*Inflation is unjust and deflation is inexpedient*” (disadvantageous). Some economists believe that of the two, deflation is worse because it results in unemployment. That is why it is now generally agreed that a steadily rising price level is a good thing for economic progress and social justice. We may agree with Robertson when he says that “money which is a source of so many blessings to mankind, becomes also, unless we can control it, a source of peril and confusion”.

EXERCISE PART – A

I. Choose the correct answer

1. Monetary policy is controlled by

a) central government	b) state government
c) central bank	d) private sector.
2. Currency with the public is known as

a) M1	b) M2
c) M3	d) M4
3. Bank rate is raised during

a) deflation	b) inflation
c) stable prices	d) unemployment
4. During inflation

a) businessmen gain	b) wage earners gain
c) salaried people gain	d) Rentiers gain
5. A situation marked by rising prices and stagnation in demand is known as

a) cost-push inflation	b) demand – pull inflation
c) stagflation	d) wage – push inflation.

II. Fill in the blanks

6. The direct exchange of goods for goods is known as _____
7. Deflation is a period marked by _____ prices
8. The equation of exchange ($MV = PT$) was given by _____
9. Galloping inflation is also known as _____
10. Monetary policy is usually effective in controlling _____

III. Match the following

- | | |
|---------------------------------|-------------------------|
| 11. Quantitative credit control | a) Low rate of interest |
| 12. Selective credit control | b) Bank rate |
| 13. cheap money policy | c) Moral Suasion |

Chapter 12

Fiscal Policy

Public finance or government finance is a field of economics. It deals with budgeting the revenues and expenditures of government (or public sector). It is about the identification of and appraisal of the means and effects of government financial policies. Public finance deals with the financing of the State activities and it discusses the financial operations of the public treasury. Fiscal economics is another name for public finance.

The functions of the government were minimal in the early days of the development of economic philosophy. The economic decisions were guided by the market forces of demand and supply and the government was not expected to interfere with the working of the market forces. Earlier governments limited their activities to a) the maintenance of law and order b) the defence of the country c) administration of justice d) general administration. The early State was a police State.

Modern governments do not confine their activities to the barest minimum. Besides the activities performed by the early State, modern governments undertake a number of growth and development-oriented projects and welfare activities for the well-being of the people. The modern State is a Welfare State. Therefore there is a change in the concept of a modern State which is a welfare State. The State has to mobilize adequate resources for meeting out the ever increasing expenditures, as the responsibilities and functions of the State have multiplied.

Fiscal economics in the modern days has undergone far-reaching changes. These changes can also be studied through macro aspects of fiscal policy. It relates to macro economic functions of the government. It is concerned with the taxation, public expenditure and monetary policy

which affects the overall level of employment and price level. It may be noted that there is a link between economic theory and the theory of public finance.

Definition

Economists have defined public finance differently. The following are some of the popular definitions:

According to Dalton, “Public finance is concerned with the income and expenditure of public authorities and with the adjustment of the one with the other”.

Findlay Shirras says that, “Public finance is the study of the Principles underlying the spending and raising of funds by public authorities”.

To quote Lutz, “Public finance deals with the provision, custody, and disbursement of resources needed for the conduct of public or government functions”.

We may conclude from the above definitions that Public Finance or Fiscal Economics is concerned with the principles and practices of obtaining funds and spending the same for achieving the maximum social welfare and economic growth in the country.

Subject matter of public finance

The following subdivisions form the subject matter of public finance

1. Public expenditure
2. Public Revenue
3. Public debt
4. Financial administration and
5. Federal finance

1. Public expenditure

Since the modern government represents a welfare state, the responsibility of the government is to bring about maximum social

welfare. In addition to this, it has to perform various other functions, which require heavy expenditures. We study in this sub-division, the fundamental principles governing the flow of government funds into different spending streams and the methods of incurring expenditure on the various activities.

2. Public Revenue

Public revenue means different sources of government’s income. It deals with the methods of raising revenue for the government, principles of taxation and other related problems. Raising of tax revenue and non-tax revenue is the subject matter of public revenue. Tax revenue deals with the kinds of taxes and the impact and incidence of various taxes. Non-tax revenue includes

- i.) Commercial revenue (income earned through sale of goods and services and profits earned by public sector enterprises),
- ii.) Administrative revenues (Fees, license fees, special assessments),
- iii) Gifts and grants.

3. Public debt

The problem relating to the raising and repayment of public loans is studied under this sub-division. Borrowing by the government from the public is called public debt. In modern world, it is not possible for the government to meet all its expenditure through tax and non-tax revenue. Hence public revenue falls short of public expenditure. As a result, governments are forced to borrow from internal and external sources. In the case of internal debt, Government borrows from the people, commercial banks and the central bank. External debt includes borrowing from international monetary institutions like IMF and World Bank and also from foreign countries. The soundness of the borrowing policy of the governments and indication of the healthy direction of spending are examined under this sub-division.

4. Financial administration

Financial administration is concerned with the organisation and functioning of the government machinery that is responsible for performing various financial activities of the state. Preparing the budget for the particular financial year is the master financial plan of the government. The various works, starting with the objectives of designing a budget, the methods of preparing it, presentation of the budget before the Parliament and State Assembly, passing or sanctioning by the Parliament, execution, auditing, implementation etc., constitute the subject matter of financial administration.

5. Federal finance

Federal finance is a part of the study of public finance. A federation is an association of two or more states. In a federal form of government, there are: Central, State, and local governments. The interrelationships between these forms of governments, and the problems related to them and the financial functions of all these units are studied under federal finance.

Meaning and definition of a tax

A tax is one of the important sources of public revenue. A tax is a compulsory charge or payment levied by the government on an individual or corporation. Therefore an element of compulsion is involved in taxation. Other sources of public revenue are excluded from this compulsory element. There is no direct give and take relationship between a taxpayer and the government.

Definition of a tax

According to Prof. Seligman, “A tax is a compulsory contribution from the person to the State to defray the expenditure incurred in the common interest of all without any reference to the special benefits conferred”.

In the words of Dalton, “A tax is a compulsory contribution imposed by the public authority, irrespective of the exact amount of

service rendered to the taxpayer, in return for which no specific and direct *quid pro quo* is rendered to the payer”.

From these definitions, it is clear that tax is a compulsory contribution. It means that the State has the right to tax. Refusal to pay the tax is punishable. The phrase ‘without *quid pro quo*’ means the absence of direct and proportional benefit to the taxpayer from the government.

Canons of Taxation

Canons of taxation are considered as fundamental principles of taxation. Adam Smith laid down the following canons of taxation:

- a) Canon of equity
- b) Canon of certainty
- c) Canon of convenience
- d) Canon of economy

1. Canon of equity

This canon is also called the ‘ability to pay’ principle of taxation. It means that taxes should be imposed according to the capacity of the tax payer. Poor should be taxed less and rich should be taxed more. This canon involves the principle of justice. All persons contribute according to their ability. As the cost of running the government should be equally borne by all, this canon is justified.

2. Canon of certainty

Every tax payer should know the amount of tax to be paid, when to be paid, and where to be paid and also should be certain about the rate of tax to make investment decisions.

3. Canon of convenience

Tax payment should be convenient and less burdensome to the tax payer. e.g. income tax collected at source, sales tax collected at the time of sales and land tax collected after harvest.

4. Canon of economy

This canon signifies that the cost of collecting the revenue should be kept at the minimum possible level. The tax laws and procedures should be made simple, so as to reduce the expenses in maintaining people's income tax accounts. ie. administrative expenditure to be kept at a minimum.

Kinds of tax: Taxes are of different types. They are:

1. Direct and Indirect taxes.
2. Proportional, progressive, Regressive and digressive taxes.
3. Specific and advalorem taxes.
4. Value-added tax (VAT)
5. Single and multiple taxes.

1. Direct and Indirect taxes

According to Dalton, "A direct tax is one which is really paid by a person on whom it is imposed whereas an indirect tax, though imposed on a person, is partly or wholly paid by another".

In the case of a direct tax, the tax payer who pays a direct tax is also the tax bearer. In the case of indirect taxes, the taxpayer and the tax bearer are different persons.

Direct taxes

Direct taxes are collected from the public directly. That it is to say, these taxes are imposed on and collected from the same person. One cannot evade paying the tax if it is imposed on him.

Income tax, wealth tax, corporate tax, gift tax, estate duty, expenditure tax are good examples of direct taxes.

Indirect taxes

Taxes imposed on commodities and services are termed as indirect taxes. There is a chance for shifting the burden of indirect taxes. The

incidence is upon the person who ultimately pays it. Examples of indirect taxes are excise duties, customs duties and sales taxes (commodity taxes).

The classification of direct taxes and indirect taxes is based on the criterion of shifting of the incidence of tax. The burden of a direct tax is borne by the person on whom it is levied. For example, income tax is a direct tax. Its burden falls on the person who is liable to pay it to the Government. He cannot transfer the burden to some other person.

An indirect tax is initially paid by one person but ultimately the burden of the tax is fully or partially borne by another person. Because there is a possibility of transfer of burden of an indirect tax. For example, the excise duty on a motor-bike is initially paid by the manufacturer. But he subsequently shifts this burden to the consumer by including the tax in the price of the bike. Roughly, we may say that the direct taxes are paid by the rich and the indirect taxes are paid by the poor.

Taxes of Central Government and State Governments

The financial system of India is federal in character. Therefore, the powers and functions to raise revenue are divided between central government and state and local governments as scheduled in the Indian Constitution. This division has been made to avoid any clash in financial, administrative and other areas.

Taxes of the central government

The main sources of tax and non-tax revenue of the central government are 1. Taxes on income (other than on agricultural income), 2. Corporate tax, 3. Expenditure tax, 4. Taxes on properties (Estate duties and Death duties), 5. Gift tax, 6. Wealth tax, 7. Taxation on capital gains, 8. Union excise duties, and 9. Customs duties (Import and Export duties).

The sources of non-tax revenue of the central government include 1. Fiscal services, 2. Receipts from interest on loans, 3. Dividend and profits, 4. General and administrative services, 5. Social and community services and 6. Economic services.

Taxes of the State Governments

Under the Constitution of India, only the State governments are provided with separate powers to raise revenue, while the Union territories are financed by the Central government directly. The main sources of tax and non-tax revenue are 1. Land revenue, 2. Taxes on the sale and purchase of goods except newspaper, 3. Taxes on agricultural income, 4. Taxes on land and building, 5. Succession and estate duties in respect of agricultural land, 6. Excise duty on alcoholic liquors and narcotics, 7. Taxes on the entry of goods into a local area, 8. Taxes on mineral rights, 9. Taxes on the consumption of electricity 10. Taxes on vehicles, animals and boats, 11. Taxes on goods and passengers carried by road and inland water ways, 12. Stamp duties, court fees and registration, 13. Entertainment tax, 14. Taxes on advertisements other than those in newspaper, 15. Taxes on trade, profession and employment, 16. Income from irrigation and forests, 17. Grants from the central government and 18. Other incomes such as income from registration and share in the income-tax, excise and estate duties and debt services, loans and overdrafts.

Progressive, Proportional, Regressive and Digressive taxes

Direct taxes can also be classified on the basis of the degree of progressiveness or distribution of their burden on the tax payers. Ability of the people to pay a tax is measured on the basis of property, income, size of the family and consumption etc. The ability to pay in practice implies tax base and tax rate. Tax base denotes the income, property and expenditure on the basis of which ability to pay the tax is measured. Rate structure indicates equalisation of burden of taxation. Tax rate is the percentage of tax levied per unit of tax base. The total amount of tax is equal to the tax base multiplied by tax rate.

On the basis of rate structure, taxes are classified as follows:

a) Proportional tax

In the case of a proportional tax, tax rate remains constant regardless of whether the tax base is large or small. It means uniform

tax rate is imposed on the rich as well as the poor. The tax paid by the people is fixed in proportion to their income and wealth and other tax bases.

b) Progressive tax

In the case a progressive tax, the tax rate increases as the tax base increases. With the increase in income, a taxpayer has to pay a higher tax. For example, in the case of income tax, exemption limit and tax slabs are characterised by the income tax structure formulated by the government of India. As each income slab increases, there is an increase in the rates of tax.

c) Regressive tax

When the tax liability on income falls with the increase in the tax payer's income, it is termed as a regressive tax. Here, the tax rate decreases as the tax base increases. Under this tax system, the poorer sections of the society are taxed at higher rates than the richer sections and hence this tax is not just or equitable.

d) Digressive tax

Digressive tax is a blend of progressive tax and proportional tax. The rate of taxation increases upto a point. After that limit, a uniform rate is charged. Here the rate of tax does not increase in the same proportion as the increase in income. Under this tax system, the higher income groups make less sacrifice than the lower income groups.

Budget

Meaning: Government's revenue and expenditure decisions are presented in the budget. Budget, being an essential and important element of planning and development, provide the specific development objectives to be pursued and the required policy direction. They are necessary because income and expenditure do not occur simultaneously.

Thus, 'budget' has been defined as the annual financial statement of the estimated receipts and proposed expenditure of the government in a financial year, usually April 1 to March 31 of the next year.

The term budget is derived from the French word 'Bougette'. It means 'small bag'. As such, the Finance minister of a country carries a bag containing abstracts of budget papers while presenting the budget in the Parliament or a State Legislature. The governments, both Union and State, prepare their budget every financial year. Government budget indicates the probable income and expenditure of the government, the financial policies, taxation measures, investment opportunities, extent of saving, utilization of resources, mobilization of capital etc.

Definition: Various definitions have been formulated for the concept of Budget.

Prof. Dimock says, "A budget is a balanced estimate of expenditures and receipts for a given period of time. In the hands of the administration, the budget is record of past performance, a method of current control and a projection of future plans".

To quote Gladstone, "Budgets are not merely matters of arithmetic but in a thousand ways go to the root of prosperity of individuals and relation of classes and the strength of Kingdom".

Therefore, the budget is a document containing preliminary approval plan of public revenue and expenditures. It bridges the proposed revenue and proposed expenditure for the budget period.

Kinds of Budget

Balanced budget and unbalanced budget

- 1) **Balanced Budget :** A balanced budget is that, over a period of time, revenue does not fall short of expenditure. In other words government budget is said to be balanced when its tax revenue and expenditure are equal.
- 2) **Unbalanced Budget (Surplus or deficit) :** An unbalanced budget is that, over a period of time, revenue exceeds expenditure or expenditure exceeds revenue. In other words, the government's income or tax revenue and expenditure are not equal. When there is an excess of income over expenditure, it is called a surplus

budget. On the other hand, when there is an excess of expenditure over income, it is a case of deficit budget.

Classical economists advocated balanced budget. But it is not always helpful in achieving and sustaining economic growth.

Modern economists argue that an unbalanced budget is very useful for achieving and maintaining economic stability.

Revenue Budget and Capital Budget : Budgeting is the most important constituent of the financial administration. Preparation of the budget is one of the main operations of budgeting. It is mandatory for the government to make a statement of estimated receipts and expenditures which must be laid before the Parliament every financial year. It has to distinguish expenditure on revenue account and capital account from other expenditures. So government budget comprises Revenue Budget and Capital Budget.

Revenue Budget : Revenue budget consists of revenue receipts of the government (tax revenue and non-tax revenue) and the expenditure met from these revenues. Expenditures which do not result in creation of assets are called revenue expenditure. (e.g. current revenues and current expenditure for normal functioning of the Government departments, interest charges on debt incurred by Govt. and other non-developmental expenditure).

Capital budget : Majority of the government expenditures form the capital expenditure. Capital budget consists of receipts and payments. Capital receipts are loans raised by government from the public which are called market loans, borrowings from the RBI, sale of treasury bills, loans received from foreign governments etc. Capital payments are expenditure on assets creation such as land, buildings, machinery, equipment investment loans to government companies and state governments and other developmental expenditures.

Performance budgeting

The process of fund allocation of governments in various countries has been changed from traditional expenditure budgeting to new forms

of rationalistic budgeting, such as performance budgeting, programme budgeting and zero based budgeting.

Under performance budgeting, various activities of the government are identified in the budget both in financial and physical terms. This is necessary to ascertain the relationship between input and output and to assess the performance in relation to cost.

Performance budgeting is conceived as a system of presenting public expenditure in terms of distinguishable divisions such as government functions, programmes, activities and projects; such presentation would reflect the cost of running the government.

Under this technique, funds are granted for carrying out specific amount of work identified under a particular division. A cost-benefit approach is employed which facilitates meaningful and purposeful allocation of funds.

This method of budget technique promotes cost consciousness as well as cost efficiency and suggests corrections wherever required in the process of allocation of funds.

Zero based budgeting

Traditional technique of budgeting have been found to be inadequate for the reason that, the previous year's cost level is taken as the base for current year's budget. The traditional methods have not completely addressed the problem of efficiency in the matter of allocation of funds for various divisions. There is therefore a need for a new technique of budgeting which devices and uses a meaningful base for budgeting. Zero Based Budgeting is one such technique of budgeting.

In zero based budgeting, every year is considered as a new year thus providing a connecting link between the previous year and the current year. The past performance and programmes are not taken into account. The budget is viewed as entirely a fresh and whole fiscal initiative i.e. from zero bases.

Zero based budgeting evaluates and prioritizes the programmes of action at different levels. Each department has to justify its budget from its perspectives; evaluating feasible alternatives, before final selection and execution, the funds will be allocated for the selected programmes.

Fiscal policy

Meaning

Fiscal policy is the set of principles and decisions of a government regarding the level of public expenditure and mode of financing them. It is about the effort of government to influence the economy's output, employment and prices by altering the level of public expenditure, taxation and public debt. Arthur Smithies points out, "Fiscal policy is a policy under which the government uses its expenditure and revenue programmes to produce desirable effects and avoid undesirable effects on the national income, production and employment".

The Importance of Fiscal Policy

The significance of this policy was not at all recognized by economists before the publication of Keynes's General Theory of Employment, Interest and Money. Keynes gave the concept of fiscal policy new meaning and operation of the public finance a new perspective. He made it clear that taxation, public spending and public debt are the effective instruments of public policy capable of determining the level of output and employment.

The importance of fiscal policy in modern economies arises from the fact that the State under democracy is called upon to play an active and important role in promoting economic development and providing a vast number of essential public utilities and services like drinking water, sanitation, civic services, primary education, public health, social welfare, defence, etc. Most of these goods are characterized by the property viz. non-marketable; that it cannot be sold in the market to the consumer. But payment has to be regulated in another way, through taxation.

In the underdeveloped economies, public finance has to assume yet another role, whereas in developed economies, it aims at maintaining economic stability. In underdeveloped economies, desirous of achieving rapid economic development, the function of public finance is to promote rapid economic development of the country, besides maintaining economic stability.

Objectives of fiscal policy

The principal objectives of fiscal policy in an economy are as follows:

1. To mobilize resources for financing the development programmes in the public sector

Tax policy is to be directed towards effective mobilization of all available resources and to harness them in the execution of development programmes. This implies, on the one hand, diversion of wasteful and luxury spending to saving and on the other hand productive investment of increments that accrue to production as a result of development efforts. Taxation can be a most effective means of increasing the total quantum of savings and investments in any economy where the propensity to consume is normally high.

2. To promote development in the private sector

In a mixed economy, private sector forms an important constituent of the economy. In spite of the growing importance of the public sector in accelerating the process of economic development, the interest of the private sector cannot be neglected. Therefore rebates, reliefs and liberal depreciation allowances may be granted to boost the private sector.

3. To bring about an optimum utilization of resources

The above objective can be achieved through proper allocation of resources. We must direct investment in the desirable channels both in the public and private sectors by providing suitable incentives. Productive resources are, within limits capable of being used in various

ways, which may accelerate economic growth. The available resources must find their way into the socially necessary lines of development.

4. To restrain inflationary pressures in the economy to ensure economic stability

The fiscal policy must be used as an instrument for dealing with inflationary or deflationary situations. One way to achieve this is to devise a tax structure, which will automatically counter the economic disturbances as they arise. The second is to make changes in the tax system in order to deal with inflationary or deflationary situations. In countries like India, it is through the direction of the public expenditure rather than taxation that more effective action can be taken to remove the effect of a deflationary spiral. In terms of inflation, anti-inflationary taxes such as excess profit tax and commodity taxes on articles of both general and luxury consumption can be imposed.

5. To improve distribution of income and wealth in the community for lessening economic inequalities

The national income should be properly distributed so that the fruits of development are fairly shared by all people. Equality in income, wealth and opportunities must form an integral part of economic development and social advance. Moreover, redistribution of income in favour of the poorer sections of the society is essential. This can be achieved through taxation. We can also achieve this through an increase in public expenditure for promoting welfare to the less privileged class. Expenditure on agriculture, irrigation, education and health and medical expenses will improve the economic conditions of the weaker sections of the society.

Fiscal policy can affect total spending. (aggregate demand determinant) in two ways. The first is the direct change in total spending brought about by the government increasing or decreasing its own expenditure. And the second one is increasing or reducing private spending by varying its own tax revenue.

6. To obtain full employment and economic growth

The fiscal policy to achieve full employment and to maintain stable price in the economy has been developed in the recent past. The ineffectiveness of monetary policy as a means to remove unemployment during the Great Depression paved the way for the development of fiscal policy in achieving this objective. For accelerating the rate of growth, allocation of higher proportion of the fully employed resources is needed. Those activities increase the productive capacity of the economy. Therefore fiscal policy is used through its tax instrument to encourage investment and discourage consumption so that production may increase. It is also necessary to increase capital formation by reducing the high income tax on personal income. To increase employment, the state expenditure should be directed towards providing social and economic overheads. The state should undertake local public works of community development involving more labour and less capital per head.

7. Fiscal policy and capital formation

Fiscal policy such as taxes, tariffs, transfer payments, rebate and subsidies are expected to spur long run economic growth through increased capital formation. Capital formation is considered an important determinant of economic growth. The economic theory tells us that the optimal amount of capital formation serves a useful key to economic growth in developing economies. At the same time, the economic distortions brought about by lack of adequate fiscal incentives can cause capital formation to fall short of the socially optimal level.

Limitations to fiscal policy

Though the fiscal policy has an important place in economic development and in particular, in the stepping up of saving and investment both in public and in private sectors, it has the following limitations.

1) Size of fiscal measures

The budget is not a mere statement of receipts and revenues of the government. It explains and shapes the economic structure of a country. When the budget forms a small part of the national income in developing economies, fiscal policy cannot have the desired impact on the economic development. Direct taxation at times become an instrument of limited applicability, as the vast majority of the people are not covered by it. Further, when the total tax revenue forms a smaller portion of the national income, fiscal measures will not step up the sagging economy requiring massive help.

2. Fiscal policy as ineffective anti-cyclical measure

Fiscal measures- both loosening fiscal policy and tightening fiscal policy- will not stimulate speedy economic growth of a country, when the different sectors of the economy are not closely integrated with one another. Action taken by the government may not always have the same effect on all the sectors. Thus we may have for instance the recession in some sectors followed by a rise in prices in other sectors. An increasing purchasing power through deficit financing, a policy advocated by J.M. Keynes in 1930s may not have the effect of reviving the recession hit economies, but merely result in a spiralling rise in prices.

3. Administrative delay

Fiscal measures may introduce delay, uncertainties and arbitrariness arising from administrative bottlenecks. As a result, fiscal policy fails to be a powerful and therefore a useful stabilization policy.

Other Limitations

Large scale underemployment, lack of coordination from the public, tax evasion, low tax base are the other limitations of fiscal policy.

**EXERCISE
PART A**

I. Choose the correct answer

1. Public finance is concerned with the income and expenditure of
 - a) Private sector
 - b) Agricultural sector
 - c) Public authorities
 - d) Industrial sector
2. Tax revenue deals with the
 - a) Fees
 - b) Kinds of taxes
 - c) Revenue
 - d) Non tax revenue
3. The federal form of government consists of
 - a) central, state and local government
 - b) central and state government
 - c) state and local government
 - d) above all
4. The compulsory charge levied by the government is
 - a) Licence
 - b) Gifts and grants
 - c) Loan
 - d) Tax
5. In ZBB every year is considered as a
 - a) base year
 - b) financial year
 - c) new year
 - d) academic year

II. Fill in the blanks

6. _____ means different sources of government income
7. the absence of direct and proportional benefit is _____
8. _____ are considered as fundamental principles of taxation

9. The classification of direct and indirect taxes is based on criterion of _____ tax
10. tax is a blend of progressive tax and proportional tax.

III Match the following

- | | |
|------------------------|--------------------------------------|
| 11. Canons of taxation | a. rebate and subsidies |
| 12. Progressive tax | b. Adam Smith |
| 13. Fiscal policy | c. Tax rate decreases |
| 14. Regressive tax | d. Revenue and expenditure are equal |
| 15. Balanced budget | e. Best tax system |

IV Answer in a word or two

16. What is a tax ?
17. Give the expansion for VAT
18. What is the meaning of proportional tax ?
19. What are the kinds of budget ?
20. What is public debt ?

PART B

Answer the following questions in about four or five lines

21. Define Public Finance.
22. What is the subject matter of Public Finance ?
23. What are the canons of taxation ?
24. What are the kinds of tax ?
25. What is zero based budget ?

PART C

Answer the following questions in about a page

26. Explain the canons of taxation
27. What are main sources of tax and non-tax revenue of the state government ?
28. Define Budget. Explain the balanced and unbalanced budget.
29. What are the limitations of fiscal policy ?
30. Differentiate between the direct and indirect taxes ?

PART D

Answer for each question should be about three pages

31. Define tax and explain the kinds of direct taxes ?
32. Classify budgets
33. Explain the subdivisions of Public Finance
34. What are the objectives and limitations of fiscal policy ?

ANSWERS

CHAPTER 1

- I. 1) c 2) d 3) a 4) c 5) c
- II. 6) small 7) utilities 8) barter 9) social 10) ocean
- III. 11) c 12) e 13) d 14) a 15) b
- IV. 16) political economy 17) Statistics, mathematics, economics
18) Inductive method 19) air, sunshine
20) nominal income

CHAPTER 2

- (1) (d) 2. (a) 3. (d) 4. (b) 5 (a)
- (6) Customs and Traditions (7) Price Mechanism
- (8) Transformation / producton possibility frontier (9) Social / collective welfare (10) Private and public.
- III. 11) (d) 12) (a) 13) (e) 14) (b) 15) (c)
- IV. 16) Yes 17) Profit Motive 18) Depression 19) China and Cuba
20) Yes

CHAPTER 3

- I. 1. (a) 2. (C) 3. (b) 4. (d) 5. (a)
- II. 6. Consumption 7. Competitive and complementary
8. Cardinal utility analysis 9. Total utility 10. "Principles of Economics"
- III. 11. (d) 12. (a) 13. (b) 14. (e) 15. (c)
- IV. 16. Want satisfying power
17. Gossen's second law
18. Locus of different combinations of two commodities
19. It is a group of indifference curves for two commodities
20. Price – ratio line

CHAPTER 4

- I. 1. (d) 2. (a) 3. (b) 4. (c) 5. (d)
- II. 6. Law of diminishing marginal utility
7. Market demand schedule
8. Veblen effect
9. Alfred Marshall
10. Elasticity of supply.
- III. 11. d 12. a 13. e 14. b 15. c
- IV. 16. Other things being equal / *ceteris paribus* condition
17. During boom demand increases and during depression demand decreases
18. ep = lower segment of the demand curve
upper segment of the demand curve
19. The degree of responsiveness of demand to change in income.
20. Yes

CHAPTER 5

1. (d) 2. (b) 3. (a) 4. (c) 5. (a)
6. Price
7. Sub-systems
8. Equilibrium
9. Short period and long period
10. Vertical
11. C 12. d 13. a 14. b 15. e
- IV. 16. State of rest / balance 17. Income, taste, price of substitutes
18. Alfred Marshall 19. Heavy machinery / building /
capital equipment 20. Yes.

CHAPTER 6

- I. 1. b 2. a 3. b 4. a 5. a
- II. 6. primary 7. Adam Smith 8. Division of labour
9. capital 10. production function
- III. 11. c 12. e 13. a 14. b 15. d
- IV. 16. Entrepreneur. 17. From within the firm
18. Iso-Product curve 19. $MRTS_{xy} = P_x / P_y$
20. $Q = b L^a C^b$

CHAPTER 7

- I. (1) d (2) a (3) d (4) b (5) c
- II. 6. Nominal cost 7. Economic cost
8. Short run 9. total fixed cost and total variable cost
10. 'U' shaped
- III. 11. d 12. e 13. a 14. b 15. c
- IV. 16. M.R. remains constant / coincide with A.R.
17. Addition made to the total revenue.
18. No - profit no-loss point.
19. It is a group of short run cost curves / planning curve
20. TC/q

CHAPTER 8

- I. 1. c 2. a 3. d 4. b 5. a
- II. 6. homogeneous
7. Super normal profit
8. price-taker
9. legal monopoly
10. mutual co-operation
- III. 11. c 12. d 13. e 14. b 15. a
- IV. 16. Group of firms 17. state 18. taxation / legislative method
19. product differentiation 16. 1969

CHAPTER 9

- I. 1) d 2) d 3) c 4) b 5) a
II. 6) general 7) perfect 8) opportunity 9) nominal
10) entrepreneur
III. 11) b 12) a 13) d 14) e 15) c
IV. 16) No 17) Yes 18) Bohm-Bawerk 19) Walker
20) Innovation theory

CHAPTER 10

- I 1. b 2. c 3. a 4. b 5. d
II. 6. Income and Consumption 7. Marginal Propensity to save
8. Fall in investment 9. Liquidity Preference 10. Multiplier
III. 6. c 7. a 8. e 9. b 10. d
IV 7. Great Depression 12. Supply creates its own demand
13. Keynes 14. Keynesian cross 15. $K = 1 / 1 - MPC$

CHAPTER 11

- I. 1) a 2) a 3) b 4) a 5) c
II. 6) barter 7) falling 8) Irving Fisher 9) hyper-inflation
or run-away inflation 10) inflation
III. 11) b 12) c 13) a
14) e 15) d
IV. 16) central bank 17) during inflation 18) suppressed inflation
19) No 20) Germany

CHAPTER 12

- I. 1) c 2) b 3) a 4) d 5) c
II 6. public revenue 7. quid pro – quo 8. canons of taxation
9. shifting of the incidence 10. digressive
III 11. b 12. e 13. a 14. c 14. d
IV. 16. Compulsory contribution 17. value added tax
18. uniform tax rate 19. balanced and unbalanced budget
20. borrowing from the public.