ECONOMICS

Level: BS

CODE NO. 9810 **Unit: 1-9**









ALLAMA IQBAL OPEN UNIVERSITY
ISLAMABAD

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Revised Edition..... 2023

Quantity..... 10,000

Layout by ..... Muhammad Hameed

Printing Incharge..... Dr. Sarmad Iqbal

Printer..... AIOU-Printing Press, H-8, Islamabad.

Publisher ..... Allama Iqbal Open University, Islamabad.

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Acknowledgements: The University wishes to thank Nadeem-ul-Haq (PIDE) and Aqdas Ali Kazmi (Planning Division) for their help in reviewing certain of the Units.

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INTRODUCTION TO THE COURSE

This book is designed for BS programs of the Allama Iqbal Open University. Units 1–5 deal mainly with 'Micro Economics' while Units 6–9 concentrate on 'Macroeconomics' mainly plus banking and international economics. The terms 'Micro' and 'Macro' as applied to Economics are explained in Unit 1. This book provides the essential basis for the course economics. As a registered student you will also have the benefit of a certain amount of tutorial support, as well as the Radio and TV programmes which accompany the course.

The Aim of the Course

The course as whole is intended to provide you with a systematic introduction to the study of Economics. Its aim is to equip you with some of the main concepts, theories and techniques of economic analysis, so that you can become a better-informed and more sensitive observer of the economic world in which you live. The course assumes no prior knowledge of Economics or other social sciences. All it assumes is that you are genuinely interested in learning about the way the economy works; and that you are willing to apply yourself and work hard to obtain a better understanding of this most important aspect of our society. At the end of the course, it is very unlikely that you will be able to solve the economic problems of Pakistan; but you will have a basic understanding of the main forces which shape our economic life and of the essential considerations which go into the formulation of economic policy. In short, you may not have all the answers; but you should be able to ask some of the more important questions and to evaluate critically and constructively the answers which you receive – which is the right and responsibility of every citizen.

The Contents of Book (Units 1–9)

Book starts with a unit which raises the basic question – 'What is Economic?' – and goes on to explore the scope and subject matter of the discipline. It starts from the problem of definition and then outlines some of the main themes with which economists have unconditionally been concerned. This leads to the basic distinction which was mentioned above between 'Micro' and 'Macro' Economics and to a discussion of the main types of economic system which are found in the modern world. In this way, the first unit not only introduces the course, but also offers a preview of some of the main topics which will be dealt with in more detail later.

The next unit deals primarily with the behaviour of the consumer, and through this introduce the important subject of the 'Demand' for goods and services. Unit 2 examines the classic 'utility' approach to consumer's behaviour and introduces the central ideas of 'diminishing marginal utility' and 'consumer's equilibrium'.

In Unit 3 we switch our attention from the consumers to the producers – from the demand side of the economy to the supply side. We start off with the 'theory of the firm', – and in Part I of the unit we look at the way in which the firm makes rational decisions about its output in terms of the relationship between it costs (what it must pay out) and its revenues (what it receives for the product). The theme is further developed in Part II of the unit which analyses how a firm's costs determine a firm's supply of goods or services and how this can be generalized to cover an industry.

Unit 4 is again divided into two parts. Part I analyses the different types of market and the different forms of competition; and Part II looks at the way in which firms behave under these different kinds of market conditions.

Against this general background, we then look in more detail at the process by which goods and services are produced in an economy. Unit 5 deals with the 'factors of production' – land, labour, capital and organization (or entrepreneurship); the laws which govern the production process – particularly the laws of increasing, constant and diminishing returns; and the factors which influence the size of the production unit – especially 'economics of scale'. This unit carries out the analysis further. It introduces 'Marginal productivity Theory' and analyses the 'pricing' of the various factors of production – i.e. the process by which the level of rent, wages, interest and profit (the payments for the four factors of production) are established.

Unit 6 is on national income, unit 7 explains the banking system (a) modern banking (b) central banking. Unit 8 discusses international trade and rate of exchange. Unit 9 explains the role of government expenditure and taxes in changing the economic condition of a country. This is called fiscal policy.

The Structure of the Units

Each unit in this book is intended to provide the basis for one week's work on the course. You may find that some units take a bit longer and others take less time; but on average each unit should take about a week. In this way, the structure of the book will provide you with a check on how well you are keeping up with the work that is required of you for the course. You should aim to complete on unit per week – and not let yourself get more than few days behind. And if you do get behind, try and catch up quickly – even if that means spending less time on a

particular unit than you should. You can always go back to that unit later when you need some of the material in it or when you are revising the course.

You will find that each unit follows a standard pattern. It starts off after the title page, with a table of contents. This is followed by a brief introduction and a statement of objectives for the unit. The unit is then divided into a series of main sections which are numbered 1, 2, 3… etc. These are then broken down into sub sections (e.g. 1.1, 1.2, 1.3…etc.). And where necessary, these are in turn divided into what might be called sub-sub-sections – first using the letters of the alphabet (a), (b), (c)… etc. and then if further sub-division is required, using the figures (i), (ii), (iii)…etc. (All of this sound very complicated – but you will find, in fact, that it is straightforward and that it will help you follow the structure and the argument of each unit). At the end of each main section, you will find a sub-section headed points to remember and a series of Self-Assessment Questions (SAQs). At the end of most units, you will find a Glossary of main Terms, some suggestions for further reading, and were appropriate answer to selected SAQs.

If may be useful to comment briefly on some of the more important standard features of each unit.

Contents: You will find that this is a useful summary of the structure and content of the unit which you may also want to use as a convenient 'index' if you need to refer to material in the unit.

Introduction and Objectives: The introduction will tell you what you will be covering in the unit and the objectives will tell you what you should have learned and what you should be able to do by the end of the unit. You should read these statements carefully before you start work on the unit; and come back to them after having completed it to make sure that you have in fact learned what you are supposed to have learned and that you can carry out the tasks which are specified in the objectives. In this way, these two sections will serve as a check on your understanding and your progress through the course.

Points to Remember: These sections are also intended as an aid to learning. They provide a summary of the most important points which have been covered in a main Section and can be used as a checklist to make sure that you have grasped the essential ideas on a particular topic. You may also find that if you have not fully understood an idea in the main text, it may become clearer to you when you read the summary.

Self-Assessment Questions (SAQs): These are intended as the main 'aid to learning' in the text. They are not intended as examination questions are as required assignments for the course. (if you are a registered student there will of course be required assignments and a written examination: but this is not the purpose of the SAQs.) the intention of the SAQs is to provide you with a regular check on your understating of the material in the course to identify parts of the course which you have not fully grasped or understood (and to suggest what you should do to remedy this), and to offer you an opportunity of testing your understanding by applying your knowledge, where possible, to the economic community in which you live. Some of the SAQs are simple and straightforward factual questions to test your understanding of the text: others are of a more demanding nature which will require more thought and application. You should not feel obliged to attempt all the SAQs: how many you attempt will depend on how well you feel you have understood the material in the section whatever you have available for studying. However, the more SAQs you can successfully complete, the more confident you can be that you are mastering the material in the course. Although the SAQs are not exam question or required assignments, if you can answer them confidently and accurately, then you should have no problem with the formal assignments or with the final examination. The SAQs are there to help you to learn and give you confidence: what use you make of them is up to you.

Glossary of Main Terms: One of the difficulties of studying Economics (or any other modern academic discipline!) is that each week you will be introduced to a new set of technical terms. The Glossaries at the end of most units are intended to provide you with a readily accessible checklist of such terms together with brief definitions. At first, you may find the technical language of Economic somewhat daunting: but don't worry – you will soon find that you get used to it and will be able to handle it confidently.

Suggestions for Further Reading: At the end of most units, you will find a list of books which is intended for those students who wish to pursue the subject matter of the unit further and in greater detail. However, you are not required to read these books. And if you don't have time to look at them or if you don't have access to them, don't worry – all the information you need is in the two volumes of the course book. However, one practical suggestion may be made there. This book is inevitably fairly theoretical – since it is important that you should have a sound basis in economic theory. But at the same time, you need to supplement this theoretical knowledge with more practical knowledge. One way of obtaining this is to start reading carefully and systematically articles which appear in newspaper and magazines on econo0mic subjects. In some cases (if it is your own newspaper) it may be possible for you to cut out the article or news report and file it for future

reference in connection with one of the units. But in any case, it would be worth keeping a special notebook in which you can take notes on relevant facts and figures judgments and opinions, which you come across in newspapers or magazines. And gradually, as you collect such information, you will find that you are able to evaluate it more critically and to use it effectively to illustrate and exemplify the more theoretical aspects of your study of Economics.

All of this implies that the course of study of which this book is an integral part is a very demanding course. This is true. It will require a good deal of careful attention of time and effort and of painstakingly study. However, at the risk of family matters, the more effort that you put into the course the more benefit you are likely to derive from it. Economics is capable of being a dry and boring academic subject: equally, it can provide exciting and relevant insights into a vital aspect of our society. To acquire such insights, however, it is necessary first to learn the discipline of systematic and rigorous analysis.

It is to this end that the book is dedicated. To what extent it will succeed, will depend very largely on the use you make of it.

ACKNOWLEDGEMENTS

The preparation of this book has been a cooperative effort. As the list of unit writers and members of the course team indicates, contributions have been made by several scholars drawn from different educational and governmental institutions in Pakistan. The Allama Iqbal Open University wishes gratefully to acknowledge the participation of these scholars in the preparation and authorship of this book and in the design and realization of the University's BS level course in Economics. Their involvement in the project represents a model of academic partnership and cooperation which the university appreciates very much and would wish to foster in the interests of the wider dissemination of education in Pakistan.

Unit–1

WHAT IS ECONOMICS?

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INTRODUCTION

What is Economics? What are the different areas that the subject covers? Is it a science? Does it tell us how things should be in ideal conditions? Or does it tell us how they really are? What is an economic system? What are the factors that determine the characteristics of an economic system? Or make one system different from another? No doubt these and several other questions have arisen in your mind as you have been thinking about this course. This unit is meant to introduce you to the subject of Economics – to provide you an idea of its definition, its scope and the subject matter that you will cover as the course develops. In the following pages an attempt will be made to answer the type of questions raised above.

OBJECTIVES

By the end of this unit, you should be able to:

a) discuss the various ways in which Economies has been defined in the past;

b) provide an up-to-date definition of the subject in terms of ends, means and alternative uses.

c) outline the traditional scope and subject matter of Economics in terms of consumption, production, exchange and distribution.

d) outline three types of basic assumptions involved in economic analysis.

e) distinguish between Microeconomics and Macroeconomics.

f) distinguish between the extreme forms of free-enterprise and socialist or communist economic systems.

g) explain in general terms the way in which a free-enterprise or capitalistic system works.

1. DEFINITIONS

1.1 Evolution of the Definition Based on Wealth, Welfare and Scarcity of Means

Economics has been defined in several ways. Its definition has been changing over time with the change in the emphasis about the subject and its scope. With the development in the subject, greater precision has been introduced in its definition. Since the subject matter of Economics is so vast and covers such a wide area, its definition has always been the cause of controversy. One definition has been accepted by one school of thought but challenged later by another.

The definitions of Economics have over the years passed through three major phases of emphasis. The earliest economists emphasized wealth in their definitions. This led to a later school of thought challenging them on the basis that wealth might give birth to the evil forces, hence, welfare considerations should be emphasized more. Recently, with the greater precision and development in the subject, the emphasis has shifted to the choice between scarce means to satisfy unlimited wants.

1.2 Man, Nature, and Wealth

Economics was defined as the “study of the nature and causes of the wealth of nations” by a Scotsman named Adam Smith who is often called the father of' Economics. He was the first man to produce a systematically written book on Economics and the definition he gave which also served as the title of the book.

For nearly a century after the publication of Adam Smith's book, wealth continued to be the central theme of all definitions of Economics. For instance, the subject was defined as “the science which treats with the nature of the production and distribution of wealth”; and as “the subject which deals with the nature of wealth and the laws which govern its production and exchange”.

With the passage of time, the emphasis on wealth was challenged. It was felt that wealth taught selfishness and love of money; but that the subject of Economics was much more noble and vast than that and was concerned more with man himself. Alfred Marshall, another great economist, modified the older definitions and stated that Economics was “on the one side a study of wealth and on the other and more important side a part of the study of man”. Thus, Economic came to be defined as "the study of mankind in the ordinary business of life.

However, this definition was thought to be too broad and general, so it was further qualified. Economics was said “to examine that part of individual and social action which is most closely connected with the attainment and with the use of the material requisites of well-being.”

1.3 The Welfare of Man

The emphasis of the definitions shifted from wealth to man and to the concept of material welfare. The followers of Alfred Marshall described the aim of Political Economy (as Economics was then called) as the explanation of the general causes on which the material welfare of human beings depends; and **"**material welfare" to these economists was "that part of social welfare that could he brought directly or indirectly into relation with the measuring rod of money."

Hence Economics came to be called the science of human welfare. It became it study of wealth, not for its own sake, but for the material welfare that it promotes. Still later, the concept of material welfare was challenged as being inadequate since Economics is concerned with both the material and non-material aspects of welfare. Because of this, and because of the greater precision that the science had developed, Economics was defined as "the science which studies human behaviour as a relationship between ends and means (source) that have alternative uses".

1.4 Three Basic Pillars- Ends, Means, Alternative Uses

Professor Robin's definition laid down the three basic pillars on which the study of modern Economics is structured.

a) **Ends:** These are human wants that unlimited in nature. They create the problems of choice. Everyone must choose between them to maximize one's well-being or satisfaction.

b) **Means:** The means to satisfy these unlimited ends or wants are limited and create the problem of scarcity. Scarcity is a relative term used in relation to wants or ends. There may be very small quantities of a certain commodity or good that nobody desires or wants. This commodity will not be called 'scarce' in the economic sense. But almost all ' means ' are scarce in relation to wants. There are a very few goods that are not scarce; these are called free goods. Examples are sunlight, air, rain, etc.

c) **Alternative Uses:** If a commodity could be put to only one use, few economic problems would arise. However, these economic problems arise out of the numerous uses to which a commodity or good can be put. When you go to the market with a certain amount of money, you are immediately faced with a problem of what to buy and what not to buy. Your wants are unlimited; but the money in your pocket is Limited. It has alternative uses. You must decide what you need most and what can be postponed; and you spend your money accordingly.

1.5 Resource Allocation

The three conditions mentioned above are at the heart of all economic problems. Economics as a science can tell you what the best possible way is of allocating your scarce resources among different wants to get the maximum satisfaction possible.

This definition of Economics is generally considered to be the most complete and satisfactory. However, in recent years, the scope of Economics has widened so much and there have been extensive debates on its definition, but for the moment economists have set aside these discussions.

1.6 Behaviour Means and Ends

It will be useful for you simply to remember that "Economics is that science which studies human behaviour as a relationship between ends and scarce means that have alternative uses."

1.7 Points to Remember

i) Economics is the study of the nature and causes of the wealth of nations. (Adam Smith).
ii) Economics is the science of human welfare. (Alfred Marshall)
iii) Economics is the study of the allocation of scarce resources to unlimited uses. (L. Robbins).

SELF-ASSESSMENT QUESTIONS

1. Can you summarize in your own words the way in which the definition of Economics has evolved?
   [If you are not clear about the main stages of this process—wealth, the ordinary business of life, welfare – look again at Sections 1.1, 1.3]

2. Can you state Professor Robbins' definition of Economics and explain in your own words the three basic pillars on which the study of modern Economics is based?
   [You can check Professor Robbins' definition in Section 1.3. If you are not sure about what is meant by the 'three basic pillars' and how are they related to each other? Then re-read Section 1.4]

2. SCOPE AND SUBJECT MATTER

2.1 Individual vs Society

You have seen that Economics is defined as the study of man. And perhaps you may have wondered—does Economics study man as an isolated individual or as a member of the society? Each person has different behaviour patterns. Certain people spend more than others; some save more than others. For this reason, the economists tend not to be concerned with individual behaviour. They cannot effectively generalize from isolated individual behaviour. Consequently, they tend to study the collective behaviour of a society, or of a representative sample of that society. No doubt man is important to the science of Economics; but isolated individual behaviour is much less important to it.

2.2 Positive Normative

Is Economics a 'positive' or a 'normative' science? This is a controversial question about which there has been a tremendous amount of debate. A 'positive' science is one that analyses reactions in an ideal situation and in this sense, Economies is a pure positive science, since it can tell us precisely how things will be in an ideal state. But the controlled "ideal" conditions or the laboratory do not exist in the real world of Economics, which

deals with the behaviour of a creature as complex and varied as man. It has become imperative in recent times for the science of Economics to be normative as well in the sense that it does consider how things really are and the choices that are available; and economists are today required more than ever before to give their opinion and value judgments suggest policies, and to guide development efforts. In most cases they make value judgment based on what they see really exists instead of what ought to exist. This would shock the pure or positive scientist. In this respect Economics as a science has both a positive and a normative aspect.

2.3 Problems of Allocation

What does the subject of Economics really cover? What is the basic economics problem? We have seen that Economics is concerned with the problem of allocating scarce means between unlimited wants. The problem of the allocation of resources (whether they are effort, time, or money to acquire goods or commodities that yield satisfaction in such a way that this satisfaction is maximized with minimum use of the resources) is the central economics problem. Economics assumes that if an individual is rational, he will economize the use of resources to maximize the satisfaction that he can get from the consumption of various goods and commodities. You, as an individual, allocate your scarce time and effort to those activities that maximize your income; and then you allocate that income amongst various goods and services that maximize your overall satisfaction. Each person within a society is doing the same. In a similar way, your society or country faces the same problem. It has to allocate its scarce natural resources, manpower and capital, in such a way to obtain the maximum quantities of those goods and services that its people most desire collectively.

2.4 Limited Wants

In a primitive society, Economics would have concerned with the problem of allocation only. A primitive man would decide between the time and effort needed to pick berries and wild fruits or to go hunting, and the satisfaction that each type of food would yield to him. He would simply allocate his time and effort to the pursuit that yielded him the greatest satisfaction. In the case of primitive man, therefore, the scope of Economics would have been limited to allocation only, as can be seen below:

Wants ⟶ allocation of effort ⟶ maximization of satisfaction

2.5 Expanded Wants– Specialization and Exchange

Through the years, the process of economizing led to specialization. Everyone allocated his time and effort entirely to that pursuit in which he felt he had an edge over others and could thus indirectly maximize his overall satisfaction. The farmer allocated his entire time and effort to farming and producing food. Similarly, the cobbler allocated his entire time and effort to making shoes, the tailor to stitching clothes, and so on. The farmer could produce more food with less time and effort relative to the rest; the cobbler could make more shoes with less time and effort than the rest; and the tailor could stitch more clothes with less time and effort than the rest. Each had efficiently allocated his resources to the production of one specialized good or commodity. There was thus introduced the system of exchange. The tailor could exchange his clothes for food and shoes; the cobbler could get clothes and food for his shoes; and the farmer could get shoes and clothing for his food.

Each one of them had indirectly maximized his satisfaction through this specialization or division of labour—in the sense that each one of them now had more food, shoes, and clothes, than they could individually have produced with the same time and effort. Thus, the scope of Economics was broadened to include exchange.

2.6 The Factory System

Now a days most of the goods and commodities that we desire are produced in factories. To produce them, the capitalist gives his capital, the landlord his land, the labourer his labour and the businessman or entrepreneur his organizational skill. Each of them is rewarded in terms of money. The capitalist gets interest; the landlord gets rent; the labourer gets wages, and the entrepreneur gets profits.

2.7 Factors of Production

The scope of Economics thus also includes the study of how interest, rent, wages, and profits are determined. This aspect of the economic system is called distribution. The entire production that takes place within a country is due to the employment of these four factors of production (land, labour, capital and entrepreneurship). What is produced is then distributed back to these factors of production as rewards in the form of money. Money being the medium of exchange facilities this reward and is also ultimately utilized to buy goods and services for consumption.

2.8 The Scope of Economics

The scope of Economics is thus said to cover (a) consumption (i.e. the satisfaction of wants); (b) production (i.e. making an effort to satisfy wants); (c) exchange and its mechanism (money, credit and banking); and (d) distribution i.e. the sharing of all that is produced in the form of interest, wages, rent and profits, to the capitalist, labourers, landlords and entrepreneurs respectively.

At the heart of the subject of economics then lies consumption, production, exchange, and distribution. But this division is old fashioned. Modern economists tend to divide the subject into two parts only: Microeconomics and Macroeconomics.

2.9 Economic Analysis

Three Types of Assumptions: The nature of Economics as a subject is such that we must make various assumptions when analyzing economic phenomena. It is only when we take certain things for granted that we can explain economic behaviour. Because of the effect of the interdependence of many factors in economic behavior, the assumption of “ceteris paribus” (all other things being equal) underlies in all economic reasoning and is the only way by which the effect of a certain factor can be isolated.

There are basically three broad types of assumptions

a) The first type relates to the behaviour of individuals. We assume that the consumer is a rational person and seeks to maximize his satisfaction that the labourer seeks to move on to higher wages; and the entrepreneur aims for higher and higher profits.
b) The second type of assumptions relate to social, economic and political institutions. We assume the existence of a capitalistic order of society, with freehold property,

law and order, and a stable political system. The existence of free markets is also a basic assumption.

c) The third type of assumptions relate to facts of geography and biology. The reasoning is based on what is physically or climatically possible. The most basic of these assumptions is that the goods are scarce.

2.10 Points to Remember

(i) A positive science tells you how things with be in an ideal state and a normative science involves making value judgments about the real world.

(ii) Economics is both a positive and a normative science.

(iii) The subject matter of Economics covers the problem of allocating scarce resources between unlimited wants to attain maximum satisfaction.

(iv) There are four basic factors of production–land, labour, capital, and entrepreneurs.

(v) Each of the four factors of production is rewarded in money terms—i.e., the landlord gets rent, the labourer gets wages, the capitalist gets interest, and the entrepreneur gets profits.

(vi) Previously, Economics was divided into four major branches-i.e., consumption, production, exchange, and distribution. But modern economists tend to divide the subject into two parts only—Microeconomics and Macroeconomics.

(vii) Some of the basic assumptions of economics are:

a) that individuals are rational in their behaviour.

b) the existence of a capitalistic order of society and a stable political system.

c) that goods are scarce.

SELF-ASSESSMENT QUESTIONS

3. Can you name the four factors of production? See if you can briefly explain in your own words the importance of each of them in the production of economic goods.
[These are important basic concepts in Economics. If you are not sure about them re-read Sections 2.6 mid 2.7]

4. What are the four basic economic activities which economists have traditionally studied and which until recently have defined the scope and subject matter of Economics?
[Again, these concepts are very important. If you are not clear about them, re-read Section 2.4-2.8, and now especially the four economic activities listed in Section 2.8]

5. Can you outline the three broad types or groups of assumptions on which most economic analysis tends to be based?
[After you have made your own attempt at this question, check your answer against the list given in Section 2.9]

3. MICROECONOMICS AND MACROECONOMICS

3.1 Small Unit Behaviour

Price Theory and Production Theory. Micro means small, and 'micro-analysis' in Economics is concerned with the behavior: of small economic units. Your behaviour as a consumer fall in the realm of microeconomics. The production unit or firm is also like a micro-organism. Your demand for a particular commodity, when aggregated over several consumers, becomes the market demand for that commodity. Similarly, the supply of firms manufacturing a particular commodity, when aggregated, becomes the market supply of that commodity. The interaction of this demand and supply determines the eventual market price of that commodity and this entire analysis falls within the scope of microeconomics. That is why micro-theory is also called price or value theory.

The field of 'consumer behaviour' covers all the factors that eventually determine the consumer's demand for a particular commodity– for example, his income, his tastes and preferences, his position in society in terms of wealth, the price of the commodity, and the prices of any substitutes for it that are available. Given these factors, the consumer tries to maximize the satisfaction (or utility) that the consumption of that commodity will yield to him. This will determine how much of that community he will demand and eventually how much of it he will consume.

Within the realm of production theory falls all the analysis which is concerned with the maximization of revenues and the minimization of costs in the production of any commodity. Within the scope of production theory, we deal with the pricing of a particular commodity, its supply by a firm given the cost constraints, and the eventual market supply of that commodity by a number of firms producing it. The pricing of the factors of production (see Section 2.7) also falls under micro-theory as does the interaction; of demand and supply to determine the market price of commodities.

'Micro' means a "millionth part" or small part. Thus, in Microeconomics we study a small part of component of the whole economy. If it is an analysis of price, then we study the price of a particular commodity or a factor of production. Similarly, if it is demand or supply that we are analyzing, it is the demand for or the supply of a particular commodity.

3.2 What is Macroeconomics?

'Macro' means large. And Macroeconomics thus the study of large aggregates. In this branch of economics analysis, we look at the overall system. Under Macroeconomics, we study how the total National Income is determined. What is the value of the total output of the economy? How much of the total income is saved? And how much is consumed? What are the factors affecting aggregate savings and consumptions? How much National Income is invested? What influences on the shape of overall investment behaviour? What determines the total level of employment in the economy? What is the total money supply in the economy? How do changes in the money supply affect the overall level of output and employment, and the general price level?

Macroeconomics is thus the study of aggregates of the whole economy like its output, income, employment, consumption, savings, investments, aggregate demand, aggregate supply and the general price level. The purpose of this study is to determine the effects of various monetary and fiscal measure that the government can take to influence the overall level of output and employment.

3.3 The Macro Approach

Boom and Depression: The macro-approach to Economics was pioneered by a British economist, John Maynard Keynes; and was necessitated by the apparent cyclical nature of economic activity. It was observed that the economy passes through periods of 'boom' with intense overall economic activity, and 'depression' when overall economic activity slows down. A boom is characterized by high productivity and an increase in employment levels, whereas a depression is characterized by low productivity and unemployment. Consequently, it has become imperative that governments should adopt policies that can help tide over these periods of depression.

3.4 Points to Remember

i) Microeconomics is concerned with the behaviour of small economics units, e.g. a firm or an individual.

ii) Macroeconomics is the study of the aggregates (levels) related to whole economy like Gross National Product (GNP), national income, employment level, consumption level, savings and investment levels, aggregate demand and supply, the general price level etc.

SELF–ASSESSMENT QUESTIONS

6. Can you explain the difference between Microeconomics and Macroeconomics? Try to illustrate your answer by giving examples of the type of subject studied by each branch of the discipline?
   [If you are not clear about the distinction, or if it is difficult for you to think of illustrative examples, re-read Sections 3.1-3.4]

7. Why has the study of Macroeconomics become very important in the modern world?
   [If you have any difficulty with this question, you will find a broad answer in Sections 3.2 and 3.3, but you should also try to specify and illustrate your answer from what you already know about Pakistan's economic problems.]

4. ECONOMIC SYSTEM

4.1 Political and Economic Aspects

What is an economic system? What are the factors that make one economic system different from another? What are the advantages and disadvantages of a particular type of economic system? These and several other questions frequently arise nowadays in the minds of educated people. There are two aspects to an economic system one is the political and the other purely related to economics.

a) The State as Protector: On the political front, since man is a social animal, he must cooperate with his like-minded fellow men to defend themselves against other groups of men with different objectives and ideals. Men need law and order and the protection of his rights to flourish-which further necessitates these organisations. Man relinquishes part of his freedom in exchange for this protection.

b) Production Controlling Factors: On the economics side, we have seen in Section 3.3 and in the introductory part of this unit that an organization ought to oversee the equitable distribution of production among the factors of production and to control run-away tendencies of the overall economy such as inflation, depressions and unemployment, so that the material welfare of the people under that organisation is protected and increased.

4.2 Activity Within a System

Organization is a system because the various economic activities undertaken by the people within it are inter-related. These activities have a common purpose, that is, to increase the material welfare of the people within the system. The direction of these activities– the degree of freedom for private enterprise or alternatively the degree of control of economic activity by the state– determines the overall nature of the economic system.

4.3 Freedom vs. Control

Historically it can be seen that there are two extremes possible in an economic system. At one extreme there is capitalist system– complete freedom of enterprise, consumption and production; with the right of ownership, and with the state playing the role of providing the basic amenities and defence which is not possible on private basis. At the other extreme we have a system where everything is state-owned– the-state decides what the people should produce and eventually what they should consume. Such a system is ‘socialist’ in nature it implies central control and is commonly called it communist system. In the present era, each state belongs to the one form of system or the other; or in some more moderate form of one of the two.

4.4 System Determinants

The shape of an economics system is determined by the following considerations.

a) Who owns the factors of production—land, labour, capital, and organization?
b) Is there a right to private ownership of property or otherwise?
c) Who decides how these resources are to be employed for production?

d) Who decides what to produce, how much to produce, for whom to produce, what to consume and how much to save?
e) Who decides where to invest savings?

If there is no private ownership of the factors of production; and if the state or a central organization decides about the questions raised in points (c), (d) and (e), then the system is communist or socialistic in nature. If individuals have the right to own property and factors of production, and to employ them in whatever way they think profitable. If they have a right to produce whatever they like; to consume whatever they like; to save whatever proportion of their income, they deem fit; and eventually to invest these savings in whatever enterprise suit them–then the system is capitalistic in nature. This individualistic system is also called the free-enterprise system. The completely free enterprise system is an ideal state and may be said having existence for a short while in Great Britain only in the first half of the nineteenth century.

4.5 Types of Economies

Most countries of the world exist between the two extremes described above. The degree of control by the state determines where the system lies. If the state follows a policy of non-intervention or "laissez-faire", then the system is capitalistic; if the state imposes strict control on ownership and economic freedom, then the system is communist or socialistic. A good example of a capitalistic system in the present-day is the United States of America. The Soviet Union is an example of a communist or socialist state. Most of the countries of the world fall in between these two extremes and may be called "mixed economies". These economies are, generally, termed as capitalist economies, because the private sector tends to predominate, though there is also a substantially large public sector. By public sector we mean that sector which is state-controlled.

4.6 Free-Enterprise

What characterizes a modern capitalist economy or free-enterprise system? We have seen that the completely capitalistic or free-enterprise system does not exist anywhere in the world today. The United States of America is the closest example to it that we can see. So, a modern capitalistic economy is characterized by the following:

a) Right of ownership: The factors of production are privately owned and used with freedom by their owners for private profits. The state only guarantees their safety and protection. However, some proportion of these factors and property, like land and capital, are state-owned. Generally, the state owns these factors to provide the basic civic amenities to its people. However, the major proportion of the means of production is privately owned.
b) Economics Freedom: This is the right of the people to employ the factors of production in whatever manner they please; to enter and leave any profession or do business as they please; and generally, to produce and consume whatever yields the greatest profit and satisfaction to them. Here again, the state has some measure of control in the sense that it can prohibit things like hoarding, black marketing, and child labour.

c) The right to earn wages, profits and rent as determined by the free play of market demand and supply forces, without exploitation and fear. Here again, the state protects workers, who own only their labour, from the exploitation that could result from a completely free enterprise system.
d) A specialization or division of labour born out of the free interplay of market forces and not imposed through state control.
e) A competitive market where there is free interaction of demand and supply to determine all prices, both factors of production and of consumable commodities, without any artificial control. It is true that perfectly competitive market conditions do not exist anywhere; but competitiveness, even in varying degrees, is a strong characteristic of the modern capitalistic state.

4.7 Functioning of Free-Enterprise

How does a modern capitalistic or free-enterprise system function? If we assume, leaving aside the government's role in providing defence and enforcing law, that the government follows a policy of complete non-intervention or laissez-faire in the working the economy, and that there exists a competitive market structure, then each individual will employ the factors of production that he either owns or hires in the production of that commodity on which he can maximize his returns. What to produce is thus determined by market demand. How to produce depends on two sets of prices– factor and commodity ones, each competitively determined that the entrepreneur faces. The market demand gives entrepreneur an idea of the return he will get. The supply and demand of the factors of production determine the price of each factor that the entrepreneur wishes to employ. Being a rational person in a competitive system, he will employ that combination of the factors of production that minimize his costs since this is the only way he can maximize his profits (i.e. the difference between his returns and costs). Since the profit motive underlies all economic activity in a capitalist system, those commodities that yield the greatest profits will be produced in the greatest quantities. If these commodities yield greater satisfaction to the consumers, they will continue to demand greater quantities, which will eventually be produced. If the consumers' demand decreases, the profit margin decreases and production shifts to other commodities where the profit is greater.

4.8 Production and Wages

In this system, the labourer tries to maximize his wages, the landlord his rent, the capitalist his interest, and the entrepreneur his profits. The consumer dictates what will be produced and is sovereign in this respect. He maximizes his satisfaction through the consumption of those goods that yield to him the highest satisfaction; and an "ideal" economy has those characteristics in which everybody is satisfied. Increased production takes place; there is a constant endeavour to increase the productivities of the factors of production; so that by employing less of these (reduced costs) more is produced (greater returns) and there is greater incentive to produce. Increased productivities lead to higher rewards for the factors of production, which in turn leads to more consumption and more production.

4.9 State vs. Enterprise

What has been described above will be elaborated as the course develops and you learn more about price theory (microeconomics) and macroeconomics. However, even at this stage you will realize that this ideal capitalistic system does not exist anywhere; that the state must interfere to guard against the exploitation of certain sectors of the economy; that the consumer is not completely "sovereign"; and that this form of production still leaves certain areas in which the government has to intervene, for example in the provision of basic sanitation, health and education facilities.

4.10 Points to Remember

i) In the free-enterprise system, there is complete freedom of consumption and production, i.e., what to produce, how to produce it, and how much to produce, is determined by free market demand and supply conditions.

ii) At the other extreme, in the socialist or communist system, everything is state-owned; and the state decides what the people should produce and how much of it they should consume.

SELF-ASSESSMENT QUESTIONS

8. Can you briefly describe in your own words the main characteristics of the two 'extreme' or 'ideal' types of economic system?
   [check your answer against the brief description given in Section 4.3]

9. What are the five questions you need to ask for deciding about to which of the two extreme types a particular economy belongs?
   [If you don't know, or if your list is incomplete, look again at Section 4.4 where the five questions are listed.]

10. What is meant by 'mixed economy'? Can you illustrate some of its characteristics with the reference to the 'public sector' and 'private sector' in the economics system Pakistan?
    [if you are not sure about this, re-read Section 4.5 and then try again.]

11. Can you explain briefly in your own words (a) the five main characteristics of a modern free-enterprise or capitalistic economic system, and (b) in very general terms, how does such a system work?
    [When you have made your own attempt at this question, check your answer (a) against Section 4.6, and (b) against Sections 4.7 and 4.8.]

GLOSSARY OF MAIN TERMS

Allocation	.. ..	The process of distributing scarce means.
Boom	.. ..	A state of the economy where there is intense activity, increased productivity, and increased employment.
Choice	.. ..	Process of selection of commodities that eventually maximizes satisfaction.
Consumption	. .	Process of satisfaction of wants.
Demand	.. ..	Quantity– Desire to consume + Purchasing power + Intention to purcase
Depression	.. ..	A state of the economy where production is at a relatively low level and unemployment at a relatively high level.
Economize	.. ..	To maximize one's satisfaction with the minimal effort or money.
Ends	.. ..	Another word for outputs, objectives and wants
Exchange	.. ..	Substitution of one commodity for another (which yields greater satisfaction).
Factors of production	..	Resources which are used in production (Land, Labour, capital, organization).
Goods	.. ..	Commodities
Macro	.. ..	Large or in aggregate.
Means	.. ..	Inputs– like factors of production (those resources which can be used to fulfill ends).
Micro	.. ..	A millionth part or a small unit.
Money	.. ..	Anything that can act as a medium of exchange, a measure and store of value, and a standard for future Payments
Normative	.. ..	How things ought to be in the real world.

Positive	..	..	How things will be in an ideal state (involving certain assumptions).
Production	..	..	The process of the creation of commodities or output.
Productivity	..	..	Maximum output produced per unit of input
Satisfaction	..	..	The fulfilment of a human want.
Scarcity	..	..	A relative term–less availability of means or resources.
Specialization	..	..	Division of labour– everyone produces that part of of production in which he is more efficient than producing others.
Supply	..	..	Quantity– offered for sale at a particular price.
Wants	..	..	Human desires which yield satisfaction.
Wealth	..	..	Anything which possesses value in exchange.
Welfare	..	..	A state of mind; it reflects the sum of satisfaction and dissatisfaction.

SUGGESTIONS FOR FURTHER READING

Samuelson, P. A. (latest Ed.). Economics: an introductory analysis.

Stonier, A. W. and Hague, D. C. (latest Ed.). A Textbook of Economic Theory

Unit–2

THE THEORY OF CONSUMER BEHAVIOUR: THE UTILITY APPROACH

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INTRODUCTION

We use a lot of things in our daily life like bread, butter, meat, vegetables, and many other goods and services. If someone asks you, why do we use so many things? your prompt reply will be that we use them because they satisfy our numerous wants. In the language of economics, we say that we use these goods and services because they possess utility for us. But is it always possible to get as many things and services as we desire with our limited income? Not always! so because most of the things that we use in our daily life are not available free of cost like air, sunshine, rainfall. We can get them only in exchange for money. In other words, these things command prices; and unless we are willing to pay the price of a commodity, we may fail to get it. Whenever you go to bazaar to get something, you first make sure that you have enough money with you to pay for it. Thus, as consumers, we are faced with the problem of choice. We know very well that we cannot purchase all the things that we want with the limited amount of money in our possession; and we are forced to make a choice which things to buy and which to leave, which things to purchase more and which to purchase less. A wise consumer normally wants to maximize his satisfaction, that is, he tries to spend his income (which is fixed) in the best possible way. He purchases those goods and services which are needed by him; and does not like to spend his money on things which he thinks are not so necessary for him.

In the pages that follow an effort has been made to explain and illustrate the laws and principles that guide the conduct of human beings as consumers, as they attempt to get the maximum of satisfaction with the resources at their disposal. The whole of this unit centres on the word Consumption. So, it is important that the meaning of this term should be clear from the very beginning. Consumption in Economics means, the use of a thing to get direct satisfaction from it. When we feel hungry, we eat (or consume) a meal to satisfy our appetite. We feel thirsty; and we drink (or consume) water to quench our thirst.

OBJECTIVES

At the end of this unit, you should be able to:

a) explain the role of 'human wants' as a basis for consumption.

b) define the concept of utility.

c) explain how utility can be measured and define total, average, marginal, positive, and negative utility.

d) explain the Law of Diminishing Marginal Utility and illustrate your explanation in terms of a schedule and diagram.

e) explain the practical significance of the Law of Diminishing Marginal Utility and its relation to the Law of Demand, the Concept of Consumer Surplus, and the Law of Equi-Marginal Utility.

f) define the concepts of Weighted Marginal Utility and Consumers Equilibrium, calculate their values from given data; and explain the Law of Equi-Marginal Utility with the help of a schedule and diagram.

g) derive Market Demand Schedule and Curve from information on individual demands and analyse upward and downward shifts in the Demand Curve.

1. HUMAN WANTS AS A BASIS FOR CONSUMPTION

1.1 Human Wants

Man is surrounded by a host of wants in this world. Can you make a list of the various goods and services you need daily? It is likely to be a fairly long list. Which of the following would you include in your list? Bread, butter, flour, meat, vegetables, fuel, toothpaste, soap, shirt, trousers, milk, sugar, pencil, bicycle, radio, etc. Obviously, we need many more things in our daily life in varying quantities. If we do not get them, we would be deprived of the satisfaction of many wants. We consume or use things because they satisfy our wants.

Our wants are the very basis of the process of consumption. Human wants have many characteristics and some of the more important are explained in the next section.

1.2 Characteristics of Human Wants

a) Human Wants are Numerous: Man's wants in this world never come to an end. Can you say that all you wish, or desire is available to you and that you want nothing more? Your answer is likely to be in the negative. If you have a bicycle, you aspire to a motorcycle; and when you get it, you long for a car, and so on.

b) Human Wants we Repetitive: Our consumption of a thing often does not stop with the use of it on one occasion. We use it again and again. You have your breakfast in the morning. Then you have lunch in the afternoon and late in the evening you have dinner. This practice you repeat daily because after every four to five hours you feel hungry and want to eat something. The shirt that you wear will soon wear out and you will need another.

c) Human Wants are Capable of being Satisfied: When you feel thirsty and you have a cold drink, your thirst is quenched. If you feel hungry and you take a meal, your hunger is satisfied. During the winter you feel cold; but when you put on warm clothes and drink a hot cup of tea, you get warm and feel more comfortable. If wants were not satiable, consumption could never take place.

d) All Wants are not of the Same Importance: The importance of various wants is relative. Some are more important than others. Naturally, therefore, man prefers to satisfy his more urgent and pressing wants, and to postpone the fulfillment of less important ones to a later date. You would perhaps like to have a sweet dish after your evening meal at Marriot hotel, provided you have enough money to pay for it. But if you are short of money, you would perhaps prefer to take meal without the sweet dish to purchase something else.

e) Wants can be Satisfied with Alternative Uses: Man needs food, clothing, and shelter, to survive in this world. But there are different types of food available. Many varieties of clothes are to be found in the market if one can pay for them. A person can satisfy his hunger by consuming more meat and less starch and vice versa.

f) Wants are Complementary: This means that to satisfy one want fully, we may need several things together. For example, to play badminton we need a badminton racket as well as a shuttle cock. To play cricket, a bat and a ball are both required.

1.3 Points to Remember

i) We consume or use things because we must satisfy our wants.
ii) Our wants in this world never end.
iii) Wants are repetitive.
iv) Wants are satiable.
v) Different wants carry different importance.
vi) Wants can be satisfied with alternative means.
vii) Wants are complementary.

SELF-ASSESSMENT QUESTION

1. Can you outline in your own words by using illustrative examples from your own life about the major characteristics of 'human wants'?
   [Check your answer against the list in Section 1.2 Are there any characteristics that you have left out? Are there any item that you feel are relevant to 'consumption' and should be added?]

2. THE CONCEPT OF UTILITY: DEFINITION AND MEANING

2.1 What is Utility?

In the previous section, you learned that man in this world faces the problem of satisfying his ever-increasing wants. For this purpose, he uses many things in his daily life such as meat, eggs, butter, shirts etc. He consumes these things because they satisfy his wants. In economic terminology we can say that these things possess utility for the consumer. And we define 'utility' as the power or quality of a thing to satisfy a human want. No one wants to use that thing which has no utility for him. A healthy person is unlikely to use a medicine because it is of no use to him. But a sick person will certainly wish to do so.

2.2 Utility – A Relative Term

Utility is a relative term, that is, it differs from man to man, from time to time, and from place to place. Cigarettes have utility for you if you are a smoker; but they are of little use to you if you do not smoke. In Muslim society women are expected to observe 'pardah'. Thus, a veil has great utility for Muslim women but not for non-Muslim women whose religion does not require them to wear it.

2.3 Utility vs. Usefulness

Another important point which needs to he explained at this stage is that the term utility does not mean the same thing as usefulness. Do you think poison is 'useful' for a person who intends to commit suicide? Is the consumption of smoking material, narcotics etc.

useful for persons addicted to the use of these things? Surely not. But there is no doubt that the users of these things do get satisfaction from their use. Otherwise they would use them. These things, therefore, possess utility although they are not useful for them from an ethical and health point of view. On the other hand, such things as mutton, fruit, milk, and butter, not only possess utility, but are also useful for health. Thus, we conclude that all useful things also possess utility: but commodities which have utility for their users are not necessarily useful for them.

2.4 Is Utility the Same Thing as Satisfaction?

Do you always get utility worth the price you pay for a thing or a service? Not always so. It often happens in life that we purchase a thing hoping it will give its a certain amount of satisfaction; but it may in fact turn out to be less satisfying than we hoped. You may be willing to pay a high price for the cinema ticket to enjoy a new movie. But after you have seen it, you may find just the opposite, and feel that you have wasted your money on it. Thus, utility is the expected satisfaction and not the actual satisfaction that we get from the consumption of a commodity. If we knew beforehand that the satisfaction, we would actually derive from the use of a thing would be less than the price that we had to pay for it, we would never purchase it.

2.5 Points to Remember

a) Utility in Economics is the power of a commodity or a service to satisfy a human want.
b) Utility is a relative term. It differs from man to man and from time to time.
c) All useful things possess utility. But all the things having utility may not be useful.
d) Utility is expected satisfaction —not necessarily actual satisfaction.

SELF-ASSESSMENT QUESTIONS

Q. 2 Can you define the concept of utility'?
[Check your answer against the definition given in Section 2.1]

Q. 3 How is ‘utility’ different from ‘usefulness’?
[If you are not clear about the distinction, look again in Section 2.3. Can you give an example from your own life about the things which have ‘utility’ for you, but are not necessarily ‘useful’?]

Q. 4 If something has ‘utility’ for you, does this mean you will always get satisfaction from it?
[lf you are not sure whether your answer should be yes or no, then re-read Section 2.4. Can you give any example from your own life of the things that seemed to have ‘utility’ for you, but in fact turned out not to provide satisfaction?]

3. THE MEASUREMENT OF UTILITY AND THE EXPI.ANAFION OF VARIOUS UTILITY CONCEPTS

3.1 Can We Measure Utility?

In Section 2 you learned that utility is the power of a thing to satisfy a human Want. But is it possible to measure in quantitative terms the utility of a thing you consume? Suppose you eat three apples one after the other. Can you tell how much utility or satisfaction you get from each of them? You may well reply that it is not possible to measure utility in units because utility is a subjective concept. In other words, the satisfaction that we get from the use of a thing relates to our mind. We can, no doubt, feel it; but we can never express it quantitatively.

Although it is not possible for us to express utility in quantitative terms, fortunately we have a rough and ready measure in terms of money. It helps us in comparing the degree of two satisfactions. Suppose you have Rs. 500 which you intend to spend on the purchase of a radio set which also costs Rs. 500. If you purchase it, this means that the radio set carries the same importance for you as the sum of Rs. 500. In other words, the utility of the radio set for you is equal to Rs. 500. If a bicycle also costs Rs. 500 it means that the utility of a radio set and that of the bicycle are equal. Thus, money measures utilities.

The utilities of two commodities are in the same ratio as the ratio of their respective market prices. The British economist, Prof. Alfred Marshall (1842–1924), explained human behaviour assuming that utility was measurable in units in the same way that the weight or length of things can be measured, and that utilities could be added and subtracted. Suppose, for example, that the utility of an orange for you is 10 units and that of an apple is 30 units. This of course means that you like an apple three times more than an orange. This theory– the cardinal measurement of utility, has been challenged by modern economists like Prof. Hicks and an alternative theory entitled the Theory of Indifference Curves has been developed. (This approach to consumer behaviour will be examined in detail in Unit 3).

3.2 Total Utility

Prof. Alfred Marshall assumed that the utility of a commodity or a service can be measured in units. Therefore, we define Total Utility in terms of the total number of units of utility yielded by all the units of a commodity used by consumer. Some economists also name these units as ‘utils’. If you consume three mangoes, and you get 21 utils of utility or satisfaction from them, then we say that the total utility of the consumption of three mangoes for you to 21 utils.

3.3 Average Utility

Average Utility is defined as the utility derived (or obtained) from the use of an average unit of a commodity. It is calculated by dividing the total number of utils by the number of units of a commodity used by the consumer. Thus

$$\text{Average Utility} = \frac{\text{Total Utility}}{\text{No. of units of a thing consumed}}$$

According to the example given in Section 3.2, if three mangoes give a total utility of 21 utils to the consumer, then his average utility is 21/3 = 7.

That is, on the average one mango gives him utility equal to 7 units, or utils.

3.4 Marginal Utility

It is an addition made to total utility by consuming an additional unit of a commodity during a certain period of time. Suppose you eat three mangoes one after the other. The first mango gives you utility equal to 10 units. At this point of time your total utility and marginal utility both have a value 10 units. But you want still more. You take another one which yields utility equal to 7 units or utils. Now your total utility is 17 but the marginal utility is 7. You are still not completely satisfied and want another one. Let the third mango gives you 4 units of utility. Now you have total utility equal to 21 units and that of marginal utility are 4. If you are fully satisfied and do not want any more mangoes then your addition to the total utility (i.e., marginal utility) would be zero. While the total utility would still be 21 units. Hence, marginal utility is the increase in total utility resulting from the consumption of the marginal or additional unit of a certain commodity.

Another point worthy of notice is that 'marginal' utility does not mean the utility of the last unit of a commodity. The marginal is not something rigid or fixed. The consumer may want to have fourth mangoes as well. Then the fourth one will be the marginal unit. And if he stops eating mangoes after second one then the second mango will be marginal mango; and the utility yielded by the second mango will be the Marginal Utility.

As we shall see in the following sections, the concept of marginal utility is very important one in the analysis of consumer behaviour. The consumer stops the purchasing of a thing at a point when the price of that commodity and its marginal utility become equal.

3.5 Positive Utility

An individual always wants to consume something as long as it has utility for him. If you stop eating mangoes after the third one, this means that you obtained positive satisfaction from the third one which had positive utility for you. Otherwise you would not have consumed it.

3.6 Negative Utility

Would you want something if it has no utility for you or you do not expect to derive any satisfaction from it? Obviously not, according to the above example, you stopped the consumption of mangoes after the third one because you did not expect to get any further utility from further consumption. Rather, you thought that if you consumed another mango this might; reduce the satisfaction that you had already obtained from the consumption of three mangoes. Thus negative utility is the utility of a unit of a thing which instead of adding to your satisfaction causes a net reduction in it, so that you feel that you would have been better off had you not used it.

3.7 Points to Remember

i) Although utility cannot be measured quantitatively, we have a ready measure in the shape of money.

ii) Prof. Alfred Marshall assumed that utility can be expressed in units of satisfaction called 'Utils'. But modern economists do not endorse his view.

iii) Total utility is the sum of the utilities of all the units of a commodity consumed by a person.

iv) Marginal utility is the additional to total utility by the consumption of an additional unit of a commodity.

v) Positive utility is the utility of a unit of a commodity which does give satisfaction, however small, to the consumption.

vi) Negative utility is that utility of a unit of a commodity which causes a net reduction in total utility to a consumer.

SELF-ASSESSMENT QUESTIONS

Q. 5 In what sense can we say that utility is measurable?
[If you are not sure of the answer, or if you find it difficult to explain, look again at Section 3.1. The central idea is that utility can roughly be measured in monetary terms and that this enables us to compare the utilities of two commodities in terms of the ratio of their respective market prices.]

Q. 6 Can you explain the meaning of the following terms:
a) Total Utility
b) Average Utility
c) Marginal Utility
d) Positive Utility
e) Negative Utility.
[If you are not sure about any of these terms, check against the definitions and explanations given in Sections 3.2-3.6.)

Q. 7 Now, applying your knowledge, can you fill in the blanks in the following sentences:
a) If a consumer get7s 5 units of utility from the first banana, 3 units from the second banana, and one unit from the third banana, his total utility is equal to _____ utils; his average utility is equal to _____ units; and his marginal utility is equal to utils.
b) If you eat a loaf of bread after your appetite is fully satisfied, the utility of this loaf of bread for you is likely to be _____.
c) If you purchase two shirts on one occasion (and only two), the utility you get from the purchase of the second shirt is known as _____.
d) If the consumption of a fifth mango does not give you any satisfaction, then the utility of the fifth mango is equal to _____.
[The correct answers are given at the end of the Unit on Page 58. If you got any of these answers wrong, then check again through Sections 3.2, 3.6 to make sure you understand them.]

4. THE LAW OF DIMINISHING MARGINAL UTILITY OR THE LAW OF SATABLE WANTS: ITS ASSUMPTIONS AND EXCEPTIONS

4.1 A Basic Law of Consumption

Can you get as much satisfaction as you want from the constant use of a thing? Most probably not. In Section 1.2 you learnt that human wants are satiable. This is something which we experience daily in our lives. Suppose you feel hungry and start eating loaves of bread (chapaties) one after the other. The first chapati will give you more satisfaction that the second because after eating one loaf of a of bread your hunger will be satisfied to some extent. The second loaf will give you some satisfaction, but not as much as the first one. If you consume the third chapati its well, the satisfaction you get from it will be even less. If your appetite is completely satisfied, you will stop consuming loaves of bread at the third one because if you go beyond that you are likely to get little satisfaction and even the satisfaction that you have already got may be reduced.

This basic tendency in human behaviour has been given the name of the Law of Diminishing Marginal Utility or the Law of Satiable wants. Prof. Alfred Marshall has stated this law in the following words:

> *The additional benefit which a person derives from a given increase of his stock of a thing diminishes with every increase in the stock he already has.*

In other words, according to the Law of Diminishing Marginal Utility, if a consumer goes on using successive units of a commodity, the marginal utility goes on decreasing, or the total utility increases at it decreasing rate, provided that other things remain the same other things remain the same means that this law will hold good if certain conditions are present as we shall see shortly (Section 4.4).

4.2 Explanation of the Law of Diminishing Marginal Utility

With the help of a schedule, we can explain the above law with the help of a schedule as follows. Suppose that a consumer uses chapaties one after the other. The way he sees satisfaction from the use of loaves of bread according to the Law of Diminishing (or the Law of Satiable Wants) is explained below:

Table: SCHEDULE ILLUSTRATING THE LAW OF DIMINISHING MARGINAL UTILITY

Loaves of bread (1)	Total Utility (2)	Average Utility (3)	Marginal Utility (4)
1	10	10	10
2	16	8	6
3	18	6	2
4	18	4.5	0
5	15	3	-3

In the above schedule, the first column shows units of loaves of bread; the second column indicates the total utility of the bred consumed; the third the average utility and the fourth column gives the marginal utility of the loaves of bread consumed.

It is quite clear from the above schedule that, as the consumer goes on consuming loaves of bread one after the other, the total utility goes on increasing up to the third unit and stops increasing with the use of the fourth loaf of broad. The consumer does not get any satisfaction from the use of the fourth chapati and after that his total utility in fact decreases with the use of the fifth chapati, because for him the total utility of four loaves of bread is 18 units whereas that of five loaves of bread is only 15 units.

The third column of the schedule shows that the average utility goes on decreasing from first to last. This column we get by dividing the second column by the first. Remember that in Section 3.3 we learnt that

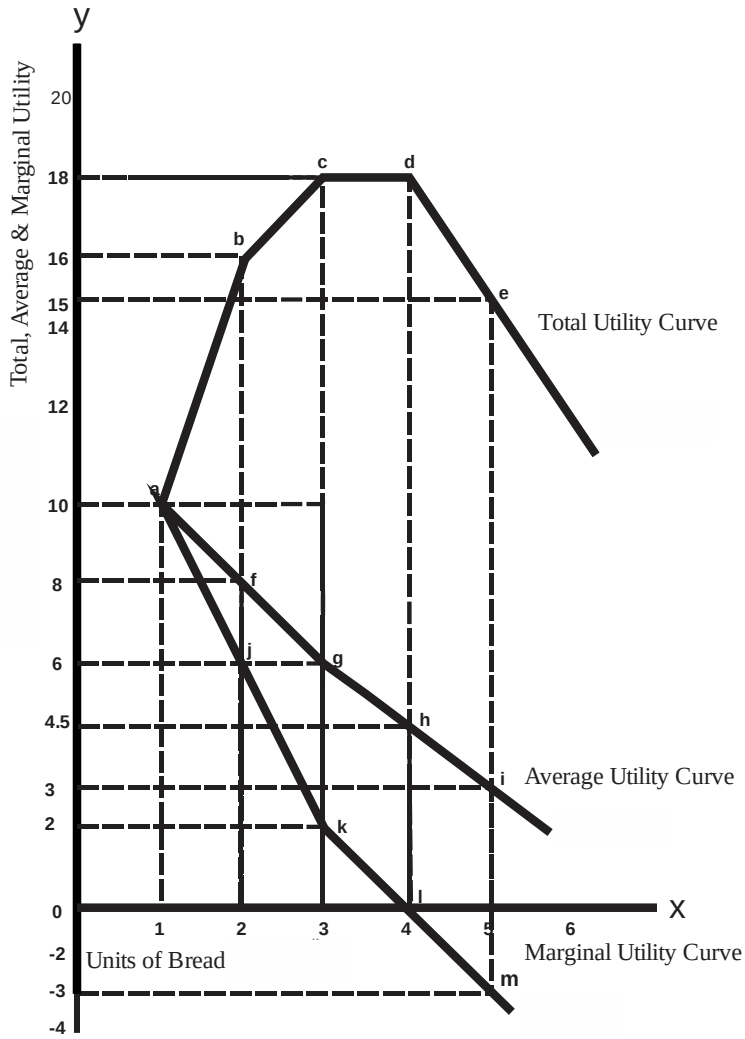
$$\text{Average Utility} = \frac{\text{Total Utility}}{\text{No. of Units Consumed}}$$

The fourth column of the schedule is the column of marginal utility. This we get by subtracting every former figure Iron the latter figure in column number 2 because, as we learned in Section 3.4, marginal utility is the utility derived from the use of an additional or extra unit of a commodity. The first loaf of bread gives the consumer a utility equal to 10 units but when he takes the second chapaties total utility becomes 16 units. Thus his marginal utility or the utility of the second loaf of bread is equal to 16–10 or 6 units, and so on. We notice from column number 4 of the schedule that the marginal utility goes on decreasing so that the utility of the fourth loaf of bread is zero a id that of the fifth is negative i.e. –3.

4.3 Explanation of the Law of Diminishing Marginal Utility with the Help of a Diagram

The schedule given in the preceding section can also be translated into a diagram and explained accordingly. Look at the following diagram and then read the explanation given after it.

Diagram 2.1: Law of Diminishing Marginal Utility



In the above diagram we have shown loaves of bread along the horizontal line OX (named the X axis) and the total, average and marginal utility has been measured along the vertical line OY (known as the Y axis). We get the total Utility curve by plotting points on the plane between the X and the Y ayes. Since the total utility of the first chapati is equal to 10 units we get point ‘a’ on the total utility curve, if we draw a perpendicular line from point 'a' to the X axis, it will meet it at 1 that is the first loaf of bread. Similarly, another perpendicular from ' a' to the V axis will meet it at 10 showing that the total utility of the first chapati is equal to 10 units. In the same manner we get the other points a, b c, d, etc. on the total utility curve; and by joining all those points we get the total utility curve. You can easily see that this curve first rises up to point ‘c’ then remains on the same level between ‘c; and ‘d’; and then slopes downwards to point ‘o’.

This is because total utility increases up to the use of the third loaf of bread then it stops increasing between the third and the fourth loaf of bread; and afterwards it decreases when the fifth chapati is also used.

We get the average utility curve by plotting points in the plane in the same fashion. Since the average utility of the first to f of bread is 10 units we get point "a' on the average utility curve. The average utility of second loaf of bread being 8 units, we get point 'f' on the average utility curve, and then points 'g', 'h' and 'I'. By joining these points we get the average utility curve which falls from left to right throughout its length. This is because as a consumer goes on using chapaties his average utility goes op decreasing.

Now look at the marginal utility curve. This curve we get by joining the points ‘a’, ‘j’, ‘k’, ‘1’ and ‘m’ on the marginal utility curve. Since the marginal utility of the first loaf of bread is 10 units, we get point 'a' on the marginal utility curve. Then we get point 'j' on the curve because the marginal utility of the second chapati is 6 units, and so on. Since the marginal utility of fourth loaf of bread is zero, the point ‘I’ falls just on the line OX corresponding to zero on the V axis. But point ‘m’ on the marginal utility curve has crossed the X axis and gone beyond it, showing the negative marginal utility of the fifth loaf of bread, It should be remembered that any point below the point 'o' indicates minus quantity— as in this case whore the quantity is-3, the utility of the fifth loaf of bread.

In the above diagram we have shown all the three curves on one figure although separate diagrams for total, average and marginal utilities can also be made. The reason why all three curves have been placed in one figure is that in this way we can see their mutual relationships easily. The relationship between the average utility curve and the marginal utility curve is worth noticing in particular. You can see that both the curves slope downwards but that the marginal utility curve falls more sharply than the average utility curve. This is because the average utility is obtained n the basis of all the units consumed— whereas the marginal utility is the utility of the unit consumed at the end.

As a matter of fact, it is marginal utility which causes the change in average utility. According to the above example, when the marginal utility of the second chapati falls to 6 units, the average utility falls to 8 units. Now the marginal utility is the utility only of the second loaf of bread whereas the average utility is equal to 8 units. If there were no decrease in marginal utility, there would not be any decrease in average utility sin cell change in marginal utility is the cause of a change in average utility; the change in marginal utility is always more than the change in average utility. That is why we see in the diagram that the marginal utility curve falls more steeply than the average utility curve.

4.4 The Limitations of the Law of Diminishing Marginal Utility

You will remember that while giving the definition of the above law in Section 4.1 we used the words 'other things remain the same'. These words are commonly used in all the laws of Economics. This is because such laws involve generalizations about human behaviour; and one can only make such generalizations on the basis of certain general assumptions about the conditions in which the behaviour takes place. Thus man will behave according

to the Law of Diminishing Marginal Utility only the following condition are assumed:

a) The units of commodity should be of suitable size or quantity. The units of the commodity being used should be of a reasonable s e or quantity to enable the consumer to derive substantial satisfaction fr m its consumption. If you are thirsty and start taking water in drops instead of glasses, the utility of successive drops of water for you, instead of decreasing, may increase since a drop of water is too small a unit to give any reasonable satisfaction to the consumer.

b) All the units of the commodity should be used one after the other without interval. Do you think that during summer, if you have a glass of "sharbat" at 10 am and a second glass after two hours at 12 noon, the second glass of sharbat will give you loss satisfaction than the one you took at 10 am? Most probably you will get even more satisfaction from second glass than you got from the first one. The second glass of "sharbat" will give you less utility than the first one only f it is used immediately after the first without interval.

c) The quality of all the units consumed should be the same: If you have already eaten a sour mango and the second mango you eat is sweet and more delicious, then the utility you derive from the use of the second mango is likely to be more than the utility of the first mango. Therefore, for the Law of Diminishing Marginal Utility to apply, the quality of all the units must be the same.

d) The income of the consumer should remain the same: Another very important condition for the validity of the law is that the income of the consumer should not change. Suppose you are buying clothes from a shop. You have already purchased one suit of clothes when someone comes to inform you that you have just won a prize bond worth Rs. 10,000. This sudden increase in your income may result in the increase of the utility of a second suit of clothes for you, instead of decreasing it.

e) The mental condition of the consumer should not change: The utility of the later units of a commodity will decrease only when the state of mind of the consumer does not change. Suppose you are eating apples. You have already taken one and you remember the advice of your doctor to cat apples frequently as these are very good for your health. It is possible that the second apple may give you more satisfaction than the first because your state of mind has changed.

4.5 Exceptions to the Law of Diminishing Marginal Utility

In the preceding paragraph you have learned about the assumptions of the Law and the conditions which make the application of the law valid. But there are some exceptions to the law as well. There are certain things the consumption of which is not subject to the Law of Diminishing Marginal Utility. These are listed below:

a) Rare Collections: The law does not apply to the collection of rare things. The more ancient coins, manuscripts and other commodities of historic value we have, the more of these we want.

b) Hobbies: If your hobby is to collect stamps, you are never fed up with this exercise. The more stamps you have, the more utility you get from them.

c) Acquisition of knowledge: There is an ever-increasing quest for the knowledge in man. He always wants to know more and more about the world he lives in. The more he learns the more utility he gets.

d) Money: In general, the law does not apply to money because money gives us purchasing power and we like to get as much money as we can. There is hardly any person who would say "Now, 1 have enough money, and I do not want any more of it". But if we compare the marginal utility of money for the rich with that for the poor, ten of course we can say that the marginal utility of money for the rich is lower than it is for the poor. Because if there an increase in the money income of a poor person, he will spend on the necessities of life; whereas the rich person will most probably spend his additional money on business.

4.6 Points to Remember

i) The Law of Diminishing Marginal Utility is also known as the Law of Satiable Want;
ii) This law is based on a basic characteristic of human wants: that is, that human wants are capable of being satisfied.
iii) The law simply means that the more we have of a thing, the less of it we want.
iv) The Law of Diminishing Marginal Utility can be explained with the help of schedules and diagrams.
v) The total utility of the various units of a thing increases but at a decreasing rate up to a point; after that, the increase may stop and if the consumption is still continued, total utility may even decrease.
vi) Average Utility and Marginal Utility both decrease but the latter falls more steeply than the former.
vii) The Law of Diminishing Marginal Utility holds good only when the units of a commodity used are of suitable size or quantity; are used without interval; are of the same quality; and when the mental condition and the income of the consumer do not change.
viii) The law does not apply to rare collection, hobbies, knowledge and money.

SELF-ASSESSMENT QUESTIONS

Q. 8 Can you briefly explain the main idea of the Law of Diminishing Marginal Utility as stated by Professor Alfred Marshall?
[If not, look again at Section 4.1]

Q. 9 What are the main conditions that are necessary (i.e., the 'other things' that need to remain the same) for the Law of Diminishing Marginal Utility to operate?
[Check your answer against the list and explanation provided in Section 4.4)

Q. 10 To test your understanding of the various ideas in this section, see if you can fill in the blanks in the following sentences

a) As a consumer goes on eating apples, the marginal utility of the apples for him goes on _____.
b) The total utility of apples increases at a _____ rate, if they are eaten successively.
c) The average utility of apples, if eaten successively, will go on _____.

d) The marginal utility curve slopes to the right.
[The correct answers to SAQS 10-12 appear at the end of the unit (P. 58). If you gave any incorrect answers in SAQ 10, then look again at Sections 4.2 and 4.3].

Q. 11 Again to test your understanding, which of the following statements do you think is or are correct:

a) The Law of Diminishing Marginal Utility is of universal application.
b) The marginal utility of the second of two mangoes will necessarily decrease, even if the second is sweeter than the first.
c) The marginal utility of a commodity may increase if there is an increase in the income of the consumer.

Q. 12 Complete the following two sc1dules:

a)

Units of Shirts (1)	Total Utility of Shirts (2)	Average Utility of Shirts (3)	Marginal Utility of Shirts (4)
1			20
2			12
3			4
4			0

b)

Units of Cups of Tea (1)	Total Utility of Cups of Tea (2)	Average Utility of Cups of Tea (3)	Marginal Utility of Cups of Tea (4)
1	10		
2	12		
3	12		
4	8		

[The completed schedules are given at the end of the unit on p 58. If you got any of the figures wrong, then work through the example in Section 4.2 once again.]

Q. 13 Now translate the above schedules (when you have completed them and checked your answers against those on p58) into diagrams.
[If you have any difficulty with this task, then once again work through the example given in Section 4.3].

5. THE PRACTICAL SIGNIFICANCE OF THE LAW OF DIMINISHING MARGINAL UTILITY

The basic law of consumption that you learned in the previous section is of great practical importance in Economics. This fact will become clear to you after you have carefully read the following points.

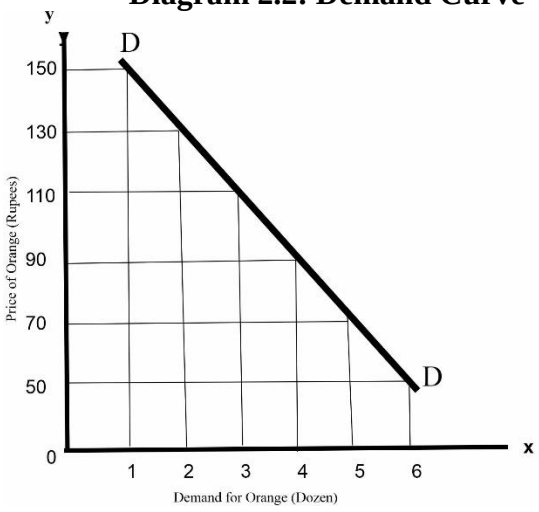
5.1 The Law of Demand is based on the Law of Diminishing Marginal Utility

Our experience in daily life is that we purchase more of a thing when its price falls and we purchase less of it when its price rises. Why s this so? The point is quite easy to understand. According to the Law of Diminishing Marginal Utility, as we have more of a thing, its marginal utility decreases and we would like to have more of it only if the price of the commodity falls. If it does not fall, the marginal utility may be lower than the price which a consumer h to pay for it; and hence he may not purchase it. A consumer goes on purchasing additional units of a commodity until the falling marginal utility becomes equal to the price of the commodity in the market. The fact that the Law of Diminishing Marginal Utility is the basis for the Law of Demand also explains why the curve derived from the Law of Demand, like that of the Law of Diminishing Marginal Utility, is negatively sloped. That is, it falls from left to right, as is shown in the following schedule and diagram

DEMAND SCHEDULE

Price of Oranges in Rupees per dozen	Demand for Oranges in Dozens
(1)	(2)
7	10
6	20
5	30
4	40

Diagram 2.2: Demand Curve



It is quite clear from the above schedule and diagram that as the price of oranges decreases from Rs.7 to Rs. 4 per dozen, the demand for them increases from 10 dozen to 40 dozen. The diagram shows that the demand curve falls from loft to right. This curve we get by plotting points a, b, c, and d. in the plane and then joining them together.

5.2 The Concept of Consumer's Surplus

Another very important contribution of the Law of Diminishing Marginal Utility is that the concept of Consumer's Surplus given to us by Prof. Alfred Marshall is also based on this law, in the words of Prof. Marshall.

The excess of the price which he (i.e. the consumer) 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 satisfaction. It may be called consumer's surplus.

In other words, the consumer's surplus is what we are prepared to pay minus what we actually pay. There are many things that we purchase daily and for which we would be willing to pay a higher price rather than do without them. Such commodities include post-cards, newspapers, matches, salt etc. These things are very cheap; but the utility that we derive from 'their use is much higher than the price. A post card is available from the post office at 10 paisa. If you are willing to pay 20 paisa for it rather than do without it, then the consumer's surplus or the extra satisfaction that you get from a post card is equal to 20-10 that is 10 units. But as you go on purchasing more post cards, their marginal utility for you will go on diminishing: and you will be willing to pay less and less for additional post cards.

5.3 The Law of Diminishing Marginal Utility as a Basis for the Law of Equi-Marginal Utility

The Law of Diminishing Marginal Utility also underlines the basic law of consumption, known as the Law of Equi-Marginal Utility or the Law 01 Substitution, which is discussed in detail in the next section.

According to the Law of Equi-Marginal Utility, a consumer tries to get the maximum utility or satisfaction from the limited sum of money available to him. This objective he achieves only when he spends the money in such a way that the marginal utilities of all the things which he buys become equal to one another.

As a consumer spends more on one thing, say meat, its utility goes on decreasing: and that of another thing, say Fruit (which the consumer has not had previously), goes n increasing. So, to get the maximum satisfaction, the wise consumer diverts sonic of his expenditure from the consumption or purchase of meat to the purchase of fruit. And thus, by a process of substitution, e succeeds in equating the marginal utilities of both meal, and fruit, and gels the maximum utility from the use of these commodities.

5.4 The Law of Diminishing Marginal Utility and Taxation

Do you know where the Government gets its money from to spend on the welfare of the state? One of the most important sources of revenue for the government is taxes. In Section

4.5 you learnt that the marginal utility of money for the rich is normally lower than that for the poor. The demand of justice can only be met if the rich are taxed at a higher rate than the poor (known in Economics as progressive taxation).

Since the marginal utility of money for the rich is less than that for the poor, it is said that taking away a part of the wealth of the rich through taxation will, no doubt, reduce their welfare but not as much as the money spent on the welfare of the poor will add to their welfare.

5.5 Points to Remember

i) The Law of Demand is based on the Law of Diminishing Marginal Utility.
ii) The concept of 'consumer's surplus' is also based on this basic law of consumption.
iii) Another law of consumption known as the Law of Equi-Marginal Utility is also based on the same law.
iii) The Law of Diminishing Marginal Utility is also of great practical significance in the field of Public Finance.

SELF-ASSESSMENT QUESTIONS

Q. 14 Can you explain in your own words what the connection is between the Law of Diminishing Marginal Utility and the fact that demand for a commodity tends to fall as its price increases?
[If you find it difficult to answer this question, re-read Section 5.1 and then try again].

Q. 15 What do you understand by the term consumer's surplus'?
[Check your understanding against the explanation given in Section 5.2].

Q. 16 In what way is the Law or Diminishing Marginal Utility relevant to government taxation policy?
[If you are not clear about the marginal utility of money for the rich and the idea of 'progressive' taxes, then look again at Section 5.4].

6. CONSUMER'S EQUILIBRIUM: THE PROCESS OF MAXIMISATION OF SATISFACTION

6.1 Man's Economic Problem

According to Professor Lionel Robbins of the London School of Economics, man's real economic problem is that his wants are unlimited but his resources to satisfy those wants are limited. He cannot, therefore, fulfill his needs according to his liking: and he is faced with the problem of choice i.e., which of his wants should be fulfilled and which should he postpone? It is through the problem of choice that he arrives at equilibrium. Equilibrium means a state of balance that exists in a situation where the consumer feels fully satisfied and does not want to bring about any change in his expenditure.

6.2 The Law of Equi-Marginal Utility or the Law of Substitution

In Section 5.3 you learned that there is another very important law of consumption known as the Law of Equi-Marginal Utility or the Law of Substitution. Before we give a description of this law, we need to make the following assumptions:

a) A consumer behaves rationally.
b) A consumer is a person of given tastes.
c) A consumer has a given income.
d) The prices of the commodities used by the consumer can be divided into small units.

With these assumptions in mind, we can slate the Law of Equi-Marginal Utility as follows:

> A consumer spends his limited income on various commodities in such a way that the marginal utility of all the commodities becomes equal. Only then can lie get the maximum total utility.

According to the Law of Diminishing Marginal Utility (as explained in Section 4), if a consumer spends more on one thing, its marginal utility goes on decreasing until it becomes zero and then hccou.es negative. But a wise man is not likely to push his purchase of it thing up to the point where he gets little satisfaction from it. Since he has many other things to spend his money on (which possess higher utility for him), he will divert his expenditure to something else which lie needs more than the one whose utility has fallen. This process of spending more on one thing and less on another will continue until the consumer gets equal marginal utility from all the things consumed. And when that happens, the consumer will have got the maximum satisfaction or achieved a slate of equilibrium as explained in Section 6.1 above.

6.3 Explanation of the Law of Equi-Marginal Utility with the help of Schedule

The Law of Equi-Marginal Utility can also be explained with the help of a schedule. Suppose you have a fixed sum of Rs. 8 which you want to spend on two commodities, say meat and vegetables. To make our analysis simple we will assume just two commodities although in real life consumer is normally confronted with the problem of choosing from among many goods and services. What is true of two commodities is also valid for more

than two. Let us see how much money you would spend on meat and how much on vegetables.

SCHEDULE ILLUSTRATING THE LAW OF EQUL-MARGINAL UTILITY

Units of Rupees (1)	MU of Meat (2)	MU of Vegetables (3)
1	50	40
2	45	35
3	40	30
4	35	25
5	30	20
6	25	15
7	20	10
8	15	5

In the above schedule, the first column shows the amount of money possessed by the consumer to spend on meat and vegetables in rupees. The second column indicates the marginal utility meat; and the third column shows the marginal utility of vegetables. The marginal utility of both meat and vegetables goes on diminishing as more money is spent on them. This is because of the operation of the Law of Diminishing Marginal Utility. Now the consumer is in equilibrium (i.e. he gets the maximum total utility) when he spends Rs. 5 on meat and the remaining Rs. 3 on vegetables. Because only then does the marginal utility of meat become equal to the marginal utility of vegetables. That is, the marginal utility of both meat and vegetables is 30 units. We can easily calculate the total utility of both meat and vegetables as follows:

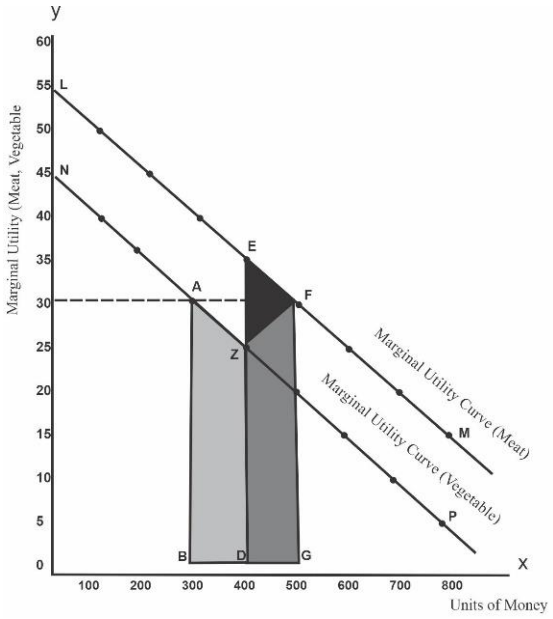
Utility of meat by spending Rs. 5 on it	= 50 +45 +40 +35 +30 = 200	
Utility of vegetables by spending Rs. 3 on them	= 40 + 35 + 30	= 105
Total utility of both commodities		= 305

So 305 units is the maximum utility which you can get under the above conditions. In no other way can you get more utility than that. You can easily verify this by making some changes in your plan of expenditure. Suppose you spend Rs. 4 on vegetables instead of Rs. 3. Then you will have Rs. 4 to spend on meat since your income is fixed. The spending of an extra rupee on vegetables will add 25 units of utility; but the reduction of one rupee's expenditure on meat will bring about a loss of 30 units of utility. This means your satisfaction will be reduced by five units of utility. Thus it is proved that consumer gets the maximum utility only when he spends his limited income on various commodities in such a way that the marginal utility of all the commodities is equal.

6.4 Explanation of the Law of Equi-Marginal Utility

With the help of a Diagram. Can we translate the schedule given in Section 63 into a diagram? The answer is Yes, as can be seen below:

DIAGRAM 2.3: DIAGRAM ILLUSTRATING THE



LAW OF EQUI-MARGINAL UTILITY

In the above figure, units of rupees have been placed along the X-axis and the marginal utility of meat and vegetables along the Y axis. LM is the marginal utility curve of meat which falls from left to right. This curve we get by plotting points a, b, c, d, e, f, g and h (in the light of the information given in the schedule in Section 6.3) and then joining these points.

Similarly, we can obtain the marginal utility curve of vegetables which is also negatively sloped—that is, it falls from left to right, because of the operation of the Law of Diminishing Marginal Utility. The consumer gels the maximum utility when he spends Rs. 5/ on meat and Rs. 3/-on vegetables—because only then is the marginal utility of both meat and vegetables equal, i.e., 30 units each. According to the above diagram, by spending Rs. 5/ on meat, the consumer gets a marginal utility equal to the vertical distance FG; and by spending Rs. 3/-on vegetables, he gets a marginal utility equal to the vertical distance AB. Both AB and FG are equal. Thus the total utility that the consumer gets, according to the above diagram, is equal to the area ON AB + OL FG. This is the maximum area covered in the plane according to the assumed conditions.

This can be proved by bringing about a change in the plan f expenditure of the consumer. Suppose instead of spending Rs. 5 on meat spends Rs. 4 (i.e., one rupee less than before), and thus increases his expenditure on vegetables from Rs. 3/- to Rs. 4/-. Now, by reducing his expenditure on meat he loses utility equal to the shaded area EDFG and by spending one more rupee on vegetables he gets additional utility equal to the area AE3CD. Now, is there any doubt that the shaded area ABCD is smaller than the shaded area EDFG? Since the loss of utility is more than the gain in utility it is proved that a consumer under the above conditions can maximize his utility only when he spends his limited money on various commodities in such a way that the marginal utility of all the commodities becomes equal. When he gets maximum total utility, we say that he is in equilibrium.

6.5 The concept of Weighted Marginal Utility and the Consumer's Equilibrium

The concept of weighted marginal utility is very important to a proper understanding of consumer's equilibrium. It is needed when we want to compare and equate the utilities of things at the margin of consumption. We do this by expressing the marginal utility not per unit of the commodity, but per unit of the money measure being used. Suppose we want to compare the marginal utility of oranges with that of apples. An orange costs say 20 paisa, while apples cost Rs. 1 each, or 100 paisa i.e., five times more than oranges. To make the marginal utilities of these two commodities comparable, it is necessary to bring them both on to a uniform scale. This can be done by expressing the marginal utility of each per unit of the money measure used in this case paisa. Thus if the marginal utility of an orange for a consumer is measured by 100 units or utils, and the marginal utility of an apple by 1000 utils, then the weighted marginal utilities (marginal utility of one paisa worth of an orange and of an apple) can be ascertained by dividing the marginal utility of each thing by its price.

Thus we see that the last paisa spent on oranges gives the consumer less utility than the last paisa spent on the purchase of an apple. This comparison becomes possible for us only when we have converted the simple marginal utilities into weighted marginal utilities. But why do we need such a comparison? This is because we want to know when and how a consumer will be in 'equilibrium under the assumptions stated in Section 6.2.

While stating the Law of Equi-Marginal Utility in Section 6.2 we said that a consumer gets the maximum utility only when lie spends his fixed income on various commodities in such a way that he gets equal marginal utility ft in all the commodities used. In terms of the concept of weighted marginal utilities we can say that a consumer will be in equilibrium, or he will be enjoying maximum satisfaction, when he distributes his limited income on the purchase of various commodities in such a way that weighted marginal utilities of all the things purchased are the same.

When the WMUs (weighted marginal utilities) of all the things are equal, the consumer is said be in equilibrium because then he gains nothing by transferring a unit of expenditure from the purchase of any one of the commodities to any other.

According to the above formula, if the following conditions exist

Then the consumer is in equilibrium because the WMU of all the four commodities is equal that is 10 utils each. If the weighted marginal utilities are not equal between any two commodities, the consumer will gain by spending more on a commodity with a greater WMU and spending less on a commodity with a smaller WMU. Suppose that

then the weighted marginal utilities of both the commodities are not equal. The consumer will spend more on commodity A whose WMU is more and will spend less on commodity B whose WMU is less. By spending more on commodity A, its WMU will fall; and by spending less on commodity B, its WMU will increase (the Law of Diminishing Marginal Utility in action). And once again the WMUs of both the commodities will become equal, as follows:

thus the consumer has reached the state of equilibrium once again.

6.6 The Practical Significance of the Equi-Marginal Principle

The Law of Substitution or the Law of Equi-Marginal Utility discussed above has a very wide application in various branches of Economics

a) In the Field of Consumption: You have learned in detail how a rational consumer tries to get maximum satisfaction when he spends his limited resources on various things in such a way that the weighted marginal utilities of all the things are equalized.
b) In the Field of Production: Just as the income of a consumer is limited. so are the financial resources of a producer. A producer tries o spend his limited resources on the purchase of the services of various factors of production in such a way that the marginal productivities of all the factors of production, divided by their prices, become equal. Because only then can he get maximum production and earn maximum profit.
c) In the Field of Distribution: The. National Income produced during a given year is distributed among the factors of production (land, labour, capital and organisation or enterprise) in the form of Rent, Wages, Interest and Profit, again according to the Law of Substitution. Under conditions of perfect competition, an entrepreneur cannot pay a factor of production more than its marginal product measured in money terms. He will go on substituting one factor of production for the other until the marginal productivities of all the factors of production used by the entrepreneur become equal to the prices of their services.
d) In the Field of Public Finance: The principle of substitution is also very useful in the field of public finance. Since the aim of a modern government is to increase the welfare of the society to the maximum, the government of a country tries to spend its revenue (raised through taxes) in such a way as to get the maximum social advantage. This is only possible when the marginal utility of each rupee spent on one sector becomes equal to the marginal utility derived from each rupee spent on all other sectors.

6.7 Limitations of the Equi-Marginal Principle

The Principle or the Law of Equi-Marginal Utility has been criticized on the following grounds:

a) Many goods are not divisible: The law is based on the assumption that the various commodities used by the consumer can be divided into small units to enable the consumer to choose a little more or a little less in order to equalize his weighted marginal utility. But this may not always be so. For example, should a person purchase a house or send his son for higher studies abroad? He cannot have a bit more of one and a bit less of the other: he has to choose one or the other.

b) The problem of time: Many things that we purchase give us utility even beyond the budget period—such as television sets, refrigerators, motor cars and many other durable consumer goods. But this does not mean that the law is not valid. It only makes the application of the Jaw rather difficult.

c) Ignorance of the consumer: The consumers may not always know what other useful alternatives are available to them on which they can spend their money; and because of this, they may not be able to maximize their utility.

(d) Influence of customs and fashions: People sometimes spend their money, not consciously, but under the influence of the customs and fashions prevailing in a society. They may not, therefore, get the full value of their money.

(e) Utility being a subjective concept not measurable quantitatively: A very important criticism of the Theory of Equi-Marginal Utility Is that since utility is a psychological concept it cannot be expressed in quantitative terms.

But despite all these criticisms, the fact remains that the principle of Equi-Marginal Utility occupies a very important place in economic theory.

6.8 Points to Remember

i) Man's economic problem is that his wants are unlimited but the moans to satisfy those wants are limited. Hence he is faced with the problem of choice.

ii) The Law of Equi-Marginal Utility is based on the assumptions that (a) the income of the consumer is fixed (b) he is rational being he is a person of given tastes (d) the prices of the things he purchases are given (c) the commodities are divisible into small units.

iii) The Law of Equi-Marginal Utility states that a consumer spends his limited income on various things in such a way that the marginal utility of all the things is equal. Only then does he obtain maximum satisfaction.

iv) The law can be explained with the help of a schedule and a diagram as illustrated in Sections 6.3 and 6.4.

v) Consumer's Equilibrium is bettor explained with the help of the concept of weighted marginal utility so that a consumer is in equilibrium with respect to his expenditure on commodities A, 13, C to... N when he spends his money in such a way that

vi) The law of Equi-Marginal Utility is of great practical importance In the fields of consumption, production, distribution and public finance.

vii) To application of the law becomes rather difficult because many goods are not divisible. There is also the problem of time. The ignorance of the consumer and the

influence of customs and fashions also make the use of this law somewhat difficult. But the main criticism is that since utility is a psychological concept it is not measurable quantitatively.

SELF-ASSESSMENT QUESTIONS

Q. 17 Can you answer the following questions about the Law of Equi-Marginal Utility

a) What does the law state?
b) On what assumptions does it rest?
c) To what areas of Economics is the law relevant?
d) Where are its limitations?

[If you are unclear about questions (a) and (b), look again Section 6.2 for question (c), check your answer with Section 6.6; and for question (d) see Section 6.7].

Q. 18 What do you understand by the following concepts:

a) Weighted Ma gloat Utility (WMU)?
b) Consumer's Equilibrium?

[Check your answers against the discussion in Section 6.5].

Now test the practical application of what you have learned by attempting the following exercises.

Q. 19 Suppose a consumer has a sum of Rs. 20 to spend on any two commodities, say sugar and ghee. Make a schedule to illustrate how much of the money he might spend on sugar and how much he might spend on ghee to get the maximum utility from both.

[If you are unsure about how to prepare the schedule, then look again at the worked example in Section 6.3. Remember there is no one right answer in this question; your schedule will simply illustrate a possible way in which the consumer could come to his decision about how to maximize the utilities].

Q. 20 Suppose the Weighted Marginal Utility (WMU) of commodity A is 5 utils and that of commodity B is 8 utils: that is-How will a consumer adjust his expenditures in order to equalize the Weighted Marginal Utilities of both commodities?
[In attempting his question, follow the procedure outlined in Section 6.5].

Q. 21 Suppose the marginal utility of a shirt for you is 10,000 utils and the price of a shirt is Rs 50 (paisa 5000); and suppose the marginal utility of a necktie is 500 utils and its price is Rs. 10 (1000 paisa). Using the appropriate formula, work out the weighted marginal utilities (WMUs) for the two items; and if there is a difference between the WMUs for the two items, make the necessary adjustments so that the WMUs of both are equal.
[In answering this question, follow the model worked out in Section 6.5].

7. THE EQUI-MARGINAL PRINCIPLE AND THE LAW DEMAND

7.1 The Individual Law of Demand

You were told in Section 5. 1 that the importance of THE Law of Diminishing Marginal Utility lies in the fact that it is a basis for the Law of Demand.

We purchase many things from the bazar every day; and normally we purchase more when the price is low and less when the price is high. This is because when the price of a commodity, say 'A', falls, the weighted marginal utility that is will increase. So the consumer will shift his expenditure from other commodities towards the purchase of A; so that the weighted marginal utilities of all the commodities become equal (as explained in detail in Section 6.5). Thus a fall in the price of commodity A leads the consumer to purchase more of it; and a rise in its price makes him purchase less of it, provided other things remain the same i.e., his income, his taste and the prices of substitutes remain unchanged.

In Section 5.1 we made a schedule and a diagram of the Law of Demand. The demand curve as you will remember is negatively sloped that is, it falls from left to right. We can make a demand schedule and a demand curve both for an individual and for the market as a whole.

7.2 The Market Demand Schedule

The total demand for a commodity in the market consists of the sum of all the individual demands of a large number of buyers. In fact, it is the collective demand of all the buyers of a commodity which determines its price in the market. For an individual buyer the price is already given. He will just push the purchase of that commodity up to the point where its falling marginal utility becomes equal to its price.

We make a market demand schedule and curve assuming that there are four buyers of a thing, say oranges, in the market. All the four buyers purchase less when the price of oranges is high and more when the price is low. For an understanding of the market demand read the following schedule:

MARKET DEMAND SCHEDULE

Price of oranges Rs. per dozen	Individual demand for organs in dozens				Market demand for oranges
(1)	A (2)	B (3)	C (4)	D (5)	(6)
7	1	2	3	4	10
6	2	2	4	5	14
5	3	4	5	6	18
4	4	5	6	7	22

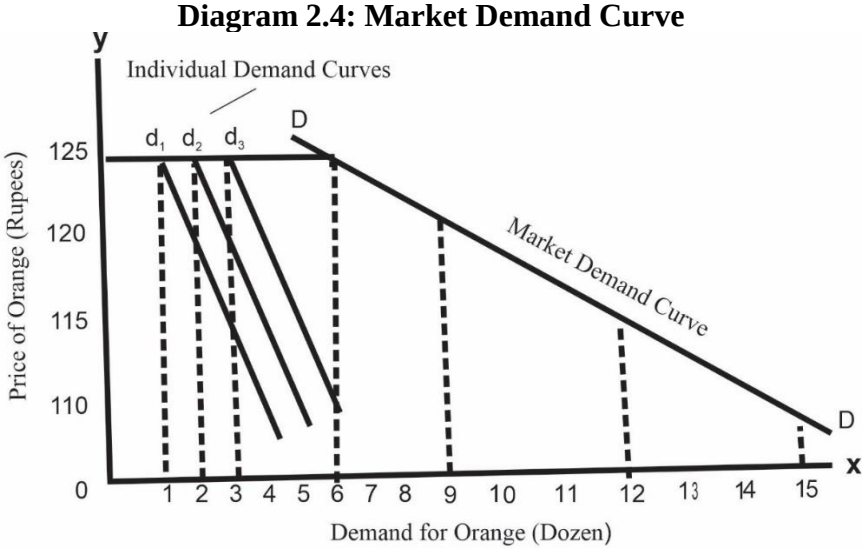
In the above schedule, the first column shows the price of oranges per dozen. The second, third, fourth and fifth columns show the individual demand for oranges of buyers A, B, C

and derespectively. The last column, number 6, shows the market demand which is the sum of all the individual demands at a particular price. For instance, when the price of oranges is Rs. 7 per dozen, buyer A purchases one dozen, buyer B-2 dozen, buyer C-3 dozen, and buyer D-4 dozens. Thus the market demand is 1 + 2 + 3 + 4 = 10 dozen oranges at the price of Ks. 7 per dozen. Similarly, as the price of oranges goes on falling, the demand of all the buyers goes on increasing and so does the market demand.

7.3 The Market Demand Curve

The market demand schedule given in the preceding section can also be represented diagrammatically, as is shown below:

Diagram 2.4: Market Demand Curve



In the above figure, we have shown the demand for oranges in dozens along the X axis and the price of oranges per dozen along the Y axis. First, we made the individual demand curve A, B, C and D by plotting points in the plane and then joining them. It can easily be seen that all four demand curses slope downwards from left to right. By adding up all the four individual demand curves, we get the market demand curve DI) which is also negatively sloped. Since market demand for a commodity is the sum of all the individual demands, it follows that the market demand curve is also the sum of all the individual demand curves.

7.4 Shifting of the Demand Curve

While stating Law of Demand we used the words “other things remaining the same”. This means that there are certain conditions under which the Law of Demand will hold good. These conditions are:

a) That the income of the consumers should not change. Suppose you purchase one kilo or mutton at Rs. 12 per kilo. Meanwhile, the price of mutton goes up from Rs. 12 to Rs. 16 per kilo. According the Law of Demand, your demand for mutton should

contract; but if there is a proportionate increase in your money income, your demand for mutton may not shrink at all. Alternatively, if the price of mutton remains the same (i.e. Rs. 12 per kilo,) but the income of the consumer increases, his demand for mutton may increase, even if there is no reduction in the price of mutton.

b) That consumers' taste and fashion should remain the same. Suppose you are fond of having milk and 'lassi' at present. But after sometime you develop the habit of taking tea excessively. In that case, your demand for tea will increase even though there is no fall in the price of tea. So a change in taste or fashion also causes a shift in the demand curve.

c) That the prices of substitutes should remain the same: Most of the things that we use daily are close substitutes for each other. If the price of sugar goes up, the demand for it will contract provided that the price of 'gur' does not increase simultaneously. But if the price' of 'gur' also increases, the demand for sugar may not decrease despite the rise in its price. Thus a change in the price of a substitute for a commodity may also shift the demand curve.

That the demand curve may shift as a result of a change in the conditions of demand can also be explained with the help of the following schedules and diagrams:

RISE IN DEMAND OR SHIFTING DEMAND

Price of grapes per kilo (1)	Demand for grapes in kilos (2)
5 5	2 3

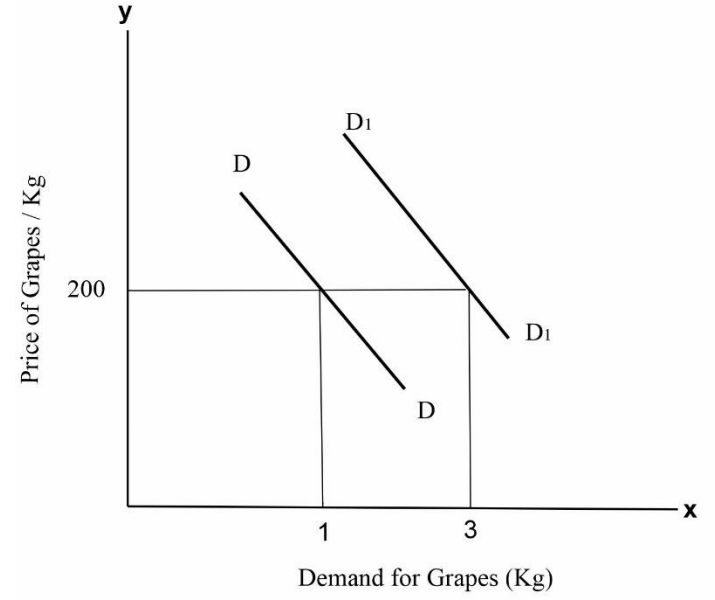
RISE IN DEMAND FOR SHIFTING DEMAND CURVE UPWARDS

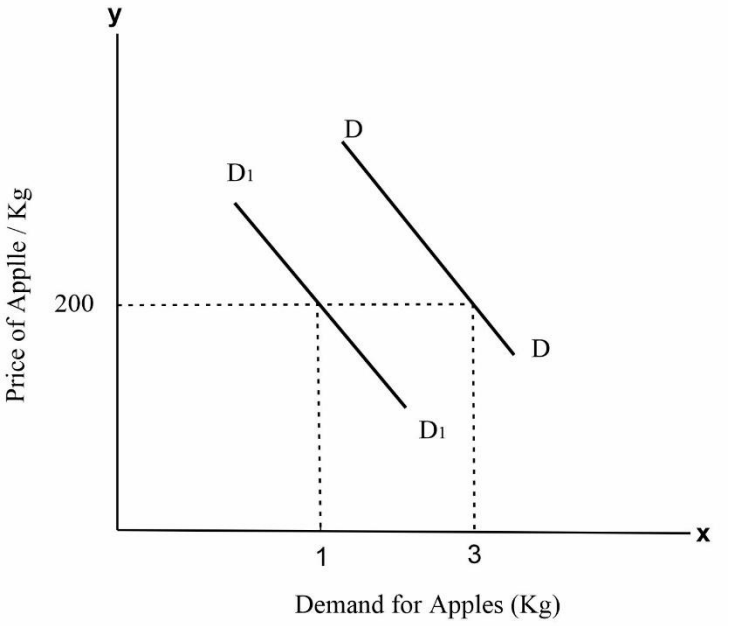
According to the above schedule, the demand for grapes has risen from 2 to 3 kilos, even though there has been no fall in the price of grapes. That is why the demand curve has shifted upwards to the right, as shown by the dotted line D^{1} D^{1}. It may be that the income of the consumers has increased, or that pope now like grapes more than before, or that the prices of other fruits have increased and that grapes are now relatively cheaper than other types of fruit.

FALL IN DEMAND OR SHIFTING OF THE DEMAND CURVE DOWNWARDS

Price of apples per kilo (in rupees) (1)	Demand for apples (in kilos) (2)
8 8	3 2

FALL IN DEMAND OR SHIFTING OF THE DEMAND CURVE DOWNWARDS





The above schedule and diagram show that the demand for apples has fallen from three kilos to two kilos, although there has not been any rise in the price of apples. That is why the demand curve has shifted downwards as shown in the diagram by the dotted line $D^{l}\,D^{1}$. Again, it may be that the income of the consumer has decreased, or perhaps his liking for apples has lessened, or that apples are now relatively more expensive than other types of fruit.

7.5 Points to Remember

i) When the MU of A.P of A increases as a result of a fall in the price of commodity 'A', the consumer's demand for 'A' expands and he purchases more of it than before,

ii) The market demand schedule is the sum of individual demand schedules By adding the demand for a commodity of all the individual buyer, in the market we eat the market demand schedule.

iii) The market demand curve is also the sum of all the individual demand curves.

iv) The Law of Demand holds good when there is no change in the income of the consumer, the taste of the consumer, or the prices of substitutes.

v) The demand curve shifts upwards or downwards depending on particular changes in the conditions which the law assumes.

SELF-ASSESSMENT QUESTIONS

Q. 22 Can you explain with reference to Weighted Marginal Utilities (WMUs), Price and Market Demand, why it is 0'.t when the price of a commodity falls, the demand for it is likely to increase?
[If you are not clear about this, check your answer with Sections 7.1 and 7.2].

Q. 23 Complete the following schedule and then translate it into a diagram:

Price of tea Rs. Per lb.	Individual's Demand				Market Demand
	A	B	C	D	
(1)	(2)	(3)	(4)	(5)	(6)
10 9 8 7	1/21	1	1-1/2	2	5

[In attempting this question, follow the procedure indicated in Section 7.2. The correctly completed schedule appears at the end of the unit on P.59; and you diagram should be derived from it as indicated in Section 7.3]

Q. 24 What are the main factors which will cause the market demand curve to shift? Can you explain in your own words, and with practical examples from your own experience, the circumstance under the demand curve will move (a) upwards, and (b) downwards?

[Check your answer against the list of general assumptions on which the Law of Demand is based which appears in Section 7.4].

GLOSSARY OF MAIN TERMS

Average utility	..	.. Total utility divided by the number of units consumed.
Consumer's equilibrium		.. A state or position arrived at by a consumer where he achieves maximum satisfaction.
Consumer' surplus		.. The excess price which a consumer is willing to pay over the one he actually pays for the purchase of a commodity.
Demand	..	.. The amount of goods purchased by the consumers at the current price.
Marginal utility	..	.. The amount of utility derived from the last unit of a commodity consumed.
Negative utility	..	.. An amount of utility less than zero.
Total utility	..	.. Summation of marginal utilities of all units consumed.
Utility	..	.. The power or quality of a thing to satisfy a human want.
Weighted marginal utility		.. The marginal utility of a commodity divided by its price.

SUGGESTIONS FOR FURTHER READING

Akhtar, S.M.	An Introduction to Modern Economics (1967) pages 58–78.
Dewett, K.K.	Modern Economic Theory (11th revised edition, 1964) page 41–63.
Hicks, J.R.	Value and Capital (1939)
Marshall, A.	Principles of Economics (8th edition) pages 70–114.
Samuelson, P.A.	Economics (5th edition) pages 433–450.
Stonier A.W. and D.C. Hague	A textbook of Economic Theory (1966 edition) pages 15–19 and 37–42.

ANSWERS TO SELECTED SAQs

Q. 7 a) 9, 3, 1.

b) Negative (Utility)

c) Marginal Utility

d) Zero (Utility)

Q. 10 a) Diminishing

b) Decreasing

c) Decreasing

d) Downwards

Q. 11 a) Incorrect

b) Incorrect

c) Correct

Q. 12 The completed schedules should be as follows:

a)

Units of shirts	Total utility of shirts	Average utility of shirts	Marginal utility of shirts
(1)	(2)	(3)	(4)
1	20	20	20
2	32	16	12
3	36	12	4
4	36	9	0

b)

Units of cups of tea	Total utility of cups of tea	Average utility of cups of tea	Marginal utility of cups of tea
(1)	(2)	(3)	(4)
1	10	10	10
2	12	6	2
3	12	4	0
4	8	2	-4

Q. 23 The completed schedules should be as follows:

Price of tea Rs. Per lb.	Individual's Demand				Market Demand
	A	B	C	D	
(1)	(2)	(3)	(4)	(5)	(6)
10	½	1	1-1/2	2	5
9	1	1-1/2	2	2-1/2	7
8	1-1/2	2	2-1/2	3	9
7	2	2-1/2	3	13-1/2	11

Unit–3

THE THEORY OF THE FIRM AND THE ANALYSIS OF SUPPLY

Written by: Sohail Jehangir Malik

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INTRODUCTION

Each firm or production unit is faced with the problem of maximizing its profits given two sets of prices. One set reflects the prices that it has to play which are its costs; and the other set reflects the price of its product that it will receive, and which makes up its revenue. Each firm tries to maximize the difference between what it receives and what it pays out. This difference is the profit that accrues to the firm; and it forms the crux of the area of economic analysis which is called the theory of the firm.

OBJECTIVES

By the end of Part-I, you should be able to

a) Define
   i) The main concepts related to a firm's costs of production (total cost, fixed cost, variable cost, average cost and marginal cost)
   ii) The main concepts related to a firm's revenue from production (total revenue, average revenue, and marginal revenue)
   iii) The concept of profit and the idea of a firm's equilibrium point

b) Analyse for both perfect and imperfect competition
   i) The main cost relationships (Ii) the **main revenue relationships**
   ii) Relationships between costs and revenue involved in defining the firm's equilibrium position.

c) Explain how a firm reaches rational decisions about the most profitable level of production in terms of its costs and revenues.

1. COST

1.1 Total Cost

This is the sum of all the costs incurred by the producer to produce a certain quantity of output. It includes payments made for the use of the factors of production (for example, land, labour, and capital), the raw, material costs and other overhead costs like electricity, water, gas and other charges. Since the use of these inputs that go into the production of a commodity vary with the amount of that quantity produced, the overall total cost increases or decreases with the increase or decrease in the quantity of production.

1.2 Input and Cost

For a given quantity of production, the total cost to the firm is the sum of the costs of all the separate inputs that go into its production. The cost of each input depends upon the price of that input multiplied by the amount of that input used in the production of the given output. We can depict this quite simply.

Assume that the cost of one input is Rs. 10 to the firm. This cost is dependent on the price per unit of the input, which we can assume to be Rs. 10, and the quantity or number of units or that input that are used, which we can call q units. Then c = p x q gives us the cost of one input to the firm. If three inputs are used, then the total cost (which we can call Rs. C) is the sum of the costs of the individual inputs or $C = c_1 + c_2 + c_3$ where C is total cost, c_1 is cost of input one, c_2 is cost of input two, and c_3 is cost of input three. Similarly, there can be six, seven eight or more inputs; and the cost of each will figure in the total cost of production.

Example: We take a firm manufacturing 100 units of output. We want to evaluate its total cost on the production of these 100 units of output. Suppose it uses only three inputs. Then we need the following information:

a) The price per unit of input that the firms is paying; and
b) The number of units of each input used in the production of 100 units of output.

Continuing with the same example, we assume the following information:

Table3.1: Input Costs and Total Cost

Inputs used in the Manufacturing Process	Price per Unit (Rs.)	Number of Units used in the Production of 100 Units of output	(Cost) (Rs.)
	P	q	p × q
Input 1	10	125	1250 (c_1)
Input 2	7	150	1050 (c_1)
Input 3	25	50	1250 (c_3)
	Total cost $C = c_1 + c_2 + c_3$ =		3550

Then the cost of input 1 or c_1 will be 10 × 125 = Rs. 1250 which is obtained by multiplying the price per unit by the quantity or input used, or p × q. Similarly, the cost of the second input or c_2 will be 7 × 150 = Rs. 1050; and cost of third input or c_3 will be 25 × 50 = Rs. 1250. Then the total cost or C to the firm for producing the 100 units of output will be C = $c_1 + c_2 + c_3$ or Rs. 1250 + 1050 + 1250 = Rs. 3550. If there are more than three inputs, then same procedure is applied to calculate the cost of the each.

1.3 Competition and Cost

Any firm in a competitive market will try to reduce its total cost as much as possible. Thus, it can do by reducing input cost. We have learned earlier that the input cost is dependent upon (a) the price of that input, and (b) the quantity of that input used in the production of a given output. So, the producer will attempt to buy his inputs in those markets where their price is the lowest and to adopt those techniques of production which minimize the use of inputs or utilize the least cost combinations of inputs.

1.4 Production and Cost Relationship

One thing should he clear by now that the total cost of a firm increases or decreases as its production increases or decreases. This is because the total cost is dependent upon input cost which varies as input usage is varied to increase or decrease production.

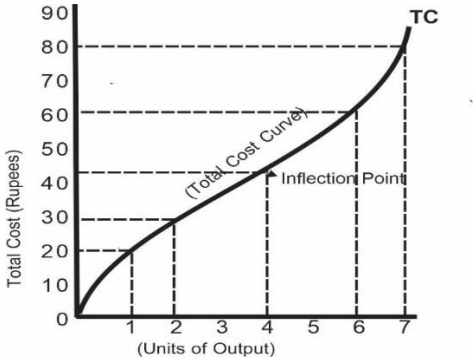
These relationships of total cost to quantity of production can be seen clearly from the schedule below:

Table 3.2: Output and Total Cost Schedule

Output (units)	Total Cost (Rs.)
0	0.00
1	20,00
2	28,00
3	33,00
4	40,00
5	50,00
6	67,00
7	84,00

The above schedule can also be represented by a graph:

Diagram 3.1: Output and Total Cost



OC is the total cost curve. All total cost curves have the general shape in the sense that they will all rise upwards from left to right which implies that total cost increases as output is increased. Any point on this curve will tell you what it costs the firm to produce a given output.

1.5 Points to Remember

i) Total cost is the sum of all costs incurred by the producer.
ii) Total cost varies directly with the size of output
iii) Total cost is the cost of all the separate inputs.
iv) The cost of each input depends upon the price of the input multiplied by the amount of the input.
v) A producer is naturally inclined towards using more of the factor which is cheaper and attempts to utilize the least cost combination of inputs.
vi) The total cost curve rises upwards from left to right.

SELF-ASSESSMENT QUESTIONS

Q. 1 What are the three main types of input cost which are included in the producer's total cost?
[Check your answer against Section 1. 1]

Q. 2 What information is needed to calculate total cost? How is total cost calculated? Can you express this in terms of a simple equation?
[Check your answer against Section 1.2]

Q. 3 Why does a producer try to minimize his costs? In general terms, how can he do this?
[Check your answer against Section 1.3]

Q. 4 What is the relationship of total cost to the quantity of production?
Can you illustrate this in diagrammatic form? What is the general shape of the total cost curve?
[Check your answer against the discussion and diagram in Section 1.4)

2. FIXED AND VARIABLE COSTS

2.1 Fixed Cost

We have seen from the Cost schedule and the total cost curve in the previous section that when there is zero production there is zero cost. But this is not always true. It is only in the very long run that total cost can be said to be zero for zero production.

Normally, in the short run (in a short time period), there are certain inputs that cannot be varied by the producer; and whether there is production or not, the firm is forced to use these inputs and pay their cost. Land and machinery are an example. A firm manufacturing a certain commodity needs land and machinery for its factory. It does not matter whether

there is any production or not; the cost of the land and the machinery is a cost the firm must bear. If there is zero or reduced production, the firm can stop hiring labour, it can stop buying raw material, cut off its power and water intake; but it cannot vary or alter the land or machinery.

This proportion of total cost that is due to those inputs, the use of which cannot be varied is called Fixed Cost. No matter what the output, fixed Cost remains the same.

2.2 Variable Cost

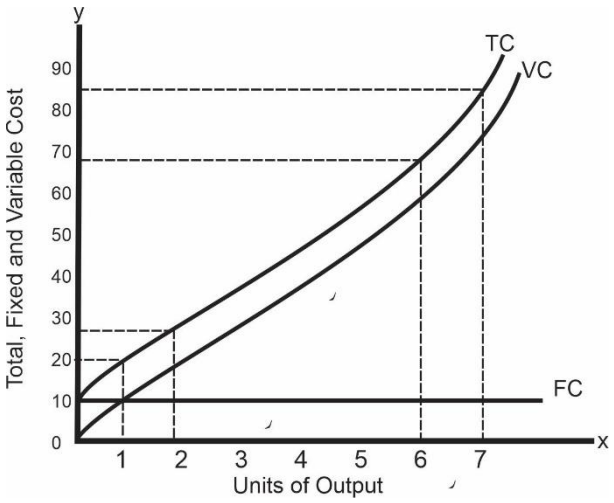
The following schedule shows the relationship of fixed cost, total cost and the quantity of output.

Table 3.3: Fixed Cost, Total Cost and Output

Output (Units)	Fixed Cost (Rs.)	Total Cost (Rs.)
0	10.00	10
1	10.00	20
2	10.00	28
3	10.00	33
4	10.00	40
5	10.00	50
6	10.00	67
7	10.00	84

The same information can also be presented on a graph:

Diagram 3.2: Fixed Cost. Total Cost and Output



FC is the Fixed Cost Curve: You will see that whatever the output, the fixed cost remains the same. In this case, the total cost curve does not start from zero. It starts from some point on the Y axis which reflects the fixed cost. At that point of zero output, total cost is equal to fixed cost. As production starts, raw material and other variable costs are added on to the fixed cost to make up the total costs.

What are variable costs? Variable costs, as we have seen, are that component of total costs that is made up of the cost of variable inputs, or those inputs whose use varies with the output. Examples of variable inputs are raw materials, labour, electricity, fuel, etc. In a situation in which all inputs are variable, then the total cost of a firm is equal to its variable costs

2.3 Cost Relationships

The same schedule shown in Section 2.2 can be used to display variable costs and their relation to fixed and total costs.

Table 3.4: Schedule of Fixed, Variable and Total Cost

Output (Units)	Fixed Cost (Rs.)	Variable Cost (Rs.)	Total Cost (Rs.)
0	10	0	10
1	10	10	20
2	10	18	28
3	10	23	33
4	10	30	40
5	10	40	50
6	10	57	67
7	10	74	84

It becomes clear from the schedule above that for any output, total cost is equal to fixed cost-plus variable cost. For a firm thinking of reducing costs, the relevant area in which it can do so is the variable cost area. That is why you must have heard of retrenchment or reduction of the labour force and economy of fuel and electricity etc. by firms, making what is called an "economy drive".

2.4 Points to Remember

i) The proportion of total cost that is due to the inputs the use of which cannot be varied is called Fixed Cost.
ii) Variable cost is the proportion of total cost which varies with the output.
iii) The fixed cost curve runs parallel to the X axis, where the total cost curve constantly rises upwards from0 left to right.

SELF-ASSESSMENT QUESTIONS

Q. 5 What is meant by Fixed Cost and Variable Cost? Explain each term briefly in your own words and give examples which show the differences between them.
[Check your answer with the discussion in Section 2. 1 and 2.2].

Q. 6 What is the relationship between total costs, fixed costs, and variable costs? Can you illustrate the relationship in terms of a simple diagram?
[Check your answer with the discussion and diagram in Section 2.3. Make sure that your diagram is properly labeled so that it is clear what is represented on each axis and which curves represent total costs and fixed costs. How can you indicate variable costs on your diagram?]

Q. 7 Can you explain what happens to the various costs of production as the volume of production increases? Place a tick in the appropriate box.

	Increase	Stay Constant	Decrease
a) Total Costs			
b) Fixed Coasts			
c) Variable Costs			

[The correct answers are given at the end of the unit on p.157. If you got any part of the question wrong, re-read the whole section].

3. AVERAGE AND MARGINAL COST

3.1 Average Cost

Two other concepts related to costs are very important. As you will see later, these form the basis of the derivation of the supply curve, and they are also important in establishing the criteria for the expansion or contraction of the output of a firm or an industry. The two concepts are those of Average Costs and Marginal Costs.

What is average cost? Average cost is simply the cost per unit of output; or the total cost of producing a certain quantity divided by the number of units of output produced.

We will again use the schedule introduced in Section 2.3 to explain average total cost, average fixed cost, and average variable cost.

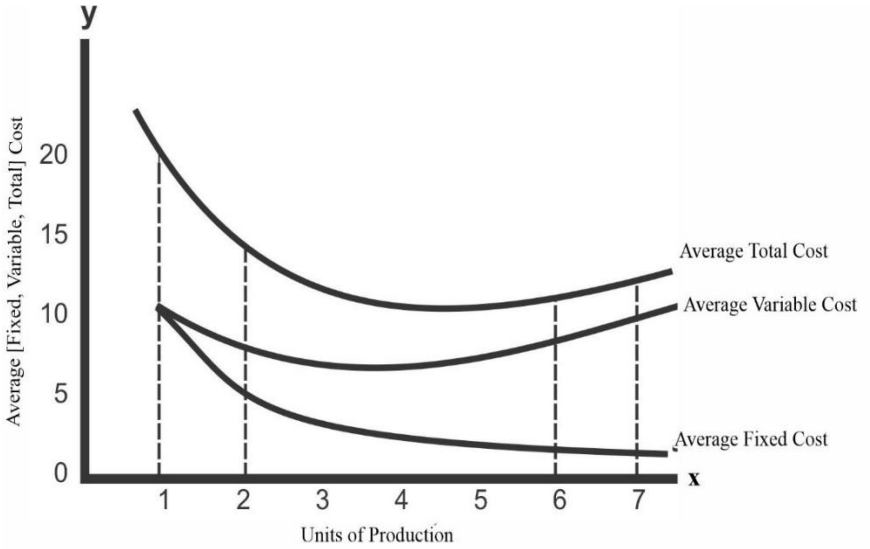
Table 3.5: Average Cost Schedule

Output in (Units	Costs in Rupees					
				Average		
	Total Cost	Fixed Cost	Variable Cost	Total Cost	Fixed Cost	Variable Cost
0	10	10	0			
1	20	10	10	20	10	10
2	28	10	18	14	5	9
3	33	10	23	11	3.3	7.6
4	40	10	30	10	2.5	7.5
5	50	10	40	10	2	8
6	67	10	57	11.1	1.6	9.5
7	84	10	74	12	1.3	10.6

You can see from the above schedule that average total cost is equal to average fixed cost-plus average variable cost. (The averages were obtained by dividing the respective costs by the number of units of output).

The average cost schedule can so be presented graphically as follows

Diagram 3.3: Average Total Cost, Average Fixed Cost and Average Variable Cost



As you can see both from the schedule and from the above graph, the average fixed cost tends to become smaller and smaller as the output increases; and the average variable cost grows closer and closer to the average total cost.

The average total cost curve slopes downwards from left to right to a point where it reaches a minimum; then it rises upwards. This shape is determined by the laws of return which govern production theory.

3.2 Marginal Cost

What is marginal cost? The theory of the margin forms the basis of all modern economic theory and decision-making. Marginal cost, quite simply, is the cost of producing an additional unit of output. Only if the producer knows what it will cost him to produce an additional unit of output, and what price the sale of that unit will achieve in the market, will he be able to decide whether to increase production or not.

We will use the same data of total and average cost as presented in Section 3.1 to develop a series of figures for marginal cost.

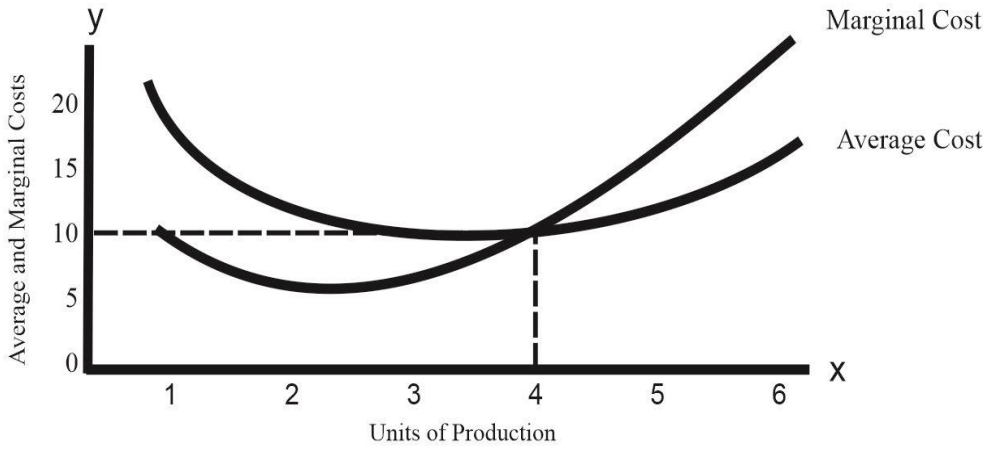
Table 3.6: Total, Average and Marginal Cost

Output (in Units)	Total Cost (Rupees)	Average Cost (Rupees)	Marginal Cost (Rupees)
0	10	---	---
1	20	20	10
2	28	14	8
3	33	11	5
4	40	10	7
5	50	10	10
6	67	11.1	17
7	84	12	20

3.3 Cost Relationships

By now it should be clear that marginal cost is the addition to total cost with the production of one additional unit. When one unit is produced the total cost is Rs. 20 and the marginal cost is Rs. 10; when two units are produced the total cost increases to Rs. 28 and the marginal cost is thus Rs. 8 (Rs. 28 - 20) and so on. It becomes easier to study the relationship between marginal costs and average costs through a graph.

Diagram 3.4: Average Cost and Marginal Cost



You can see that the marginal cost curve has the same general shape as the average cost curve. But a point to remember is that when average cost is decreasing, marginal cost is also decreasing, and the marginal cost curve is below the average cost curve. When average cost is increasing, marginal cost is also increasing; the marginal cost curve is above the average cost curve. The marginal cost curve cuts the average cost curve from below at the lowest point of the average cost curve.

3.4 Points to Remember

i) Average cost is the cost per unit of output.

ii) Average cost is calculated by dividing the total cost of output by the number of units produced.

iii) Average cost is the sum of average fixed cost and average variable cost.

iv) Average variable cost (AVC) is obtained by dividing the total variable cost of the output by the number of units produced.

v) Average fixed cost (AFC) is obtained by dividing the total fixed cost of the output by the number of units produced.

vi) Marginal cost is the cost of producing an additional unit of output.

vii) The AFC curve slopes downwards from left to right and comes very close to the X axis.

viii) The AVC curve slopes downwards, reaches its lowest point, and then rises upwards from left to right.

ix) The average total cost (ATC) curve slopes downwards, reaches its lowest point, and then rises upwards from left to right.

x) The gap between ATC and AVC keeps on diminishing.

xi) The marginal cost curve cuts the average cost curve from below at its lowest point.

SELF-ASSESSMENT QUESTIONS

Q. 8 What is the relationship between Average Total Cost, Average Variable Cost and Average Fixed Cost? Can you illustrate the same in terms of a diagram?
[If you have any difficulty with this, look again at the discussion and diagram in Section 3.1. Make sure that the axes and curves on your graph are clearly labeled].

Q. 9 What do you understand by Marginal Cost? How is it calculated? Can you illustrate in terms of a graph the relationship between Marginal Cost and Average Cost?
[Check your answer against the discussion in Sections 3.2 and 3.3].

Q. 10 Using the schedule in Section 3.2 and the diagram in Section 3.3 (or the diagram you have just drawn for SAQ 9), answer the following questions:

a) When average cost is decreasing, what is happening to marginal cost? (Is it increasing or decreasing?)

b) When average cost is increasing, what is happening to Marginal Cost? (Is it increasing or decreasing?)

c) At what point does the Marginal Cost Curve cut the Average Cost Curve? Does it cut across it from above or below?

[The answers to these questions are given at the end of the unit on page 157. It is important that you should grasp the logical relationship between Marginal Cost and Average Cost. Marginal Cost is defined as the cost of producing an additional unit of a commodity. It therefore follows that as marginal cost decreases, average cost must also decrease; and that as marginal cost increases, average cost must increase. It also follows that if average cost is decreasing, then the marginal cost for a particular level of output must be lower than the average cost; and but if average cost is increasing, then the marginal cost for a particular level of output must be higher than the average cost. If this were not so, then in the first case average cost would not be decreasing; and in the second case they would not be increasing. Finally, if marginal cost must be lower than average cost when average cost is decreasing, and if it must be higher when average cost is increasing, then the marginal cost curve must cut across the average cost curve; and the point at which it will cut across it is the point when average cost stops decreasing and starts increasing i.e., at the lowest point of the curve].

4. REVENUE

4.1 Average Revenue

So far, we have seen only one side of the picture. We have studied how cost curves are generated; what makes up the total cost for a firm; and what fixed, variable, average and marginal costs are. However, another side of the picture– the revenue side. This aspect is also equally important and essential in determining how much the firm will produce and what will be its profits. We assume that the profit motive underlies all production. What then is total revenue? It is the income of the firm through the sale of its product. At any given price, it is the price of the product multiplied by the quantity of output sold.

It is important to bear in mind that the price per unit of output (which can also be called the firm's average revenue which determines its total revenue) depends upon the nature of the market in which the firm is selling.

a) In perfect competition, no matter what the quantity offered for sale, the price per unit remains the same or is constant.
b) In imperfect competition, the price per unit depends upon the quantity offered for sale. As the quantity increases, the price per unit decreases.

(Note: Perfect Competition and 'Imperfect Competition' are defined in the glossary of Main Terms at the end of this unit).

4.2 Total and Average Revenue

We will now illustrate total and average revenue with the help of a schedule.

Table 3.7: Schedule of Total and Average Revenue Under Perfect and Imperfect Competition

Output (Units	Perfect Competition		Imperfect Competition	
	Average Revenue (Rupees)	Total Revenue Rupees)	Average Revenue (Rupees)	Total Revenue (Rupees)
0	0	0	0	0
1	17	17	16	16
2	17	34	15	30
3	17	51	14	42
4	17	68	13	52
5	17	85	12	60
6	17	102	11	66
7	17	119	10	70

The above schedule shows total revenue and average revenue under conditions of perfect competition and imperfect competition. In the case of perfect competition, it can be seen that the price per unit remains the same whatever the output sold. Whereas, in the case of imperfect competition, the price per unit decreases.

The information contained in the schedule above can also be illustrated graphically.

Diagram 3.5 (A): Total and Average Revenue under Perfect Competition

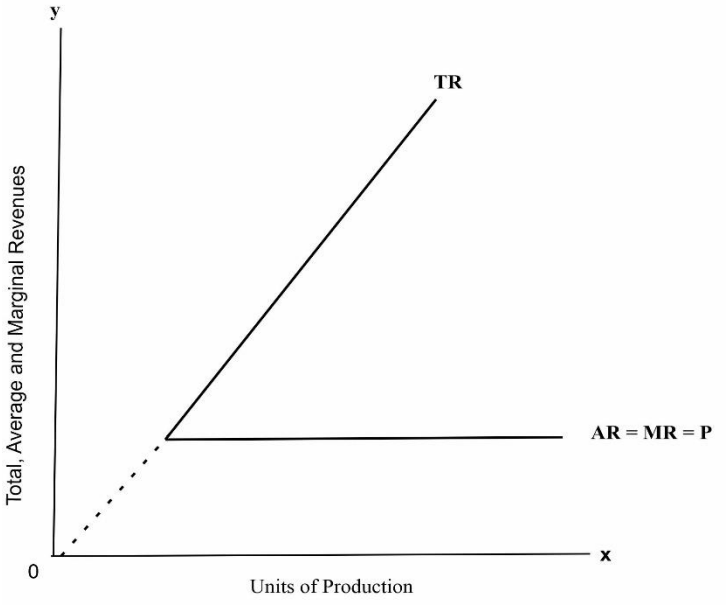
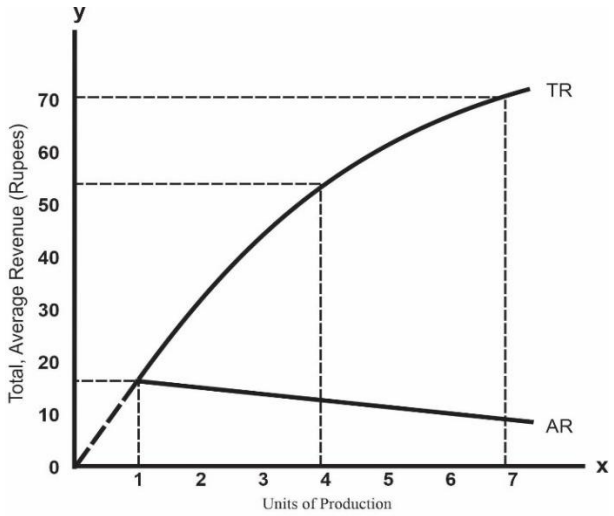


Diagram 3.5 (B): Total and Average Revenue under Imperfect Competition



So, we can see that average revenue or price remain, constant under perfect competition and the average revenue curve is parallel to the X axis of the graph. In the case of imperfect competition, however, the average revenue decreases with the increase in output; and the average revenue curve slopes downward from left to right.

4.3 Marginal Revenue

We are already familiar with the concept of marginal cost (See Section 3); but what is marginal revenue? Marginal revenue is the addition to total revenue through the sale of one additional unit of output. We can again use the schedule in, Section 4.2 to find out the marginal revenue of the firm in the schedule, under both perfect competition and imperfect competition.

AVERAGE TOTAL AND MARGINAL REVENUE UNDER PERFECT AND IMPERFECT COMPETITION

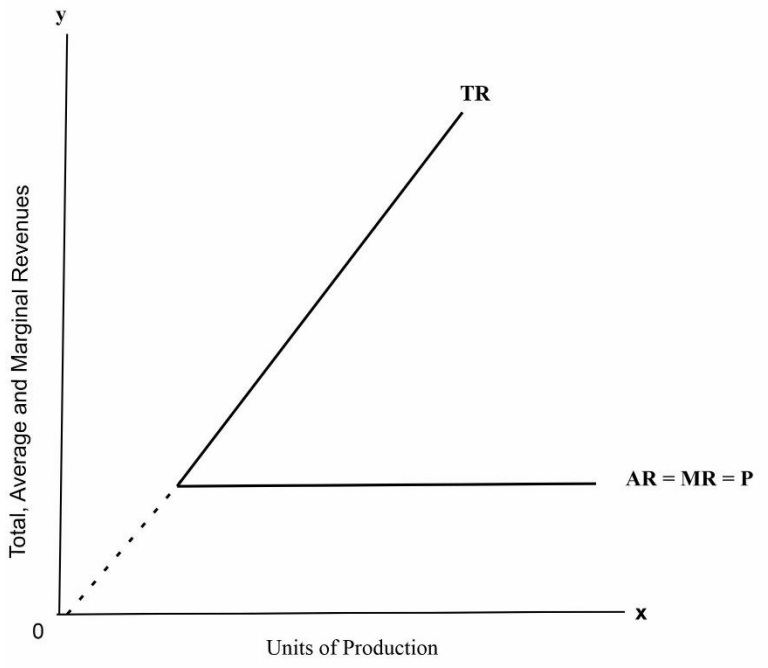
Output (in units)	Perfect Competition			Imperfect Competition		
	Average Revenue (Rupees)	Total Revenue (Rupees)	Marginal Revenue (Rupees)	Average Revenue (Rupees)	Total Revenue (Rupees)	Marginal Revenue Rupees)
0	---	---	---	---	---	---
1	17	17	17	16	16	16
2	17	34	17	15	30	14
3	17	51	17	14	42	12
4	17	68	17	13	52	10
5	17	85	17	12	60	8
6	17	102	17	11	66	6
7	17	119	17	10	70	4

In case of perfect competition, we see that the addition to the total revenue through the sale of each additional unit is Rs. 17 and that marginal revenue is constant and equal to average revenue. In the case of imperfect competition**,** marginal revenue is less than average revenue.

4.4 Revenue Relationships

Total revenue, average revenue and marginal revenue under perfect competition can be illustrated graphically using the information from the above schedule.

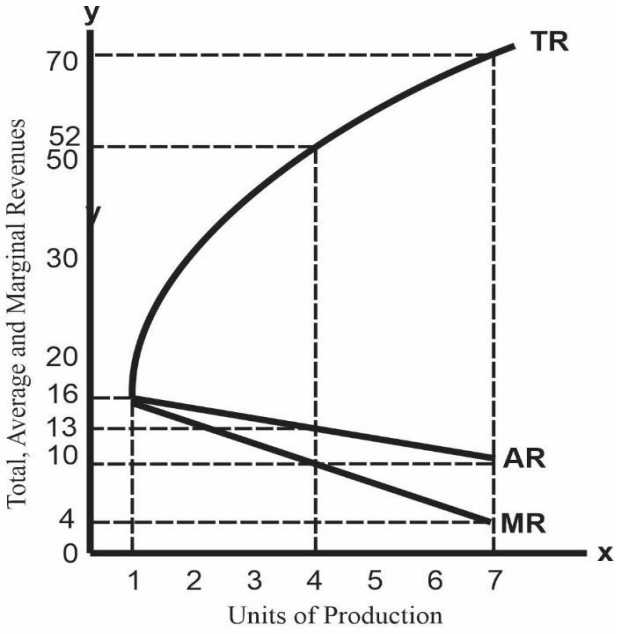
Diagram 3.6: Total, Average and Marginal Revenue under Perfect Competition



The above diagram shows the general shape of the total revenue, average revenue and marginal revenue curves under perfect competition. You should note that, since average revenue is equal to marginal revenue under perfect competition, the average revenue curve and marginal revenue curve coincide, and can be depicted by the same straight line parallel to the X axis. Since the price per unit remains constant wider perfect competition, average revenue is equal to marginal revenue which is equal to price.

The general shape of the total revenue, average revenue and marginal revenue curves under perfect competition is different from the shape of these curves under perfect competition studied above. We will use the information presented in the schedule in Section 4.3 to draw the respective curves for total revenue, average revenue, and marginal revenue under conditions of imperfect competition.

Diagram 3.7: Total, Average and Marginal Revenue Under Imperfect Competition



4.5 Points to Remember

i) The price per wilt under perfect competition remains the same.
ii) Under imperfect competition the price per wilt decreases.
iii) Marginal revenue is the addition to total revenue through the sale of one additional unit of output.
iv) Under perfect competition Average Revenue (AR) and Marginal Revenue (MR) are equal; but wider imperfect competition they are not equal MR is less than AR.
v) Under perfect competition, the MR and AR curves can be shown by a straight line parallel to LX axis.
vi) Under imperfect competition, the MR curve remains lower than AR curve.

SELF-ASSESSMENT QUESTIONS

Q. 11 Can you explain what is meant by **the** terms Total Revenue, Average Revenue and Marginal Revenue?
[These are basic concepts for the unit. You can check their precise meanings in Sections 4.2 and 4.3]

Q. 12 What is the difference between 'perfect' and 'imperfect' competition?
[You can check your answer with the definition which appears in the glossary at the end of Part I oft/ifs unit]

Q. 13 What are the main differences in terms of revenue (total revenue, average revenue and marginal revenue) for a firm operating under conditions of (ii) perfect competition (b) imperfect competition? Can you illustrate your answer with appropriate graphs showing the relationship of the different revenue curves in the two situations?
[Check your answer by going carefully through Sections 2.4 & 4.4 looking specifically for references to differences in terms of the revenue curses between perfect and imperfect competition].

Q. 14 To check on your detailed understanding of the material in this section, -can you now indicate which of the following statements you think are correct and which are incorrect. Indicate your answer with a tick (√)

	Correct	Incorrect
a) Under perfect competition the price per unit of output depends on the quantity for sale.		
b) Under imperfect competition, as the output increases the price per unit decreases.		
c) Average revenue and price mean the same thing.		
d) Marginal revenue equal total revenue divided by the number of units sold.		
e) In case of perfect competition, marginal revenue is constant and equal to average revenue.		
f) In the case of imperfect competition, marginal revenue is increasing and is more than average revenue.		
g) Under perfect competition, average revenue equal marginal revenue, which is equal to price.		
h) Under imperfect competition, the marginal revenue curve remains above the average revenue curve.		

[The answers to these questions are given at the end of the unit on Page 157. For any question you got wrong, check the answer to the relevant part of the Section. If you got more than two questions wrong it would probably be sensible for you to work through the section once again].

5. EQUILIBRIUM OF THE FIRM

5.1 Equilibrium of the Firm

All the discussion so far in this unit has been designed to lead 10 this section—which studies the equilibrium of the firm and the idea of profit maximization. The total cost and revenue curves, the average and marginal cost and revenue curves are all tools designed to facilitate the analysis of the equilibrium of the firm and the idea of profit maximization. So the key question is when is a firm in equilibrium?

A firm can be said to be in equilibrium when it has no incentive to increase or decrease its production. We assume that a firm produces under the profit motive. So, rationally, it will continue to produce as long as it is making a profit on its marginal production. What this means is simply that a firm will keep producing up to that point where its marginal revenue, or what it will receive for its marginal unit of production, is greater than what it costs to produce that unit. Or, to express it differently, it will stop production at the point where marginal revenue marginal cost.

There will be a constant endeavour on the part the firm to continue production as long as there is a difference between its marginal revenue and its marginal costs. In fact, under perfect competition, the, firm will continue to produce until its marginal revenue is equal to its marginal cost, as it will have made a profit on all its previous units of production.

Looking at it from the point of view or total revenue curves and total cost curves this means that the firm will continue to produce up to that point where its profit is at a maximum. This is that point of output where the difference between total revenue kind total cost is the maximum.

The point of output where the difference between total revenue and total cost (i.e. the profit) is the maximum is also the same point at which Marginal Revenue is equal to Marginal Cost. This is logical because as long as marginal revenue is greater than marginal cost, there is an addition to total profit. Total profit reaches a maximum where marginal revenue is equal to marginal cost. At this point, profit per unit is zero and no addition is being made to total profit. After this point, marginal cost becomes greater than marginal revenue or there is a loss per unit of output, which means a decrease in the total profit. Hence, total profit is maximum at that point where marginal revenue is equal to marginal cost. This is the point where there is the maximum difference between total revenue and total cost. The firm is in equilibrium at this point i.e. there is no incentive for it to increase or decrease its output.

5.2 Revenue – Cost Relationship

The above can he illustrated by using the schedules
for total revenue, total cost, marginal revenue and marginal cost used previously, and by constructing graphs for total revenue, total cost, marginal revenue and marginal cost. We will illustrate the case of equilibrium under conditions of perfect competition and we leave you to draw equivalent graphs for imperfect competition.

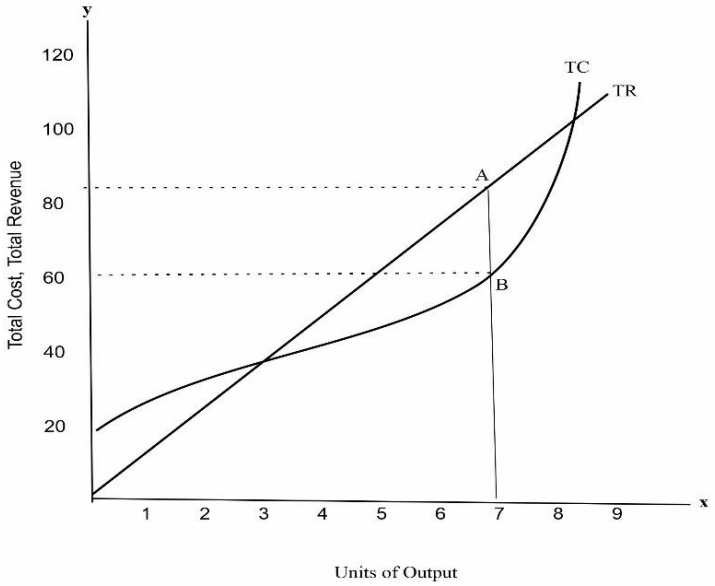
SCHEDULE ILLUSTRATING EQUILIBRIUM OF THE FIRM UNDER PERFECT COMPETITION

Output (in Units)	Total Revenue (Rupees)	Total Cost (Rupees)	Profit (Total Revenue total Cost)	Marginal Revenue (Rupees)	Marginal Cost (Rupees)
0	0	10	-10	0	0
1	17	20	-3	17	10
2	24	28	6	17	8
3	51	33	18	17	5
4	68	40	28	17	7
5	85	50	35	17	10
6	102	67	38	17	17
7	119	84	35	17	20

We see that six units is the equilibrium output at which profit (total revenue-total cost) is at a maximum and marginal revenue is equal to marginal cost.

This can also be illustrated graphically. We will construct two graphs – one for total profit using total revenue and total cost curves and then another using marginal revenue and marginal cost curves.

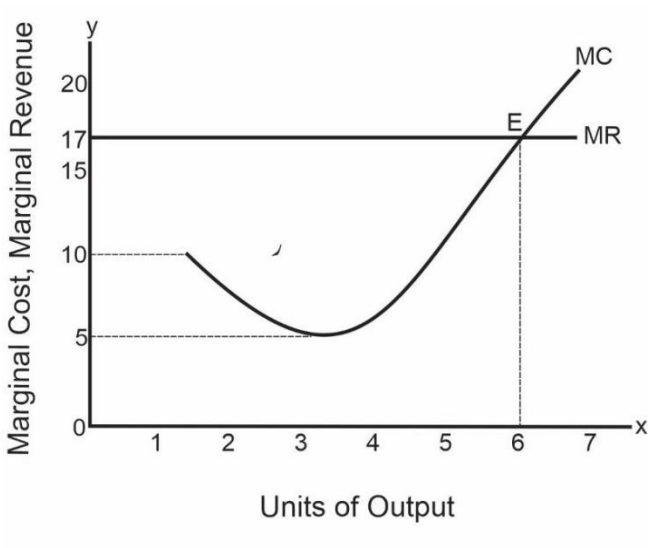
Diagram 3.8: Equilibrium of the Firm under Perfect Competition Using Total Revenue and Total Cost



The distance AB shows the total profits of the firm at the point at which the firm has reached its equilibrium output of six units of production.

The equilibrium point can also be illustrated in terms of a graph showing the relationship between marginal cost and marginal revenue.

Diagram 3.9: Equilibrium of the Firm under Perfect Competition Using Marginal Cost and Marginal Revenue Curves



5.3 Points to Remember

i) The goal of the firm is to obtain the maximum possible profits. Profits are the difference between a firm's revenue and its costs.

ii) Average cost is simply total cost divided by the quantity of output; or, alternatively, the unit cost of production.

iii) Marginal cost is the additional cost incurred on the production of one more unit of output; alternatively, it can be expressed as the change in total cost when output is expanded by one more unit.

iv) Marginal costs normally first decrease till they reach a minimum, then they start increasing. This is due to the action of the laws of return.

v) Each firm endevours to maximize its profits, which are the difference between its total revenue and its total costs for a given output. The firm can do this either by directly comparing total cost and total revenue data, or by equating marginal revenue with marginal cost.

vi) The firm will have maximized its profit at that output whore its MR = MC This is also the firm's equilibrium position. At that point it has no further incentive t increase or decrease production.

SELF-ASSESSMENT QUESTIONS

Q. 15 What do we mean when we say that a firm is (in equilibrium)? Can y u express this in terms of a simple formula relating marginal Cost and marginal revenue? [Check your answer against the definition given in Section 5.1].

Q. 16 Can you illustrate from memory the equilibrium position of a firm under conditions of perfect competition (a) with a graph showing the relationship of total revenue and total cost, and (b) with a graph showing the relationship between marginal cost and marginal revenue?
[Check your graphs against those illustrated in Section 5.2. Why is profit not shown in the second graph?]

Q. 17 In SAQ 16 you were asked to prepare graphs showing the equilibrium position of the firm under conditions of perfect competition. Can you now (as suggested in the first paragraph of Section 5.2) prepare similar graphs to illustrate the equilibrium position of a firm under conditions of imperfect competition?
[In answering this question, ask yourself whether the total revenue and marginal revenue curves have the same general shop under imperfect competition as they do in perfect competition. (Check this with Sections 4.2 and 4.3). If they do not, what Implications does this have for the graphs which illustrate the equilibrium position of the firm? Also, ask yourself whether the general shape of the total and marginal cost curves is likely to be different under imperfect competition compared to perfect competition].

Q. 18 Which of the following statements do you think are correct and which do you think are incorrect?

(Tick ✔ as appropriate)

	Correct	Incorrect
a) A firm is in equilibrium when it has no incentive to increase or decrease it production.		
b) Profit can be defined as the difference between total revenue and total cost.		
c) Profit is at its maximum when Marginal Revenue = Marginal Cost.		
d) Marginal Costs normally increase first until they reach a maximum and then decrease.		
e) A firm is in equilibrium when its total profit has been reduced to a minimum.		

[The answers to these questions are given at the end of the unit on p 157. If you got any of the questions wrong–then find the right answer by looking up the appropriate part of the section. If you got more than two questions wrong, then it would probably be sensible to work through the whole section again].

GLOSSARY OF MAIN TERMS (PART 1)

Average Cost	..	Cost per unit.
Average Revenue	..	Total revenue divided by the output sold to obtain it.
Equilibrium	..	Position of rest: in this case, the point of output from which firm has no incentive to move.
Firm	..	A production unit.
Fixed Cost	..	The cost of those inputs whose use cannot be varied whatever the output.
Factors of Production	..	Means to produce: for example – land, labour, capital and entrepreneurship.
Inputs	..	The same as factors of production; but also includes raw materials etc.
Imperfect Competition	..	A market in which certain firms, through their size, can control prices.
Marginal Cost	..	The cost of producing an additional unit of output.
Marginal Revenue	..	The addition to total revenue through the sale of one additional unit of output.
Output	..	What is produced by a firm?
Perfect Competition	..	A situation in which price is determined by free market forces and remains constant no matter what.
Profits	..	The difference between total revenue and total cost.
Total Cost	..	The sum total of the cost of all the inputs used in the production of output.
Total Revenue	..	The total receipts of a firm through the sale of its output.

PART II-COSTS AND SUPPLY

INTRODUCTION

In Part I of this unit we studied how to construct cost curves and the relationship between them. In Part II we shall see how these cost curves, the marginal cost curve in particular, are used to derive the supply curve for a firm and how individual firm's supply curves are aggregated to get the supply curve for an industry. We shall also differentiate between short-run and long-run supply curves and introduce the concept of elasticity of supply.

OBJECTIVES

By the end of Part-II, you should be able to

a) Derive an individual firm's supply curve from its average cost and marginal cost curves

b) Explain how the supply curves of individual firms are aggregated to give the supply curve for an industry

c) Distinguish between short-run and long-run supply curves

d) Give a basic explanation of elasticity of supply and its relation to the supply curve.

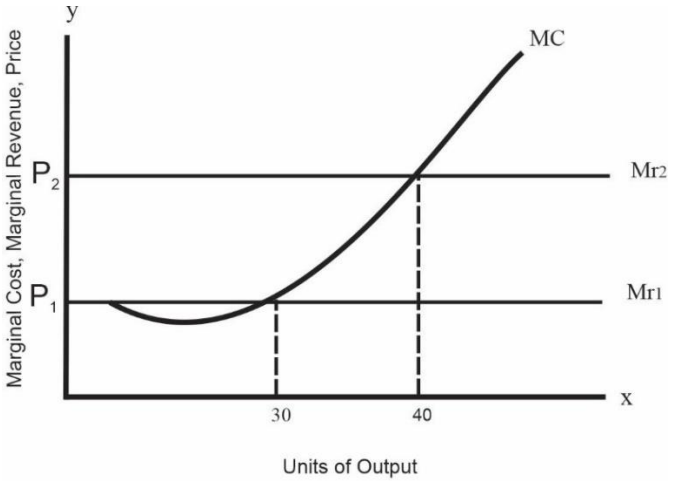
6. THE DERIVATION OF A FIRM'S SUPPLY CURVE FROM ITS MARGINAL COST CURVE

6.1 Supply

What is Supply? It is simply the quantity of produce that a firm is willing to sell at a particular price. What determines this supply? Basically, it is the price that the firm will get for its output. We saw in part I that the quantity that the firm will produce or sell is determined by the intersection of the marginal cost curve with the price or marginal revenue curve. We also saw that this was the equilibrium output of the firm the point at which its profits were being maximized. In addition, we noted that whatever the price, the firm's output was determined along the marginal cost curve by the intersection of the price line with it.

So, it follows that a portion of the firm's Marginal Cost Curve can be taken to be its Supply Curve, this part or the curve will show what the firm will supply at different prices. This can also be shown diagrammatically:

Diagram 3.10: Marginal Cost Curve



The graph above shows typical equilibrium output determination under perfect competition. If the price of the output is P1, then the firm will produce or supply QQ_1 units. If, however, the price is P_2, then the firm will produce OQ_2 units and supply these.

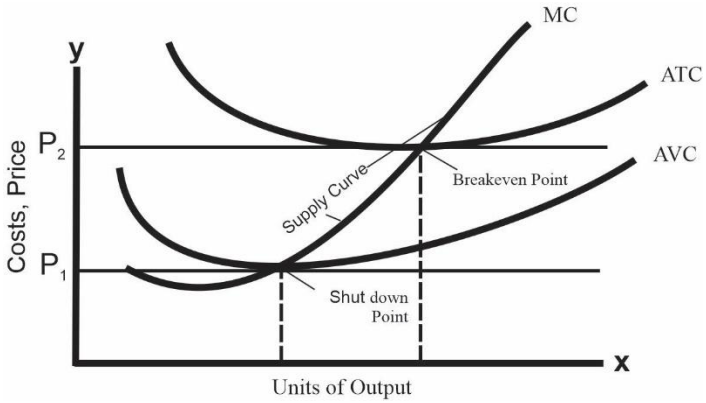
Since P_2 is greater than P_1, the quantity supplied at P_2 which is OQ_2 units is also greater than quantity OQ_1 which will be supplied if the price is P_1.

6.2 Cost and Supply Curves

In general, as the price is reduced, the quantity supplied will also be reduced; as price increases, the quantity supplied also increases. This fact can clearly be seen from the shape of the marginal cost curve in the graph above.

You should remember that the firm's supply curie is only the rising portion of its marginal cost curve. This can easily be explained. If the price or marginal revenue is so low that the firm is unable to meet its variable costs, then it will close down. However, in the short-run, firms will continue to produce even if they can barely meet their variable costs, in the hope that things will improve. So we see that the supply curve of the firm will be that rising portion of the marginal cost curve that is above the critical shutdown point.

Diagram 3.11: Average Cost,
Marginal Cost and Supply Curve



The graph above illustrates the supply curve AS the rising portion of the marginal cost curve above the shut-do n point. It becomes clear now that whereas the marginal cost curve hypothetically presents the entire picture of production and cost, in fact the supply curve is only a portion of the marginal cost curve the feasible portion where production will actually take place. In the graph, SSe denotes the supply curve of the firm.

6.3 Shut-Down Point

What does the shut-down point imply? If a firm shuts down, it is incurring a loss equal to its fixed costs only, hut if it continues produce at some point below the shut-down point on its marginal cost curve, it is incurring a greater loss since that proportion of its variable cost that it cannot meet through Its revenue at that point of production is also added on to the fixed costs and represents a loss for the firm. Since profit is the motive for all production the firm will find it more feasible to close down rather than to continue to produce t a point where the price is below the critical shut-down point.

6.4 Break-Even Point

What is the break-even point? It is that point where production is generating enough revenue to cover all the costs; i.e. there ii zero profit but no loss. Ideally, as price decreases, the firm will continue to produce down to this break-even point-since it will still be making a positive profit on every unit of production above this point. But in real economic life, we know that in the short-run firms are willing to incur losses and continue to produce at prices as low as P_1 (or until a certain shut-down point). This is because they foresee better

conditions **tit** the longer run—when, for instance, they will be able to readjust inputs so that there are fewer or no fixed costs, or when they anticipate that the price will rise.

In the long run, however, the firm would not even think of producing at a price below P_2 (i.e. below the break-even point). There would be no logic in the firm incurring a perpetual loss. So, in the longer run, the break-even point would be the minimum possible price below which the firm would close down.

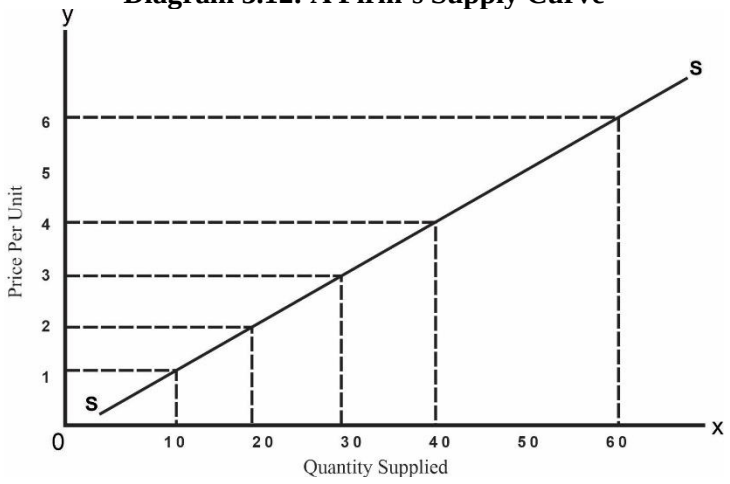
6.5 Price Supply Relationship

So you can see that the rising portion of the marginal cost curve is the firm's supply curve. Supply is defined as the quantity of output offered for sale at a particular price at a particular time. We have already seen that the height the price per unit of the commodity, the higher will be the quantity supplied. For a better understanding of this, it may be helpful to represent a particular firm's supply curve in terms of a graph derive I from a simple schedule:

A SIMPLE SUPPLY SCHEDULE

Price per Unit (Rupees)	Quantity Supplied (In Units)
1	10
2	20
3	30
4	40
5	50
6	60

Diagram 3.12: A Firm's Supply Curve



The above supply curve shows clearly that as price increases, the quantity supplied increases also. You can easily work out for yourself why this should be the case. Keep in mind the theory of the firm (Part 1) and the fact that this supply curve is really the rising portion of the marginal cost curve.

SELF-ASSESSMENT QUESTIONS

Q. 19 a) What portion of a firm's marginal cost curve can be regarded as its supply curve?

b) Can you explain why in practice the whole of a firm's marginal cost curve cannot be regarded as its supply curve?
[Check your answer with Section 1.1 and 1.2. You may find it useful to illustrate your answer with a diagram, showing a firm's supply curve super-imposed on its relevant cost curves].

Q. 20 a) What is meant by a firm's i) 'shut-down' point, and (ii) 'break-even' point?

b) Why are these two concepts important in understanding how a firm makes its decision about its quantity of production?
[Check your answer against the discussion in Section 1.3 and 1.4].

Q. 21 As the price of a commodity increases, a firms supply of it will tend to increase. Can you explain why?
[As suggested in Section 1.5, 5ou should check back on the discussion of a firm's costs and revenues in Unit 4; also hear in mind the fact that a firm's supply curve is really the rising part of its marginal cost curve].

7. THE DERIVATION OF AN INDUSTRY'S SUPPLY CURVE F1OM THE FIRM'S SUPPLY CURVE

7.1 An Industry's Supply

So far we have studied only the firm's supply curve. But what about the situation with regard to supply for an industry?

An industry consists of a number of firms producing and supplying the same commodity. In a competitive market, each firm is laced with the same price and the industry's supply is simply the aggregation of all the firm's supply at a particular price. A simple schedule will explain this:

AN INDUSTRY'S SUPPLY SCHEDULE

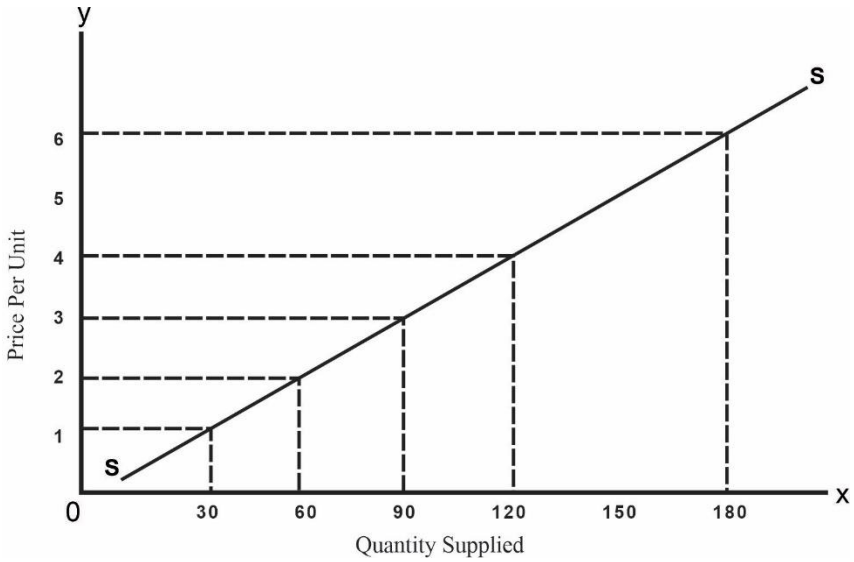
Price per Unit (Rupees)	Supply of Firm A (in Units)	Supply of Firm B (in Units)	Supply of Firm C (in Units)	Total or Industry's Supply (in Units)
1	10	15	5	30
2	20	25	15	60
3	30	35	25	90
4	40	45	35	120
5	50	55	45	150
6	60	65	55	180

You can see that at each price the supply of each of the individual firm is added together to get the supply of the industry as a whole.

7.2 Price-Supply Curve

The supply curve of the industry has the same shape as the supply curve of the firm; i.e. it rises upwards from left to right. There is no difference in the Y axis (the price axis). However, the X axis (the quantity axis) depicts the combined quantity supplied by all the firms in the industry—as you can see in the following graph

Diagram 3.13: An Industry's Supply Curve



Compare this supply curve with the one presented in Section 6.5. You will see that the difference lies in the X axis whore the much larger quantities by an industry are presented.

SELF-ASSESSMENT QUESTION

Q. 22 What is the maw difference between the graphs illustrating an individual firm's supply curve and the aggregated supply curve for an industry? In what way are the two curves similar?
[Check your answer against the discussion in Section 2.1 and 2.2].

8. SHORT AND LONG RUN SUPPLY CURVES

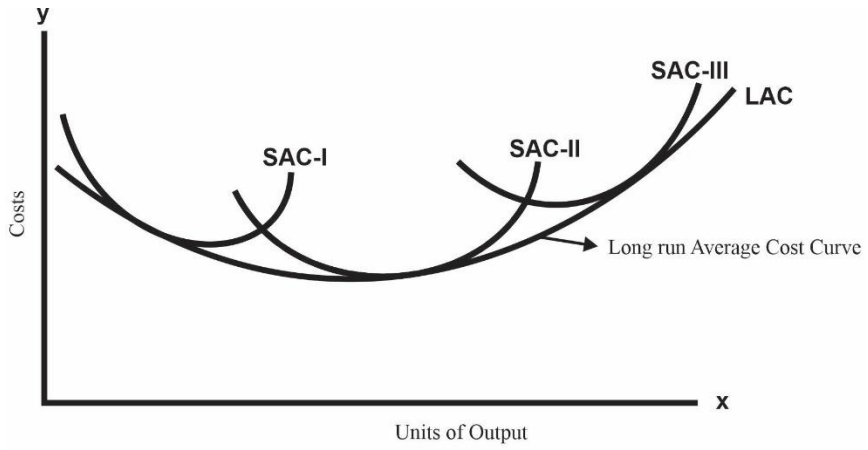
8.1 The Short-Run

In the short-run, the rising portion of the marginal cost curve above the critical shut-down point forms the firms supply curve. In the previous section, we have seen how the firm's supply curves can be aggregated to get the industry's supply curve. But what happens in the long-run?

8.2 The Long-Run

The long-run implies a period long enough for the firm to readjust 'fixed inputs' like plant, machinery etc. What does this readjustment imply? It implies that given a long enough time period, the firm can come up with a number of different cost curves. It can adjust 'the scale of its operations, depending upon the conditions in the market. Each cost curve would imply the most optimum combination of factors of production compatible with the firm's scale of operations. Once the firm has these different cost curves before it, it can easily identify the path it should take in the long-run. It will choose the least cost processes or the lowest frontiers of all its possible cost curses. We can show this diagrammatically.

Diagram 3.14: Short and Long Run Average Cost Curves



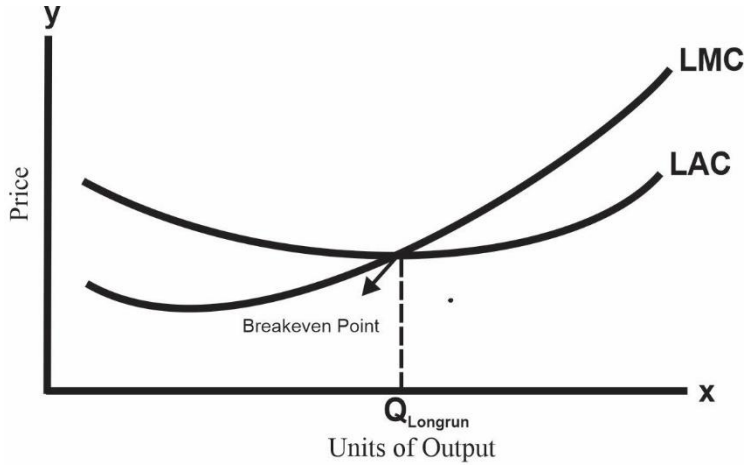
As the firm expands production, it moves along the first short-run average cost curve. As costs begin to rise, the firm can readjust to the lower portion of the second short-run cost curve; and so along to the third. The long-run average cost curve is thus an 'envelope' curve, much flatter than the short-run average cost curves, which 'envelops' the lowest portions of each feasible short run average cost curves.

Since there can be an infinite number of short-run average cost curves before a firm which is making long-term decisions, the long-run average cost curve becomes a smooth flat curve and not the kinked long-run average cost curve illustrated above, which is the result of only having three short-run average cost curves to choose from.

8.3 Cost Curves

Once the firm has its long-run average cost curve before it, it can easily construct the corresponding marginal cost curve. The general shape of the two curves is shown below:

Diagram 3.15: Long-Run Marginal and Average Cost Curves



The long-run marginal cost curve is also much less steep than its short-run counterparts. It intersects the long-run average cost curve from below at its lowest point. This is the break-even point. As we discussed earlier, in the long-run, the firm will not supply at prices below this point. So for long-run purposes, the operative portion of the long-run marginal cost curve is the portion above the break-even point. This is the firm's long-run supply curve.

8.4 Industry's Long-Run Supply Curve

We have learned earlier how to aggregate firms' supply curves to get the industry's supply curve. This process can also be applied in this case. However, there is an interesting (though extreme) case of the shape of the industry's supply curve. This case is based on the following assumptions:

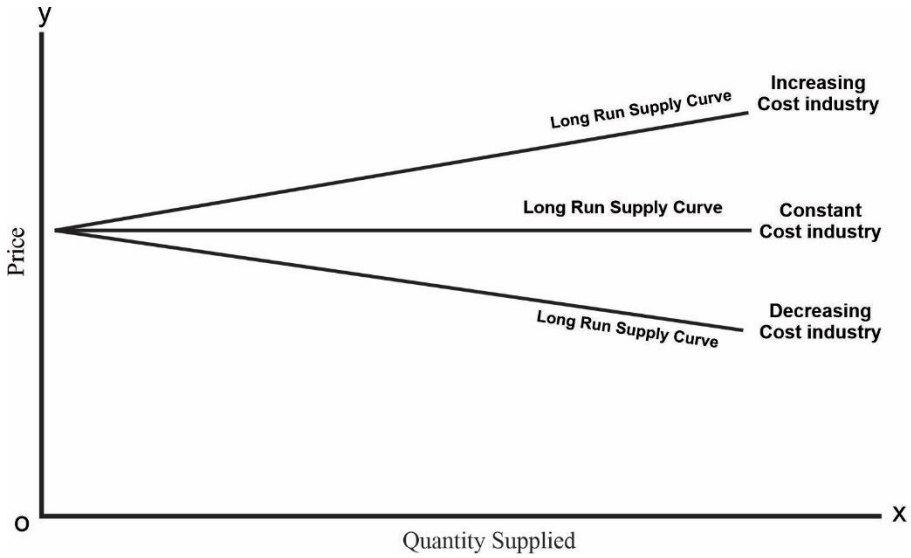
a) Perfectly competitive product and factor markets
b) Free entry and exit of firms to and from the industry
c) Free flow of information and technology.

If these three basic conditions are met then the industry's long run supply curve will be a horizontal straight line parallel to the X axis (indicating quantity), joining the break-even points of the identical, unchanged cost curves of numerous firms within the industry.

The reason for this is simple, if the price of the product is above the break-even point, then the firms are all making large profits. This will induce newer firms to enter the industry. These firms will also produce along identical cost curves and will therefore eventually force down the price in the market to the break-even level. However, if the price prevailing

in the market is lower than the break-even point then firms will stop production, thus forcing the price up to its break-even level. The shape of the long-run supply curve in this case would be as follows:

Diagram 3.16: Long Turn Supply Curves Under Specified Conditions



However, if the firms within the industry cannot buy their inputs (i.e. their factors of production, raw materials, etc.) at unchanged prices, but have to pay rising prices, this will tend to push up the cost curve of each firm within the industry and eventually its supply curve will also slope upwards. The shape of the curve is illustrated in the graph below:

DIAGRAM 4/17: LONG RUN SUPPLY CURVE OF INDUSTRY FACING RISING INPUT PRICES

SELF-ASSESSMENT QUESTIONS

Q. 23 What is meant by the long-run' in terms of a firm's decisions about the level of its output? What can a firm do with regard to costs in the long-run that it cannot do in the short-run? Why is this important in terms of a firm's profitability?
[Check your answer against the discussion in Sections 8.1 and 8.2].

Q. 24 Can you illustrate in t.rms of a graph how a firm's long-run average cost curve is derived from its short-run average cost curves? How does the long-run curve differ from the short-run curves?
[Check your answer against the discussion and diagram in Section 8.2].

Q. 25 Once a firm has established its long-run average cost curve, how does it go about constructing the corresponding marginal cost curve?
[If you are not clear about this go back to the relevant section of part I to remind yourself of the process. How does the long-run marginal cost curve differ from the one illustrated in Part I].

Q. 26 Can you now illustrate a firm's supply curve in terms of its long-run average cost curve and its long-run marginal cost curve? When do the average cost and marginal cost curves intersect? Can you explain why this point coincides with the 'break-even' point?
[Check your answer against the discussion and diagram in Section 3.3].

Q. 27 Under what circumstances will an industry's long-run supply curve be parallel to the X axis (the quantity axis)? Can you explain the process which leads to this situation? Why are most industries not in this situation? What is the more usual form for an industry's supply curse?
[Check your answer against the discussion in Section 3.4].

9. ELASTICITY OF SUPPLY

9.1 Elasticity of Supply

This is the degree of responsiveness of supply to changes in price. For some commodities a small change in price brings about a large change in supply; whereas for other commodities, this may not be true. For example, in the case of a particular commodity, if its price is reduced, large quantities of it will he supplied; whereas, in the case of another commodity, a price reduction of similar magnitude may not bring about an equal increase in the quantity supplied. In this case, the supply of the first commodity may be said to be more elastic than that of the second commodity.

9.2 Unit Supply Elasticity

If the magnitude of the change in the quantity supplied is exactly proportional to the change in the price, then the commodity can be said to have unit supply elasticity, or its elasticity of supply is said to be equal to one. This is the standard for judging elasticity. If the proportionate change in quantity supplied is less than the change in price, then supply is said to be 'inelastic'; if it is more, then supply is said to 'elastic'.

9.3 Elasticity of Supply and the Supply Curve

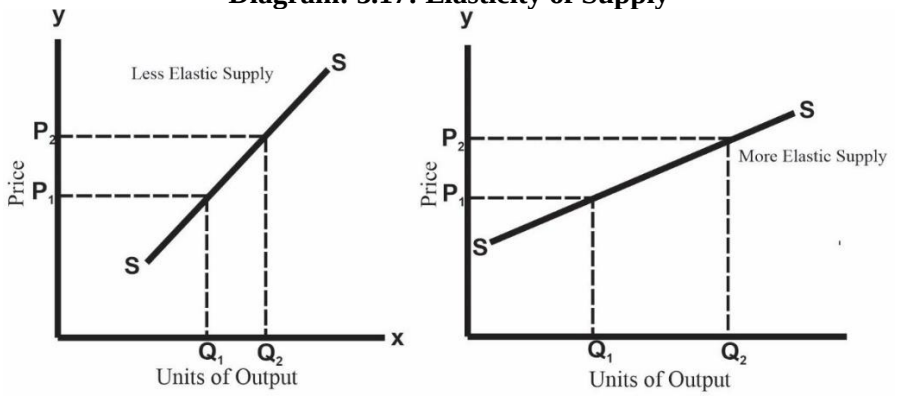
Elasticity of supply can be summarized as follows:

where p is price, q is quantity supplied and (delta) indicates a small change in price or quantity.

You will probably have realized by now that elasticity of supply is dependent on the shape of the supply curve. If the supply curve is rising steeply, then a small change in price will

bring about a smaller change in the quantity supplied; or, in the other words, supply will be inelastic. However, if the supply curve rises gradually, a small change in price will bring about a larger change in the quantity supplied and in this case supply can be said to be elastic. This point can be illustrated as follows:

Diagram: 3.17: Elasticity of Supply



It should be pointed out at this stage that the way of looking at elasticity of supply outlined above is very intuitive and simplistic. However, once you are more familiar with derivatives and trigonometry, elasticity can be illustrated and proved much more rigorously.

9.4 Points to Remember

i) The rising portion of the firm's marginal cost curve above the critical shut-down point is the firm's supply curve.

ii) The supply curve shows the quantity offered for sale at a particular price at a particular time.

iii) The industry's supply curve is simply an aggregation of the firms' supply curves across the quantity or X axis.

iv) The long-run supply curve is flatter than the short-run supply curve.

v) Elasticity of supply is the degree of responsiveness of supply to small changes in price.

SELF-ASSESSMENT QUESTIONS

Q. 28 Can you explain in your own words?

a) What is meant by 'elasticity of supply'?

b) The difference between 'elastic' and 'inelastic' supply.

[Check your answer against Sections 4.1 and 4.2].

Q. 29 Can you express the following summary definition in terms of the conventional symbols?

"Elasticity of supply equals the proportionate change in the quantity supplied divided by the proportionate change in price".

[Check your answer against the formula given in Section 4.3].

Q. 30 What is the relationship between the elasticity of supply and the shape of the supply curve? Can you illustrate this in diagrammatic terms?
[Check your answer against Section 4.3].

Q. 31 Now, to review what you have covered in this unit and the test how much, of it you can recall, indicate (with a tick) which of the following statements you think are correct and which are incorrect:

	Correct	Incorrect
a) Supply is the quantity of produce a firm is willing to buy a particular price.		
b) Supply is the quantity of produce a firm is willing to sell at a particular price.		
c) The entire marginal cost curve is also the supply curve of the firm.		
d) Only the rising portion of the marginal cost curve above the shut-down point is the firm's supply curve.		
e) Break-even point is the point where the firm's profits are maximum.		
f) Break-even point is the point where the firm is just able to cover costs.		
g) As price increases the firm's supply decreases.		
h) As price increases, the firm's supply increases.		
i) The industry's supply is the aggregation of firms supply at a particular price.		
j) The industry's supply is not the aggregation of firms supply at a particular price.		
k) The short-run supply curve of the firm is flatter than the long run supply curve.		
l) The long-run supply curve of the firm is flatter than the short-run supply curve of the firm.		

m) The long-run cost curve of the firm takes the highest portion of different short-run cost curves.		
n) The long-run cost curve takes the lowest portions of the different short-run cost curves.		
o) Fixed costs cannot be reduced even in the long-run.		
p) In the long-run there is no such thing as fixed costs.		
q) The break-even point becomes the crucial shut-down points in the long-run.		
r) The break-even point is not the crucial shut-down point in the long-run.		
s) The industry's long-run supply curve can be a straight line parallel to the output axis.		
t) The industry's long-run supply curve cannot be a straight line parallel to the output axis.		
u) Elasticity of supply is the proportionate change in supply given a change in price.		
v) Elasticity of supply is the degree of responsiveness of supply to small changes in price.		

[The right answers to these questions are given on page 157 at the end of this unit. If you got more than 4 questions, wrong, then it would probably be a good idea to work through Part II again – checking particularly the questions to which you gave the wrong answers].

GLOSSARY OF MAIN TERMS (PART II)

Break-even point:	The level of production at which the firm is just meeting its costs or where total revenue and total cost.
Elasticity of Supply:	The degree of responsiveness of supply to small changes in price.
Factor Market:	The market from which the firm buys its factors of production.
Product Market:	The market in which the firm sells its output.
Shut-down point:	The point below which the product prices are so low that the firm is not even covering its variable costs. Hence it is more reasonable for the firm to shut-down rather than continue production at a loss.
Supply:	The quantity of output offered for sale at a particular price at a particular time.

ANSWERS TO SELECTED SAQs

Q. 7	a)	Increase	b)	Stay Constant	c)	Increase

Q. 10 a) decreasing b) Increasing

c) The marginal cost curve cuts the average cost curve from below at the lowest point of the average cost curve.

Q. 14	a)	Incorrect	b)	Correct	c)	Correct
	d)	Incorrect	e)	Correct	f)	Incorrect
	g)	Correct	h)	Incorrect		

Q. 18	a)	Correct	b)	Correct	c)	Correct
	d)	Incorrect	e)	Incorrect		

Q. 31	a)	Incorrect	b)	Correct	c)	Incorrect
	d)	Correct	e)	Incorrect	f)	Correct
	g)	Incorrect	h)	Correct	i)	Correct
	j)	Incorrect	k)	Incorrect	l)	Correct
	m)	Incorrect	n)	Correct	o)	Incorrect
	p)	Correct	q)	Correct	r)	Incorrect
	s)	Correct	t)	Incorrect	u)	Correct
	v)	Correct				

SUGGESTIONS FOR FURTHER READING

Akhtar, S.M: An Introduction to Modern Economics. (1967).

Stonier, A.W. & D.C. Hague: A textbook of Economic Theory. (1953).

Samuelson, P.A: Economics: An Introductory Analysis.

Unit–4

THE MARKET, COMPETITIION AND THE EQUILIBRIUM OF THE FIRM

PART I: THE MARKET AND COMPETITION
PART II: THE EQUILIBRIUM OF THE FIRM

Written by: Abdul Hamid Dar

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INTRODUCTION

Exchange

Exchange is an important concept of economics. It is through the exchange of goods and services (wealth) that we satisfy our economic wants and that the goods produced are distributed among consumers. This act of exchange takes place in the market. The force of Demand and Supply (as explained in Units 3 and 4 respectively) come into contact in the market; and, through the price mechanism complete the process of economic activity. Therefore, the study of the Market is of great importance for understanding the working of the basic economic forces (Demand and Supply) and the determination of the prices of goods and services which is the central problem of Economics.

The Extent of the Market

The importance of the Market is obvious. But we need to be quite clear about the meaning of the term "Market"; and also about the necessary conditions of a market and the question of its extent.

The area of the market for a commodity differs under different circumstance. This is called the 'Extent' or 'Size' of the Market. Some goods can be bought and sold over a vast area and their market is said to be a 'wide' market. But there are other goods which can be bought and sold only in limited area, e.g. bricks and stones etc. Their market is said to be 'narrow' market. There are various factors which determine the size or extent of a market for a commodity, for example, demand, supply, the nature of the commodity and the means of transport and communication available. etc. (For details see Section 1.4 below).

The Types of Market

Markets are of various types. In order to understand of the concept and the way it works it is very important that you should be familiar with different kinds of market. In this respect, we shall study markets from the point of view of geography, time, the nature of the commodity and the degree of competition.

Competition and its Forms

In Economics the concept of 'competition' is of very great importance. It is through the process of competition that the forces of market (Demand and Supply) come into contact with other and the price of a commodity is determined. Therefore, it is necessary to understand the meaning and nature of competition. In Economics, competition simply implies bargaining between buyers and sellers.

Competition can assume two forms:

a) **Perfect Competition**
   Perfect competition implies a situation in the market where there are a large number of buyers and sellers of a commodity and only one price for the commodity prevails. [For a detailed discussion, see Section 3.1 (a).]

b) Imperfect Competition

By imperfect competition, we mean a situation of a market which lacks the qualities of perfect competition; and in which; as a result, more than one price prevails for a particular commodity.

Types of Imperfect Competition

Imperfect Competition can be of the following types

(a) Monopoly: When there is only one seller or producer of a particular commodity. [For details see Section 3.1 (b)(c)]

(b) Duopoly: When the number of sellers or producers of a particular commodity is two: (For details, see Section 3.1 ($b_)$ (ii)1

(c) Oligopoly: When only a few sellers or producers are supplying a particular commodity. [For details see Section 3. (b) (iii).

(d) Monopolistic Competition: When a large number of sellers or producers are producing similar commodities which are not exactly identical but are close substitutes for each other. For details see Section 3.1 (b)].

OBJECTIVES

At the end of Part-I of this unit you should be able to:

a) as far as the concept of the 'market' is concerned:
   i. defines the concept of' market as it is used by economists.
   ii. identify the essential characteristics of a market.
   iii. explain the main factors which determine the size or extent of a market.

b) as far as the classification of 'markets' is concerned:
   i. identifies the four main types of classification.
   ii. describe and illustrate the range of different types of market which exist in each main category.

c) as far as the concept of 'competition' is concerned
   i. identifies the five conditions which are required for perfect competition.
   ii. distinguish between perfect competition and imperfect competition
   iii. explain the four main types of imperfect competition.

1. THE MARKET

1.1 The Meaning of the Market

What is a 'Market'? In ordinary language, by market we mean a place where commodities are bought and sold. For example, a fruit market means it place where people go to buy fruit; and a cloth market is a place where shopkeepers are selling cloth to their customers. But this is not the meaning of the word Market as it is understood and used in Economics. In Economics, the term is used in a much wider sense. Market means the entire area or region in which buyers and sellers of commodity are in contact with one another for the purpose of striking bargain. This contact may be direct (with the buyers physically meeting the sellers) or indirect. For example, through the telephone, the telegraph or post office. But the contact between the buyers and sellers must be meaningful in the sense that it results in the determination of the price of the commodity concerned. Current a well-known economist, explained the term market in the following words:

The whole of any region in which buyers and sellers are in such intercourse with one another that the prices of the same goods tend to equality easily and quickly.

Although this is a reasonable definition, it suffers from one defect. It is not essential that only one price of a commodity should prevail in the market. This only occurs under certain particular conditions of perfect competition. Under imperfect competition, as we shall see presently, the price of the same commodity can vary even in the same market.

In short, by market we mean 'place or region where the buyers and sellers of a commodity cleat in that commodity'.

From the above discussion, it should he clear that the market is not a particular place where certain type of goods are brought for sale rather it is an area where buyers and sellers contact each other with the object of striking a transaction with regard to a particular commodity. From this, we can easily move to the "essentials of the market" that is, the qualities which distinguish a market from other areas of economic activity.

1.2 The Essentials of the Market

The following are the four essentials of market:

a) Commodity

The first essential of a market is the presence of a commodity in which the market deals. It may not be physically present before the bargaining parties. But the parties concerned must be sure about the existence and availability of the commodity.

b) Buyers and Sellers

The existence of buyers and sellers is also an important prerequisite of a market. Without them, no bargaining can take place. The number of buyers and sellers is not fixed. There may be a large or a small number; but they should be in contact directly or indirectly, with one another.

c) Region

The contact between buyers and sellers presupposes the existence of an area or region. The area may be limited to a town, city or a country. or it may extend to the whole world, depending upon the nature of the commodity and the demand for it. For example, the market for a bulky commodity, such as stones or bricks, is mostly confined to the place of their production; whereas commodities like cotton and yarn can be traded over a vast area. Similarly, commodities like silver and gold are demanded all over the world: hence the market for them extends to the whole world.

d) Determination of Price

The contact between buyers and sellers must result in the determination of a price for the commodity concerned. Without the element of price, we cannot conceive of a market. There may be one price for a commodity in the market, as is the case with perfect competition. [For detailed discussion see Section 3.1 (a)] But there may also be more than one price for the same commodity, as happens under conditions of imperfect competition. j for details see Section 3.1 (b)]

1.3 The Extent of the Market

Markets for all commodities are not of the same size. Some commodities have vast markets: they are demanded far and wide. For example, wheat, sugar, cloth, gold and silver, are demanded by a large number of people in various towns and countries. Hence their market is vast. In contrast, commodities like bricks and stones have limited markets because they cannot be transported cheaply and conveniently to areas far away from the place of their production.

1.4 Factors Determining the Extent of the Market

The size of market is usually called the extent of the market. Various factors go to determine the extent of the market for a commodity:

a) Demand: The demand for a commodity is very important in determining the size of its market. Commodities which are demanded by a large number of people have a wide market. Wheat and rice are demanded in almost all the parts of our country. Gold is demanded all over the world.

b) Portability: Commodities which are portable usually have wider markets than those which cannot easily he transported. The value of portable commodities is much more than their bulk. Hence, they can be transported to distribute places at low cost. For example, in the case of gold and diamonds in the cost of their transport is very low compared to their value. In contrast, the market for bulky goods, such as bricks, is extremely limited. They cannot be transported conveniently to far-off places. Their market is, in practical terms, confined to the immediate neighborhood of the kilns in which they are made.

c) Durability: The extent of the market also depends upon the durability of a commodity. Durable commodities have a wide market. They can safely be transported from one place to another. Gold, cloth and machines are durable goods

and have a world-wide market. Perishable and delicate articles like fish, meat, eggs and vegetables have limited market. They cannot normally be transported over long distances in a safe condition. It should be noted, however, that the introduction of cold storage and rapid means of transport have tended to enlarge the extent of markets even for perishable commodities.

d) **Supply:** The supply of a commodity also plays important part in determining the size of its market. The market for a commodity can only be extensive when it is available in a large quantity. If the demand for a commodity is large but its supply is limited then the size of its market will also be limited.

e) **Cognizability:** Commodities which can easily and exactly be described by grading or by providing a sample usually enjoy a wider market than commodities which do not possess these qualities. Cotton, wheat, rice and yarn, for instance, have these qualities; and therefore have larger markets. They can be bought and sold by people who are separated by long distances. The buyer recognizes the quality of the commodity on the basis of a sample or grade and places in order for its purchase. Commodities which cannot be graded or represented by a sample have to be thoroughly examined before striking a bargain. Obviously, this would involve a lot of trouble and inconvenience for buyers from distant places.

f) **Means of transport and Communication:** Means of transport and communication also substantially influence the size of a market. It means of transport, such as roads, railways, ships and aeroplanes, are developed, they make the carriage of goods over long distances easy, cheap and quick. Similarly, means of communication such as the post office, telegraph, telephone and radio, play an effective role in determining the extent of the market. Efficient means of communication enable buyers and sellers who are widely separated to come into close contact with each other. If the means of transport and communication are poor and inefficient, the mobility of goods and factors of production will be restricted. It will not be possible for traders to affect transactions with people who live in distant places. Naturally the market will be narrowed down. It is only as a result of the development of effective means of transport and communication that the movement of goods and services over long distances and on an international level has become possible--and the area of potential markets has been consequently widened.

g) **Peace and Security:** The situation with regard to law and order also affects the size of the market. If sellers are sure that their goods will reach the buyers safely and will not be stolen or damaged on the way, they will freely send their goods to dist.tnt places. During a period of riots or war, business activity often comes to a standstill as both buyers and sellers have a sense of insecurity regarding the purchase and sale of commodities. Goods move freely from one place to another only when there is a peaceful atmosphere and reasonable security.

h) **Currency and Banking System:** The currency and banking system of a country also influences the extent of the market. A stable and efficient monetary and banking system encourages businessmen to transact with buyers at far off places. If the currency system is unstable and uncertain it will upset the calculation of businessmen and they will not take the risk of sending their goods to distant places. So the market will be restricted. If the monetary system is sound and stable it will create confidence in the minds of businessmen who will be willing to send their goods to buyers over long distances and even to other countries.

Similarly, a sound and efficient barking system helps the business community to transfer money from one place to another conveniently. Goods are also handed over to buyers through the banks. The buyer receives the goods alter making due payment to the bank, which the bank remits to the seller. These facilities encourage businessmen to increase the area of the market.

i) **The Policy of the Government:** The policy of the Government also affects the extent of the market for a commodity. If the Government imposes duties on the movement of a particular commodity from one district or province to another, the market for the commodity will tend to be confined to that district or province. For example, sometimes our Government bans the movement of wheat and rice from one province to another: this restricts the market for these commodities. Sometimes, however, the Government gives a subsidy for the export of certain commodities. This step encourages exporters to increase their exports to the outside world and thus to expand the area of the market.

j) **Methods of Business:** Methods of business also influence the size of the market. If modern methods of salesmanship and advertisement are adopted, the market is sure to be extended. Proper packing and cud storage facilities also help to extend the area of the market.

1.5 Points to Remember

a) Essential Conditions of the Market
   i. Commodity: There must lie sonic commodities which are to be bought and sold.
   ii. Area: A market can extend to any area -a town, a country or the whole world.
   iii. Buyers and Sellers: The transaction can take place only when sellers and buyers are in contact although their physical presence for this purpose is not necessary.
   iv. Determination of Price: The contact between buyers and sellers must result in the determination of a price for the commodity concerned.

b) Determinants of the Size or Extent of the Market
   i) Demand: Commodities for which there is a large demand have a wide market.
   ii) Portability: Portable commodities enjoy a wider market. While bulky goods like stones, have a narrower market.
   iii) Durability: Durable goods have a wider market, whereas the market for perishable goods, like eggs and vegetable, is usually very limited.

iv) Supply: Only commodities of which there is a large supply have a wide market. Scarce commodities always have a more limited market.

v) Cognizability: Commodities which can be easily represented by grades or samples have a wider market. Buyers readily accept them.

vi) Means of Transport and Communication: Transport and communication systems are among the most important factors which affect the extent of a market. Efficient and cheap means of transport and communication make the mobility of goods over long distances possible and easier. International trade has developed because of developments in the means of transport and communication.

vii) Peace and Security: Goods moves from one place to the other more readily when there is peace and security.

viii) Policy of the Government: A tax or law imposed on the movement of a commodity restricts the area of its marketability; whereas a subsidy expands the market.

ix) Currency and Banking System: A sound and stable currency creates confidence in the minds of buyers and sellers and encourages them to expand their activities.

x) Methods of Business: Modern techniques of business (e.g. proper Packing, Publicity, etc. wide; the scope of a market. These methods create new demand for the commodity concerned.

SELF-ASSESSMENT QUESTIONS

Q. 1 What do you understand by the term 'Market' as it is used by an economist?
[Check your answer with the discussion in Section 1.1]

Q. 2 What are the four essentials of a market as far as the economist is concerned?
[Check your answer against the list given in Section 1.2]

Q. 3 What is meant by the 'extent' of the market? And what are the main factors which determine the extent of a market?
[Check your answers against the discussions in Sections 1.3 and 1.4]

2. CLASSIFICATION OF MARKETS

2.1 Types of Classification

Markets can be of various types. They can be classified on the basis of (a) geography (b) time (c) commodity and (d) competition. Below we discuss each of these types.

2.2 Types of Market (a) Geographical Markets

In the case of geographical markets, the area occupied by the buyers and sellers is taken into consideration. From this point of view, markets can be of three types

i) Local Markets: If a commodity is bought and sold near the place of its production its

market is said to be local. Perishable commodities like eggs and vegetables, or bulky goods like bricks and heavy stones, usually have local markets either because of their lack of durability or heavy transportation costs. However, with the introduction of facilities like cold storage, and quick means of transport like railways, ships and aeroplanes, the market for some of these commodities is becoming wider.

ii) National Markets: If the buyers and sellers of a commodity are spread over the entire length and breadth of a country, the market for such a commodity is called a national market. For example, wheat and rice have a national market in Pakistan as they are traded in all parts of the country. The price of a commodity throughout a national market tends to be the same: the only differences being the result of the different costs of transporting the commodity from one place to mother. For instance, if what is s1ling at Rs. 40/- per manud in Gujranwala (where it is produced) and in Islamabad it.; price is Rs. 45/- per manud, and the cost of transporting wheat from Gujranwala to Islamabad is Rs. 5/- per manud, it will be said that price of wheat at both the places is the same.

iii) International or World Markets: If the buyers and sellers of a commodity are found in all countries of the world, its market will be called n international or world market. Cotton, cloth, gold and silver have international markets, as they are demanded all over the world. With the development of efficient and quick means of transport and communication, the scope of international markets has been extended, however, wars, international tensions, tariffs, quotas and exchange controls restrict the scope of world markets.

b) Time Markets: Markets can also be classified according to the time which the forces of demand and supply take to reach a state of equilibrium. From the point of view of time, markets can assume three forms:

   i. Day-to-Day Markets: In the case of day-to-day markets, the supply of a commodity is restricted to the quantity which is already in the hands of the sellers. Time is so short that in practical terms supply can nether be increased nor decreased. Whatever supply is available with the sellers, it will have to be disposed of the same day. The price may then decrease or increase the next day. As the supply is fixed in a day-to-day market, the price of the commodity is influenced only by the demand for it. It demands rises, prices increase; and if demand fall price decrease. Normally perishable commodities like fish, vegetables, milk and meat have day-to-day markets.

   ii. Short-Period Markets: In the short-period market, the supply of a commodity is also limited, as in the case of the day-to-day market. With the increase in demand or price, the supply can only be increased with the help of the existing means of production. In this period, only variable factors like labour, quantity of raw material and hours of work can be changed according to the change in the demand for the commodity. Fixed factors, like buildings, machines, etc. cannot be changed in the short-period, the cost of production does effect the supply but not to a great extent. Price is still mainly influenced by demand. If demand increases, the price rises; and if demand decreases, the price falls.

   iii. Long Period Markets: In the long-period market, there is enough time to allow the level of supply to be adjusted to the change in demand. If demand increases

permanently, then supply can also be increased not only by using the existing means of production, but also by installing new ones. For example, if the demand for shoes increases, the producers wilt first of all try to meet this demand by using the existing machines and increasing the hours of work and so on. However, if demand still remains unsatisfied, the existing producers will install new machines and new producers will enter the field. Consequently, supply will catch up with demand and a new equilibrium between supply and demand will be established. Thus, in the long period, the influence of supply on the price of a commodity is as strong as the influence of demand.

c) Commodity Markets: Markets can also be classified according to the nature of the commodity or the specific functions of the market. From this point of view, markets can be of the following types:

i. General Markets: The general market is a market where different types of goods are bought and sold. In villages and small towns, we often come across this type of market. All sorts of ordinary household goods are available there. For example, sugar. Salt, cloth and all kinds of eatables can be purchased from the same place. Such markets now exist only in small villages and towns. In cities, specialized markets are usually found.

ii. Specialized Market: In cities we mostly find specialized markets in a specialized market only a specific article of use is bought and sold. For example, in the fruit market only fruit is bought and sold. Similarly, there are separate markets for precious metals like gold and silver which are known as ‘Sarafa bazar’.

iii. Marketing by Sample: Samples have greatly increased scope of the market. It is difficult for a producer to transport large quantities of **a** commodity to distant places and display them to the customers. To avoid this inconvenience, the method of selling by samples has been adopted. The producer simply shows the sample of a commodity to the buyers and on this basis the bargain is struck. This method facilitates transaction in commodities which are bought and sold in large quantities, such as wheat, rice, cotton and so on. However, this method is not applicable to all sorts of' commodities.

iv. Marketing by Grade: The method of grading has also facilitated business activity to a great extent. According to this method, a commodity is divided into certain definite grades. Each grade possesses a particular quality and is given a distinct mark or name. The transaction takes place in terms of the grade of commodity: and as a result, the bargaining parties clearly understand the quality of the commodity concerned. For example, in our country, wheat is of various grades. If a seller quotes the price of ‘Mexi Pak’ a [variety of wheat) the buyer clearly understands the nature of what he is buying. He need not see the commodity concerned just by knowing the grade; he can put in an order for its purchase. Marketing by grades avoids the trouble of showing the entire stock of a commodity to the buyer; and with this system even sample become unnecessary. This makes the transaction easier and considerably increases the extent of the market.

d) Markets According to Competition: In Economics 'competition' means bargaining between buyers and sellers. In terms of competition, markets can be of two types

i. Perfect Markets: Perfect markets are those in which perfect competition prevails. By perfect competition we mean a condition where buyers and sellers are free to bid and outbid each other as a result of which one and only one price for a commodity prevails throughout the market. (Note Perfect competition and its attributes are discussed in detail in Section 3.)

ii. Imperfect Markets: Imperfect markets are those which lack the attributes of perfect competition (as explained in Section 3). In such a market more than one price may prevail for the same commodity.

2.3 Points to Remember

a) Types of Market: Markets can be of various types:

i. Geographical Markets: These can be of three kinds

Local Markets: When the commodity is bought and sold near the place of its production. For examples, bricks, vegetables etc.

National Markets: When the buyers and sellers of a commodity reside in all the parts of the country. For example, wheat, rice cotton and cloth.

International Markets: When the buyers and sellers of a commodity are found in all the countries of the world. For example, gold and silver.

ii. Time Markets: These markets can assume three forms:

– Day-to-day Markets: When supply is restricted to the quantity in the hands of sellers and can neither be increased nor decreased. Demand controls price.

– Short Period Markets: In this case supply is also limited. It cannot be increased except by using existing means of production. Price is mainly affected by demand.

– Long-Period Markets: In this case the time is long enough to allow supply to adjust itself to changes in demand. With a permanent rise in demand, supply can be increased, not only by using existing means of production, but also by installing new facilities. Here supply and demand influence price.

In the short-period, (supply is passive; whereas in the long-period, supply plays an active role in the determination of price.

iii. Commodity Markets: Here the following types of markets are important:

– General Markets: When all sorts of goods are bought and sold in a market. For example, a village market in which commodities of all kinds are available.

– Specialized Markets: Where a specific article of use is bought and sold. For example—cloth markets, shoes markets or Sarafa Bazar.

– Marketing by Sample: Where samples of the commodity and not the whole supply of it are shown to the buyer, on the basis of which the bargain is finalized. For example, wheat, rice and cotton, are mostly sold by means of samples.

– Marketing by Grades: When a commodity is divided into different

grades according to quality. Each quality is given a specific name or mark. For examples, Iri-Pak, Basmati, Palman and so on are different grades of rice.

Samples and grades make transitions easier and widen the scope of market.

iv. Markets According to Competition: According to competition, markets can be either:

- Perfect Markets: Where perfect competition prevails and, as a result, there is only price for a commodity.
- Imperfect Markets: When perfect competition does not prevail and, as a result, more than one price for a commodity may prevail in the market, the market is said to be imperfect.

SELF-ASSESSMENT QUESTIONS

Q. 4 Can you explain in your own words the main differences between local, national and international or world markets? Give your own examples of the different types of goods in which each type of market is likely to deal.
[Check your answer against the general discussions in Section 2.2-(a)]

Q. 5 What are the main differences between day-to-day, short-period and long-period markets? Again give examples from your own experience of the different types of commodities in which you think each of the different markets will deal.
[Cheek your answer against the general discussion in Section 2.2 (h)]

Q. 6 What are the main differences between a general market and a specialized market? Can you give examples of the two kinds of market from your own local area and the sort of commodities in which they deal?
[Check your general answer against Section 2.2 (e) i & ii)]

Q. 7 Can you explain in your own words what is meant by ‘marketing the sample’ and ‘marketing by grade’. Some examples of these of the two different kinds of marketing are given in the text of the unit: Can you think of other examples which illustrate the way they operate?
[Check your general answer against Section 2.2 (c) (iii) and (iv)]

3. COMPETITION

3.1 Forms of Competition

The classification of markets from the point of view of location, time, the nature of the commodity and the degree competition has been explained in a previous section. The most important classification, however, is that which takes into consideration the degree of competition present in the market. From this point of view, markets can be characterized

as having either perfect competition or imperfect competition. These concepts explained below in some detail:

a) Perfect Competition: Perfect competition is a situation of the market where the following conditions are present
   i. The existence of a large number of buyers and sellers: Under perfect competition there are a large number of buyers and sellers of a commodity in the market; each supplying or demanding a fraction of the total supply to the commodity. None is in a position to influence the market price though his own individual action.
   ii. Homogeneity of the Product: The commodities to be sold by all the sellers are homogeneous. This means that all the units of the commodity are of the same quality in every respect in colour, form, label, brand, etc. Consequently, buyers are quite indifferent as to which seller they buy from. Thus only one price for a commodity will prevail throughout the market.
   iii. Perfect information: Buyers and sellers must have full knowledge of the relevant facts of the market. Buyers should know what price the sellers are charging; and sellers should also be aware of the price that the buyers are paying in different parts of the market. This knowledge irons out the differences in prices; and consequently one, and only one price prevails in the market, any small difference in pi ice at different places will only be due to the cost of transporting goods from one place to another.
   iv. Free Entry and Free Exit: Competition is perfect when the field of production is open to all firms. New firms are free to enter the industry, and the old ones are allowed to leave, as and when they wish to do so.
   v. Perfect Mobility of Factors of Production: Under perfect competition, factors of production are completely mobile. There are no restrictions on the factors of production; and land, labour, capital and organization can move from one producer to another. Under such conditions, factors of production will move from the producers from whom they are gutting a low reward towards those which give higher remuneration. This will ultimately make the reward of all the units of a factor of production equal in all firms which in turn will result in the uniformity of prices throughout the market.

The net result of these conditions of perfect competition is that there will prevail one and only one price for a commodity throughout the market at a particular time. Perfect competition seldom exists in this pure form, because the necessary conditions for perfect competition are rarely present. The nearest practical approach to it can perhaps be found in the case of agricultural commodities in a small village.

b) Imperfect Competition: Imperfect competition is the situation of a market which lacks all or any of the characteristics of perfect competition which have been mentioned above. The main feature of imperfect competition is that within the market different prices prevail for the same commodity. Imperfect competition can assume the following forms

i. Monopoly: Monopoly is the complete negation of perfect competition. This situation exists in a market when there is only one firm supplying the commodity to the customers. The monopolist produces a commodity for which there is no close substitute available. All the units of the commodity produced are homogeneous.

Since the monopolist enjoys full control over the supply of his commodity (unlike a firm working under perfect competition), he can influence its price. By increasing the supply, he can lower its price; and by reducing the supply, he can raise its price. But the power to influence price on the part of the monopolist is not absolute. Since the aim of a monopolist is to maximize his profit, he will fix that price for his product which helps him to get the maximum revenue. Whether he will fix a higher or lower price for his product depends on the elasticity of demand for the product. If the demand for his product is fairly elastic, it will pay him to lower the price and increase the supply. On the other hand, if the demand for his product is relatively inelastic, it will pay him to reduce the output (supply) and charge a higher price. (Note: The concept of elasticity of demand has already been dealt with in Unit 3).

Like perfect competition, pure monopoly seldom exists in practice. But the concept is of great theoretical importance in economic analysis.

ii) Duopoly: When there are only two firms supplying a commodity to the buyers the situation of the market is called duopoly, If all the units of the commodity are homogeneous and are perfect substitutes for each other, the situation is known as pure duopoly. If the products are close substitutes but not perfect substitutes for each other, then the situation is called -differentiated duopoly. Since duopoly is not a very common situation, we shall not go into it in detail.

iii) Oligopoly: Oligopoly is a situation of the market in which only a few firms supply a commodity to the customers. If the products of all these firms are identical (i.e., homogeneous) this is called pure oligopoly. This situation resembles perfect competition in one respect i.e., that all the units of the commodity produced are perfect substitutes for each other. But there is also in important difference between the two. In perfect competition (as explained in Section 3.1 (a) there are many firms which produce the same commodity; whereas in oligopoly' only a few firms supply the entire quantity. If the products of the firms are only close substitutes and not perfect substitutes for each other, the situation is called differentiated oligopoly i.e., each firms tries differentiate its product fro in the products of its rival firms by moans of differences in packing, labels, colour, etc.

iv) Monopolistic Competition. —Monopolistic competition is a situation of the market where there are a large number of firms producing commodities which are close but not perfect substitutes for each other. This situation resembles

perfect competition in one respect i.e., in both cases, the number of firms engaged in production is very large. J3ii it differs from perfect competition in the sense that the commodities produced by all the firms are not perfect substitutes for each other, though they are close substitutes for one another. For example, Lipton, Brooke Bond and Isphani are various brands of tea produced by different firms. They are close substitutes for each other. Each producer tries to convey the impression that his product is different from that of other firms and is superior to all of them. For this purpose, he uses publicity media; and though advertisement, attractive packaging and labels, he tries to convince the consumers that his product is the best and is superior to those of his rival firms. This practice is called product differentiation. On this respect Monopolistic Competition resembles Differentiated Oligopoly us described above.)

This product differentiation is the most important feature of monopolistic competition. Every firm gets a group of customers almost permanently attached to it. These customers, for various reasons (family habit, politeness of the seller, goodwill of the firm. and so on), always prefer to buy the product of this firm irrespective of price considerations. In a way, the firm assumes the position of a monopoly in its own sphere of influence, since it has a secure market of loyal customers.

In this respect the firm working under monopolistic competition resemble, a firm producing under, monopoly conditions. But at the same time, a firm under monopolistic competition does not enjoy the absolute power that a monopolist does. Under monopoly, only remote substitutes are available; and, therefore, the monopolist is in a position to charge a higher price. But under monopolistic competition, because of the existence of a large number of firms, close, substitutes are always present; and a firm always takes into consideration the reaction of the other firms before fixing the price of its own product.

In short, under Monopolistic Competition the following conditions are present:

– Existence of a large number of firms: There are a large number of firms producing commodities which are close substitutes for each other.
– Product differentiation: Every firm tries to differentiate its product from the products of other firms by employing different methods of advertisement and publicity.

3.2 Points to Remember

Competition can assume the following forms:

a) Perfect Competition: Perfect Competition is that situation of the market where the following five conditions are present
   i. Existence of a Large Number of Buyers and Sellers: Each buyer represents it part the total demand and each seller offers a fraction of the total supply. Therefore, no individual buyer or seller is in a position to influence the price.
   ii. Homogeneity of the Product: All the firms are producing commodities which are perfect substitutes for each other.

iii. Perfect Information: The sellers and buyers have full knowledge about the price that prevails in the market. They are aware of even the slightest variation in price.
iv. Free Entry and Free Exit: New firm cart enter the field of production, freely in order to earn profit; and old firms are also allowed to leave the field of production as and when they like.
v. Perfect Mobility of the Factors of Production: Factors of production are free to move from one producer to another with it view to earning higher remuneration.

The result of all these conditions or characteristics of perfect competition is that one and only one price of a commodity pre rails throughout the market.

b) Imperfect Competition: Imperfect competition is a situation of the market which lacks the characteristics or perfect competition. As a result, more than one price of a commodity prevails in the market. Imperfect competition can assume the following forms:

i. Monopoly
   - When there is only one firm producing the entire supply of a commodity.
   - The monopolist is in a position to fix the price of his product.
   - But he has to take into consideration the elasticity of demand for the commodity before fixing the price.
   - If the demand is relatively elastic he can maximize his profit by fixing a lower price and selling a large quantity of his product.
   - If the demand is relatively inelastic it will pay him to fix a higher price and sell a comparatively small quantity.

ii. Duopoly: In this less common situation there are only two firms producing the same commodity. If the commodities are perfect substitutes for each other the situation is called pure duopoly and if the commodities are only close substitutes this is called differentiated duopoly.

iii. Oligopoly: A situation in which there are only a few firms supplying a commodity to the market. If the products of all these firms are homogeneous this is called pure or perfect oligopoly if they are close substitutes for each other and the firms indulge in product differentiation, the situation is called differentiated oligopoly.

iv. Monopolistic Competition:
   - When there are a large numbers of firms producing commodities which are close substitutes for each other.
   - All the firms practice product differentiation: They try to convince the customer that their product is different from the product of other competing firms. For this purpose, attractive methods of publicity and advertisement are used.
   - Each firm, before fixing t1w price of its product, takes into consideration the reaction of other firms.

SELF-ASSESSMENT QUESTIONS

Q. 8 What are the five conditions with are necessary for perfect competition?
[Check your answer against the list in Section 3.1 (a)]

Q. 9 What is the main distinction between 'perfect' and 'imperfect' competition?
(The answer is straightforward in terms of the price of the commodities in the market. But can you explain in your own words why it is that the condition' which characters perfect competition result in the fact that at a single price prevails at particular time? See SAQ 8 Section 3.1 (a)]

Q. 10 Can you briefly describe the four main types of imperfect competition?
[Check your answer with the discussion in Section 3.1 (b) Can you also suggest examples from your own experience in Pakistan of markets and firms which illustrate these types four types of imperfect competition?

Q. 11 What do you understand by 'product differentiation'? Why is it important in understanding how monopolistic competition works? Can you think of examples (other than those given in the unit text) which illustrate 'product differentiation'?
[Check your answer with Section 3.1 (b) (iv)]

PART II: THE EQUILIBRIUM OF THE FIRM INTRODUCTION

In Part II of this unit you will study the concept of market equilibrium and its various forms, so that you will be able to understand the working of the forces of demand and supply. We have already discussed the concept of equilibrium on the demand side ('Consumer's Equilibrium' in Unit 2). Here you will mainly be studying equilibrium on the supply side i.e. the equilibrium of the firm.

The Meaning of Equilibrium

The concept of equilibrium has been borrowed from the natural sciences. It means a state or condition in which forces acting in one direction are balanced by forces acting in the opposite direction, as a result of which there is no net tendency for change.

In Economies we are mainly concerned with the forces of demand and supply. Accordingly, we can define equilibrium as the situation where the forces of demand and supply are equal i.e. the quantity offered for sale is just equal to the quantity demanded by the buyers. This is also called market equilibrium.

Market equilibrium s very much influenced by the element of time. Therefore, it is essential to understand the problem of equilibrium in the short period as well as in the long period.

The Equilibrium of the Firm

The decision regarding the supply of a commodity is made by the firm. The main objective of a firm is to maximize its profit. The fundamental problem for it firm is how to achieve this goal. There are two main ways in which the goal can be achieved:

a) The total Cost and total revenue approach; and
b) The marginal cost and marginal revenue approach.

All firms do not function wider the same market conditions. Some of them work under conditions of perfect competition and others under imperfect competition. Again, imperfect competition can assume the form of monopoly or monopolistic competition. A detailed study of the equilibrium of the firm under all these conditions will be made in the sections which follow.

OBJECTIVES

At the end of Part II of this unit you should be able to

a) Define 'market equilibrium' and distinguish between market equilibrium for perishable goods (short period market) and for durable goods (long-period markets);

b) Define the concept of the 'firm' and distinguish it from the 'plant' and the 'industry';

c) List and explain the problems a firm has to resolve in order to maximize its profit;

d) Define the ‘general equilibrium’ of the firm and explain it in terms of (i) the difference between total cost and total revenue, and (ii) the equality between marginal cost and marginal revenue;

e) Analyse the equilibrium of the firm under ‘perfect competition and distinguish between short-run and long-run equilibrium;

f) Analyse the equilibrium of the firm under (i) monopoly and (ii) monopolistic competition, both in the short-run and the long-run.

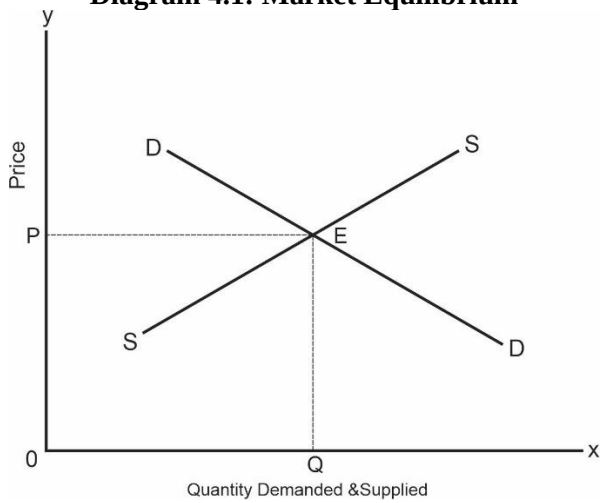
4. MARKET EQUILIBRIUM

4.1 The Meaning of Market Equilibrium

The concept of equilibrium has already been discussed in Units 2 and 3: and you have also been introduced to the idea of Consumer’s Equilibrium. Now we turn to market equilibrium. Market equilibrium is a situation in which the supply and demand of a commodity are equal. This equilibrium is established through the free interaction of the forces of demand and supply.

The equilibrium between supply and demand i.e. market equilibrium, can be illustrated with the help of a diagram.

Diagram 4.1: Market Equilibrium



In this diagram quantity (Supply and Demand) is represented along the X as and price along the Y axis, DD and SS are the demand and supply curves which intersect at point E. This shows that demand and supply are equal at this point. Therefore, EM or OP will be the price which is called the equilibrium price.

4.2 Market Equilibrium in Relation to Time Periods

We have already explained in Unit 4 that, in terms of time, markets can be of two types: short-period markets for perishable goods; and long-period markets or markets for durable goods. Here, I want to explain how market equilibrium is reached under these conditions.

a) Market equilibrium of perishable goods (short-period market): Perishable goods are those which go stale, decay or wither away, if kept over time, and therefore, lose their value. For example, eggs, vegetables meat, milk, fish and so on. These goods cannot be stored; and therefore, in their case, the stock and the supply become one and the same thing. This means that the supply curve (which has been explained in Unit 4) is a straight line parallel to the Y axis. This means that the entire quantity is offered for sale to each level of price. For the equilibrium price, therefore, it is demand and the nature of the demand curve (as explained in Unit 3) which is the sole determining factor. If the demand increases, the price will rise; if the demand decreases, the price will fall.

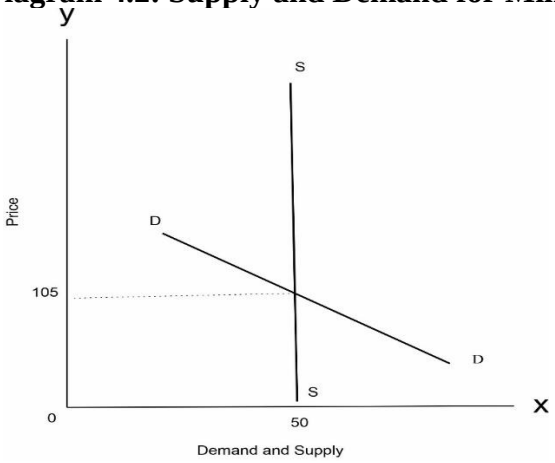
This process can be illustrated with the help of a market schedule and a diagram. Suppose the commodity is Milk and, its total supply is 50 liters.

TABLE 5/1: MARKET SCHEDULE FOR MILK

Price of Milk Rs. per litre	Demand (in liters)	Supply (in liters)
3.00	20	50
2.50	30	50
2.00	40	50
1.75	50	50

According to this schedule, the price of milk will be determined at Rs. 1.75 per litre because it is only at this price that the entire supply of milk (50 litres) is demanded by the customers. This can be further explained with the help of a diagram:

Diagram 4.2: Supply and Demand for Milk



In this diagram demand and supply are represented on the X axis and price is shown on the Y axis. DD and SS are the demand and supply, curves which intersect at point E. This means that the demand and supply are in equilibrium at point E. Therefore, the equilibrium price is ES or Rs. 1/75 per litre. It will be seen that at this price the entire supply of 50 litres of milk is demanded. No part of the supply is left unsold.

It is clear from the above discussion that in the case of perishable goods, the price arrived at will be the price at which the entire supply is demand.

b) Market equilibrium of durable goods (long-period markets): It has already been explained that market equilibrium is established through the interaction of the forces of demand and supply. It is the point at which the demand curve intersects the supply curve; but this point is reached through a series of adjustments over time between the quantities supplied and quantities demanded.

At a higher price, the sellers and willing to sell a larger quantity but the buyers will by only buy a smaller quantity. That part of the produce which is left unsold causes competition among the sellers. Consequently, the price is pulled down to a level at which all that is offered for sale is demanded by the buyers. This lower level of price discourages the sellers; and so some of them withdraw their supply or at least part of it. The net result is that demand exceeds supply, interested buyers will then be willing to make a higher bid and so the price is pushed up.

With a rise in price, some of the buyers may leave the market. The rise in price will go up to the point where demand matches supply in the market. This higher price again attracts the sellers and they expand their supply. In this way supply exceeds demand and leads to competition among the sellers. And so, finally a level of price is reached at which supply equals demand.

This process can be further illustrated with help of a schedule and diagram

Table 4.2: Market Schedule for Rice

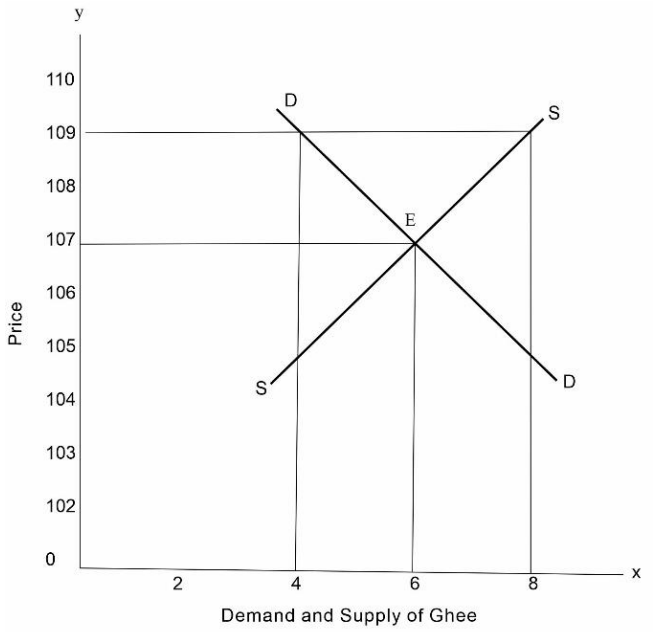
Price of Rice (Rs. per Maund)	Demand (Maunds)	Supply (Maunds)
170	100	500
160	150	450
150	200	400
140	250	350
130	300	300
120	400	250
110	500	200

In this schedule Rs. 130 per maund will be the equilibrium price of rice, because at this price demand and supply are equal (300 maunds each). When the price is Rs. 170; the sellers are willing to supply 500 maunds of rice but the buyers are prepared to demand only 100 maunds of rice. With the gradual fall in price, demand expands, hut supply contracts. The equilibrium point is not reached until the price falls to Rs. 130- per maund.

When the price is below this equilibrium point, the sellers withdraw part of the supply and only a part of the entire supply is offered for sale. This lower price, however, attracts more buyers and causes an increase in demand. This phenomenon again pushes the price upwards until it reaches the point of equilibrium.

To illustrate the process of the market equilibrium of durable goods we may look at another example Let us say that the supply and demand curves for ghee in a retail market are as given in the following diagram where demand and supply are represented on the X axis and price is shown along the Y axis. DD is demand curve and SS is the supply curve.

Diagram 4.3: Supply and Demand of Ghee



When the price is Rs. 9/- per kg the sellers offer 8 kg for sale; but the buyers find this price high and they demand only 4 kg. For the 8 kg to be disposed of the price must be lowered and comes down to Rs. 5/- per kg. The competition among sellers may bring the price down to this level but some of the sellers may not find this price profitable for them. Therefore, they will withdraw their supply wholly or the part because the commodity it durable and there is no risk of it being wasted. Suppose supply contracts to 5 kg and the buyers demand

8 kg. In this case the price will go up. With a rise in price, some of the buyers will be discouraged and they will go out of the market. When the demand equals this supply, the price will be Rs. 7/- per kg. At this price the sellers are willing to sell 6 kg and the buyers are ready to buy 6 kg. Therefore, a point of equilibrium has been reached at E—where demand and supply are equal. OP is called the equilibrium price.

4.3 Points to Remember

a) The concept of equilibrium: Equilibrium means a condition in which forces acting one direction are balanced by the forces acting in the opposite direction. In Economics, there are two opposite forces: demand and supply. Therefore, in Economics, equilibrium means a situation in which the demand for a commodity is equal to its supply.

b) Market equilibrium: When the forces of demand and supply are equal. This is called market equilibrium: and the price which is determined as a result of this equality of demand and supply is called the equilibrium price. Market equilibrium can take two forms:

   i. Short-period market equilibrium: Short-period means. a situation when the supply of a commodity is more or less fixed and can neither be increased nor decreased. In this situation, equilibrium is affected exclusively by the demand for the commodity concerned: and, therefore, the price of a commodity is influenced only by its demand. If the demand increases the price rises and if demand decreases the price falls. Short-period equilibrium exists primarily for perishable commodities like milk, meat, vegetables and so on. As these commodities cannot be stored for a long time the price that will prevail in the market will be the price at which the entire supply is demanded and nothing is left unsold.

   ii. Long-period market equilibrium: By long-period is meant a period during which the supply of a commodity can be increased or decreased' according to the nature of demand. Supply may be increased by using the existing means of production more intensively or by introducing additional means of production. In the long-period, the level of supply is free to adjust itself to changes in demand. Therefore, supply plays an active role in the determination of price. In fact, its influence on the long-period equilibrium price is more pronounced than that of the demand If price rises with an increase in demand, supply will also increase; and consequently, price will come down to the previous (equilibrium) level. On the other hand, if the price falls, supply will decrease; weaker or marginal firms and sellers may go out of market; and ultimately the price will rise to the point of equilibrium. Long-period market equilibrium takes place primarily in the case of durable goods.

SELF-ASSESSMENT QUESTIONS

Q. 12 First to make sure you understand the basic concept examined in Part II of this unit:

a) What do you understand in general by the concept of ‘equilibrium’?

b) What, in particular, do you understand by the concept of market equilibrium?

c) Why do you think the idea of 'equilibrium' is important in Economics?

[If you are still not clear about the concept of 'equilibrium', check back to the earlier units in which it has been discussed (e.g. Units 2 and 3) and also look again at the Introduction to Part II of this unit and at Section 4.1]

Q.13 Now some specific questions about equilibrium in short and long-period markets:

a) In short-period markets:
   i. What kinds of goods are bought and sold? (Can you give examples of short-period market from your own experience 7)
   ii. What is the main characteristic of the supply curve?
   iii. What is the main factor that determines market equilibrium?

b) In long period-markets:
   i. What type of commodities are dealt with?
   ii. Are the characteristics of the supply curve different from that of the short -period market? If so, how?
   iii. Can you explain in your own words how market equilibrium is reached in the long-period? Which is likely to be more important supply or demand?

c) Can you illustrate diagrammatically the difference between market equilibrium is short and long-period markets?
   [Check your answers against the discussion and diagrams in Section 4(2]

5. EQUILIBRIUM OF THE FIRM

5.1 The Meaning of the Firm

The term firm in Economics means the unit of contract in production. It is the firm which makes decisions regarding the production of a commodity. For example, Kohinoor Textile Mills is a firm which produces various types of cloth.

The firm should be distinguished from the industry and the plant. The sum total of all the firms producing a particular commodity is called its industry. For example, the sugar industry consists of all the firms engaged in the production of sugar. The plant is the unit of production in which the decisions of the firm are implemented. For example, a particular factory producing sugar would be a sugar plant. A firm may have one or more plants. For instance, Kohinoor is a firm but it has established several plants at different places.

For the purpose of economic analysis, the firm is more important than the plant or the industry because it is the firm which makes decisions regarding the production of a commodity and solves any problems which come up in the process of production.

5.2 Problems of a Firm

The main objective of a firm is to earn maximum profit. But there are many problems which it firm has to solve before it can achieve this objective. Here are some of the main problems which confront a firm:

a) Selection of the industry: Usually a firm selects that line of production in which it finds that the chances of earning a profit are quite good.

b) Selection of a location: A firm would usually choose a place for production where factors of production and other essential facilities are readily available. In this connection, transport facilities usually have a high priority.

c) Selection of the scale of production: Selection of the scale of production is also an important problem for a firm. Roth large and small scales of production have their respective merits and demerits. Given its financial, technical and other resources, the firm has to decide which scale of production is likely to produce maximum profit.

d) The size of the output: It is also essential for the firm to make the correct decision about the amount of output to be produced. Every level of output is supposed to yield profit but only a particular level of output can ensure maximum profit.

e) The combination of factors of production: This is also an important problem which the firm has to solve. Different combinations of the factors of production can he used to produce a particular amount of output. But the objective of maximizing profit (or minimizing loss) can only be achieved when the factors of production are combined in such a way that the cost of production is at its lowest. This can happen only when the marginal productivity of all the factors of production is equal.

5.3 The General Equilibrium of a Firm

The concept of equilibrium has already been discussed. In this section we shall apply this concept to the working of a firm. It has already been pointed out that the basic aim of a firm is to maximize profit. This aim can only he realized at a point where the firm is in a state of equilibrium.

A firm is said to be in a state of general equilibrium, when it is producing that amount of output which is giving it maximum profit. At this point, the firm does not want to bring about any change in the amount of output.

The general equilibrium of the firm can be explained from two points of view first, in terms of the difference between total cost and total revenue; and secondly in terms of equality between marginal cost and marginal revenue.

a) The Difference between Total Cost and Total Revenue:

   i. Total Cost (TC) means the total expenditure that a firm incurs on producing any specific amount of output. For example, if a firm spends Rs. 1,000 on the production of 100 pairs of shoes, it will be said that the total cost of 100 pairs of shoes is Rs. 1,000. A firm's total cost curve shows the total cost of producing various outputs. The curve rises from left to right.

   ii. Total Revenue (TR) name the total receipts earned by the firm by selling the entire amount of its output. For example, if a firm sells 100 pairs of shoes at a price of Rs.10/-per pair, its total revenue would be Rs. 1000/—. The total revenue curve shows the relationship between different levels of output and the total receipts of the firm at each level of output.

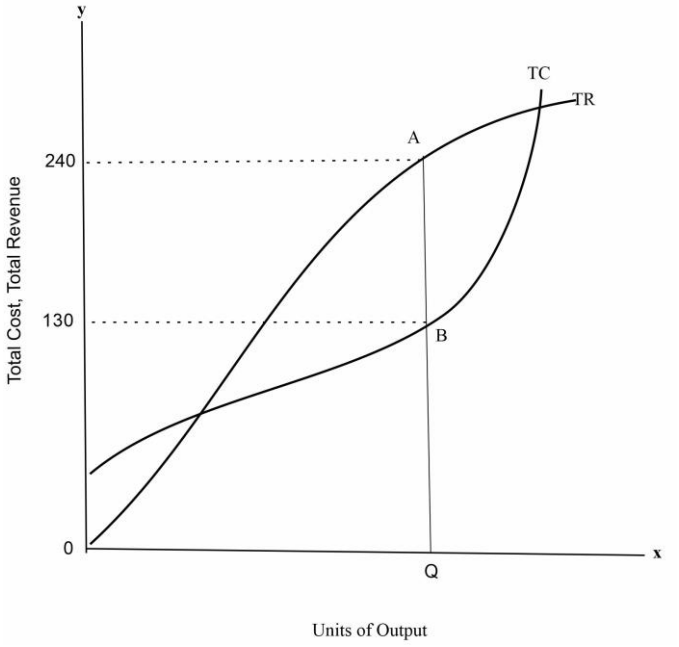
This approach to the question of maximizing profit can be illustrated with the help of a numerical example:

TABLE 5/3: TOTAL COST AND TOTAL REVENUE SCHEDULE

Output (In Units)	Total Cost (Rs.)	Total Revenue (Rs.)	Difference (Rs.)
10	100	105	5
11	105	120	15
12	110	150	40
13	120	200	80
14	130	240	110
15	140	180	40

In this case, 14 units of output will give the firm maximum profit since at this output the difference between total cost and total revenue is the greatest i.e. Rs. 110. Hence the firm will be in equilibrium when it is producing 14 units of output. This can also be explained by means of a diagram.

Diagram 4.4: Equilibrium Output Illustrated in Terms of Total Cost and Total Revenue



In this diagram output is measured along the X axis and cost and revenue are represented on the Y axis. TR and TC are the total revenue and total cost curves.

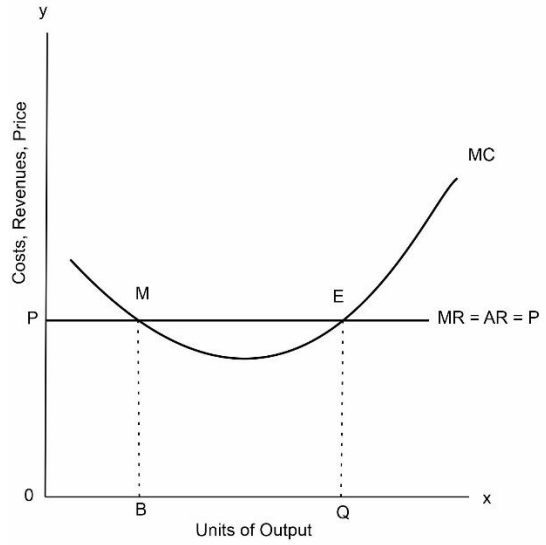
The firm will be in equilibrium when it is producing OQ output because at this point the

difference between TR and TC is the greatest, as shown by the vertical distance MN between the two curves. At points M and N the slopes of the t curves are the same. In other words, the tangents (ab and cd) to the total cost and total revenue are parallel. In this diagram, for OQ output, point N on the IC curve corresponds to point M on the TR curve. The tangents ed and ab to points N and M are parallel. Thus we say that in producing OQ output the firm enjoys maximum profit which is equal to the distance MN the longest vertical line that can be drawn between TR and the TC curve. We therefore conclude that in producing OQ output the firm is in equilibrium.

b) Equality between Marginal Cost and Marginal Revenue: The second approach to a firm's equilibrium is in terms of marginal cost (MC) and marginal revenue (MR). Marginal cost is the cost of producing the marginal unit of a firm's output. Marginal revenue is the revenue earned by the firm when it sells the marginal unit of its output. So long as MR is greater than MC, however small the difference may be, the firm has an incentive to expand its output with a view to maximizing its profit. On the other hand, if MC exceeds MR, again however small the difference may be, the firm is induced to contract its output with a view to minimizing its losses. The only point at which the firm is not inclined either to contract or expand its output is the point at which its marginal cost is equal to its marginal revenues where MC = MR.

This method can also be explained with the help of a diagram:

Diagram 4.5: Equilibrium Output Illustrated
In Terms of Marginal Cost and Marginal Revenue



In this diagram, MC intersects MR at two points, i.e. F and M which means that MC is equal to MR at OB output as well as at OO output. But OB output cannot give the firm maximum profit since the MC curve is still falling after this amount of output has been

produced. It is only OQ output which gives the firm maximum profit. At this output, MC is rising and it cuts the MR line from below. Therefore, the firm will be in equilibrium only at output OQ.

5.4 Points to Remember

a) Meaning of firm: A firm is a unit of control in production. it does not produce a commodity; it simply makes decisions regarding the production of a commodity.

b) Firm: Industry and Plant:

Firm: A firm is different from an industry and a plant; it is a unit which organizes and controls production.

Industry: An industry is the aggregate of all the firms engaged in the production of a particular commodity.

Plant: A plant is the place where the decisions of the firm are actually implemented, e.g. a factory. It is a unit of production.

c) Problems of the firm: Every firm faces certain fundamental problems and it has to make decisions to resolve them.

i. Selection of an Industry: The initial problem of a firm is to select its field of production e.g. manufacturing of cloth or sugar. A firm will decide to produce that commodity which is expected to give the highest profit.

ii. Selection of a location: A firm will select that locality for its operation where the factors of production arc readily available and transport facilities are present to bring raw materials and to carry the manufactured goods to the market.

iii. Selection of a Scale of Production: The firm has to decide whether to produce on a large or a small scale—since different levels of production can have advantages and disadvantages.

iv. Size of the output: A firm has to decide the size of its output. The objective of the firm is to earn maximum profit. This can only be achieved when the firm is producing its optimum output. This is a quantity where its marginal cost is equal to its marginal revenue.

v. Combination of the Factors of Production: Only that output which is produced at the least cost can ensure maximum profit. This (least cost) output is produced when the factors of production are combined in such a way that the marginal productivity of all the factors of production becomes equal.

d) The General Equilibrium of a Firm: A firm is said to be in equilibrium when it is producing an output which brings it maximum profit. At this point, the firm has no reason either to increase or to decrease its output. There are two approaches to the explanation of the general equilibrium of the firm.

i. The Total Cost and Total Revenue Approach: The firm is in equilibrium when the difference between total cost and total revenue is at its maximum.

ii. The Marginal Cost and Marginal Revenue Approach: Here the firm is in equilibrium when its marginal cost is equal to its marginal revenue (when MC = MR).

SELF-ASSESSMENT QUESTIONS

Q. 14 a) What do you understand by the term 'firm' in Economics?
b) How does a firm differ from a 'plant' and an 'industry'?
c) Can you give examples from your own experience of firms, plants and industries in your area of Pakistan?
[Check your answer against Section 5.1]

Q. 15 What are the main problems that a firm has to resolve in the process of achieving the objective of maximizing its profit?
[Check your answer against the list, given in Section 5.2. Now look again at the examples of 'firms' which you gave in answer to SAQ 14 (c). Can you answer any of the following questions?
a) What factors do you think they had to take into account in deciding on location? Do you think they made a good decision or could their location be improved?
b) Do the firms produce on a relatively large or a relatively small scale? Are there particular reasons for this?
c) How do the firms combine their factors of production? Do they use a lot of land? Are they capital-intensive or do they use a lot of labour? Again, are there particular reasons for this in terms f the type of industry in which these are involved?
[If possible, though it may not be, try to talk to some of the owners or managers of your local firms to find out what their answers are to the above questions.]

Q. 16 a) What do you understand by the 'general equilibrium' of the firm?
b) What are the two main approaches to defining this position of general equilibrium?
[Check your answers against the early part of Section 5.3]

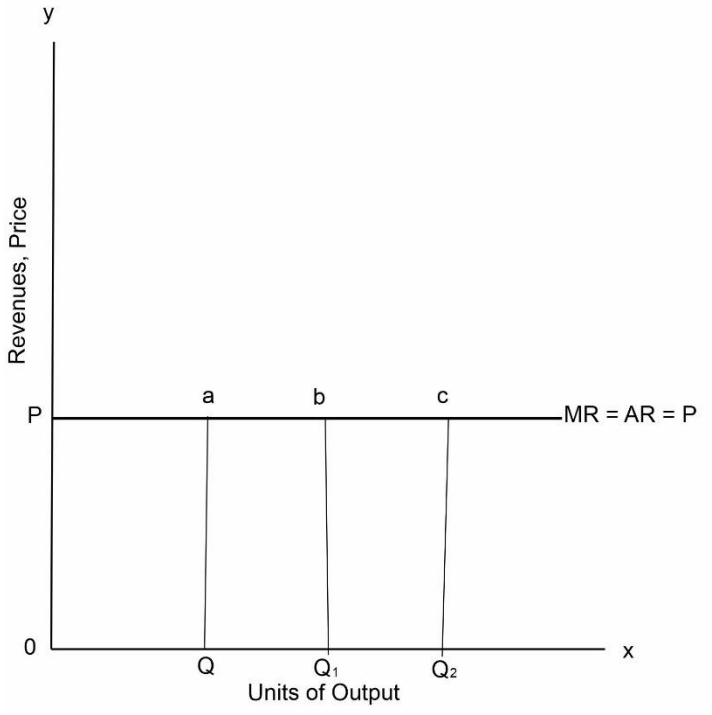
Q. 17 Can you explain in your own words and with appropriate diagrams?
a) The total cost/total revenue approach; and
b) The marginal cost/marginal revenue approach to defining the general equilibrium position of the firm?
[Check your answer and diagrams against Section 5.3 (a) and (b)]

6. EQUILIBRIUM OF THE FIRM UNDER PERFECT COMPETITION

6.1 Perfect Competition

You have already learned-the characteristics of perfect competition. Under perfect competition only one price for a commodity prevails in the market. The firm under perfect competition has to sell all that it produces at the prevailing price. In other words, if a firm wants to sell more, it cannot lower the price. This means that the average revenue of the firm for every level of output remains the same. Average revenue is also equal to marginal revenue. And the marginal revenue curve of the firm is a straight line parallel to the X axis, as shown in the following diagram.

Diagram 4.6: Average Revenue=Marginal Revenue=Price



In this diagram the output is indicated on the X axis and price is shown on the Y axis. AR and MR coincide on a straight line which is parallel to the X axis. aQ, $bQ_{,1}$ and cQ_2 are equal which shows that AR and MR are equal at all levels of output. AR and MR are also equal to the price OP. This indicates that under perfect competition AR = MR = price.

6.2 Equilibrium in Relation to Time Periods

Equilibrium under perfect competition can be studied from two points of view first, equilibrium in the short-period; and secondly, equilibrium in the long-period.

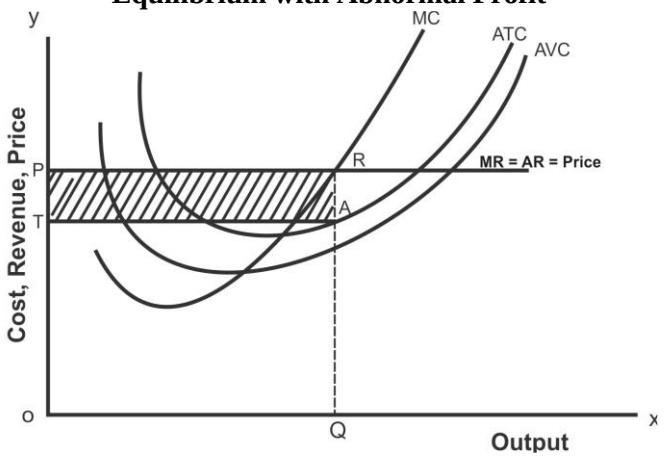
a) Short-period Equilibrium: The 'short-period' is a period in which a firm cannot change its productive capacity. A firm operating under perfect competition may be in equilibrium in the short-run in any of the following four situations:

–	When it is earning abnormal profit.
–	When it is earning normal profit;
–	When it is suffering a normal loss;
–	When it is suffering abnormal loss.

We shall look at each of these short-period situations in turn.

i. Equilibrium of the Firm with Abnormal Profit: Normal profit is included in the cost of production. Therefore, when a firm's total revenue is more than its total cost, it is said to be enjoying abnormal profit. This can be explained with the help of the following diagram:

Diagram 4.7: Short-Period Equilibrium with Abnormal Profit



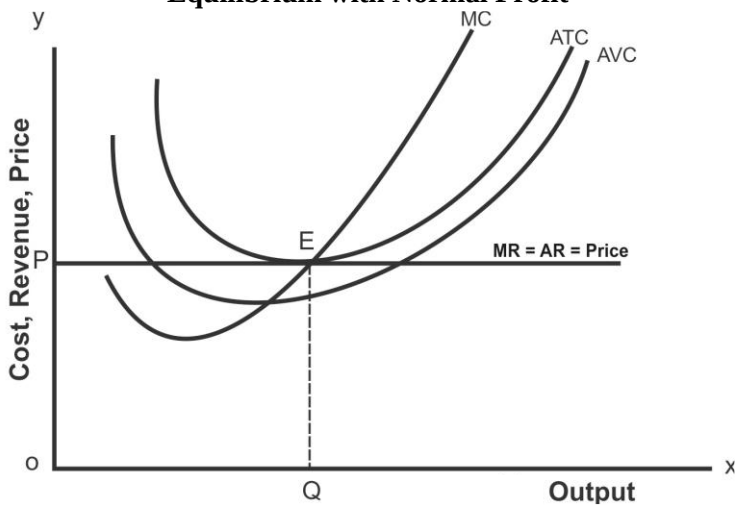
In this diagram the firm is in equilibrium at OQ output because at this output its marginal cost equals its marginal revenue (MC = MR., when MC cuts MR at r). At this point the price (AR) is so high that it not only covers the AVC but also the AC. In this cast TC = OQ at and TR = OQrp. The difference between the two as is ar pt which is the abnormal profit of the firm.

ii. Equilibrium of the Firm with Normal Profit: A firm is said to be enjoying normal profit when its total revenue is equal to its total cost. This is a situation in which not only is its marginal cost equal to its marginal revenue (MC MR); but its average cost is also equal to its average revenue (AC =AR). This is possible only when the price line (MR and AR) is at it tangent to the U-shaped AC curve, because only, at this point is MC AC, Therefore, for a firm earning normal profits, the equilibrium equation will be as follows:

MC = MR = AC = AR = Price

We can illustrate this with the help of the following diagram:

Diagram 4.8: **Short-Period Equilibrium with Normal Profit**



According to this diagram, the firm is in equilibrium at output OQ because at this level of output MC=MR (when the MC curve cuts the MR curve at point E). MC also cuts AC at the same point E which means that at this point MC is also equal to AC. As MR =AR, therefore MC =AR; as MC =AC, therefore AC=AR and AR Price, Hence at output OQ:

MC = MR = AC = AR = Price.

In this diagram

TC = OQEP

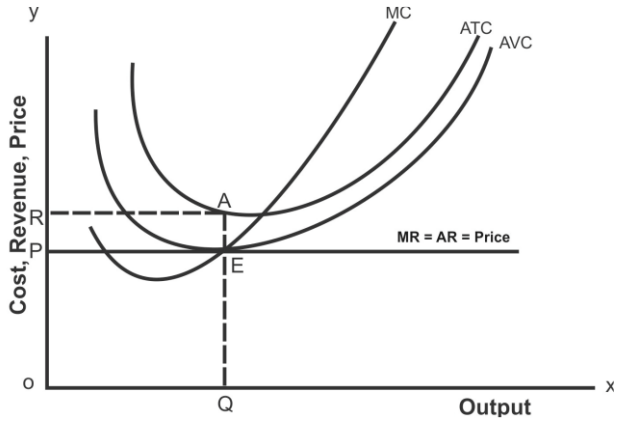
TR = OQEP

When total cost is equal to total revenue the firm will just be earning the profit which is included in the cost of production (i.e. normal profit.).

iii. Equilibrium of the Firm Suffering Normal Loss: A firm is said to be suffering normal loss when it covers only its variable costs and fails to cover its fixed costs either in part or in total. In such cases, the AR or MR curve interacts the MC curve at a point below the AC curve; and at the same time AR or MR is at a tangent to AVC.

This situation can be illustrated with the help of the following diagram:

Diagram 4.9: Short-Run Equilibrium with Normal Loss

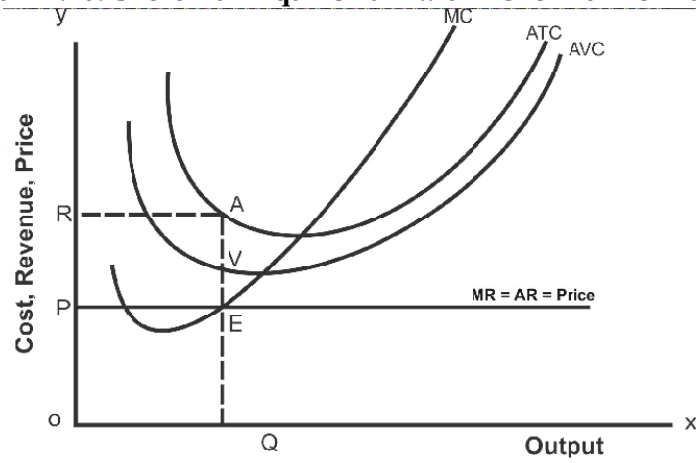


According to this diagram a firm is in equilibrium at output OQ because at this point MC = MR.

For this output, AC is aQ and TC is equal to the area OQar and AR is equal to EQ. Thus TR will be equal to the area OQEP. In this case the firm faces a loss which is equal to the area EarP.

iv. Equilibrium of the Firm Suffering Abnormal Loss: A firm which is unable to cover even its variable costs cannot stay in the field of production for a long time. Sooner or later, when it has an opportunity the firm will pack-up and leave the industry. This situation arises when the MR curve intersects the MC curve at a point which is below the AVC curve, as shown in the diagram.

Diagram 4.10: Short-Run Equilibrium with Abnormal Normal Loss

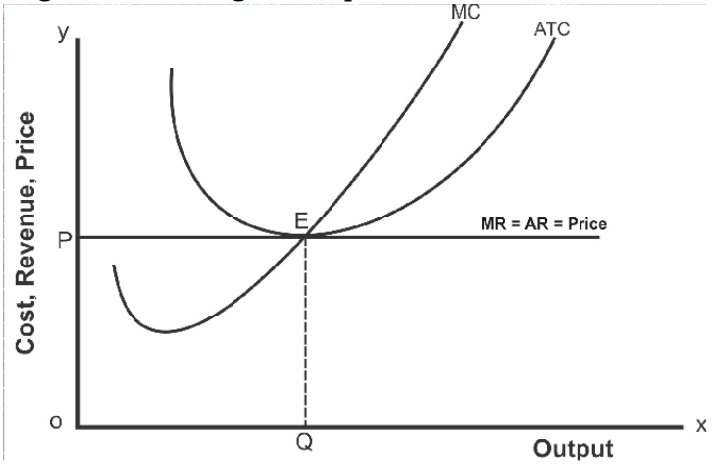


According to this diagram, the firm will produce output OQ in equilibrium since MC = MR for this output. But at this level of output AR = EQ which is less than AC (aQ) and AVC (VQ) which means that the price is so low that the firm is not able to cover even its AVC, let alone the AC. Hence the firm is suffering a loss which is equal to the shaded area Eat. This area represents abnormal loss.

b) Equilibrium of the Firm in the Long-Period: You have already learned that in Economics the 'long-run' means a period in which the supply of a commodity may be increased or decreased by altering the productive capacity of the firm. As the time is long, new firms can be established: existing firms can install new plants: and the total supply can he increased.

Under conditions of perfect competition, since there is free entry for new firms, any abnormal profit earned by the firm is an inducement for new entrepreneurs. On the other hand, those inefficient firms who are not able to earn even normal profits will be forced to leave the industry. The result is that, in the long-run, only the firms that enjoy normal profit will survive and continue. This process is illustrated below:

Diagram 4.11: Long-Run Equilibrium with Normal Profit



According to this diagram, in the long run a firm will be in equilibrium when it is producing OQ output: because at this output MC = MR. The MC curve cuts the MR curve at point E. Similarly, AC touches AR at E. That means that AC and AR are equal, which means that the firm is enjoying just normal profit. Because MR = AR and MC = MR, at this point therefore MC = AR.

At point F, the MC curve also intersects the AC curve which means that MC = AC. We can, therefore, conclude that in the long-period, when a firm is in equilibrium, the following situation prevails:

MC = MR =AC = AR = Price

which means that the firm is earning the normal profit which is included in the cost of production.

6.3 Points to Remember

a) Perfect Competition: Under perfect competition, only one price prevails for a commodity. No seller or buyer is in a position to influence that price by his individual action. The price remains the same.

b) MR AR Price: As the price remains the same, additional units sold give revenue at the same rate. Therefore, average and marginal revenue are equal.

c) The equilibrium of the firm under perfect competition can take two forms:

   i. Short-Period Equilibrium: In the short-period a firm may he in equilibrium in the following four situations
      – When it is earning abnormal profit
      – When it is earning normal profit
      – When it is suffering normal loss (meeting only its average fixed costs)
      – When it is suffering abnormal loss (covering only a part of its average fixed costs).

   ii. Equilibrium in the Long-Run: The long-run means a period when there is no fixed cost. All costs become variable costs. As the time is long, if there is abnormal profit, new firms can enter the field. Therefore, abnormal profit disappears. On the other hand, if there is continuous loss, some of the firms will leave the industry. Consequently, a firm will be in equilibrium only when it is enjoying normal profit. In the long run when the firm is in equilibrium, the following situation prevails:

$$MC = MR = AC = AR = Price$$

SELF-ASSESSMENT QUESTIONS

Q. 18 To remind yourself of what you have studied earlier, can you briefly explain the main differences between perfect and imperfect competition?
[Check first with section 6.1. If you are still not clear about this go back to the earlier section which dealt at length with the characteristics of perfect competition. Can you also remember what the main forms of imperfect competition with called?]

Q. 19 a) What are the four main situations in which a firm operating in perfect competition and over a short-period can be in equilibrium?

b) For each of these four short-period situations, can you explain briefly (and with the help of a diagram) the firm's equilibrium position?
[Check your answer against Section 3.2 (a)].

Q. 20 What is meant by 'normal profit'? Can you express in a formula the relations between costs, revenue and price for a firm which is in equilibrium and making normal profit?
[Check your answer with Section 6.2 (a) (i)].

Q. 21 “In the long run, under perfect competition, only those firms that enjoy normal profit will survive and continue.” Can you explain why this is the case?
[Check your answer with the explanation given in Section 6.2(b)].

Q. 22 Now, see if you can answer the following questions and tick (√) the correct answer.

	Correct	Incorrect
a) Does average revenue equal marginal revenue for a firm under perfect competition?	Yes	No
b) Can a firm earn abnormal profits in the short-run under perfect competition?	Yes	No
c) When a firm is earning normal profit in the short period, under perfect competition, then AR = MR = AC = MC = Price. Is that correct?	Yes	No
d) Is it true to say that in the short-run, under perfect competition, a firm can never suffer normal loss?	Yes	No
e) When a firm suffers normal loss in the short-run, under perfect competition, does this mean that it covers only its variable costs?	Yes	No
f) When the marginal revenue and average revenue curve of a firm runs below the average variable cost curve in the short period, under perfect competition, does this mean that the firm is suffering a normal loss?	Yes	No
g) Is it true that a firm working under perfect competition will fulfill the condition AR = AC = MR = MC = Price in the long period?	Yes	No

[The correct answers to these questions are given at the end of this Unit. If you got one or two questions wrong, check back through the relevant sections. If you got more than two questions wrong, then work through the section again.]

7. EQUILIBRIUM OF THE FIRM UNDER MONOPOLY

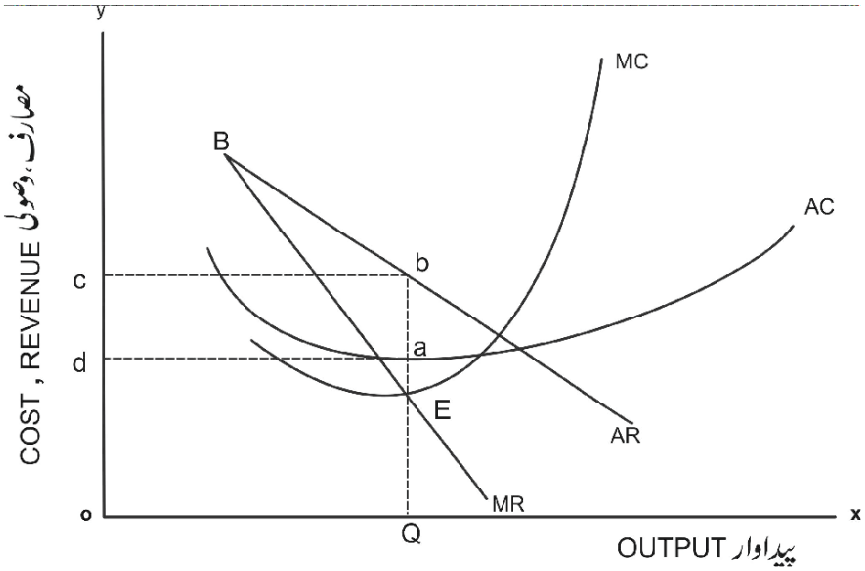
7.1 The Meaning of Monopoly

In monopoly conditions, a single producer controls the whole supply to the market and there is no close substitute available for his product. Therefore, under monopoly conditions, the firm represents the total industry; and the demand curve for the products o a monopolist shows the normal feature of demand curve i.e. it slopes downwards from left to right, indicating that at lower prices, larger quantities will he sold. This point has already been explained in Part I of Unit. 4.

A monopolist, however, is not free of market forces. He cannot increase the price of his product without losing sales nor can he gain sales without charging a lower price. The monopolist will choose to produce that output which yields him maximum profit; and that will be at a level of output where marginal revenue equals marginal cost (MR = MC).

This is illustrated in the following diagram

Diagram 4.12: Monopolistic Equilibrium with Abnormal Profit



In this diagram, AR is the demand curve for the products of the monopolist, it is also the average revenue curve. As AR slopes downwards MR is below it.

MC is the marginal cost curve and it intersects the MR curve at point E.Therefore, OQ is the equilibrium output of the monopolist. At this level of output TC = aQ x OQ, which is equal to the area OQad: whereas TR = OQ × Qb which is equal to the area OQ bc. The profit of the monopolist will be equal to the difference between the areas PQad and OQbc which is equal to the area abed.

7.2 Comparison between Competitive Equilibrium and Monopolistic Equilibrium

After studying the equilibrium of the firm under perfect competition and monopoly, it will be useful to compare the two situations, so that we may have a clearer understanding of the nature of equilibrium. Some of the important points of comparison arc given below:

a) Under both perfect competition and monopoly the firm is in equilibrium when it produces an output for which its marginal cost is equal to its marginal revenue (MC = MR).

b) Under perfect competition, the demand curve or AR is perfectly elastic and is parallel to the X axis. AR is also equal to MR (AR MR). But in the case of monopoly, the demand curve or AR slopes downwards from left to right and MR is below it.

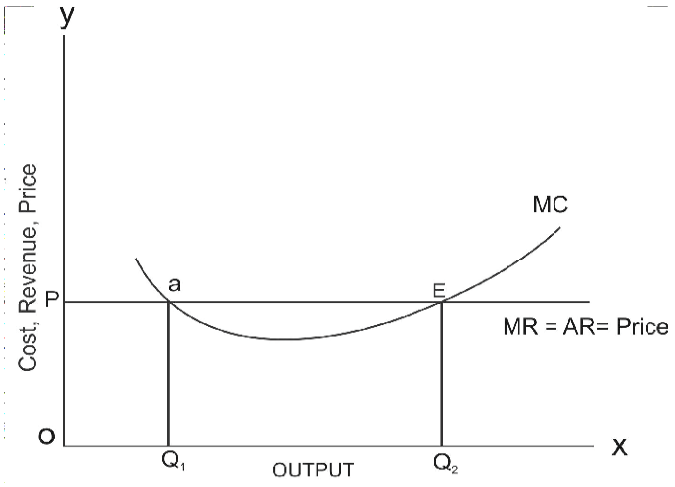
c) When the firm is in equilibrium under perfect competition the following position exists:
MC = MR = AR = AC = Price
Under monopoly, at the equilibrium point. MC =MR but AR (Price) is greater than MR.

d) Under perfect competition, in the long-run, equilibrium takes place at a point where MC =MR = AC = AR =Price and where the firm just earns normal profit. But in the case of monopoly in the long-run, AR need not equal AC. AR must at least cover the AC or it may be higher. This means that in the long run abnormal profit can exist under monopoly: whereas abnormal profit disappears under perfect competition.

e) Under perfect competition, as well as under monopoly, the firm may suffer losses in the short-period. Sometimes the monopolist purposely lowers the price to make the commodity popular among the Customers. But this is a temporary phase. In the long-run, in both cases, the price must be such as to cover the average total cost.

f) Under perfect competition, when a firm is in equilibrium, its MC curve cuts the MR curve from below since this is the only situation which can ensure maximum profit for the firm. But in the case of monopoly the MC curve may be falling, rising or parallel to the X axis. This is because, under perfect competition, the price line or MR curve is a straight line and parallel to the X axis; whereas under monopoly, it falls from left to right. This is illustrated in the following diagram:

Diagram 4.13: Equilibrium under Perfect Competition

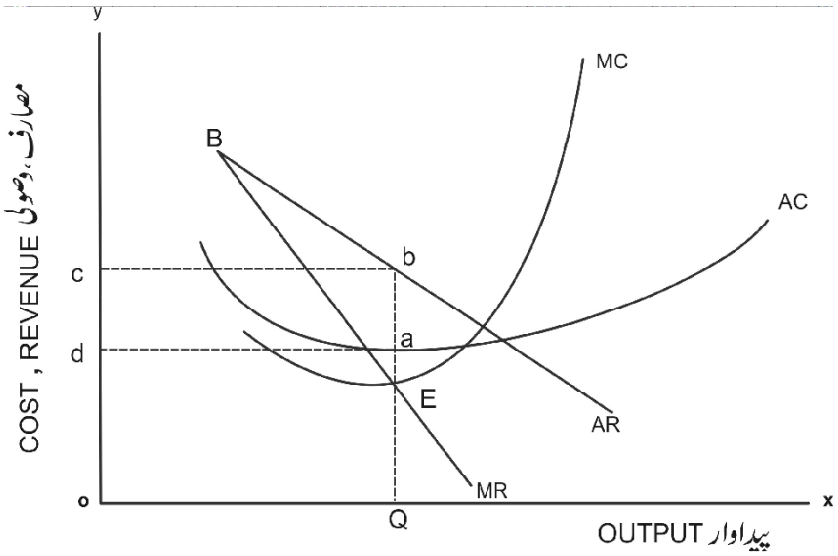


This diagram has already been explained in Section 5.3 (b).

Equilibrium under Monopoly:

i. when MC is rising:

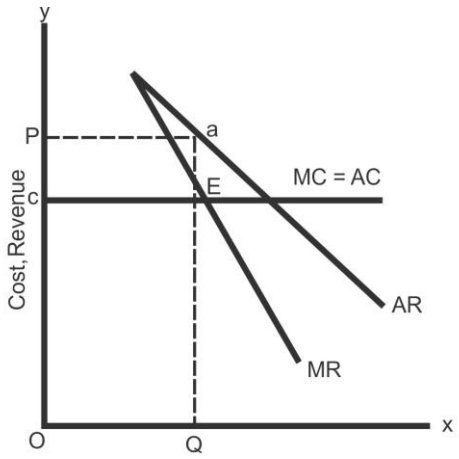
Diagram 4.14: Equilibrium Under Monopoly When MC is Rising



A firm is in equilibrium when it produces OQ output. Because at this point MC casts MR from below, abcd is the abnormal profit of the firm.

ii. When MC is parallel in the X axis"

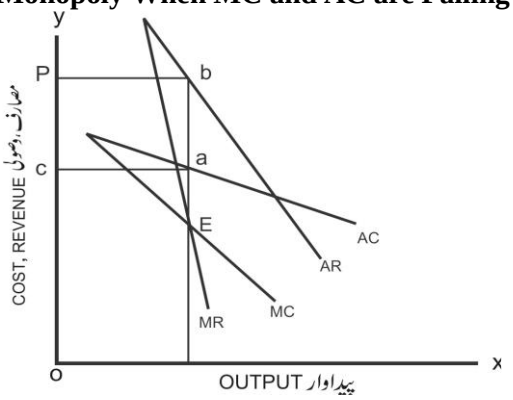
DIAGRAM 4.15: Equilibrium Under Monopoly When MC is Parallel to the X- Axis



In this case also MC cuts the MR from below. OQ is equilibrium output and the firm earns EABCO abnormal profit:

iii. When MC and AC curves are falling:

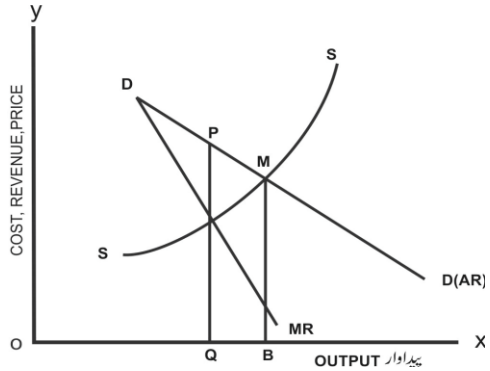
Diagram 4.16: Equilibrium under Monopoly When MC and AC are Falling



In this case OQ is the equilibrium output. Because at that output MC cuts MR at point E from below abcd is the abnormal profit of the firm.

g) Another difference is that under monopoly, cost and revenue curves remaining the same, usually the output is smaller, and the price is higher than under perfect competition. This is because under perfect competition price (AR is higher than marginal cost. This is illustrated in the following diagram:

DIAGRAM 4.17: Equilibrium under Perfect Competition and Monopoly



In this diagram, SS is the supply curve of the industry (the sum total of the output or all the firm) and DD is the demand curve which indicates the average revenue (AR). Under perfect competition the price is determined at a point where supply and demand are equal. Therefore, MB will be the equilibrium price, since the supply curve (SS) interacts the demand curve (DD) at point M. At this price (MB), OB will be the equilibrium output.

Now, suppose that all these firms combine and form a monopoly. In this case, the supply curve (SS) will become their marginal cost curve. This marginal cost curve intersects MR at point E. Therefore, OQ will be the equilibrium output which is smaller than OB (the output under perfect competition). At this output, the price of the monopoly product will be PQ which is higher than MB (the price under perfect competition).

7.3 Equilibrium under Monopolistic Competition

As you have already learned, monopolistic competition is a situation of the market in which many producers produce goods which are close substitutes for each other but which are not homogeneous. At the least, we can say that in monopolistic competition there are various monopolists competing with one another. The products of these competing monopolists are neither identical (perfect substitutes) nor completely different. Through product differentiation, each one of them has a secured market. Product differentiating (as already explained in Part 1) means the process of making a product distinct from its substitutes, either in real terms or as a result of advertisement, packing, labeling and the use of trade marks.

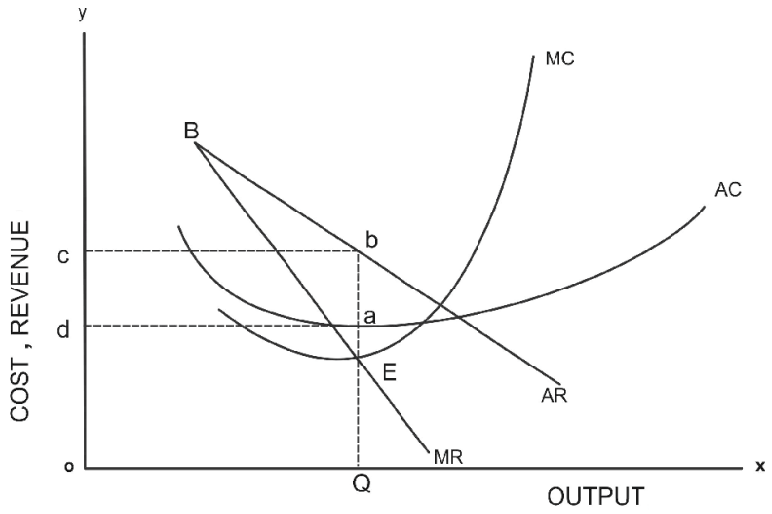
7.4 The Equilibrium of the Firm

The equilibrium of the firm working under monopolistic competition will be established at a point where marginal cost is equal to marginal revenue (MC = MR) The problem of equilibrium under monopolistic competition can be studied from two points of view: first, short-run equilibrium: and secondly, long-run equilibrium.

a) Short-Run Equilibrium: In the short-period, the firm operating under monopolistic competition can be in equilibrium at an output which gives it either Abnormal Profit or Normal Profit or Abnormal Loss.

Equilibrium under these conditions has been separately explained below with the help of diagrams:

Diagram 4.18: Equilibrium under Monopolistic Competition with Abnormal Profit



In these diagrams, AR is the average revenue curve and MR is the marginal revenue curve; AC is the average cost curve and MC is the marginal cost curve. The point of equilibrium is E.

In Figure A, MC intersects MR at E and the corresponding output is OQ, for which AC is less than AR. Thus the area abcd represents the total profit of the firm over and above the profit included in the cost of production. This profit is called abnormal profit.

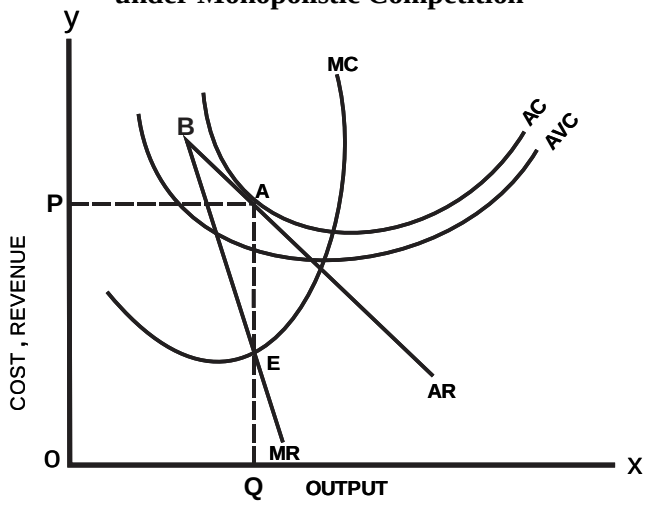
In Figure B, when the firm produces OQ output for which MC = MR, AC is also equal to AR. Thus TC = TR (the area OQaP). This means that the firm is enjoying only the normal profit which is part of its cost of production.

In Figure C you can see that AC is greater than AR for the output OQ for which MC = MR; and thus the total cost (TC) is greater than total revenue (TR) to the extent of the area abed. This is the abnormal loss ' which the firm has to bear.

b) Long-Run equilibrium under Monopolistic Competition: In the long run, as there is free entry, firms can only earn the normal profit as under prefect competition. If there is abnormal profit, new firms will enter the field; and consequently abnormal profit would disappear. On the other hand, if there are losses for a long time, some of the firms will go out of the field of production. Supply will decrease and consequently price and therefore profit will increase.

So, in the long run, a firm can only earn normal profit under monopolistic competition. This is illustrated in the following diagram:

Diagram 4.19: Normal Profit under Monopolistic Competition



In this diagram the equilibrium output is OQ as MC and MR are equal at this level of output; AC=Qa and AR is also equal to Qa. Which means that TC = TR, that is area OQ ap. This shows that the firm is enjoying just normal profit.

Diagram 4.20: Normal Loss under Monopolistic Competition

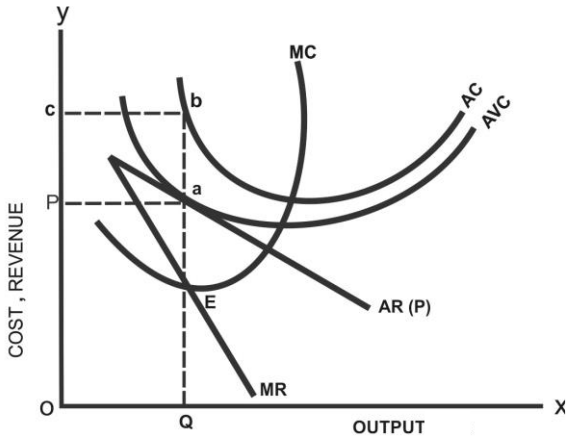
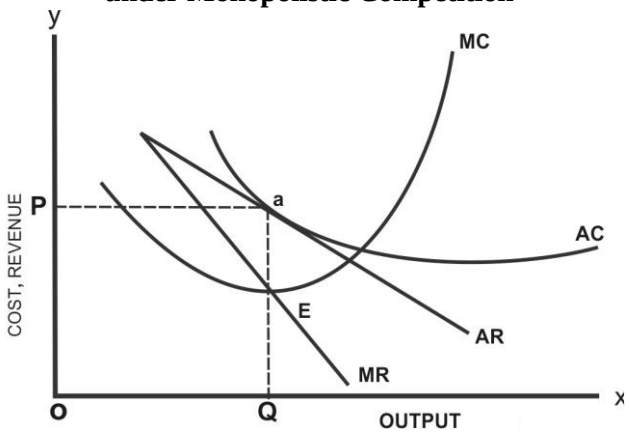


Diagram 4.21: Long- Run Equilibrium under Monopolistic Competition

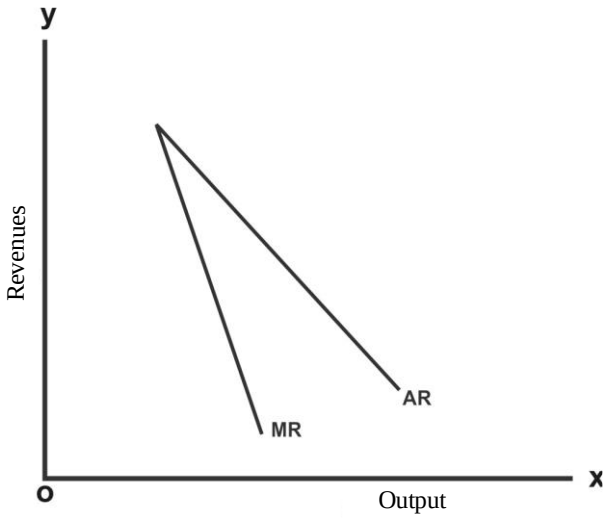


7.5 Points to Remember

a) Monopoly Equilibrium:

i. A monopolist will be in equilibrium when he produces an output for which his marginal cost is equal to his marginal revenue (MC = MR).

ii. As the monopolist can sell additional units of his output only at it lower price, his AR and MR curves are therefore falling from 1 ft to right.



iii. Usually the monopolist earns abnormal profit since his average revenue is greater than his average cost at the equilibrium output.

b) Comparison between Competitive Equilibrium and Monopoly Equilibrium:

i. In both cases a firm is in equilibrium at it level of output for which MC- MR.

ii. Under perfect competition AR is parallel to the Y axis; where under monopoly it slopes downwards from left to right.

iii. Under perfect competition when the firm is in equilibrium, the position is that MC MR= AR Price. Under monopoly, equilibrium MC= MR but AR is greater than MR.

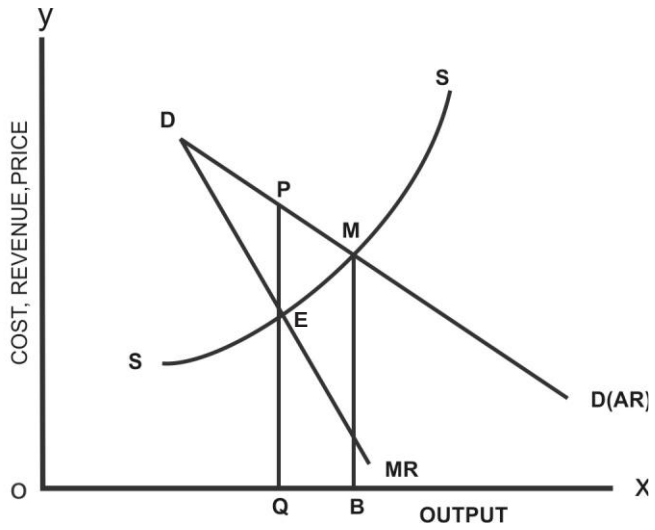
iv. Under perfect competition, in the long-run, equilibrium takes place at a point where MC- MR= AC= Price; but under monopoly AR is always greater than AC which means that under perfect competition abnormal profit disappears in the long-run, whereas the monopolist enjoys abnormal profit even in the long-run.

v. Under both perfect competition and monopoly, the firm may suffer losses in the short-run, though the possibility is fairly remote in the case of a monopolist. Ultimately, the price must be such that it covers the average total cost.

vi. Under perfect competition, when a firm is in equilibrium its MC cuts the MR. from below but in the case of monopoly MC maybe falling, rising or parallel to the X axis. In revenue case firm under monopoly earns abnormal profit.

vii. Under monopoly the price is higher and the output is smaller than under perfect competition.

Diagram 4.22: Equilibrium Under Perfect Competition and Monopoly



The output of the monopolist is OQ and the price is QP; whereas the output under perfect competition is OB and the price is BM.

c) Equilibrium under Monopolistic Competition.

i. The equilibrium of the firm under monopolistic competition resembles the equilibrium under perfect competition and monopoly. It takes place where MC= MR.

ii. Equilibrium under monopolistic competition can be studied from two points of view:

– In the short run, the firm in equilibrium can earn either Abnormal Profit or Normal Profit or it can face loss.

– In the long run, as new firms can enter and old firms can leave the industry, a firm simply earns normal profit. Abnormal profit or loss disappears in the long run, as is the case under perfect competition.

SELF-ASSESSMENT QUESTIONS

Q. 23 To revise what you have learned earlier, and to make sure you understand two of the basic concepts underlining this section, can you explain briefly and give the essential characteristics of (a) Monopoly, and (b) Monopolistic Competition?
[Check your answer with Sections 7.1 and 7.3. If you are still not clear about the essential characteristics of monopoly and monopolistic competition, go back to Part I and refresh your memory.]

Q. 24 What are the main similarities and differences between competitive equilibrium and monopolistic equilibrium (i.e. between equilibrium under perfect competition and under monopoly)?
[Check your answer with the discussion in Section 7.21]

Q. 25 Can you explain (with the help of diagrams) the circumstances under which a firm operating under monopolistic competition will be in equilibrium?
a) In the short period;
b) In the long period?
[Check your answer against the explanation and diagrams in Section 7.4].

Q. 26 In the long run, a monopolist can earn abnormal profit; where as firms operating under perfect or monopolistic competition can only earn normal profits'. Is this true? And if so, can you explain why?
[All the information you need to answer this question is contained in Section 7. A brief answer relevant to whether or not the statement is true can be found in Section 7.5 (a). (iii) For the explanation of why this is the case, check back through the relevant parts of the section dealing with the long-run equilibrium situation under perfect competition, monopoly and monopolistic competition.]

Q. 27 Now attempt the following factual questions -

	Tick (–) the appropriate answer	
a) Do you think that WAPDA enjoys a monopoly position in Pakistan as regards the supply of electricity?	Yes	No
b) Can a monopolist increase his price without losing sales?	Yes	No
c) Is a monopolist in a position to earn more than normal profit?	Yes	No
d) Dow downwards from left to right in the case of monopoly?	Yes	No
e) Does the MR curve remain below the AR curve in the case of	Yes	No
f) The equation MR = MC represents equilibrium under monopoly but not under perfect competition? Is that Correct?	Yes	No
g) Does the equation MR = MC = AR = AC Price apply to monopoly?	Yes	No

h) Is it true that abnormal profit can continue in the long run under monopolistic competition?	Yes	No
i) Is it true that the quantity produced tends to be less under monopoly than under perfect competition?	Yes	No
j) Is it true that the quantity produced tends to be less under monopoly than under perfect competition?	Yes	No
k) When a firm earns abnormal profit under monopolistic competition, is its AR curve higher than its AC curve?	Yes	No
l) When a firm suffers abnormal losses under monopolistic competition, does its AR curve remain below its AC curve?	Yes	No
m) When a firm earns normal profit under monopolistic competition is its AC curve at a tangent to its AR curve?	Yes	No

[The correct answers to these questions are given at the end of the unit. Check on the, answers to any question you got wrong in the appropriate part of Section 4. If you got more than three questions wrong, work your way through the section once again.]

GLOSSARY OF MAIN TERMS

AC	..	.. Average cost id derived by dividing total cost by the number of units produced.
AR	..	.. Average revenue is total revenue divided by the units of output sold.
Equilibrium	..	.. The situation in which demand and supply become equal.
Firm	..	.. A unit of control or business organization.
Industry	..	.. A series of firms collected together producing a specific commodity.
Long-Period Equilibrium		.. An equilibrium achieved through greatly increased demand and greatly increased supply with no change in price.
MC	..	.. Marginal cost is the cost of the last unit produced.
MR	..	Marginal revenue is the revenue earned by selling the last unit of output.
Plant	..	.. A unit of production or a machine.
Short-Period Equilibrium	..	An equilibrium which is arrived at by greatly increased demand and slightly increased supply such that the price rises considerably.
TC	..	.. Total cost is the aggregate of all marginal costs.
TR	..	Total revenue is the summation of the marginal revenue of all the units.

ANSWERS TO SELECTED SAQs

Q. 22 a) Yes

b) Yes

c) Yes

d) No

e) Yes

f) No (the firm will be suffering an abnormal loss).

g) Yes

Q. 27 a) Yes

b) No

c) Yes

d) Yes

e) Yes

f) No

g) No

h) No

i) Yes

j) Yes

k) Yes

l) Yes

m) Yes

SUGGESTIONS FOR FURTHER READING

Akhtar, S. M. An Introduction to Modern Economies, (Vol. I).

Dewett, K.K. Modern Economic Theory.

Unit–5

FACTORS OF PRODUCTION

Written by: M. Akram Tahir

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INTRODUCTION

This unit is concerned first with the factors of production land, labour, capital and organisation with their definition and characteristics, their efficiency and mobility, more generally with their relative significance in different areas of production. The unit then goes on to the laws of production the Law of Increasing Returns, the Law of Constant Returns and the Law of Diminishing Returns. It explains how the laws operate, the circumstances under which they come into force, and why they work the way they do. Finally, the unit deals with economies of scale distinguishing between internal and external economies, and exploring the advantages available to the producer of commodities as he expands his output and the scale of his operations.

In general, the unit will provide you with more information about the resources available to the firm, the way it uses them in the production process, the opportunities that are available to the firm in terms of production, and the limitations to which it is subject.

OBJECTIVES

By the end of this unit, you should be able to

(a) Define the four factors of production, outline their main characteristics, and comment upon their efficiency and mobility.

(b) Explain the Laws of Return, the three main forms which they take, and the way they operate in the production process.

(c) Identify the main economies of scale, distinguish between internal and external economies, and explain and discuss the benefits available to firms as they expand their scale of operation.

(d) Explain, in general terms, how a firm seeks to achieve the least cost combination of factors of production in order to maximize its profit.

1. LAND

1.1 The Definition of Land

Land is the basic factor of production. In ordinary language land means soil. In Economics, however, land has a more particular meaning. Here it means all natural resources bestowed by nature either below the surface of the earth of above it. Land includes, soil, minerals, forests, rivers, seas, oceans, fisheries, mountains, climate, sunlight, water-resources and geographical locations.

1.2 The Characteristics of Land

Land possesses certain characteristics which distinguish it from other factors of production. They are as follows:

a) Free Gift of Nature: One of the most outstanding qualities of land is that it is a free gift of nature. Man has put no labour into its formation. Recent writers, however, are inclined to think that much land is manmade. There is no doubt that capital can be invested to improve land; but nevertheless land derives its value mainly from its natural characteristics.

b) Limited Supply: The second important feature of land is that its supply is limited. In other words, it has no supply value. Its supply is also inelastic man cannot increase its quantity. Recovery of land from sea-beds, rivers and marshes does not mean an increase in its supply.

c) Difference in Situation and Fertility: The third characteristic of land is that it has situational differences and fertility variations. Some land is situated near cities and commercial sites, while other land is more remote. Similarly, some tracts of land are fertile, while others are barren. Though fertility margins are being narrowed, situational differences are permanent.

d) Land is Immobile: The fourth significant characteristic is that land lacks mobility. It is neither vertically nor horizontally mobile as other factors are. It is not possible to shift an acre of land from one place to another. It is immobile geographically-speaking.

e) Permanent: Land is permanent. It is not a perishable commodity like labour or butter.

f) Productive potential: The productive potential of land is not storable. It is not possible to produce four times as much crop after a gap of four years' non-production.

1.3 Efficiency of Land

We have already mentioned that land has differences of situation and fertility. As such, its efficiency (i.e. its productivity potential) differs. Some land yields more crops than other land. There are various factors which determine the efficiency of land

a) The composition of the soil.
b) The frequency of rainfall.
c) Its situation.
d) Techniques of production.
e) The efficiency of other factors of production.

A piece of land with loamy-soil, frequent rains, and a good situation will be more efficient than another piece of land without these benefits. Nowadays the efficiency of land is determined by the techniques of production and the efficiency of other inputs (i.e. labour, capital, and organisation/entrepreneurship).

1.4 The Mobility of Land

In Section 1.2, it was mentioned that land is immobile in a geographical sense. However, it can be mobile in use between industries. In the very short-term, the supply of land to ally one industry is likely to be very inelastic. For example, if the orange growers of Sargodha want to increase their crop acreage within a year, they are likely to find that it is very difficult. But over a number of years, it is surprising how 'mobile' land can become. Acres formerly used for other crops can be switched to oranges. If the price of oranges is high enough, it may oven pay to reclaim land from urban or industrial use. The supply of land as a whole is inclastic; but over a long-period it can be transferred from one use to another, depending upon the price level of the goods produced from the land. In brief, we can say that land is highly mobile in the

Long-run between alternative uses but completely immobile as far as location is concerned.

1.5 Points to Remember

i. Land is a bL.sic factor of production
ii. It is free gift of nature
iii. It is limited in supply
iv. It has differences of location and fertility
v. It is immobile in a geographical sense
vi. its productive potential is not storable
vii. Its efficiency is determined by various factors.

SELF-ASSESSMENT QUESTIONS

Q. 1 Can you define 'land' as the term is used in Economics?
[Check your answer with the definition given in the Section 1.1]

Q. 2 What are the main characteristics of land which distinguish it from other factors of production?
[Check your answer against the list given in Section 1.2]

Q. 3 Can you list the factors as a result of which some land has greater efficiency (i.e. productive potential) than other land?
[Check your answer with the list suggested in Section 1.3. Do yon think that this idea of 'efficiency' of land can apply only to rural land or is it also relevant to land in urban areas? For example, is some land better for building houses or factories than other land? Do you think that the land in your area is relatively efficient or inefficient?]

Q. 4 In what sense can land be said to be immobile and in v hat sense is it mobile?
[Check your answer with the discussion in Section 1.4. Do you think that this idea of mobility in terms of use applies only to agricultural land in rural areas, or can it be applied equally well to urban areas? Is the land in your area relatively mobile or relatively immobile?]

2. LABOUR

2.1 The Definition and Importance of Labour

Labour is the second most important factor of production. Land without labour is either jungli or desert. To produce goods and services, labour is needed, along with natural resources. Human labour transforms free goods into economic goods. We see people undertaking physical exertion building roads, tilling farms, extracting minerals, making furniture, constructing houses, typing commercial letters, teaching students, administering justice, driving motors and looking after patients in hospitals. All of these are various forms of labour.

To a layman, labour usually means physical labour e.g. the work of a coolie. But in Economics labour has a more general meaning. It includes both physical and mental exertion. Any work, mental or physical, undertaken with a view to earning income is called labour in Economics. Or as Professor Marshall put it;

> Any exertion of mind and body undergone partly or wholly with a view to some good other than the pleasure derived directly from work is called labour.

Labour differs from other factors in the sense that while other factors are agents of production, labour is both a means of production and a beneficiary from it. The aim of labour, whether mental or manual, is wages. Ay exertion, mental or manual, undertaken irrespective of some rewards does not fall in the category of labour. For example, a rich person watering his garden for pleasure or as a hobby is not undertaking labour. Similarly, a mother teaching her son to read is not undertaking labour in the economic sense, since she does not receive any payment for it. On the other hand, a gardener and a school teacher fall into the category of labour. Since they get remuneration for gardening and teaching respectively.

2.2 Characteristics of Labour

Labour, as defined in Economics, has certain distinguishing characteristics:

a) Labour and the Labourer are Integral: This means that we cannot separate labour from a labourer. It is not possible for the labourer to sit home and for his labour to be working on a farm. The labourer has to be personally present at his work.

b) Labour is Perishable: Labour is not a storable commodity. A day's labour lost is lost forever. It is because of this that a laborers' bargaining power is low. Labour is like time: once gone, it is gone forever.

c) The Supply of Labour: The supply of labour is elastic for a firm, less elastic for an industry, and almost totally inelastic for the country as a whole—at least in the short-period.

d) Labour Differs in Efficiency: All laborers are not equally efficient. Some are very intelligent and hardworking; others are less intelligent and lethargic. Some are trained and experienced; while others are new to their work. There are many factors which determine the efficiency of labour which we shall deal with as we come to them in the relevant section.

e) Labour Lacks Mobility: Unlike land, labour is mobile. But it is not as mobile as capital or organization. Adam Smith once wrote that of all kind of baggage, man was the most difficult to move. Men love their home and hearth and as such they lack mobility. Nowadays, rapidly expanding means of transport have tended to encourage the mobility of labour.

2.3 The Efficiency of Labour: All labour is not equally efficient. Some labourers are honest, well-trained, industrious and hardworking, while others are much less so. There are various factors which determine the efficiency of labour. However, before analyzing these factors, we should be clear about the meaning of efficiency. Efficiency means using labour in such a way that it will minimize the coal of production. A labourer who brings down the cost of production is more efficient than the one who keeps it constant or increases it. The production of wealth in a country depends on both the labour force and its efficiency. For example, ours is a country which has a surplus of labour; but its efficiency in an economic sense is low. The speed of work, the quality of work and the use of raw materials, are the factors on wjcb we decide whether a labourer is efficient or inefficient.

2.4 Factors Determining the Efficiency of Labour:

a) Education and training: In a country where the level of literacy is high and where training facilities are available, labour will be more efficient. For example, labour in the UK and USA is more efficient because of these factors. On the other hand, labour in Pakistan and Iran ti less efficient because these facilities are not widely available.
b) Socio-Political Conditions: Another factor that affects the efficiency of labour is the socio-political context of an economy. These conditions vary from country to country. This is one of the reasons why labour is more efficient in some countries than in others.
c) Nature of Work and Working Hours: The nature of the work and working hours also affect efficiency. For example, hard manual labour exhausts a labourer and limits the amount of work which he can do. To improve efficiency there must be reasonable time for relaxation and rest.
d) Working Conditions: If working conditions are congenial and well-designed, labour will be more efficient, in factories lacking fresh air and where sanitary conditions and living arrangements are intolerable, labour will grow less efficient with the passage of time.

In addition to the above factors, the personal qualities of labourer, climatic conditions, further prospects of work, social characteristics and trade union activities also influence the efficiency of labour.

2.5 The Mobility of Labour: In Section 2.2, it was mentioned that labour lacks mobility. Here we shall discuss this aspect of labour in greater detail. Let us first see what is meant by mobility. Mobility means passing over from one job to another or from one place to another. The mobility of labour is of three types – geographical, horizontal and vertical:

– The mobility of labour between places is called geographical mobility;
– The mobility of labour between different jobs in the same grade is called mobility horizontal.
– Mobility from a lower to a higher grade is called vertical mobility.

2.6 Determinants of Mobility: Mobility whether it is geographical or occupational (horizontal or vertical), depends on certain factors:

a) Wage Rate: Wage rates determine all types of mobility except horizontal mobility. In Pakistan, people leave their villages and seek work in industries in the town because wage rates are higher in the industrial sector. Similarly, people from Pakistan go to the Middle East countries because wages rates there are much higher.
b) Terms and Conditions of Work: Labour moves from employment where the terms and conditions of work are hard to employment where they are less hard. For example, European countries offer attractive terms and conditions so that labour constantly flows in that direction. In our country, terms and conditions tend to be harder with the result that the labour force is flowing out constantly.
c) Education and transport Facilities: Educated labour is more mobile. Moreover, if transport facilities are easily available, labour will also be more mobile. In Pakistan, increasing transport facilities have encouraged mobility on a large scale.
d) Peace and Stability: In addition to economic determinates, there are also non-economic factors which assist mobility. These include peace and stability within and outside the country. Unstable political conditions slow down the pace of labour mobility and political stability Speeds it up.

In addition to the above factors, health conditions, skill, government policies, and above all the will to progress and advance are important factors in determining the mobility of labour.

2.7 Points to Remember

i. Labour is the second most important factor of production.
ii. Any work, mental or physical, undertaken with a view to earning income is called labour.
iii. Any work, mental or manual, undertaken without getting any reward is not labour.
iv. Labour in an integral part of the labourer.
v. Labour is perishable.
vi. The supply of labour to firms is elastic but it is inelastic for an industry in the short-run.
vii. Labour differs in efficiency.
viii. Labour lacks mobility.
ix. The efficiency of labour means using labor in such a way as to lower the cost of production.
x. The efficiency of labour can be enhanced by factors promoting it.
xi. Labour is mobile ge 'graphically and occupationally (horizontally and vertically).

SELF-ASSESSMENT QUESTIONS

Q. 5 What do you understand by the term ‘labour’ as it is used in Economics?
[Check your answer with the definition given in Section 2.1]

Q. 6 Can you list and briefly explain the main characteristics of labour as a factor of production?
[Check your answer with the list given in Section 2.2]

Q. 7 a) What is meant by 'efficiency' of labour?
b) What are the main factors which determine whether or not labour is efficient an economic sense?
[Check your answer against the discussion in Sections 2.3 and 2.4. You might also find it interesting and useful to talk to the management and/or employees of a firm in your locality (if there is one fairly near); and using the factors set out in Section 2.4 as a checklist, see if you can form a judgment about whether or not the firm's use of labour is 'efficient' in the economic sense.]

Q. 8 a) What are the three types or mobility of labour suggested in this section?
b) What are the main factors which determine how mobile a labour force is?
[Check your answer against Section 2.5 and 2.6. Again, you may find it interesting to think a general about how mobile the people who work in your area are likely to be. Are they geographically mobile? (If so, where do they tend to go to?) Are they 'horizontally' and 'vertically' mobile as defined in the section? What are the main reasons for mobility (or lack of it) in your area?)]

3. CAPITAL

3.1 Definition of Capital

Very often 'capital' is defined as wealth devoted to the production of more wealth. It should be noted that all capital is wealth; but all wealth is not capital. We identify capital with producer goods. Producer goods are instrumental goods which help to produce wealth. The term capital is generally used for capital goods – including plant and machinery, tools and implements, spare parts, stocks of raw material, fuel etc.

Strictly speaking capital is defined as produced means of production. In the light of this definition, land does not fail into the category of capital. The reason is that it is not a produced means of production. Land is a gift of nature. For a thing to be called capital the following characteristics are essential:

a) It should be man-produced.
b) It should help in further production.

A produced means which is not actually helpful in further production may be an invention but it is not capital.

3.2 The Importance of Capital

Traditionally speaking, capital stands third as a factor production. But in fact, in modern Economics, its importance is much greater. The concept of economic development has enhanced the need for capital and its importance. Now capital pays a crucial role in transforming the techniques of production.

Capital formation is another name for economic development. Awe-inspiring buildings, paved roads, gigantic machines, railway-lines, ships, canals, dams and all such fixed capital goods are the basis of an economic order. The infrastructures necessary for growth and

development are possible through capital. Production, either small-scale or on a larger scale, cannot be thought of without capital goods. Thus capital is a dynamic factor which transforms a rural economy into an urban economy, an agriculture economy into an industrial economy and a traditional economy into a sophisticated modern economy. The backwardness of an economy is attributed to its lack of capital goods. All sectors – agriculture, industry, trade and manpower need capital for their growth. The importance of capital in poor and underdeveloped countries is far more than in the rich developed countries. Capital is the most dynamic determinant of National Income.

3.3 Characteristics of Capital

While defining capital in Section 3.1, we suggested that is has two characteristics: first that it is man-made, and secondly that it helps in further production. In this section I want to elaborate this. Let us take the example of land. Land helps in production. All wealth is ultimately derived from land. But we do not call it capital; the reason being that it is not a produced means of production. Man has put in no labour, manual or mental, in making land. It is termed a free gift of nature.

Similarly, an 'innovation' is not capital until it is practically applied to further production. For example, if a scientist invents an engine which works on solar power (i.e. power from the sun); unless and until this engine is practically used in a productive process, it will not be regarded as capital. In addition to these characteristics, capital goods also have the following features:

a) Capital goods are durable.
b) To keep capital goods intact they need replacement.
c) Capital goods have many forms.

3.4 Kinds of Capital

a) Industrial Capital: We include in industrial capital producer goods consisting of raw-materials unfinished consumers, goods and other goods which are used as producer goods such as machines.
b) Consumer's Capital: This consists of goods consumed by workers while engaged in production.
c) Fixed and circulating capital: Factory buildings, machines, roads, aerodromes, dams, canals, bridges and railways are examples of fixed capital. Such capital is used for a specific purpose. Raw materials and stocks of semi finished goods are examples of circulating capital.
d) Specific and Non-Specific Capital: Specific or specialized capital is meant for a particular use. Non-specific capital can be put to alternative uses. For example, a bridge is specific capital; whereas iron-ore is non-specific capital.
e) Business Capital: All tools and implements used in the making of for instance, furniture are business capital. However, money or goods which have been not apart for personal use are not part of business capital.
f) National and Private Capital: Capital like canals, bridges, roads and airports which are national properties are known as national capital. Capital like motors, building and machines where are privately owned are termed private capital.

3.5 The Efficiency of Capital

The efficiency of capital means the amount of output which is result of capital inputs only. For example, if we deduct the output of land, labour and organization from the total produce of a firm in a particular time period, what remains will be the part produced by capital. This is known as the efficiency of capital and is determined by various factors i.e. the combination of such factors as the skill of the workers, techniques and types if raw material, the availability of workshops, research facilities and the mobility of capital. Increases in the demand for capital increase its efficiency, whereas an increase in the supply of capital decreases its efficiency.

3.6 The Marginal Efficiency of Capital

The marginal efficiency of capital has become a topic of great importance. This term was introduced by Lord Keynes. It is defined as the expected rate of return in a business. Keynes defines it as follows:

> The marginal efficiency of capital is equal to that rate of discount which would make the present value of the series of annuities given by the returns expected from the capital asset during its life just equal to its supply price.

The marginal efficiency of capital can also be calculated by dividing the expected yield of a capital good by its supply cost. Expected or prospective yield is the difference between the rate of expected profit and the rate of interest at which an entrepreneur gets capital. So long as the prospective yield is greater than the rate of interest, investment expands. Replacement cost means the expenditure which an entrepreneur incurs to replace a worn-out unit of capital. The same factors which determine the efficiency of capital also determine its marginal efficiency. In addition to the factors already mentioned the following also influence the MEC (Marginal Efficiency of Capital):

a) The nature of the goods being produced;
b) Psychological tendencies of entrepreneurs;
c) The extent of the market for the goods produced;
d) The rate of interest;
e) The nature of the taxation system.

3.7 The Mobility of Capital

The mobility of capital depends on the nature of capital. Some types of capital goods are more mobile, while others are less mobile. The mobility of capital means the moving of capital from one place to another and from one use to another. As compared to labour and land, capital is more mobile. The mobility of capital depends on the following factors:

a) The presence of investment opportunities;
b) The presence of a capital market;
c) The presence of an exchange market;
d) The presence of banking facilities;
e) The policies of government;
f) The nature of the capital goods.

3.8 The Growth of Capital

We have already discussed the significance and role of capital goods in an economy. We concluded that capital is a dynamic factor which determines the rate of growth and economic progress. But this gives rise to the question of what is meant by the growth of capital and how is this growth possible? By the growth of capital, we mean an increase in the produced means of production. If capital does not grow, the economy will come to a standstill. More replacement and keeping capital intact is not sufficient unless there is an addition to them.

Capital growth is not possible unless some part of income is saved. The more that is saved, the greater will be the capital growth. But more saving is not sufficient unless the amount saved is also converted into capital goods. If we assume that saving is equal to investment, then the rate of saving will determine the growth rate of capital. Savings are of two types:

a) Private savings;
b) Public savings.

Private savings are determined by two factors:

a) The power to save;
b) The will to save.

Both the power to save and the will to save are essential for private savings. As far as public savings are concerned, they depend on the quantity and quality of natural resources, the efficiency of the factors of production, the banking system, trade patterns, fiscal and monetary policies, and above all on the income and expenditure of the government.

3.9 Points to Remember

i. Capital is the vital and dynamic factor of production,
ii. Capital means produced means of production.
iii. Capital and economic growth go together.
iv. Capital transforms an agricultural economy into industrial economy.
v. Capital goods are durable.
vi. Capital is of many kinds.
vii. The efficiency of capital means the addition made to output by the use of capital.
viii. The marginal efficiency of capital is calculated by dividing the expected yield of capital goods by replacement cost.
ix. Capital is more mobile than land or labour.

SELF-ASSESSMENT QUESTIONS

Q. 9 a) What is meant by the term “capital” as it is used in Economics?
b) Why is it important in the production process?
c) Can you list and explain briefly the main characteristics of capital?
[Check your answers against the discussion in Section 3.1 & 3.3]

Q. 10 Can you state briefly (no more than two or three sentences) the main differences between:

a) "Industrial", "consumer's" and "business capital":
b) "Fixed" and "circulating" capital;
c) "Specific" and "non-specific" capital
d) "National" and "private" capital?

[Check your answers against Section 3.4]

Q. 11 What is meant by the "marginal efficiency" of capital? Can you list the main factors which (determine the 'marginal efficiency of capital inputs?
[Check your answer against the explanation and list given in Section 3.6].

Q. 12 What is meant by the mobility of capital? What are the main factors on which it depends?
[You can check your answer against Section 3.7. What are the main reasons why capital tends to be more mobile than land and labour?]

Q. 13 Can you explain in your own words why the level of saving is important to the level of capital investment and the growth of capital?
[Check your answer against the discussion in Section 3.8. Do you think public and private savings are important to a developing country like Pakistan? It so, why? Can you think of any other sources of capital that are available to Pakistan and other developing countries? Is foreign aid and assistance relevant in this area?]

4. ORGANIZATION

4.1 The Definition of Organization

Organization, also known as entrepreneurship, is an important factor of production. What to produce, where to produce, and how to produce: these are problems which need considerable insight and wide experience on the part of an organization. An entrepreneur is a man who manages to produce wealth by taking the risks and responsibilities of the production process. The definition covers the following points:

a) An entrepreneur is a person;
b) He manages the production process;
c) He takes risks and is responsible for coping with the uncertainties of production

It is these characteristics which distinguish organization entrepreneurship from labour.

4.2 The Need for Organisation and its Importance

Nowadays wealth is not produced on a small scale. Production usually takes place on a large scale taking advantage of the division and specialization of labour. Gone are the days when goods were produced by hand on a small scale; when markets were small in size and demand was limited. People used to meet their all needs locally. But with the Industrial Revolution and the increase in population there has been an explosion of the demand for all types of goods and

services. Markets have expanded beyond their previous borders. To meet these demands, production on a large scale through modern techniques is necessary; and this type of production depends on imaginative and intelligent entrepreneurs.

The process of production requires factor inputs. When production starts, there are some costs which the producers incur. The aim of firm is to maximize its profit. This maximization is possible only when revenues are greater than costs. The task of an organizer or entrepreneur is to bring down the costs of production through his or her knowledge, experience and skills. Costs can be lowered by the optimal combination of factor inputs. This is the challenge for an entrepreneur. An organization demands insight, wide experience and good administrative abilities. The organizer not only has to manage Production; he is also responsible for selling it. He should know what to produce cheaply and where to sell his product profitably. The need and importance of the entrepreneur, therefore is of great significance.

4.3 The Functions of an Entrepreneur

An entrepreneur undertakes the following tasks

a) He initiates the process of production.
b) He hires the other factors of production.
c) He makes an optimal combination of the factors of production.
d) He shoulders the risks and uncertainties of production.
e) He introduces new techniques and makes experiments.
f) He forecasts events to determine the scale of production.
g) He distributes income among the other factors of production.

4.4 Forms of Organization

Organisation takes many forms. It can be very simple as in the case of a single entrepreneur; or very complex as in the case of joint stock companies. The main forms of organisation are as follows:

a) The single entrepreneur: This is the most basic and simple form of organization. It is feasible for small scale production, where a small amount of capital is involved. The entrepreneur may arrange the capital personally or borrow it. This type or organization is very effective in terms of super on and control. Responsibility falls on one man who takes a keen interest in and devout his full attention to lowering the costs and making decisions about output. In such an organization misappropriation and malpractices are reduced to a minimum.

   But this form of organisation also has some limitations. It cannot introduce developed techniques. It cannot avail itself of the economies of large scale production. In addition, it is difficult for, one man to look after every aspect of production properly. Consequently, in modern societies, single entrepreneurs often find it difficult to compete with larger companies.

b) Partnership: We have seen that the single entrepreneur has limitations. To overcome such limitations, a new form of organisation developed which is known as

'partnership'. Partnership is a business organization in which a maximum of seven persons can share the profit and loss involved in production. All partners shoulder the risk and share the profits according to their share of the capital. It is not necessary that all the partners should be involved in the day-to-day running of the business. Partners who are not personally supervising the business, but only investing in it and sharing the profit and loss, are known as 'sleeping partners'. Partnership is suitable for a medium size business in which medium scale production is required. Capital requirements can more easily be met in partnership than in individual enterprise. Partnership offers more economics of scale, mutual consultation, division of labour and specialization, and also more governmental facilities.

But partnership also has disadvantages. Partners in such a business can become careless and shift the responsibilities to others. Decisions can be delayed. If any partner dies the partnership is discontinued or dissolved. A partnership cannot meet large-scale demand. Its financial resources are usually limited and it cannot always meet the requirements of modern trade and industry. The liability in such business is also limited; and this is a great handicap from the point of view of the creditors of such an organization.

c) The Joint Stock Company: The single entrepreneur and the partnership cannot always cope with the demands of modern societies where large-scale outputs require substantial financial backing. To overcome the disadvantages and limitations of the single entrepreneur and partnership, a form of organisation evolved I s known as the joint stock company.

There are two main forms of Joint Stock Company the private limited company and the public limited company. In private limited company minimum of two and a maximum of fifty persons can participate in the business. In a public limited company, a minimum of seven and a maximum of any number under given rules can participate. These companies are established according to the Company Act of 19l3. They collect their capital either by shares or by debentures; and the affairs of such companies are run by a Board of Directors.

A company is in a position to produce on a large scale. It enjoys all the economies of scale, both internal and external, and its liability is also limited. It is advantageous for small investors. It enjoys the benefits of research, stock exchange markets and workshop facilities. However, it also has some disadvantages. There is every chance of misappropriation, undue interruption and unnecessary expansion. Nevertheless, joint stock companies play an important role in large-scale production.

In addition to the above forms of business organisation there are others forms such as cooperative organisations, consumer's cooperation and state enterprise. These forms also play an important part in modern economies.

4.5 Points to Remember

i. Organization is that factors of production that coordinates the other factors of production.
ii. An entrepreneur is a person who manages the production of wealth and shoulders the risks and responsibilities of earning profit.
iii. It is the entrepreneur who initiates production.
iv. Organisation has many forms, both simple and complex.
v. The aim of an entrepreneur is to earn profit.
vi. The main duty of an organizer is to organise and to take responsibility for risk.

SELF-ASSESSMENT QUESTIONS

Q. 14 What is meant in Economics by 'organisation' or 'entrepreneurship'?
[Check your answer against Section 4.1]

Q. 15 What are the main functions served by an organizer or entrepreneur in a firm operating in Pakistan society?
[Check your answer against the discussion in sections 4.1, 4.3. If you know someone who is working as an entrepreneur or manager in a local firm or industrial enterprise, why not go and discuss his job with him and see whether his functions match up with those listed in Section 4.3]

Q. 16 Can you describe briefly the three main forms of organisation that are discussed in the section you have just read? What are the main advantages and disadvantages of each? And to what forms of production are they appropriate?
[Check your answer against the discussion in Section 4.4. Can you give from your own experience examples of each of these three forms of organisation? What other forms of organization do you know?]

5. LAWS OF PRODUCTION

5.1 Introduction

Production as you know is the function of the factors of production. But an increase of the input of various factors of production does not necessarily result in a proportional increase in output. If it were possible to make a constant increase in output by increasing the units of factor inputs, economic problems would be rare.

It is both a general observation and a reflection on practical experience that when a productive activity starts by combining the four factors of production, output follows certain trends. These trends can involve increasing, constant or diminishing rates of production. As in the case of consumption, where, a consumer faces a fall in utility by consuming more units of a commodity; similarly, in the case of production, a producer faces a fall in production if he goes on expanding his scale-of production.

5.2 Definition o a Law of Production

A law of production in Economies is the trend of output which is observed when the quantity of one factor is kept constant while units of the other factors are variable. Other things being equal, when one factor (say 'land') is fixed while other factors (say labour and capital) are varied, three results can be observed

a) Output may increase;
b) Output may remain constant;
c) Output may decrease.

In the first case, we say the Law of Increasing Returns operates. In the second case, we say that Law of Constant Return is in operation. And, in the third case, we say that the Law of Diminishing Returns is in force. These three laws are also known collectively as the Laws of Variable Proportion.

5.3 Three Types of Law

(a) The Law of Increasing Returns. Other things being equal, if by increasing the units of variable factors (say labour and capital) with a fixed acreage of land, output increases, we say that the Law of Increasing Returns is in force. This law is also known as the Law of Diminishing Costs. Since if an increase of the variable factor causes an increase in marginal output, costs per unit will decrease.

This law is based on the following assumptions:

i. One factor (say land) is constant
ii. Other factors (say labour and capital) are variable and their units increase
iii. Techniques of production do not change
iv. The stage of optimal combination has not been reached.

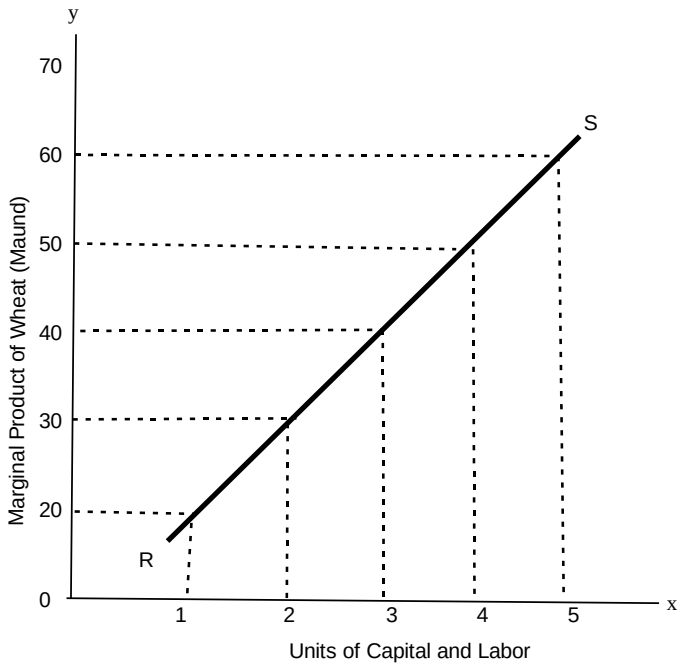
Now look at the following table:

Factor Inputs		**Production of Wheat (in Maunds)**		
Land Area (In Acres)	**Labour & Capital (In Units)**	**Total Production**	**Marginal Production**	**Average Production**
10	1	20	20	20
10	2	50	30	25
10	3	90	40	30
10	4	140	50	35
10	5	150	60	40

The above schedule shows that with increasing units of labour and capital, marginal output is constantly increasing. For example, the marginal output of 2, 3, 4, and 5 units of labour and capital is 20, 30. 40, 50 and 60 Maunds respectively. Average production is also increasing. The functional relationship between marginal and average output is increasing. When average output increases, marginal output also increases and decreases. As already

mentioned, this law is also known as the Law of Diminishing Costs because when marginal output increases, marginal costs decrease.

Diagram 5.1: Increasing Returns



On the horizontal line (the X axis) labour and capital units are indicated; and on the vertical line (the Y axis) the marginal output of wheat is indicated. Marginal output is an increasing function of labour and capital units. The line RS shows the trend of production which is increasing.

(Note: This law generally operates in industrial sectors where human skill is dominant and natural forces are under control).

At this stage, natural and human forces are balanced. It comes into force when the optimal combination of factors is reached.

Other things being equal, if by increasing the units of variable factors (say labour and capital), marginal output remains constant we say that the Law of Constant Returns is in operation.

The Law of Constant Returns is also known as Law of Constant Costs, since, with constancy in output, costs also remain constant. The conclusions of this law depend on the following assumptions:

i. The price of the variable factors should remain constant
ii. Variable factor units are equally efficient

iii. Techniques of production do not change; and
iv. Production should, be at the stage of optimum combination.

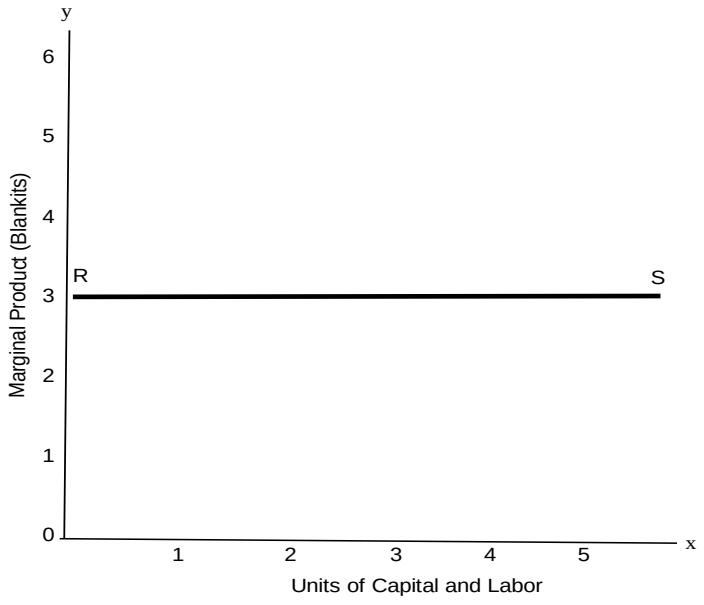
In the light of the above factors, let us explain the law with the help of a schedule and graph, taking as an example a firm, which produces woolen blankets:

Table 6.2: Constant Returns

Units of Labour and Capital at Constant cost	Production of Blankets (Price of One Labour Capital Unit is Rs. 100)		
	Total Output per Unit of Labour and Capital	Marginal Output per Unit of Labour and Capital	Average Output Per Unit of labour and Capital
1	3	3	3
2	6	3	3
3	9	3	3
4	12	3	3
5	15	3	3

This schedule shows that by increasing the units of labour and capital, marginal output remains the same. Similarly, average output is also constant.

Diagram 6.2: Constant Returns



In this diagram, labour and capital units are measured on the X axis, while marginal output of blankets is shown on the Y axis. When labour and capital units arc increased from 1 to 5, output remain, the same. The line RS shows constant returns. (Note: The Law of Constant Returns operates in firms and productive fields where natural and human forces are balanced. The woolen and carpet industries are well-known examples of situations in which the Law of Constant Returns is in operation.

The Law of Diminishing Returns: This law is of great importance in studying production. If it were not in operation, the nature of economic problems would be very different. The indivisibility and immobility of factors of production ultimately result in a decrease in output. With all our developed technology and capital, we cannot go beyond a certain point in producing wealth. If we continue increasing variable factor inputs with a fixed factor, production tends to fall with every addition of the variable factor input. This trend of output is known as the Law of Diminishing Returns. It is also known as Law of Increasing Costs because a fall in marginal output causes an increase in marginal cost keeping other conditions constant.

Professor Marshall states the law as follows:
An increase in capital and labour applied in the cultivation of land causes in general less than proportionate increase in the amount of produce raised, unless it happens to coincide with an improvement in the art of agriculture.

In simple words we can state the law as follows:
Other things being equal, if with a given amount of a fixed factor, we increase the units of a variable factor, marginal output will go on diminishing with every increase in the variable factor.
Other things being equal involves the following assumptions:
i. One factor (say land) is constant;
ii. Other factors (say labour and capital) are variable;
iii. Techniques of production do not change;
iv. The optimum combination stage has been passed.

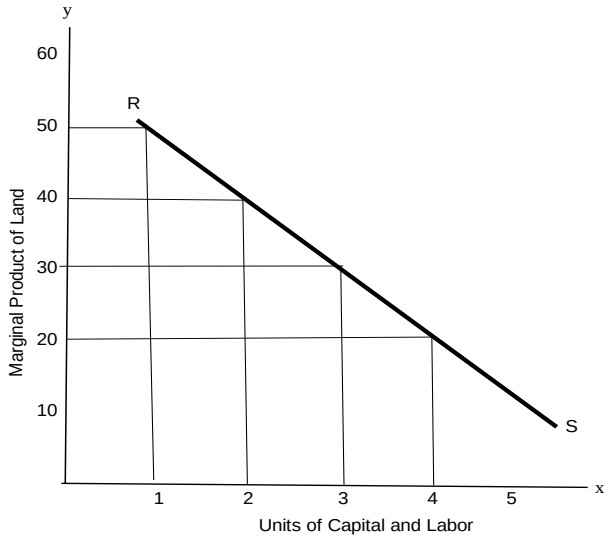
This law is particularly applicable to the agricultural sector. The reason for this is that in agriculture natural farces are more dominant. Land lacks mobility and divisibility. Moreover, its supply is constant. If successive does of capital and labour are applied to fixed areas of land, other things remaining the same, the increase in production is bound to be less than proportionate. The operation of this law is explained by the following schedule and diagram:

Table 6.3: Decreasing Returns

Land Area (In Acres)	Labour & Capital (In doses each Dose Costs Rs. 1000	Production (In Units)			Marginal Cost (In Rupees)
		Total Return	Marginal Return	Average Return	
10	1	50	50	50	20.00
10	2	90	40	45	25.00
10	3	120	30	40	33.00
10	4	140	20	35	50.00

We suppose that doses of labour and capital costing Rs. 1000 per dose are applied to a 10 acre farm. We observe that the marginal return is decreasing with the application of successive doses of capital and labour. That is why the law is known as the Law of Diminishing Returns. Since with the application of successive doses, the marginal cost goes on rising, we may also term it as the Law of Increasing Costs.

Diagram 6.3: Decreasing Returns



In this figure, the curve RS has been drawn which slopes downwards from left to right. This is the diminishing returns curve.

5.4 Limitations

There are some exceptions to the Law of Diminishing Returns when it is applied to agriculture:

a) Better techniques: Modern techniques of cultivation have gone a long way in increasing farm produce. But there is a limit to this and the law must come into force sooner or later.

b) Virgin Soil: When virgin soil is brought under cultivation, it may yield more crops for a time; but soon the law of diminishing returns begins to operate.

c) Insufficient Capital: If a farmer has been short of capital, it is likely that the increased application of capital will yield more than a proportionate return.

5.5 Why do the Laws of Variable Proportion Operate?

Having discussed in detail the Laws of Return, let us now briefly explain why they operate the way they do. If we analyse this, we find there are two basic reasons:

a) The indivisibility of factors of production

b) The immobility of factors of production.

If factors of production were perfectly divisible, there would be no possibility of the operation of the laws of return. Take the example of a piece of we cannot divide land in yards and feet. Take the example of abridge we cannot divide a bridge into small pieces to meet our requirements. The second limitation of factors of production is that they are not perfectly mobile. For example, land lacks geographical mobility; labour is also often reluctant to move. There are many reasons for this. However, the limitations of mobility and indivisibility result in imperfections in the market and ultimately enhance costs dis-proportionately. As we concluded earlier, in both agriculture and industry, in the long run, output will inevitably be subject to diminishing returns due to the factors mentioned above.

3.6 Points to Remember

i. Production is it Function of factors of production.
ii. A law of production is a trend in output observed when units of fixed and variable factors are introduced in it productive activity,
iii. There are three laws of return, commonly known as the Law of Increasing Returns, the Law of Constant Returns and the Law of Diminishing Returns.
iv. Those laws are also termed: The Law of Diminishing Costs, the Law of Constant Costs and the Law or 1nroasing Costs, respectively.
v. The Law of increasing Returns operates primarily in Industry.
vi. The Law of Diminishing Returns applies mainly to agriculture.
vii. All three laws have their limitations.
viii. Indivisibility and immobility are the basic reasons why the laws operate the way they do.

SELF-ASSESSMENT QUESTIONS

Q. 17 Can you state briefly and with the help of a diagram:

a) The Law of Increasing Returns;
b) The Law of Diminishing Returns;
c) The Law of Constant Returns.

Why are these laws important in explaining the role of the factors of production in the production process?

[This is the most important part of this Unit. if you are not clear about the meaning and relevance of the three laws, then work through Sections 5.1, 5.3 once again]

Q. 18 Why does the Law of Diminishing Returns apply mainly to the agricultural sector, while the Law of Increasing Returns applies mainly to the industrial sector?
[Check your answer against the discussion in Section 5.3 (a) and (c)]

Q. 19 "The Law of Constant Returns operates when the optimal combinations of factors of production has been achieved". Can you explain what this statement means and why this should be so?
[Check your answer against the discussion to section 5.3 (b). In the history of a firm is it likely that the Law of Constant Returns will come into operation after the Law

of Increasing Ret urns and before the Law of Diminishing Returns? If so, can you explain why? If you have difficulties with this question, then look again at Sections 5.1 & 5.3]

Q. 20 Why are (a) the indivisibility and (b) the immobility of factors of production relevant to the operation of the laws of production?
[Check your answer against the explanation given in Section 5.5]

6. ECONOMIES OF SCALE

6.1 The Meaning of Economies of Scale

One of the problems faced by a business organization or a firm is the decision about the scale of production. What quantity of a commodity should be produced in order to maximize profit? Profit cannot be maximized unless costs are lowered. The scale of production and the costs of production are related to each other. The higher the level of production, the lower the average cost of production. A producer wants to push his production to the point where his marginal revenue (MR) is equal to his marginal cost (MC).

There are certain advantages which an entrepreneur can benefit from in connection with the scale of production. These advantages are called economies of scale. These economies are an increasing function of scale. The larger the scale of production, the greater the economies, and vice-versa. These economies are usually classified as Internal and External.

6.2 Internal Economies of Scale

Internal economies of scale are those advantages which an entrepreneur can benefit from as a result of his experience, wisdom, commercial relations, and administrative abilities, knowledge of market variations, exact and timely decisions and personal contacts. The more dynamic an entrepreneur, the more will be the internal economies which he can take advantage.

Internal Economies arise out of following factors:

a) Administrative efficiency: In modern economies, large-scale production has been pioneered by far-sighted and experienced organizers. To control and administer a large-scale production process is a difficult job. Economics of administration reduce unnecessary expenditure. One effective way of lowering the costs of production is to administer the enterprise efficiency. Efficient administration means the optimal combination of factors of production. An experienced entrepreneur, therefore, can take advantage of internal economics more than an inexperienced one.

b) Economies of Technique: As we have already mentioned, large-scale production requires sophisticated techniques. Technical economics refer not to the size of the firm, but to the size of factory, plant or establishment. An entrepreneur who efficiently enlarges the size, integrates the production process and introduces new and superior techniques and technologies, can derive substantial internal economies.

c) Commercial economies: The economies arise from the purchase of materials and sale of goods. An organizer should have up-to-date information about factor markets and

sales markets. If the organizer entrepreneur lacks information about where to buy and sell most advantageously, he cannot maximize his profit.

d) Financial Economies: The establishment of a business organisation and its scale of production are determined by the size of its financial resources. Large-scale production enjoys more internal economies than small-scale production. If an organizer, by his qualities of efficient entrepreneurship, establishes the credit-worthiness and financial stability of his business organization, he will have access to grouter financial and credit facilities from banks and other companies.

e) Risk-Bearing Economies: A big firm can spread its risks and can often reduce thorn substantially. This is possible by diversifying output. Risk-bearing economies are part of' administrative economies.

f) Economics of Forecast: Organizers of large scale production need to be able to forecast events; and their level of profits will often depend on how good their forecasts arc. Economics of forecasting are also part of managerial economics. An entrepreneur should see far ahead both in the factor-market and in the product-mar.et. Organizers who forecast accurately earn more profits than those whose prediction of future trends is less accurate.

6.3 External Economies of Scale

External economies are those advantages from which all firms can benefit as an industry expands. They are not restricted to individual entrepreneurs. When an industry expands, transport facilities increase, raw materials grow, workshops and research services expand, and superior technical now-how becomes more widely available. The growth of industry also involves banking and insurance facilities. Subsidies and tax remissions may also be available. As large-scale firms reap internal economies, so large-scale industries bring to the firm external economies.

Some of the different types of external economics arc discussed below:

a) Economics of Concentration: As an industry grows, transport facilities expand, skilled labour increases, credit opportunities improve and subsidiaries are established, By-products are also economically utilized. In concentration, research and experiments are fruitfully made. If firms are scattered, they cannot avail themselves or such advantages.

b) Economics of Information: These economies refer to the benefits which all firms engaged in an industry derive from the publication of trade and technical journals and from central research institutions and facilities.

c) Miscellaneous Economics: In addition to the economics of concentration and information, external economies also in include the availability of raw materials, skilled labour, government protection, road and other links etc.

The difference between internal and external economies is that the former are specific to the firm while the latter are general to the industry. It should he noted, however, that there is no definite line of demarcation between internal and external economics. When a number of firms combine, external economics become internal economies In any case; internal economies and external economies represent major advantages of large-scale production.

6.4 Points to Remember

i. Economics of scale are the advantages which individual firms and industries benefit from in the process of large-scale production;
ii. The scale of production and the costs of production arc correlated;
iii. The larger the scale of production, the greater the economies;
iv. Economics of scale are classified as internal and external;
v. Internal economies are benefits which arc available to a firm as a result of the Superior organizing ability of an entrepreneur;
vi. External economies are the advantages which a firm can benefit from as an industry expands;
vii. There is no hard and fast line of demarcation between internal and external economics of scale.

SELF-ASSESSMENT QUESTIONS

Q. 21 What is meant by 'economics of scale'?
[Check your answer against Section 6.1]

Q. 22 What is the main difference between internal and external economies of scale?
[Check your answer against sections 6.2 and 6.3]

Q. 23 Can you list and briefly explain:
a) The main internal economies of scale?
b) The main external economies of scale?
[Check your answer against the discussion in sections 6.2 and 6.3. Can you think of any other economies of scale which are not mentioned in these sections? If you know any local businessmen, why not discuss with them what the economies of scale might be available in practical terms in their particular area of business and industry. Would they necessarily be better off if they were reducing on larger scale? Or might there also be some disadvantages?]

GLOSSARY OF MAIN TERMS

Capital	..	Goods which help in producing further goods.
Efficiency of Capital	..	Expected rate of return on investment.
External Economies	..	Economies in costs due to facilities rendered from outside the firm.
Growth of Capital	..	Expansion in the means of production.
Internal Economies	..	Economy in the costs of a firm due to the experience, skill or administrative abilities of an entrepreneur.
Joint-Stock Company	..	A business conducted by at least seven persons and at the most thousands.
Labour	..	Physical or mental exertion used for the production of goods and services.
Land	..	All natural resources bestowed by nature, either below the surface of earth or above it.
Laws of Return	..	The laws that govern the returns to a firm business at an increasing, constant or decreasing rate.
Law of Variable Proportion	..	See laws of Returns.
Organization	..	Capacity to establish and run a factory or firm.
Partnership	..	A business share by two or more persons.
Single Entrepreneur		An individual who manages a shop, a firm or a factory on his own.

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Unit–6

NATIONAL INCOME

Written by: Mrs. K. Anwar-ul-Haq

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INTRODUCTION

This unit deals with National Income — its definition, characteristics and measurement. You will be introduced to a flow model' of economics life; to various approaches to the measurement of National Income; and to some of the basic concepts which are used in this area — such as Gross National Product (GNP), Net National Product (NNP), disposable income and so on. The unit also looks at different approaches to national Income accounting; presents the idea of two — three and four sectors' economies; and introduces the internationally recognized symbols used to denote basic National Income concepts, together with the essential identifies which exist between them. In a final section, the unit turns from a general theoretical account of National Income and looks more specifically at Pakistan. It deals first with the evaluation of Gross and Net National product in Pakistan; and then goes on to present estimates of Gross National Product and Net National product for the year 1974-75 to 1977-78, and to show in graphic terms the changes in Gross Domestic Product (GDP), per capita Gross National product (GNP) and population for Pakistan over certain selected years.

OBJECTIVES

By the end of this unit, you should be able:

(a) to define National Income and identify its major characteristics.

(b) to explain the two main approaches to the analysis of national Income in terms of a 'Circular Flow' model of economic activity.

(c) to define the major concepts used in National Income analysis and explain how they are used.

(d) to outline the basic principles of National Income measurement and accounting.

(e) to recognize the internationally accepted symbols used in National Income analysis; to express the main identities which exist between them; and to use them to build up an analytical model of the full economy.

(f) to describe the basic on which Gross and Net National Product are evaluated in Pakistan and to summarise in general terms the estimates and changes in GNP in recent years.

1. NATIONAL INCOME

1.1 Definition

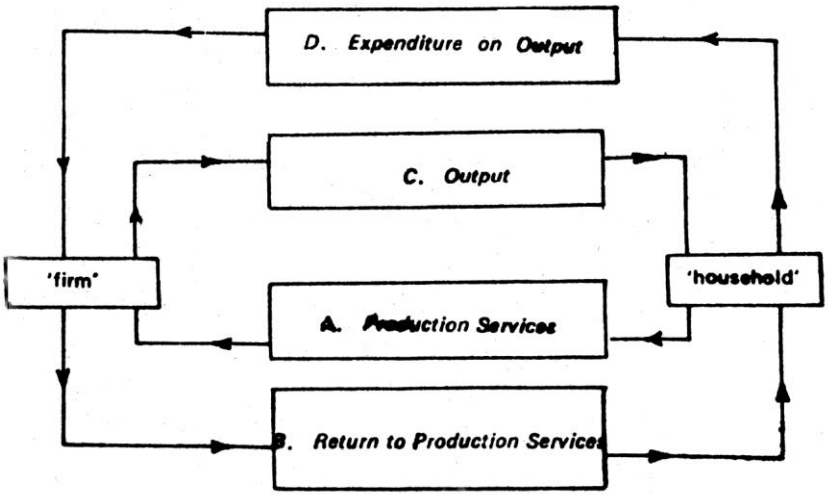
National income in a general sense is the measurement in terms of money of the overall annual flow of goods and services in an economy. It is also called 'National product' (NP) or 'Net National Product' (NNP). It can be regarded as the money equivalent of what a society produces with the use of its resources.

1.2 Characteristics of National Income

Two characteristics of national Income are of the greatest importance in understanding its meaning. First, National Income is a 'flow'. Commodities and services are continuously being produced and most of them are being consumed at the same time. Secondly, National Income represents the value of the final product, or more precisely the value added after making allowances for the materials and intermediate goods consumed in its production.

1.3 Circular Flow Diagram

In the study of National Income, the flow of money, goods and services in an economic system can be illustrated using a 'Circular Flow Diagram', as follows:



1.4 The Two Party Flow Model

For the diagrammatic representation of the flow of economic life, a simplified model has been used. It assumes that only two parties are involved i.e. the 'household' and the 'firm'. The 'household' represents the people in an economy (a) as suppliers of the factors of production, and (b) as consumers of goods and services. The 'firm' represents all producing units. Using this model, we can illustrate two approaches to National Income, the income approach and the expenditure approach and we do so in terms of the four main 'flows' indicated in the diagram (marked A, B, C and D).

1.5 The Income Approach

A. **Production Services:** The firm hires the factors of production from the household. These factors are land, labour, capital and entrepreneurship. Land may be rented, but more commonly it is purchased labour is provided by the workforce of the firm; capital is provided by the stockholders/shareholders in a public limited concern or by the owner in the case of an individual proprietorship; and entrepreneurship is provided by managerial and associated groups.

B. **Return to Production Services:** In return for services rendered, the firm pays out income. The owner of the land receives rent; the labourer receives wages; the investor receives interest; and the profits are distributed to the owners and/or top management. These payments are known as 'factor payments'; and the sum total of all these factor payments is referred to as National Income.

1.6 The Expenditure Approach

C. **Output:** With the income received from factor payments, the household purchases output. The flow of Output to the household constitutes real income because it represents the flow of goods and services which is enjoyed by the consumers.

D. **Expenditure on Output:** In exchange for this flow of output, the household spends money, and thus contributes to the flow of money to the firm. This expenditure on output may be regarded as a measurement in terms of money of the output. When each good or service valued at the price prevailing in the market, a common unit is established in terms of which each commodity is evaluated. By adding up the total amounts spent on all the goods and services, total expenditure on output is assessed. However, this procedure measures 'expenditure' and not real output. Nevertheless, this value of output can also be taken as a measure of National Income

1.7 Note on Diagram

You should note that in the upper loop of Diagram 9/1 the household spends money on output (final goods and services). The total money flow on an annual basis is one measure of Net National Product (NNP), The lower loop measures the annual flow of the cost of output—the earnings the firm pays out in wages, rent, interest, dividends and accrued profits.

1.8 NNP

Net National Product (NNP) or 'National Income evaluated at market prices' is defined as the total money value of the flow of final products of the nation. Similarly, Net National Product is also defined as the total factor earnings (wages, interest, rent and profits) that are the costs of production of the final goods made available to the nation for the satisfaction of its wants. Thus, Net National Product is measurable as a flow of products (the 'expenditure approach') it is also measurable as a flow of factor earnings (the 'income approach'). Each approach leads to the same evaluation of NNP.

1.9 Summary and Conclusions

Thus National Income is a measure of the money value of the total flow of goods and services produced in an economy over a specified period of time. It is assessed (a) as the value of the output of all goods and services in the economy, net of indirect taxes and subsidies (b) as the total flow of incomes paid out to households in return for the supply of productive services less profits and (c) as the sum of the expenditure on consumer goods, investment goods, government expenditure and expenditure on exports. loss expenditure on imports.

SELF-ASSESSMENT QUESTIONS

1. Can you now define National Income and describe its two main characteristics?
   [II not, or if you are not sure, re-read Sections 1.1 and 1.2.]

2. Can you explain in your own words (and with an appropriate diagram) the 'circular flow' of economic life in a simple model of the economy consisting only of 'households' and 'firms'?
   [If you have difficulty in doing this look *again* at Diagram 9/1 and at Sections 1.4–1.6.]

3. What are the two approaches to the measurement of National Income (or Net National Product—NNP) that can be derived from the model?
   [Check your answer against Sections 1.7 and 1.8.]

2. INCOME CONCEPTS

2.1 Main Income Concepts

Some of the most important concepts which are used internationally, in connection with the determination of National Income are as follows:

(a) Gross National Product (GNP) and Gross Domestic Product (GOP);
(b) Net National Product (NNP) and Net Domestic Product (NDP) (C) National Income, including Exports and Imports
(d) Personal Income;
(e) Disposable Personal Income.

2.2 Gross National Product (GNP)

GNP is the total value at current market prices of all final goods and services produced by a nation's economy before the deduction of depreciation charges and other allowances for business and institutional consumption of durable capital goods. Usually GNP includes:

(a) Personal consumption expenditure;
(b) Gross domestic (i. e. private) investment;
(c) Net foreign investment– i.e. the excess accruing to a nation from international trade and finance;

(d) Government purchases of goods and services—but excluding such transfer transactions as are not related to income or product.

GNP is the sum of 'values added' by the various industries and activities of the economy. It is the sum of all the goods and services produced for consumption and investment; and thus it is also the sum. of all the factor incomes earned in the process of producing the nation's output.

2.3 Approaches to Measuring GNP

Essentially. GNP measures the total value of the economy's output of goods and services. This output evaluation can be expressed either in terms of the expenditure required to purchase it or in terms of the expenditure required to produce it.

(a) Output-Expenditure Approach

When GNP is evaluated by measuring the value of output or the value or expenditure on that output we are using the 'output-expenditure' approach to GNP determination.

(b) Factor-Income Approach

When GNP is assessed by measuring the value of factor incomes generated in the process of producing total output, this is called the output (actor-income' approach, which is usually referred to more simply as the 'factor-income' approach.

2.4 What GPN Measures

GNP measures the total money value of final goods are services produced during a year. Thus, it has a price and a quantity component. Consequently, a particular change in GNP can be caused by many different combinations of price and quantity changes.

2.5 GNP

(a) at current values
(b) at real or constant values

When GNP is measured in terms of the prices prevailing at the time of measurement, it is said to be measured 'at current values'. When it is adjusted to take account of price changes, it is said to be measured at 'real (or constant) values.

2.6 The Uses of GNP

The main uses of GNP are as follows:

(a) GNP is the most useful measure of a country's production;
(b) GNP measures the revenue from the sales of all business taken together, plus the cost value of Government production;
(c) GNP measures the total expenditure incurred by spending agencies on produced goods and services, including expenditure by consumers for the purchase of producer's goods and by the government;
(d) GNP is useful in making studies of fluctuations in business activity
(e) GNP indicates the total money transactions which take place in the economy

(f) GNP divided by the total population gives the average output for each person in the economy.
(g) GNP divided by the number of persons in employment gives the output per employed person
(h) GNP divided by the total number of hours worked measures the output per hour of the total labour input
(i) GNP measures the total factor incomes generated by the productive activities of the economy.

2.7 Omissions from GNP

However, there are certain things which GNP does not take into account:

(a) GNP does not measure illegal activities, even though many of these are ordinary business activities in the sense that they produce goods and services sold on the market and generate factor incomes
(b) Any labour service that does not pass through a market is not counted in GNP. Such omissions include the services of a housewife, do-it-yourself activities and voluntary work of any kind. Generally, the non-market sector of the economy is larger in rural areas than it is in urban areas and it also tends to be larger in underdeveloped economies than it is in the more developed.
(c) GNP does not measure human welfare; and many factors which contribute to human welfare are not reflected in it (and vice versa).

SELF-ASSESSMENT QUESTIONS

4. What is the difference between GNP measured at current values' and at 'real (or constant) values 2
   [if the distinction is not clear to you, look again at Sec non 2.5.]

5. What are the main uses to which GNP is put? What other statistics can be derived from GNP?
   [Check your answers against the list given in section 2.6.]

6. What economic activities does GNP *not* take into account? Why is this?
   [Check your answers against Section 5.7.1 2.8 Capital Stock

2.8 Capital Stock

Final goods and services are produced by combining the services of labour with the 'stock of land' and the 'capital stock' of the economy. The capital stock at the beginning of any period consists of goods and equipment which can be used in the productive process. It comprises the stock of goods which can be used as 'intermediate' goods during the period, together with the community's productive equipment (or 'capital equipment').

(a) **Value Added**

The value which an enterprise adds in the production process to purchases of intermediate goods is the value of production, or 'value added', of the enterprise.

(b) **Depreciation**

Purchases of capital equipment are not regarded as purchases of intermediate goods because the capital equipment is only partly used up in production. This using up (or 'depreciation') is measured by the decline in the value of the capital stock over the period of time.

2.9 Annual Output

The value of the 'annual output' of an enterprise is the sum of its annual sales to other enterprises, together with the change over the year of the value of its stocks of finished and semi-finished goods. The value of the inputs used up in the production of the annual output is the sum of the annual purchases by the enterprise from other enterprises and the change over the year of the value of stocks of inputs.

2.10 Value Added by an Enterprise

The value added by an enterprise is therefore:

(a) Sales of output during the year

Plus

(b) Addition to stocks of finished and semi-finished goods during

Minus

(c) Purchases of intermediate goods during the year.

Plus

(d) Depletion of stocks of intermediate goods during the year.

When all types of stock are combined, the value added is:

(a) Sales of output during the year.

Plus

(b)+(d) Net addition to stocks of all kinds during the year.

Minus

(c) Purchases of intermediate goods during the year.

2.11 Value Added in the Government Sector

The value added in the Government Sector is defined as:

(a) The value of collective goods and services provided.

Minus

(b) The value of the goods purchased from trading enterprises (Theses are intermediate goods from the point of view of the Government).

Conventionally, collective goods and services provided by the Government are evaluated at cost; that is, at the cost of the purchases entering into them, plus the wages and salaries of public servants. The value added in the Government sector is thus equal to the wages and salaries paid to public servants.

2.12 Value Added by Financial Enterprises

The value of the output of financial enterprises equals their current purchases of goods and services from trading enterprises, and the wages and salaries that they pay to their employees. The value added by financial enterprises therefore, also equals the wages and salaries paid to their employees.

SELF-ASSESSMENT QUESTIONS

7. What do you understand by the terms 'capital stock' 'capital equipment', 'depreciation' and 'intermediate goods'? Can you give practical examples of 'capital equipment' and 'intermediate goods'?
   [If you are not clear about the meaning of the terms or their relationship to each other, then re-read Section 2.8. On these concepts see also Sections 4.1– 4.6 below].

8. Can you explain in your own words what 13 meant by the concept of 'value added' and why it is important to the study of the National Income?
   [If you are not sure about your answer, look' again at Sections 1.2 and 2.8.]

9. How is the 'value added' by an enterprise calculated? How does this calculation differ in the case of the government sector and financial enterprises?
   [Check your answers against Sections 2.10-2.12. On 'value added' see also Section 4.1 and 5.3 below]

2.13 The Distribution of Value Added

The value added is distributed in the following ways

(a) **Depreciation Allowance**—Funds retained in trading and financial enterprises to allow for the using up of capital equipment in the process of production
(b) **Company Income and the Surplus of Public Enterprises**—The surpluses of trading enterprises (after meeting all their coats) which are available to pay interest, dividends and company Income tax, or to be retained as undistributed company income;
(c) **Personal Income** —Wages and salaries earned by individuals, together with the profits of unincorporated business; and
(d) **Indirect Taxes**—Those which are assessed at the base; e.g. sales taxes, etc.

The sum total of (a) to (d) is termed Gross National Income (GNI). As items (a) to (d) are a classification of value added, and in view of the way GNP has been defined earlier (see Section 2.2 above), then GNI must equal GNP.

2.14 Value of Production

Except for depreciation and indirect taxes, the above items accrue as income receipts to owners of factors of production. Indirect taxes raise prices. In some cases, government subsidies are paid to producers and the incomes of the factors of production concerned are then derived from the subsidies (explained in Section 4.8 below) received as well as from the sale of the products. In such cases, the value of production which is distributed to the private sector is then the market value of production, plus the subsidies received, less the indirect taxes.

2.15 GNI Distribution

The final distribution of GNI takes the following form:

(a) **Depreciation allowances** — Retained by trading and financial enterprises;
(b) Companies 'undistributed income — retained by trading enterprises;
(c) **Personal disposable income** —Personal income after the payment of direct taxes, together with receipts of transfer payments from the Government and enterprises;
(d) **Net taxation** —The taxation collected, both direct as well as indirect, and the net surpluses of public enterprise, less cash social service benefits;
(e) **Property income of financial enterprises**—Received from the trading enterprises sector, less taxes paid, dividends and interests redistributed to the personal sector, and depreciation allowances and retained income transferred to the trading enterprises sector.

2.16 Gross National Expenditure and Gross Market Expenditure

Gross National Expenditure (GNE) is the total domestic expenditure on goods and services of the nation as a whole. Gross Market Expenditure (GME) is the total expenditure on goods and services in the economy, both domestic and overseas.

GME = GNE plus Exports
GDE = GME minus imports
(GDE is Gross Domestic Expenditure)

2.17 Economic Activity Determination

The level of economic activity in the short run is primarily determined by the level of aggregate expenditure. The level of imports is influenced by the level of GME; but as imports are intermediate goods from the point of view of the domestic economy, the level of aggregate expenditure is an expenditure net of imports, i.e. GDE.

Recapitulating, the level of aggregate expenditure can be stated as follows:

Sales to Persons	(1)
Plus Sales to Government	(2)
Plus Sales to financial enterprises	(3)
Plus Sales to the rest of the world	(4)
Plus Sales of intermediate goods to other enterprises	(5)
Plus Sales of capital equipment to other enterprises	(6)
Plus Net additions to stock	(7)
Minus Purchase of intermediate goods from other enterprises	(8)

Minus Purchases from the rest of the world (9)
Plus Wages paid to public servants (10)
Plus Wages paid to employees of the financial enterprises (11)

This rather lengthy equation can, however, be simplified as follows:
Items (5) and (8) cancel out
Items (1) is consumption expenditure
Items (6) and (7) constitute Gross Investment Expenditures;
Items (2) and (10) represent Government Expenditure;
Items (3) and 11) make up the expenditure of financial enterprises;
Item (4) constitute exports; and
Item (9) represents total imports into the economy.

Thus the level of aggregate expenditure, i.e., the Gross National Product, equals Consumption Expenditure plus Gross Investment Expenditure plus Government Expenditure plus Financial Enterprise Expenditure plus Exports and minus imports.

Alternatively:

GNP = (1) plus (6 & 7) plus (2 & 10) plus (3 & 11) plus (4) minus (9)

Thus GNP = GDE; but GNP = GNI
Hence GDE = GNP = GNI

2.18 Summary & Conclusion

GNP at market prices measures the total value of the production of goods and services gross of the allowance for the depreciation of capital equipment which occurs during the specified period of one year. If the whole of GNP were used up for consumer purses, the economy could not possibly maintain its capital intact. This could continue for only a limited period without damage to the productive capacity of the economy.

SELF-ASSESSMENT QUESTION

10. Have you followed the argument which leads to the conclusion that
GDE = GNP = GNI?
[If not, re-read Sections 2.13–2.17 until you have a general sense of the argument]

2.19 Gross Domestic Product

The concept of production is fundamental to a system of national accounting. Production is the process where by labour, natural resources, accumulated capital assets and knowledge are applied to the provision of valuable goods and services. Thus, the gross domestic product is derived from gross output of the economy. i.e. from the3 total flow of goods and services which are produced during a specified period. The different and numerous categories of goods and services are expressed in terms of the money values that these products tenth in the market.

(a) GDP at market prices

By deducting from the total gross output measured at market prices all the intermediate goods and services, domestically produced as well as imported, which are used up in the production process during the period, we arrive at the evaluation which depicts the Gross Domestic Product at market prices.

GDP at market price	=	Value of goods and services at market	=	Value of intermediate goods and services at market prices.

(b) GDP at factor Costs

The gross income received by the various factors of production also measures GOP. This measurement will yield the Gross Domestic Product at factor costs. The difference between this and GDP at market prices equals indirect taxes net of subsidies. Thus **Gross** Domestic Product at market prices equals Gross Domestic Product at factor costs *plus* indirect taxes and net of subsidies. This can be expressed as follows:

GDP at market	=	Gross Domestic Product at factor costs *plus* (Indirect Taxes—subsidies).

(c) GOP Identity

The Gross Domestic Product at market prices is equal to the sun- of consumption expenditure, gross fixed capital formation, private and public, and the net export of goods and services from 'the country.

GDP at market prices	=	Consumption expenditure + Gross domestic capital formation+ Exports of goods and services—Imports of goods and services).

(d) The relationship of GOP and NOP with GNP and NNP

Gross Domestic Product (GOP) and Net Domestic Product (NDP) differ from Gross National Product (GNP) and Net National Product (NNP) in that the format exclude, while the latter include, net factor earnings from the rest of the world'

SFLF-ASSFSSMENT QUESTIONS

11. What is the difference between GOP at 'factor costs' and GDP at market prices? [See Section *2.19]*

12. What is the difference between GOP and (NP? [See Section 2.20]

3. NATIONAL PRODUCT

3.1 Net National Product (NNP)

Net National Product differs from Gross National Product in only one way. While NNP includes net private investment, GNP includes gross private investment—i.e. GNP minus depreciation allowances (estimates of the amount of capital equipment used in the productive process) gives Net National Product at current market prices (NNP).

3.2 Uses of NNP

(a) NNP measures the net volum3 of goods and services produced whilst maintaining capital intact. It indicates the volume of production which can be used for current purposes without diminishing the economy's capital equipment.

(b) NNP is of great use in the solution of problems Concerning the Productivity of the various factors of production.

(c) NNP guides resource allocation and profitability maximization.

3.3 NNP in Short Periods Studies

In short period studies, depreciation can be ignored as the equipment is not used to a sufficient extent to effect its efficiency, and because buildings etc. only show signs of deterioration after a fairly long period of time. Thus, in the short run, NNP and GNI evaluations are almost identical.

In view of the fact that different items of equipment contributing to the production of final goods behave different under different working conditions, it is quite difficult to arrive at a correct assessment of wearability and depreciation and for this reason NNP evaluation is not widely used.

3.4 Personal Income

Personal income is defined as the current income of persons of households from all sources. Personal income is not a measure of production for it both excludes some items that are matched by the productive activity and includes others that are not.

The steps involved may be shown as:

National Income	
less corporate profits	20
less employer's contribution for social insurance	6
plus transfer payments	13
plus business transfer payments	i
plus net interest paid by Government	4
plus interest paid by consumers	1
plus dividends	6
less employment contribution for social insurance	4
EQUALS Personal Income	200

3.5 Disposable Personal Income

The income available to persons to dispose of as they choose is termed disposable personal income'. It is derived from personal income by deducting from that total. the amount taken away by the government in the form of taxes, donations, levies etc. Whatever part of the remainder a person chooses not to use for personal outlays is reckoned as personal saving.

Personal disposable income is thus the sum of employment incomes. self-employed incomes, distributed profits, rent and interest received by persons—minus all forms of income tax paid by the persons.

The relationship may be shown as follows:

Personal Income	Rs.200.00
Less Personal Taxes	Rs.24.00
Equals Disposable Personal	Rs.176.00 Income

SELF-ASSESSMENT QUESTIONS

13. What is the essential difference between GNP and NNP? [See Section 3 1]

14. Can you express in your own words the main uses of Net National Product (NNP)?
[Check your answer against the list in Section 3.2]

15. Why are GNP and NNP evaluations almost identical in the short-run?
[To check your answer see Section 3.3]

16. How is Personal Income calculated? What is the difference between 'Personal Income' and 'Disposable Personal Income'?
[For a discussion of these concepts see Sections 3'4 and 3'5]

4. OTHER BASIC CONCEPTS

4.1 Value Added

Value added is identical to Domestic Product when it is used for the country as a whole. When the total domestic product is broken down by sectors, the analogous term 'sector product' can be used as well as the term 'Value added'.

> Value added —Value of output—value of intermediate consumption of goods and 'services.

4.2 Capital Assets

Capital assets are defined as those tangible assets which take part in the production process over more than one accounting period. They are also subject to wear and tear and obsolesce.

4.3 Depreciation

Capital assets, when used in the production process, are subject to wear and tear. This 'consumption' of capital assets, commonly known as depreciation, is similar to the consumption of raw materials and has to be deducted in order to arrive at net product. Throughout, the national accounting process, gross product, gross income and gross investment are defined to include depreciation of fixed capital and 'net' means that depreciation has been deducted.

4.4 Gross Domestic Capital Formation

Gross domestic capital formation represents the gross value of the goods which are added to the domestic capital stock of the nation. It comprises both expenditure on the acquisition of fixed assets and the value of physical changes of stocks.

> Gross Domestic Capital Formation= Gross Fixed Capital Formation +changes in stock.

4.5 Gross Fixed, Capital Formation

Gross fixed capital formation id the expenditure on the purchase and 'own account' construction of fixed assets which includes improvement of land, Construction of buildings and other construction e.g., roads, dams, culverts, drainage, ports and wharfs, machinery and transport equipment. Capital repairs are included while the sale of fixed assets is deducted. Expenditure on residential construction for military personnel and their families is part of fixed capital formation.

4.6 Changes in Stock

Stocks consist largely of materials and supplies. work-in-progress and finished products, and goods in the possession of industries, Standing timber and crops are excluded from stocks, but logs and harvested crops are included. The change in stock is the difference between the stocks held at the closing and opening of the accounting year. It may be positive or negative. The acquisition of breeding stock, draught animals, dairy cattle etc. are part of capital formation.

4.7 Indirect Taxes

indirect taxes are taxes assessed on producers in respect of the production, sale, purchase or use of goods and services, which they charge to the expanses of production. The incidence of indirect tax is commonly transferred to consumers. Common examples of Indirect taxes ate import/export and excise duties, sales tax, entertainment duties, betting taxes, business licences, stamp duty, property tax, and municipal taxes. Motor vehicle duties, taxes on the operation of wireless and television sets, and octroi charges are also included.

4.8 Subsidies

Subsidies include all grants on current account which private industries receive from the government. These are transfers which, in view of the basis on which they are made, represent additions to the income of producers from current production subsidies also include all grants on current account which the government makes to public corporations—for example, in compensation for operating losses *(i.e.* negative operating surpluses). In the case of government enterprises, transfers on current account should be treated as subsidies when it is clear that the transfers are the consequence of a government policy to maintain prices at a level at which the proceeds of the enterprises will not cover the current cost of production. Included under this are subsidies on wheat, sugar, fertilizers, on loss of coinage and foreign exchange.

SELF-ASSESSMENT QUESTION

17. Before going any further, make sure that you have a general understanding of the new concepts introduced in the section.
    [If in doubt, re-read Sections 4.1-4.8]

5. NATIONAL INCOME MEASUREMENT

5.1 NI Accounting

National Income Accounting means the total flow of output (goods and services) and the total flow of inputs (factors of production) that pass through all the markets in an economy during a specific period of time.

5.2 Income Accounting—Simple Economy

As was indicated earlier in the discussion of the 'Circular Flow, of economic life (Section 1.3-1.7); in the simple economy there are only two groups of decision-makers households and firms. Each group earns all of its incomes by selling goods and services to the other group; and each group spends all of its income by buying goods and services from the other group. In the 'spendthrift' economy, neither the households nor the firms save anything. Everything that One group receives goes to buy goods and services from the other group.

This simple, economy is illustrated in the diagram below:

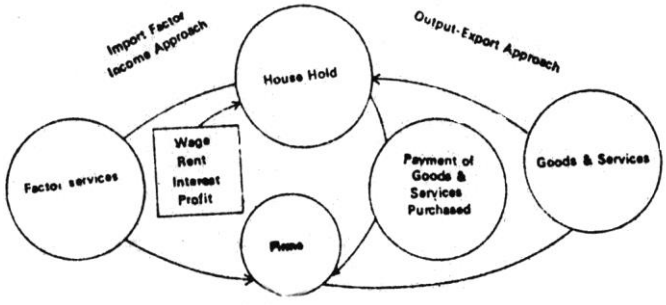


Diagram 9/2: Real and money flow between firms and households

Payments are shown flowing from households to firm in return for goods and services purchased; and from firms to households in return for factor services purchased.

The total value of the economy's annual output can be assessed by making calculations based on either side of the circular flow diagram above. The Output-Expenditure approach uses calculations based on the flows on the right-hand side of the diagram; while the Input-Factor Income approach uses calculations based on flows on the left-hand side of the diagram.

5.3 Output - Expenditure Approach to National Income

When we use the Output-Expenditure approach to measuring the total value of the output, we calculate the total expenditure needed to purchase the nations output. All the output is sold to households and by measuring the actual expenditure of households on currently reduced goods and services, we can get the total.

In complex economies, many groups other than households purchase a part of the economy's output; and another part is not sold at all but rather held by the firms that produce it for sale in the future. In such economies, it is often simpler to calculate the total value of all firms' output directly, rather than to calculate the expenditure on that output by those who purchase it.

Calculating the economy's total output from the outputs of individual firms raises peculiar and difficult problems—in particular, the problem of counting certain values many times:

(a) Value Added in Income Accounting

To avoid this problem of double or multiple accounting, National Income accountants use. the Important concept of 'value added'. Each firm's value added is the value of Its output minus the value of the inputs it purchases from other firms. In Macro-Economics, a firm's output is defined as its value added. The sum of all the values added must therefore be the value of all goods and services produced by the economy.

(b) Intermediate and Final Product

The idea of value added clearly distinguishes between Intermediate and final products. Intermediate products are all goods and services used as inputs into a further stage of production. Fine/products are the outputs of the economy after eliminating all double counting. In the simple economy, all final products are produced by the firms and sold to household for consumption.

5.4 Factor-Income approach to National Income

National Income can also be calculated by measuring the value of factor inputs; or—what is the same thing– the factor incomes generated by the process of production. This approach is based on the flows on the left-hand side of figure, Commonly, this approach is referred to as the factor-income approach.

Usually in macro-economics, four main components of factor incomes are distinguished

(a) **Rent:** the payment for the services of land

(b) **Wages:** payment for the services of labour

(c) **Interest** and (d) **Profits** both are payments for services of capital. In order to obtain its capital goods, a firm requires money. This is made available by those who lend money to the firm and by those who put up their own money and a risk its loss in order to become the firm's owners. Interest is earned by those who lend money to the firm; and profits are earned by those who own the firm.

5.5 Relationship between the two approaches to National Income

The value of the output produced over a specified period can be obtained by looking at either the Output-Expenditure or the Input-Factor Income side of the economy. The profits on a firm's output are defined by the Nasional Income accountant as the value of Its output minus all claims for rent, wages and interest$_s$ that arise on its production. This definition ensures that the sum of rent, wages, interest and profit is equal to value of the product (output).

Because the value of the output produced Is equal to the value of Income earned, National Income emphasizes the input or factor-income aspect of production, while National Product emphasizes the output of the final goods aspect of production.

5.6 Two-Sector Economy

In the simple economy, the goods and services produced and sold for consumption account for total value of production. Factor incomes earned by the households who supply the services of land, labour and loan capital, account for most of the total value to the goods produced, while the remainder is profit. Since the economy consists only of (a) the business sector (firms) and *(b)* households, it is called a Two-Sector economy.

5.7 Three-Sector Economy

In practice, however, the business sector invariably feels the impact of government transactions in the real economy Direct taxes on persons and corporations, together with public sector expenditure on the purchase of goods and services constitute major items entering National Income accounting. Due to the addition of government transactions, identities developed for the two sector economy require modification to accommodate government receipts and expenditures for the purposes of National Income accounting. With the involvement of the government in the economic active as of the country, we enter the three-sector economy and identities are therefore modified to suit the throe-sector economy.

5.8 Four-Sector Economy

Since foreign transection play a major role in shaping economic life in both developed and developing as a fourth sector, the identities developed earlier are further modified to deal with the characteristics of the Four-Sector economy. Thus in the Four-Sector economy, transactions with the 'rest-of-the-world' (i.e. the import and export of goods and services, the follow of capital in the form of foreign loans, aid and other direct and direct transactions) are considered in National Income accounting.

SELF-ASSESSMENT QUESTIONS

18. What are the two main approaches to National Income accounting? How do they differ? [To make sure. you understand the two approaches and their main differences, look again at Sections 5.2-5.5]

19. What are the main distinctions between the two-, three-and four-sector economies? Which model is most appropriate to Pakistan's economy? Why?
[If you are not clear about the basic differences, read Sections 5.6-5.8 again]

6. IDENTITIES IN THE ECONOMY

6.1 Internationally Accepted Symbols

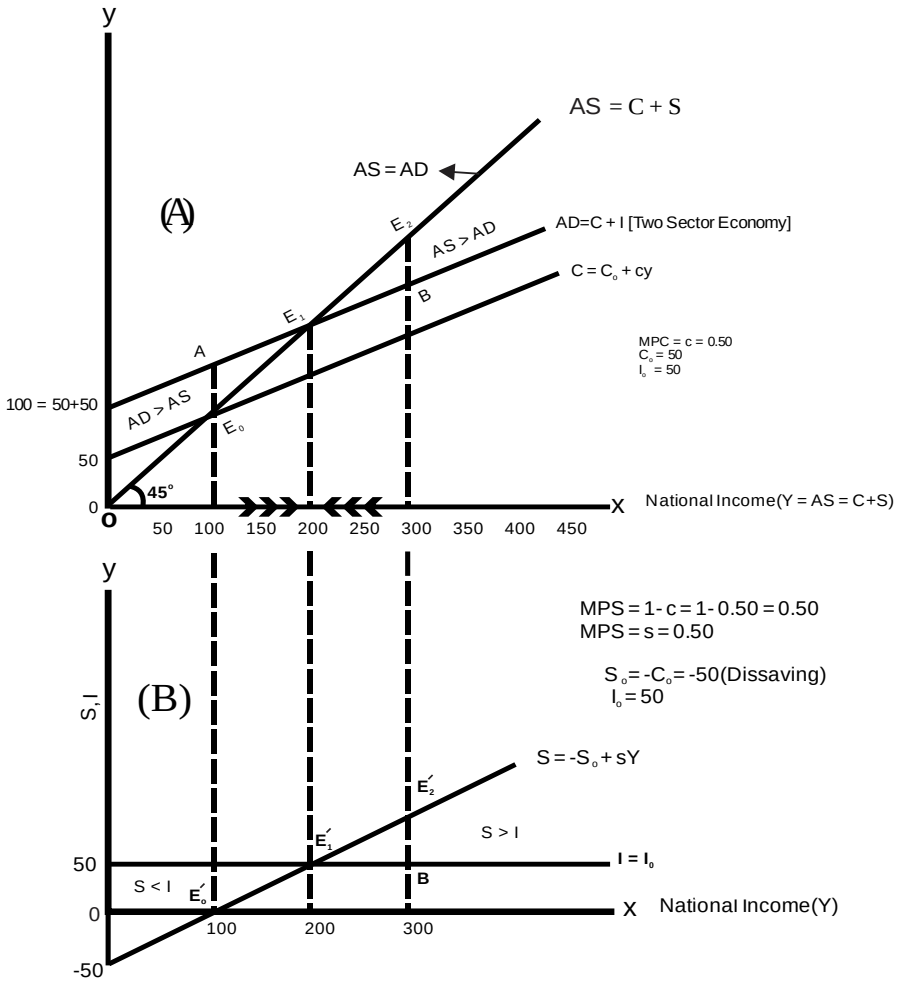
In analyzing the identities which exist in the economy for the purpose of studying National Income, the following are the internationally accepted and commonly used symbols which denote various income concepts

Y – Gross National Product (GNP).
Yp – Personal Disposable Income.
C – Consumption Expenditure.
S – Savings (Personal Income not spent on consumption goods) - Investment Expenditure.
D – Depreciation Allowance.
U – Undistributed Company Income.
G – Government Expenditure on Goods and Services.
F – Financial Enterprises 'Expenditure on Goods and Services.'
T – Direct and Indirect Taxes less Subsidies.
M – Imports.
X – Exports.
R – Overseas Balance on Current Account.
B – Government Borrowings.

6.2 Equilibrium Identities and Two-Sector Economy

Identities are those equations which remain equal at all values of their variables e.g. in equation x + y = y + x LHS = RHS at all values of x and y. Hence, equations of national income by definition considered as identities. Moreover, value of aggregate supply (C + S) at all levels always equal to national income. In diagram 6.3, national income is measured on x-axis and national expenditures on y-axis. The 45º OZ line also show the aggregate supply curve (C + S) in case of two sector economy besides equilibrium points of Aggregate Supply (AS) and Aggregate Demand (AD) or Aggregate Expenditures (AE). The aggregate supply of goods and services is also synonymous with or equal to incomes of the residents of a country or National Income (NI) available for purchasing goods and services.

Diagram 6.3: Determination of Equilibrium National Income – Two- Sector Economy.



Following table 6.5 could explain this phenomenon clearly. Here values of National Income (NI) in column 1and values of Aggregate Supply (AS) in column 2 are equal, therefore 45º line in diagram 6.3 also represents Aggregate Supply (AS) of an economy.

Table 6.5: Illustration of Aggregate Supply = National income

National Income (NI = Y)	Consumption (C)	Saving (S)	C + S = AS
0	40	-40	0
100	120	-20	100
200	200	0	200
300	260	40	300
400	380	20	400

Moreover, during analysis of different sectors of an economy the role of Financial Sector (F) is ignored. The identities of two sector economy are as under.

$$\begin{aligned} Y\ (AS) &= C + S \\ AE\ (AD) &= C + I \\ Y\ (AS) &= AE\ (AD) \\ Y &= C + I \quad \ldots\ldots\ldots\ldots\ldots \quad (1) \\ C + S &= C + I \\ S &= I \quad \ldots\ldots\ldots\ldots\ldots\ldots \quad (2) \end{aligned}$$

(A): First method for the determination of equilibrium level of national income, Identity (1) above, is called the method of AS = AD. The explanation of the same is as under.

Consumption Function: $C = C_o + cY$
Where, c = Marginal Propensity to Consume (MPC) & Y = National Income (NI).

Consumption is a positive function of national income (+ cY) i.e., with the increase in incomes of the residents of a country their average tendency to consume goods and services also increases and vice versa. Whereas C_o is an autonomous consumption– even at zero income one must fulfil one's basic needs, say, a poor person must eat something from his / her relatives or some welfare trust to cope with hunger. Putting consumption function in Identity (1):

$$Y = C_o + cY + I_o$$

As investment is autonomous and not a function of any variable i.e., I = I_o

$$\begin{aligned} \text{Or} \qquad Y - cY &= C_o + I_o \\ Y\ (1 - c) &= C_o + I_o \\ Y &= \frac{C_o + I_o}{1 - c} \\ K &= \frac{1}{1 - c} \end{aligned}$$

K = Keynesian aggregate expenditure multiplier in case of two sector economy
If one wants to calculate the effect of only autonomous investment I_o on the national income, then following equation would work.

$$\frac{\Delta Y}{\Delta I_o} = \text{K or } \Delta Y = K \times \Delta I_o \text{ or } \Delta Y = \frac{1}{1-c} \times \Delta I_o$$

Hence $\frac{1}{1-c}$ is an expenditure multiplier. If MPC = 0.50 the then K = 2. If change in autonomous investment I_o is 50 billion, then increase in national income would be $50 \times 2 = 100$ billion.

(B) The lower panel of diagram 6.3 depicts the equation (2):

$$S = I_o \qquad \text{As } I = I_o$$

Also saving is a positive function of income: $S = -S_o + sY$

Hence, $S = -S_o + sY = I_o$

OR $sY = S_o + I_o$

OR $Y = \frac{S_o + I_o}{s}$

So $K = \frac{1}{s}$ …… Keynesian Multiplier

Which is same as of method (A), as s = 1- c. Hence, Methods (A) and (B) give the same quantity of national income as shown in diagram 6.3. Moreover, E_o is a breakeven point where Y = C, whereas E_1 is an equilibrium point of national income. Hence, AD starts from C + I, because in two sector economy where firms and households simultaneously present, the concept of AD and AS could only be picturized. Remember, 45° line simultaneously represents AS and those equilibrium points where AD = AS. Likewise, national income (Y) shown on x-axis is also equal to AS under the illustration given in table 6.5. The part (A) of diagram 6.3 explains AD = AS method for the determination of equilibrium value of national income. On the left- hand side of equilibrium point E_1, AD > AS. Hence, output should increase to cope with increasing demand until point E_1 reached where Y = 200 billion. On the right side of E_1, AS > AD, inventories pile up that ultimately result in cutting production volume and output tends to decrease until equilibrium point E_1 Where again AD = AS.

Part (B) of diagram 6.3 explains the determination of equilibrium national income through S = I approach. It ensures that planned savings of residents of a country should match with their planned investments. On the left-hand side of equilibrium point E_1, I > S, i.e., injections in the economy are greater than leakages. Resultantly, production would increase until E_1 = Rs. 200 billion. Likewise, on the left- hand side of E_1, S > I, i.e., leakages are greater than injection. Resultantly, output would decrease until point E_1. Hence, equilibrium point E_1 is stable one. Remember, in case of two sector economy it is assumed that the government sector is absent, therefore, National Income (NI) which is another name of Net National Product at factor cost $(NNP)_{FC}$ would automatically emerge because indirect taxes are included in Net National Product at market prices $(NNP)_{MP}$ and we know that indirect taxes are out of question in the absence of government in case of two sector economy.

6.3 Equilibrium Identities and Three- Sector Economy

In three sectors economy the role of government is included that leads to the concept of disposable income (Y_D) obtained after detecting taxes from National Income (Y). Hence, the identities related to three sector economy begin from evaluating the same (i.e.,Y_D).

$Y_D = Y- T + TR$ T = Taxes, TR = Transfer Payments

Now, $C = C_o + c(Y_D)$

Hence, $C = C_o + c(Y – T + TR)$

Tax revenue allocated $T = G + TR$ G = Government Expenditures

Also $G = T - TR$

Aggregate Supply (Resources available): AS = C + S + T

[C =Nation's Fund to cater consumption, S = Nation's saving available for investment, T = Nation's tax revenue available to cater G and TR.]

Aggregate Demand (Nation's expenditure plan): AD = C + I + G

[C =Nation's planned consumption expenditure, I = Nation's planned investment expenditure, G = Planned government expenditures on nation' residents.]

At Equilibrium: AD = AS = Y

[Y = Output realized at equilibrium by AD and AS interaction. However, AD is leader while AS is follower in Keynesian economics. Also Y = National Income (NI), as during production of output each factor of production earn remuneration.]

Hence at equilibrium **Y (Output) = C + I + G…..(1)**

Also at equilibrium AS = AD $C + S + T = C + I + G$

OR **S + T = I + G …… (2)**

Leakages = Injections

(A) First method for the determination of equilibrium level of national income, Identity (1) above, is called the method of AS (Y) = AD. The explanation of the same is as under: Remember, $C = C_o + c(Y - T + TR)$. $I = I_o$, $G = G_o$, $T = T_o$ and $TR = TR_o$. I, G, T and TR are autonomous not having functional relationship with other variables.

Putting consumption function and values of I, G, T and TR in identity (1):

$$Y = C_o + c(Y - T_o + TR_o) + I_o + G_o$$

$$Y - c(Y - T_o + TR_o) = C_o + I_o + G_o$$

$$Y - cY + cT_o - cTR_o = C_o + I_o + G_o$$

$$Y(1-c) = -cT_o + cTR_o + C_o + I_o + G_o$$

$$Y = \frac{-cTo + cTR_o + Co + Io + Go}{(1 - c)}$$

OR $$\mathbf{Y = \frac{1}{1-c} \times - cTo + cTR_o + Co + Io + Go \ldots (3)}$$

Equation (3) shows the change in aggregate output or national income (ΔY) by $\frac{1}{1-c}$ times the changes in all autonomous entities on the right- hand side simultaneously. If say only autonomous investment (I_o) changes then effect of investment multiplier on aggregate output or national income is:

$$\Delta Y = \frac{1}{1 - c} \times \Delta Io$$

(B) The second method for the determination of equilibrium level of national income, Identity (2) above, is called the method of Leakages = Injections. Like consumption, saving is also function of disposable income (Y_D).

$$S = S_o + s(Y_D)$$

Putting saving function with value of Y_D in Identity (2): Remember, $T_o = G_o + TR_o$

$$-S_o + \mathbf{s}(Y - T_o + TR_o) + T_o = I_o + G_o + TR_o$$
$$-S_o + \mathbf{s}Y - sT_o + sTR_o + T_o = I_o + G_o + TR_o$$
$$\mathbf{s}Y = -(1\text{-}s)T_o + (1\text{-}s)TR_o + S_o + I_o + G_o$$

$$\boldsymbol{Y = \frac{-(1-s)To + (1-s)TRo + So + Io + Go}{s}}$$

$$K = \frac{1}{s} = \frac{1}{1-c}$$ Keynesian Multiplier

6.4 Equilibrium Identities under Four- Sector Economy

Four sector economy is also called a complete and open economy as foreign sector is added in the form of exports (X) and imports (M) of a country. Now the respective identities are:

Aggregate Supply (Resources available): AS = C + S + T

Aggregate Demand (Nation's expenditure plan): AD = C + I + G + (X – M)

[Demand for producing exports leads to increase in productive activities of a country: Injections to the economy. In AD net exports (X-M) are included to show complete foreign sector]

At Equilibrium: AD = AS = Y

[Y = Output realized at equilibrium by AD and AS interaction. Also Y = National Income (NI), as during production of output each factor of production earn remuneration.]

Hence at equilibrium **Y (Output) = C + I + G + (X – M) …..(1)**

Also at equilibrium AS = AD C + S + T = C + I + G + (X – M)

OR **S + T + M = I + G + X …… (2)**

Leakages = Injections

(A) First method for the determination of equilibrium level of national income, Identity (1) above, is called the method of AS (Y) = AD. Remember, $C = C_o + c(Y - T + TR)$. $I = I_o$, $G = G_o$, $T = T_o$, $TR = TR_o$, X = Xo and $M = M_o$. I, G, T, TR, X and M are autonomous not having functional relationship with other variables. In case of four sector economy net exports (X – M) is added in the previously discussed three sector economy's case.

Putting consumption function and values of I, G, T and TR in identity (1) as in the three sector economy's case and including foreign sector ($X_o - M_o$) we have.

$$Y = C_o + c(Y - T_o + TR_o) + I_o + G_o + (X_o - M_o)$$

$$Y - c(Y - T_o + TR_o) = C_o + I_o + G_o + (X_o - M_o)$$

$$Y - cY + cT_o - cTR_o = C_o + I_o + G_o + (X_o - M_o)$$

$$Y(1\text{-}c) = -cT_o + cTR_o + C_o + I_o + G_o + (X_o - M_o)$$

$$Y = \frac{-cTo + cTR_o + Co + Io + Go + (Xo - Mo)}{(1 - c)}$$

OR $$\mathbf{Y = \frac{1}{1-c} \times - cTo + cTR_o + Co + Io + Go + (Xo - Mo) \ldots (3)}$$

Equation (3) shows the change in aggregate output or national income (ΔY) by $\frac{1}{1-c}$ times the changes in all autonomous entities on the right- hand side simultaneously. If say only net export (X-M) changes then effect of foreign multiplier on aggregate output or national income is:

$$\Delta Y = \frac{1}{1 - c} \times \Delta(Xo - Mo)$$

(B) The second method for the determination of equilibrium level of national income, Identity (2) above, is called the method of Leakages = Injections. Like consumption, saving is also function of disposable income (Y_D).

$$S = S_o + s(Y_D)$$

Putting saving function with values of Y_D, X and M in Identity (2): Remember again, $T_o = G_o + TR_o$

$$-S_o + \mathbf{s}(Y - T_o + TR_o) + T_o + M_o = I_o + G_o + TR_o + X_o$$

$$-S_o + \mathbf{s}Y - sT_o + sTR_o + T_o + M_o = I_o + G_o + TR_o + X_o$$

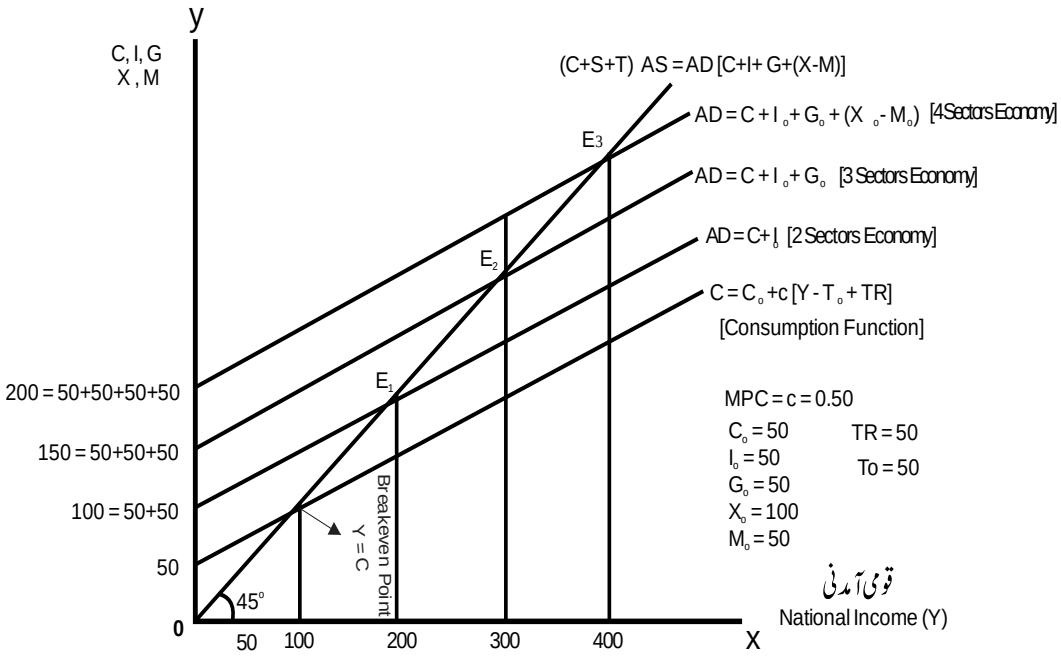
$$\mathbf{s}Y = -(1\text{-}s)T_o + (1\text{-}s)TR_o + S_o + I_o + G_o + (X_o - M_o)$$

$$\boldsymbol{Y = \frac{-(1-s)To + (1-s)TRo + So + Io + Go + (Xo - Mo)}{s}}$$

$$K = \frac{1}{s} = \frac{1}{1-c} = \frac{1}{1-0.50} = 2 \qquad \text{Keynesian Multiplier}$$

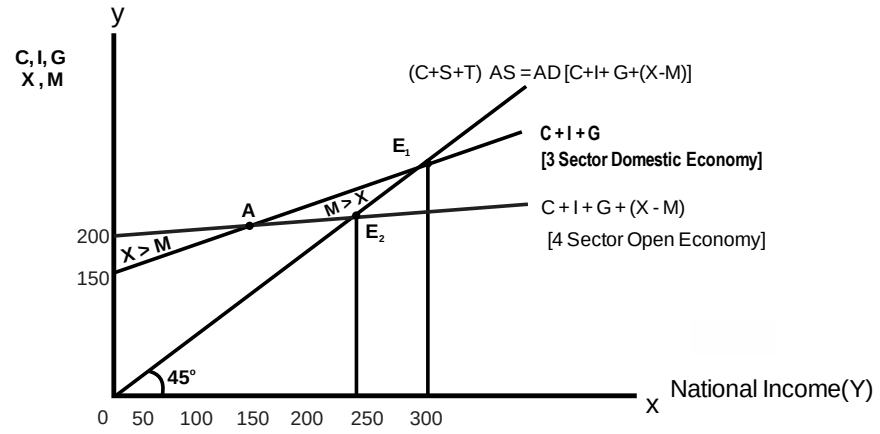
Both (A) and (B) methods explained above, give same value of National Income (NI). Students can check this phenomenon by taking hypothetical data. Moreover, diagram 6.4 only illustrate the first method for three and four sectors economies, however, students could try to draw diagram of the second method for the determination of the equilibrium level of national income.

Diagram 6.4: Equilibrium National Income- Three and Four Sector Economy



In diagram 6.4, most of the details have been discussed under the diagram 6.3. When three-sector economy exists, government expenditures (G) come to play their role in the model. An increase in G_o = 50 billion results in increasing national income = 2 (50) = 100 billion, and thus equilibrium point moves from 200 billion (E_1) to 300 billion (E_2). In case of four-sector economy net exports are included and AD shifts upwards equal to (X – M) = 50 billion. Under the effect of multiplier (= 2), national income increases to 400 billion at equilibrium point E_3 relative to that of E_2. However, if imports are greater than exports, the effect of foreign trade on equilibrium national income would be negative. As a result, the equilibrium national income of open economy would be less than that of the closed economy as shown in diagram 6.5.

Diagram 6.5: Determination of National Income–
A Comparison of Closed and Open Economics



In diagram 6.5, on the left- hand side of point A, X > M; hence, AD curve for open economy is shown above the AD curve for the closed economy. In contrary, on the left- hand side of point A, M > X; therefore, AD curve for closed economy is shown above the AD curve for the open economy. Here (X – M) < 0, which leads to decrease in AD and the resultant equilibrium national income decreases from Rs. 300 billion (E_1) to Rs. 250 billion (E_2).

Numerical Exercise:
Example 1: Given values

$$C = 60 + 0.80(Y),\ To = 0,\ TR_o = 0,\ I_o = 70,\ G_o = 80$$

Find out
(i) Equilibrium value of national income.
(ii) Value of C in case of (i).
(iii) Value of S in case of (i).

Solution: (i) 3- sector economy under total expenditure method:

$$Y = C + I_o + G_o$$

And $$C = C_o + c(Y - T_o + TR_o)$$

Putting values we get,

$$Y = 60 + 0.80(Y - 0 + 0) + 70 + 80$$
$$Y = 60 + 0.80Y + 70 + 80$$
$$Y - 0.80Y = 60 + 70 + 80$$
$$Y(1 - 0.80) = 60 + 70 + 80$$
$$Y(0.20) = 60 + 70 + 80$$
$$0.20\ Y = 210$$
$$Y = \frac{210}{0.20} = 1050 \text{ billion Rupees.}$$

(ii) To calculate equilibrium value of consumption, we know that;

$$C = 60 + 0.80(Y)$$

Putting value of Y from (i) we get.

$$C = 60 + 0.80(1050) = 60 + 840 = 900$$

Hence, equilibrium value of C = 900

(iii) We know that,

$$S + T = I + G$$
$$S + 0 = 70 + 80 = 150$$
$$S = 150$$

Example 2: Given values

$C = 300 + 0.60(Y - T_o + TR_o)$, To = 0, $TR_o = 0$, $I_o = 150$, $G_o = 100$, $X_o = 350$, $M_o = 300$

Find out equilibrium value of national income in 4-sector economy by the following methods:

(i) AD = AS

(ii) S + T + M = I + G + X

Solution:

(i) 4- sector economy under total expenditure method:

$$AS = AD$$
$$Y = C + I_o + G_o + (X_o - M_o)$$

Putting values in equilibrium identity we get,

$$Y = 300 + 0.60(Y - 0 + 0) + 150 + 100 + (350 - 300)$$
$$Y = 0.60Y + 550 + 50$$
$$Y - 0.60Y = 600$$
$$Y(1 - 0.60) = 600$$
$$Y(0.40) = 600$$
$$0.40\,Y = 600$$
$$Y = \frac{600}{0.40} = 1500 \text{ billion Rupees.}$$

(ii) $S + T_o + M_o = I_o + G_o + X_o$

$$-300 + 0.40Y + 0 + 300 = 150 + 100 + 350$$
$$0.40Y = 150 + 100 + 350 = 600$$
$$0.40\,Y = 600$$
$$Y = \frac{600}{0.40} = 1500 \text{ billion Rupees.}$$

Both (i) and (ii) methods have the same answer.

SELF-ASSESSMENT QUESTIONS

20. (a) To which National income concepts do the following internationally accepted symbols apply: Y_P, G, U, S, I, T, M and X?
    (b) What are the symbols for Personal Disposable Income, Depreciation Allowance, Government Borrowings, and Consumption Expenditure?
    [Check your answers against the list in Section 6.1. There is no need to learn the symbols by heart at this stage; but the more you know' the easier you will find it is follow the Identities and argument in Sections 6.2 – 6.4]

21. Have you been able to follow the argument in Sections 6.2 – 6.4 leading from the simplest model of the economy to a more sophisticated model?
    [If you have not been able to follow it immediately. Do not worry. Go over it several times until the pattern of the argument and its relevance to the analyses and estimation of National Income emerges.]

22. From the following information find out the equilibrium national income of 3- sector economy by using methods: (i) AS = AD (ii) S + T = I + G
    C = 200 + 0.75(Y – T + TR), To = 20, TR_o = 0, I_o = 200, G_o = 50
    [Evaluate saving function from consumption function as: S = -200 + 0.25 (Y–T+TR). Because, C_o = - S_o and s = 1 – c]

23. From the following information about 3- sector economy find out (i) Breakeven level of national income (ii) Equilibrium level of national income:
    C = 300 + 0.70(Y – T + TR), To = 0, TR_o = 0, I_o =30, G_o = 30
    [Y = C, in diagram 6.3, E_o is a breakeven point. Hint: Solve for Y = 300 + 0.70(Y – T + TR)].

7. THE AIM OF NATIONAL INCOME ACCOUNTING

7.1 Aim

The aim of National Income accounting is to provide a complete structure of an economic system in terms of transactions. Production is the fundamental concept which is sub-divided according to the uses of products and their sources either in domestic production activity or in the rest of the world. By setting these various transactions in an integrated system of accounts, the economic activity of a nation is measured during a specified period of time, usually a year.

7.2 General Accounting Problems

Income determination in general poses some peculiar problems which need thinking about.

(a) First, non-monetary transactions— i.e. all transactions which do not pass through any market - are not counted, despite the fact that such transactions are directly and indirectly related to production and consumption. Some of the important items

falling in this category are:

(i) Services rendered by housewives and members of the family;
(ii) Farm products kept for home consumption
(iii) Farm products retained for use as farm inputs - such as seeds and farm yard manure
(iv) Illegal transactions - bribes etc.

(b) Secondly, there is no hard and fast line of demarcation which clearly identifies items of Government expenditure as Consumption Expenditure or Investment Expenditure.
(c) And thirdly, it is quite difficult to obtain a truly accurate and consistent measures of depreciation—which is an important item if we are to arrive at correct investment expenditure.

SELF-ASSESSMENT QUESTION

24. Can you summarize in your own words
(a) the aim of National Income Accounting; and
(b) the main problems which it involves?
(If you are not clear about this, re-read Sections 7.1 and 721

8. GROSS AND NET NATIONAL PRODUCT EVALUATION

8.1 Basis of GM Evaluation in Pakistan

The measurement of the GNP and NNP of Pakistan is based on the concepts and classification prescribed in the United Nations Systems OF National Accounts and Supporting Tables of 1960, F, No. 2, Rev. 1). The estimates are prepared by a combination of product, income and expenditure methods The product method is applied to Compute the value added in agriculture, mining and quarring, manufacturing, construction and electricity. The income method is used to work out income accruing from gas transmission and distribution, water supply, sanitation, transportation, storage, communication, trade, banking and insurance, ownership of dwellings, public administration, defence and armed services. The expenditure method is employed to evaluate income from some services.

8.2 GNP of Pakistan—Estimates

The estimates of the Gross National Product of Pakistan for the years 1974-75 to 1977-78 at current factor cost and at constant factor cost are given in Tables 1 and 2; while the estimates for the Not National Product of Pakistan for the years 1974-1975 to 1977-78 at current factor cost and at constant factor cost for 1959-60 are given in Tables 3 and 4.

8.3 GOP of Pakistan—Estimates

The estimates for Gross Domestic Product (GOP), Per Capita GNP and Population of West Pakistan for the years 199-60 and 1974-75 to 1977-78 are given in the line and hat graphs.

TABLE–1
GROSS NATIONAL PRODUCT
at
Current Factor Cost

SECTOR	1974-75	1975-76	1976-77	1977-78 (Provisional)
	Million Rs.			
1. Agriculture	33533	38338	43512	49422
2. Mining & Quarrying	793	968	1250	1232
3. Manufacturing	16618	18831	20574	22735
4. Construction	4996	6739	7376	8442
5. Electricity & Gas Distribution Services	1264	1713	2061	2504
6. Transport, Storage and Communication	7402	8329	9119	10983
7. Wholesale & Retail Trade	15893	17940	19472	22277
8. Banking & Accountancy	2612	3021	3571	4060
9. Ownership of Dwellings	3766	4356	4930	5484
10. Public Administration & Defence	8113	9322	10271	12091
11. Services	8514	10085	10702	13342
12. Gross Domestic Product	103504	119642	132838	152572
13. Net Factor Income from Abroad	1147	2992	5480	11190
14. Gross National Product	104651	122634	138318	163762
15. Population (in Millions)	69.21	71.29	73.43	75.63
16. Per Capita Income (In Rupees)	1512	1720	1884	2165

TABLE–2
GROSS NATIONAL PRODUCT
at
Constant Factor Cost

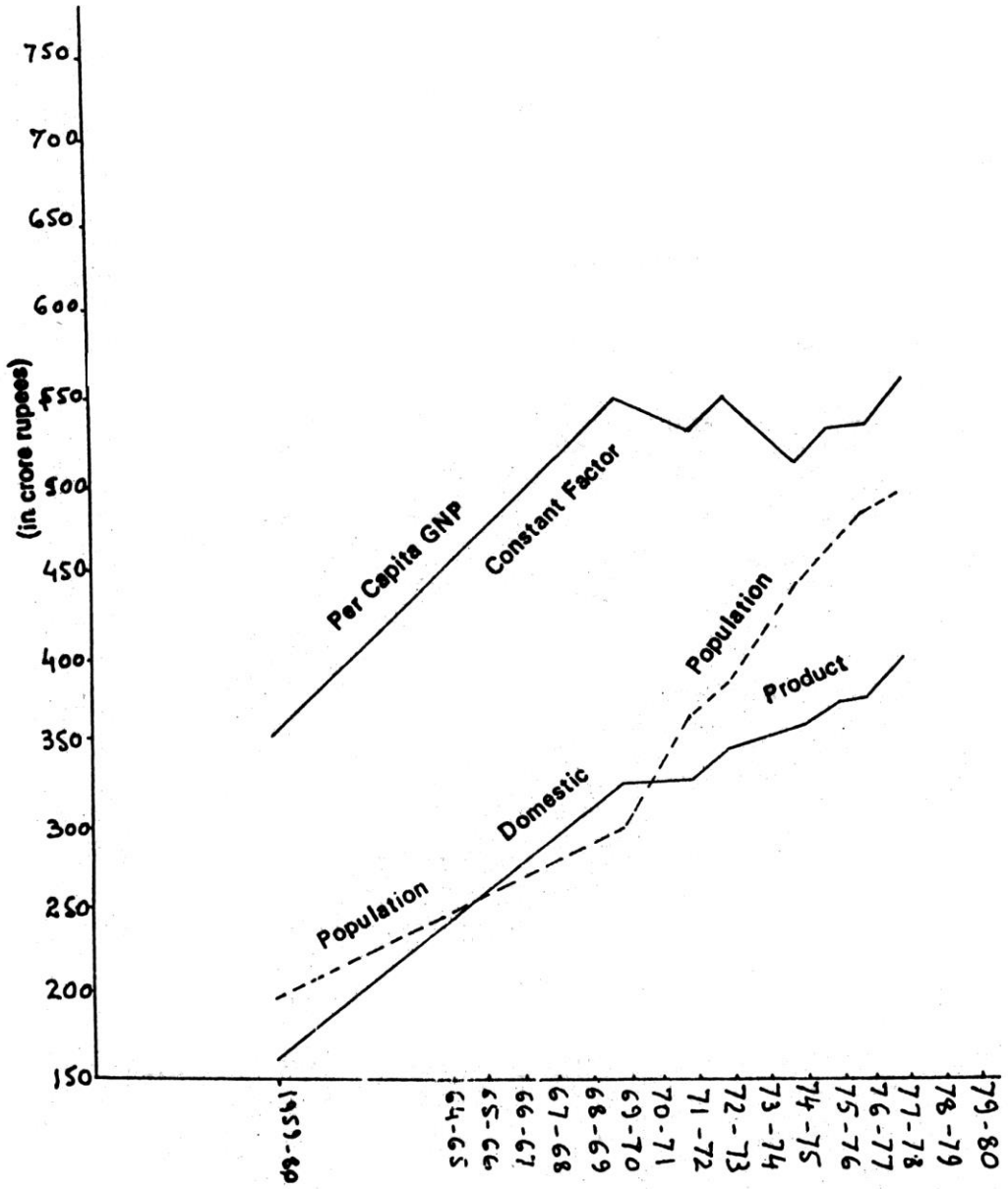
SECTOR	1974-75	1975-76	1976-77	1977-78 (Provisional)
	Million Rs.			
1. Agriculture	13074	13659	13951	14552
2. Mining & Quarrying	181	175	215	211
3. Manufacturing	5834	5851	5791	6065
4. Construction	1754	2094	2076	2252
5. Electricity &. Gas Distribution Services	949	985	1234	1258
6. Transport, Storage and Communication	2574	2602	2611	2926
7. Wholesale and Retail Trade	5527	5605	5575	5936
8. Banking & Insurance	1006	1039	1124	1182
9. Ownership of Dwellings	1321	1369	1418	1469
10. Public Administration and Defence	3065	3162	3190	3489
11. Services	2803	2964	2877	3319
12. Gross Domestic Product	38088	39505	40062	42659
13. Net Factor Income from Abroad	258	711	1295	2486
14. Gross National Product	38346	40216	41357	45154
15. Population (Millions)	69.21	71.29	73.43	75.63
16. Per Capita Income Rs.	554	564	563	597

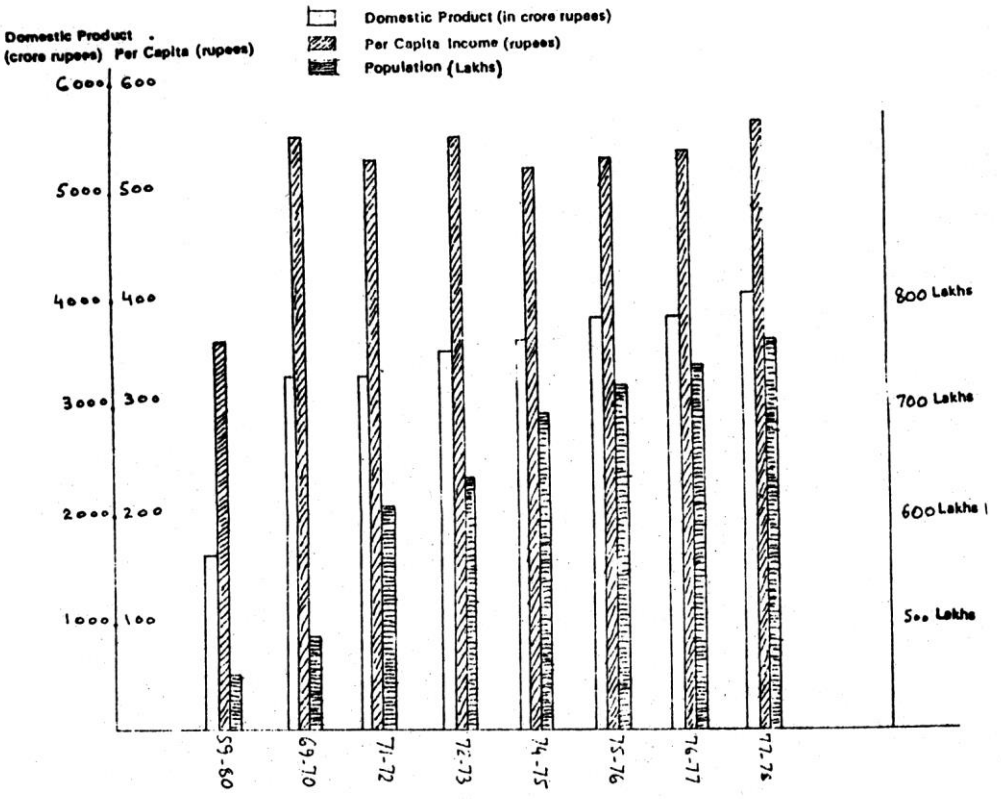
TABLE–3
NET NATIONAL PRODUCT
at
Current Factor Cost

SECTOR	1974-75	1975-76	1976-77	1977-78 (Provisional)
	Million Rs.			
1. Agriculture	31858	36421	41336	46951
2. Mining & Quarrying	753	920	1187	1170
3. Manufacturing	15145	17167	18766	20733
4. Construction	4871	6571	7192	8231
5 Electricity and Gas Distribution Services	1179	1598		2230
6. Transport, Storage and Communication	6483	7181	7874	9483
7. Wholesale and Retail Trade	15574	17581	19081	21831
8. Banking and Insurance	2558	2963	3472	3948
9. Ownership of Dwellings	2885	3336	3776	4200
10. Public. Administration and Defence	7726	8917	9824	11565
11. Services	8107	9605	10195	12675
12. Net Domestic Product	97139	112260	124555	143017
13. Net Factor Income from Abroad	1147	2992	5480	11190
14. Net National Product	98286	115252	130035	1154207
15. Population (Millions)	69.21	71.29	73.43	75.63
16. Per Capita Income (Rs.)	1420	1617	1771	2039

TABLE–4
NET NATIONAL PRODUCT
at
Constant Factor Cost

SECTOR	1974-75	1975-76	1976-77	1977-78 (Provisional)
	Million Rs.			
1. Agriculture	12420	12976	13253	13824
2. Mining & Quarrying	172	166	205	201
3. Manufacturing	5317	5334	5283	5531
4 Construction	1710	2042	2024	2196
5. Electricity & Gas Distribution Services	885	919	1135	1148
6. Transport, Storage and Communication	2255	2243	225·4	2527
7. Wholesale and Retail Trade	5416	5493	5463	5817
8. Banking and Insurance	986	1020	1093	1150
9. Ownership of Dwellings	1012	1048	1086	1125
10. Public Administration and Defence	2919	3024	3052	3338
11. Services	2669	2823	2741	3153
12. Net Domestic Product	35761	37088	37589	40010
13. Net Factor Income from Abroad	258	711	1295	2486
14. Net National Product	36019	37799	38884	42496
15. Population (Millions)	69.21	71.29	73.43	75.63
16. Per Capita Income (Rs.)	520	530	530	562


(in crore rupees)
750
700
650
600
550
500
450
400
350
300
250
200
150
Per Capita GNP
Constant Factor
Population
Product
Domestic
Population
1959-60
64-65
65-66
66-67
67-68
68-69
69-70
70-71
71-72
72-73
73-74
74-75
75-76
76-77
77-78
78-79
79-80



SELF-ASSESSMENT QUESTIONS

25. Can you explain the way in which estimates of GNP are prepared in Pakistan? What three methods are used? And to which areas of the economy are they applied?
[Chock your answer against the discussion in Section 8.1. Why do you think the different methods are used in the different areas?

26. What general conclusions about the progress of Pakistan's economy can you derive from the data in Tables 1–4?
[Study the tables carefully and see how much information you can extract from them. Which sectors of the economy seem to be expanding most quickly? Are any sectors contracting? What are the differences between GNP and NNP and between 'current' and 'constant' factor cost? Why are population figures important? What has been happening to per capita income?]

9. GENERAL SUMMARY

National Income—The money value of the total flow of goods and services produced in an economy in a year. It is measured in three ways

(a) As the value of the output of all goods and services, net of indirect taxes and subsidies, and avoiding double counting.
(b) As the total flow of the income paid to households in return for the supply of productive services, plus profits retained by the firms as reserves.
(c) As the sum of expenditure on consumer goods and investment goods, government expenditure and expenditure by foreigners on exports, loss domestic expenditure on imports.

Besides incomes arising from production within the economy, National Income also includes income which accruez to residents from activities carried on abroad.

Gross National Product (GNP)
Gross Domestic product plus income accruing to residents from investment abroad less income accruing to foreigners.

GNP at factor cost—GNP at market prices minus all Indirect taxes.
GNP at market prices—GNP with all flows valued at market prices.

Gross Domestic Product (GDP)
A measure of the total flow of goods and services produced by the economy ma year. All outputs of goods and services are valued at market prices and then aggregated; double counting is avoided and only the values of the goods for final consumption and investment are included.

NNPGNP leas Depreciation.
Disposable Income —The amount available for expenditure as consumption and saving.

SELF-ASSESSMENT QUESTION

27. Now to check on your understanding of some of the main ideas in the unit—see how many of the following questions you can answer correctly. In each case, tick (j) the one answer which you think is most correct

(a) National Income data can be used:

(i) to measure the economy's growth rate.

(ii) as an indicator of the level of unemployment.

(iii) to measure the size and frequency of economic fluctuations.

(b) GNP is defined as

(i) The total volume of goods and services produced in the economy over the period of a year.

(ii) The value of all goods in the economy produced within a year, less depreciation.

(iii) The value of all goods and services produced in final form in the economy over the period of a year.

(iv) The value of all goods and services that could possibly be produced in the economy within one year.

(c) Which of the following statements expresses the correct rate of Government spending in computation of GNP?

(i) Only Government transfer payments are a part of GNP.

(ii) No part of Government spending is a part of GNP.

(iii) All Government expenditures are part of GNP.

(iv) Expenditures on Government goods and services are counted as part of GNP.

(d) Given GNP, we can determine NNP, In which of the following ways:

(i) By adding depreciation to GNP.

(ii) Adding indirect business taxes to GNP.

(iii) Subtracting depreciation from GNP.

(iv) Subtracting government spending from GNP.

(v) Subtracting transfer payments from GNP

(e) Personal Income equals:

(i) NNP minus undistributed profits of corporations.

(ii) NNP minus undistributed profits of corporations minus corporate profit taxes.

(iii) NNP minus undistributed profits of corporations minus corporate profits taxes minus contribution to social Insurance funds.

(iv) NNP minus undistributed profits of corporations minus corporate profits taxes minus contributions to social Insurance funds plus transfer payments.

(f) Disposable personal income equals:

(i) Personal income plus indirect taxes.

(ii) Personal Income plus direct and indirect taxes.

(iii) Personal income plus direct and indirect taxes minus subsidies.

(iv) Personal income minus direct taxes.

[The correct answers are given at the end of the unit following the 'Bibliography and Suggestions for Further Reading.' If you got any of the answers wrong, then re-read the relevant part of the text].

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ANSWERS TO SELF-ASSESSMENT QUESTIONS

25. (a)—(i);
    (b)—(iii);
    (c)—(iv);
    (d)—(iii);
    (e)—(iv);
    (f)—(iv).

Unit–7

BANKING
PART-I: MODERN BANKING
PART-II: CENTRAL BANKING

Written by: Abdul Haleem Khawaja

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INTRODUCTION

This is a unit on banking. It covers all aspects of banking relating to commercial banks and the central bank of a country. Banks have a history of their, own which shows that they have develop ed into their present form through an evolutionary process. We have, therefore, examined the evolution of banks in the early part of the unit. In addition, we have analysed the various kinds of banks and the functions which they perform.

In this age of economic development, banks play an important role in the development of a country. They mobilize the savings of the people and direct them into various channels of investment. Banks encourage the growth of business transactions and thereby promote the level of income and employment in the country. They create credit by advancing loans to individuals and institutions; and in so doing they earn their own profits. However, the expansion of credit can lead to economic difficulties. In order to avoid these difficulties, the 'central bank' of a country acts as the controller of credit. It employs various techniques to keep credit within safe limits in order to maintain economic stability in the country. In addition, the central bank issues paper currency, gives loans to the government and coordinates the working of the commercial banks. Commercial banks keep in view their profitability while performing their various functions; whereas the central bank rationalizes these activities in the public interest and without regard to profit as a primary consideration.

Part I deals with the banking system in general—its evolution, the range of different types of banks and their, functions, and in particular the creation of credit. Part II deals with the role and functions of a central bank—and in particular, the way in which it acts as a controller's of credit.

OBJECTIVES

By the end of Part-I of this unit, you should be able to

(a) describe the general evolution of banking;

(b) explain the nature and purpose of a bank;

(c) list the different kinds of banks and distinguish between their main functions

(d) discuss the functions of a commercial bank; and

(e) outline the process by which credit is created and the limitation on the creation of credit.

By the end of Part-II, you should be able to

(f) describe the role and functions of a central bank

(g) discuss the central bank's rule in issuing currency and acting as banker to other banks and to the state; and

(h) explain the various ways in which the central bank acts as a controller of credit.

PART-I: MODERN BANKING

1. THE EVOLUTION OF BANKS

A bank is an institution which deals in money. It receives money from the people who can spare it and pays interest on it. It lends money to persons who need it for their consumption and their capital requirements. A bank lends at a specific rate of interest and thereby makes a profit. Modern banks are not only, profit-making institutions but they also play a crucial role in the growth of an economy. They mobilize the savings of the people and channel them into productive activities. They stimulate the rate of business transactions and encourage investment opportunities. In this way, they help to promote the level of output, income and employment in the country. In view of the considerable significance of modern banking, it is important that you should understand its origins and development.

Modern banks have three main ancestors—merchants, money-lenders and goldsmiths. in ancient times, merchants were known to be people of high repute. They used to issue documents which circulated as titles to money. Money-lenders used to carry Out their business of borrowing and lending at a very high interest rate known as 'usury'. Money was deposited with them and they paid interest on it. Money was borrowed from them on which they charged a higher rate of merest. In this way, they used to make their profit from the difference between the low Interest rate which they paid to their depositors and the higher interest rate which they received from those who borrowed from them. Goldsmiths used to keep the gold and silver which people owned in safe custody—particularly at a time when the money supplies consisted entirely of gold and silver coins. People used to get receipts for the gold and silver which they deposited. Originally, these receipts were used to reclaim the gold and silver: but after some time they began to be used as paper money for business transactions. It was more convenient for a person to hand over a receipt than to withdraw gold from the goldsmith and then make the payment. Still later, a further development occurred. Goldsmiths began to allow people to instruct them in writing to transfer. such and such an amount of gold from the original depositor to a particular creditor. These order slips developed into cheques at a later-stage. With the passage of time the goldsmiths realized that they could issue deposit receipts in excess of their gold stock. Thus they allowed their customers to withdraw more gold than they had in fact deposited—because they came to realize that people do not normally withdraw the whole of their gold deposits at one time. Here we see the beginnings of 'the creation of credit'.

Modern banks are still performing essentially the same functions as their predecessors. Like merchants, they issue documents such as bills of exchange to finance foreign trade. Like money-lenders, they collect money from those who can spare it and lend it at a rate of interest to those who need to borrow. Borrowing and lending is still a major function of our modern banks. Like goldsmiths, banks provide people with a convenient way of making payments to each other by issuing cheques rather than handing over cash; and at the same time they are also very much concerned with the creation of credit.

SELF-ASSESSMENT QUESTION

1. Having read this short introductory section, can you now explain briefly in your own words the general-way in which our modern banking system has evolved?
   [It you are still not clear about this process of evolution, read through Section-I again.]

2. WHAT IS A BANK?

In the introductory section we have learned about the origins and development of the modern banking system. But what is a bank? How can we define its functions? The answer to these questions is. very easy. We can say that a bank is a financial institution which deals in money. It receives cash deposits from its customers and pays interest. It gives various types of loans to people or institutions who require them, either for consumption or for investment purposes; and it receives interest on such loans. In addition to this, a bank also provides various services to its clients in order to enable them to conduct their private or business financial transactions more conveniently. A bank authorises its clients to transfer their money from one place to another. It also discounts the bills md securities of its customers. It provides for the safe-keeping of valuable articles such as jewelry and important documents. It acts as an agent for its clients in various spheres of financial activity. All of these things are services which a modern bank provides.

Professor Geoffrey Crowther has defined the functions of a bank as follows:
A bank is an institution which takes the debts of other people, to offer its own in exchange, and thereby to ‘create’ money. (The banker) may be dealer in debts, but indebtedness is only the obverse of wealth, and it would be equally permissible to describe the banker as a liquefier of wealth.

SELF-ASSESSMENT QUESTION

2. Having read the brief section above, can you now make a list of the main fu[i]nction6 and activities of a modern bank?
   [When you' have completed your list, check It against the items in Section-II. If any items are missing, then add them so that your list will be complete. You may find it useful and Interesting to return to this list when you have completed work on Sections 3 and 4]

3. KINDS OF BANKS

Modern banks have been classified into various kinds, depending on their specific activities. The main types of banks are as follows:

3.1 Commercial Banks

These bank primarily function, to finance the capital requirements of the entrepreneurs who are running trade and industry. They receive deposits from the public and advance short-term loans to business firms and industries. They also carry out other banking activities like the discounting of bills and the transfer of money from one 'place to another These banks are generally established on the pattern of joint stock companies, but they may be nationalized at a later stage. In Pakistan, the Allied Bank, Habib Bank, United Bank etc., are commercial banks.

3.2 Agricultural Banks

In order to strengthen the financial base of agriculturists, these banks provide short and long-term credit facilities. Long-term loans are given for the purchase of tractors and tube wells and for the introduction of agricultural innovations; whereas short-term loans are made available for the purchase of seeds; fertilizers etc. The Agricultural Development Bank of Pakistan (ADBP) Is the only financial institution which works primarily for the improvement of the agricultural sector of the economy. In addition; cooperative credit societies also advance loans 10 farmers and agriculturist.'

3.3 Industrial Banks

These banks advance loans to industrial enterprises only. They give long-term loins to enterprises for the establishment and expansion of Industrial enterprises. These are many industrial banks in European countries, but there are only two in Pakistan. These are the Pakistan Industrial Development. Bank and the Pakistan Industrial Credit and Investment Corporation.

3.4 Saving Banks

These banks accept small savings-from people with limited 'means and induce them to mobilize such savings by paying a reasonable rate of interest. In Pakistan, National Saving Centres and 'Post Offices are functioning as saving banks.

3.5 Exchange Bank

These banks deal in foreign exchange. They buy and sell foreign currencies and finance international trade by discounting bills of exchange. They issue drafts for the transfer of money to foreign countries and play an important role in promoting Pakistan's international trade.

3.6 The Central Bank

The central bank is the chief of all banks. It controls the whole banking system and regulates the money supply in a country. It does not deal directly with the public. It neither receives deposits, nor advance loans. Therefore, It Is not a profit-making institution. The central bank is the banker of the banks and the state. It enjoys a monopoly with regard to issuing paper currency. It is the custodian of the money market and seeks to ensure the country's economic stability in the face of economic and financial problems. It should be noted here that with, the exception of the central bank, the functions of the other kinds of banks overlap in many respects. To a certain extent all types of banks perform the same functions as the commercial banks.

SELF-ASSESSMENT QUESTION

3. Can you give a list of the different types of banks which exist in Pakistan —together with a brief note on their main functions?
   [Check your answer against the list given in Section-3. Can you also give an example of each of the different types of banks?]

4. THE FUNCTIONS OF A COMMERCIAL BANK

4.1 Accepting Deposits

The holding of cash by individuals is always unsafe. Money is also likely to be unproductive for certain categories of people who lack the necessary Initiative and competence to make good investments in profit. yielding enterprises. Therefore, such people often prefer to put their money in a bank and earn interest on it. Bank deposits not only provide safety for a person's savings but they are also a good way of earning money without any of the risks of loss which might result from unwise Investment in a business enterprise. Thus banks receive deposits from the people who have suites, money to spare. The following are the different. kinds of bank deposits.

(a) Demand Deposits

These deposits are received in the current account. The bank does not pay any interest on them because they can be withdrawn at any time simply by issuing a cheque. Day-to-day business transactions can conveniently be conducted with the help of demand deposits' and a current account.

(b) Fixed Deposits

Money which Is received as 'fixed deposits' is kept by the bank for a specified period of time. The depositors are required not to withdraw their deposits, partly or fully, before the expiry of the fixed period. Such deposits are used by the bank in advancing loans or making its own investments. Therefore, the bank pays an appropriate rate of interest on fixed deposits.

(c) Saving Deposits

In order to attract small savings a commercial bank receives 'savings deposits' in its saving accounts. Depositors are authorised to withdraw only a small proportion of their deposits at a time — which enables the bank to make productive use of their deposits, Consequently, the bank pays interest on these savings deposits. In order to withdraw more than the stipulated amount, the savings depositor has to give advance notice to the bank.

4.2 Advancing, Loans

A bank is obviously aware of the fact that all its depositors are unlikely to 'demand their deposits at the same time. For this reason, it is in a position to lend a certain percentage of its total deposits to suitable clients. The bank makes a profit by advancing loans. But the bank is lending money deposited with it by other people; and it has to meet the demand of these depositors when they issue cheques from time to time to claim a part or the whole of their deposits. Consequently, it has to keep cash in reserve to meet its depositors' demands. Thus a bank has to be very careful in achieving a reasonable balance between its cash reserves and its loans. Alternatively, we can say that there has to be an appropriate rate between the liquidity and the profitability of a bank. Too much liquidity will not allow a bank to earn reasonable profits; too much lending will prevent it from meeting demands from its depositors. in either case, a commercial bank will get a bad reputation. For this reason, it is required that a bank's capacity to lend money should be limited by the size of its reserve base.

Now we turn to the various methods of advancing loans:

(a) By creating deposits of credit

Having satisfied itself on the feasibility and economic viability of at enterprise, the bank gives loan to a firm or an entrepreneur. It opens an account in the name of the debtor and authorises him to draw money up to the amount of the loan from this account by issuing cheques. Thus each loan creates a deposit. Therefore, by advancing loans, the bank turns deposits of cash into deposits of credit.

(b) By means of an, overdraft

It is also convenient for a businessman to obtain a loan by means of an overdraft. By this method. the bank allows its customer to draw an additional amount of money over and above his deposit to the extent of the loan sanctioned. Interest is charged only on -additional amount drawn and not on the 'limit' of the loan.

(c) By Discounting of Bills

A bill is produced by the salter of a product in the name of a person who purchases it without making any payment. The buyer verifies the bill and promises to pay the given amount within the period of time mentioned in the bill. If the seller needs the money before the expiry of the time period, he may 6o to a bank to get the bill discounted. The bank receives commission and gives the specified amount of the bill to the person who presents it. When the bill matures, the bank realises the whole amount of the bill with interest from the person in whose name the bill was issued. This is, therefore, a method of short-term lending by a bank. Generally, this type of loan is given for a period of one to three months.

(d) By purchasing bonds and securities.

Instead of advancing loans directly to its customers, a bank purchases government securities and the bonds of joint stock companies which yield interest at a fixed rate. In, this way, the bank can earn a substantial amount of income.

Geoffrey Crowther says that "a bank does not create money out of thin air at transmutes other forms of wealth into money" — which means that a bank does not advance any loan without mortgaging mobile or immobile property. Generally, a borrower has to deposit his capital assets, loans, shares of joint stock companies, or gold, etc. as security with the bank in order to get a loan: The bank' determines its margin requirements on security loans. The bank's margin requirement is the difference between the market value of the security mortgaged and the amount of loan being given to a borrower. Suppose a borrower hands, over a security worth Rs.100/- to a bank and gets Rs.75/- as loan. The margin requirement bf the bank in this case would be 25% (i.e. 100-75).

4.3 Creation of the Safest Medium of Exchange

Most commercial transactions are now handled by cheque—because cash payments are regarded as neither safe nor convenient. In industrially-developed countries, approximately 907, of financial transactions are conducted in this way. Thus the cheque has come to be regarded as the safest and most convenient medium of exchange. It offers businessman more security than cash; and it also encourages business activity.

4.4 Transfer of Money

Carrying cash is not Only unsafe but it is also inconvenient. If a person had to carry or send cash from one place to another, it could easily be lost or stolen; and it would also be difficult to recognise and recover. A commercial bank, however, provides the facility of transferring cash over great distances for a nominal charge A person can deposit money with a bank and get a draft in the name of the branch in the city to which the money is to be transferred. The bank draft can either be taken to that place personally or it can be sent by post. In either case, the requisite amount of money will be quickly available from the bank's branch in the city to which the money is transferred.

4.5 Financing of Foreign Trade

A commercial bank will stand guarantee for foreign bill of exchange and make suitable arrangements for the encashment pf these bills. Moreover, it will convert the currency of one Country to that of another on behalf of the central bank. It receives the foreign exchange earned by exporters and makes foreign payments for importers. All inward and outward remittances are carried on through the commercial banks. In this way, a commercial bank hot only facilitates monetary transactions throughout the world, but it also finances the foreign trade which plays a key role in the development of an economy.

4.6 Agency Services

A commercial bank acts as an agent for its clients. it makes payment: to a person in whose name a cheque is issued by. its client and it receives payment on a cheque issued in the name of its client. It receives salaries and the dividends of joint stock companies on behalf of its customers. It pays rent, insurance premiums, taxes, and subscriptions to charitable institutions at regular intervals if it is requested to do so by its customers (e.g. by means of a 'Banker's Order'). A bank also provides agency services for the sale and purchase of bonds, Securities and shares of joint stock companies.

4.7 General Utility Services

A commercial bank advises its clients on matters relating to investment, foreign trade and business dealings. It is the custodian of Its clients' valuable articles, documents, gold ornaments, bonds and securities—which are put in lockers or 'safe deposit boxes'. It also acts as a trustee for its customers—particularly in dealing with the inheritance of property.

SELF-ASSESSMENT QUESTIONS

4. Can you now list the main functions of a commercial bank?
   [(Check your answer against the main sub-headings of Section 4]

5. What are the three kinds of deposits accepted by commercial banks?
   [Check you answer against Section 4.1]

6. What are the four main ways in which commercial banks can advance loans?
   [Check you answer against Section 4.2]

7. (a) Will commercial banks lend money to anyone? If not, what sort of conditions have to be satisfied by the borrowers?
   (b) Are there any limits to the total amount of money which a bank can advance in loans? If so, what are they?
   [Check your answer against the discussion in Section 4.2]

8. Can you explain in your own words how the system of 'cheques' and 'bank drafts' works? What advantages do these ways of transferring money have over the use of cash?
   [Check your answer against Sections 4.3 and 4.4]

9. What role do the commercial banks play in the financing of foreign trade?
[Check your answer against Section 4.5, What difficulties would be faced by businessmen involved in importing and exporting If these services did not exist?]

10. In what ways does a commercial bank operate as an 'agent' for its customers? What other 'general utility services' do the commercial banks offer?
[Check your answer against Sections 4.6 and 4.7]

GENERAL NOTE ON SAQS 4–10

The information given in the text of this unit is intended to provide you with a general idea of the way in which commercial banks operate and the main services which they provide for their customers. However, in studying this subject, you would probably also find it very useful if this is practically possible) to have a discussion with the manager or a senior officer of a bank in your area.

Bank managers or senior bank officers will probably be very willing to help you provided that you approach them courteously and explain that you are a student studying an Allama Iqbal Open University B.A Level Economics course and that you would like their help. However, before going to see a bank official you should prepare yourself carefully and make sure you know exactly what you want to discuss with him.

Therefore .....

(i) First read Part I of this unit carefully and make sure you have Understood it.

(ii) Then, make a list of the questions you would like to ask and the points you want to discuss about how the bank operates. (You might be interested, for instance, in (a) what proportion of the bank's accounts are current accounts and what proportion are saving accounts; (b) the purpose for which the bank lends money in your particular area, the rates of interest charged, and the periods of repayment; (c) what proportion of it funds the bank is permitted to lend ; (d) what qualities it expects from potential borrowers and what type of 'security' it requires or is prepared to accept ; (e) what other services the bank provides, for instance, to businessmen and farmers together with other questions which may be particularly appropriate in your area. The important thing is that you should be clear in your, mind what questions you want to ask before you contact the bank—so that you can explain clearly and exactly what it is that you want to talk about; and so that when you go there, you can take the best advantage of the opportunity, and not waste either your own time, or that of the bank officer.

(iii) Only then, when you are properly prepared, should you contact the bank and ask to make an appointment explaining clearly what you want to talk about and why.

(iv) And when you have the discussion at the bank, remember that financial matters are often private and confidential; therefore, you should be careful to talk about general banking practice and not to enquire about individual cases. Incidentally, if (as a

registered student for the course) you are attending a study centre, it might be possible for your tutor to arrange a group-visit to a bank to discuss banking practice. However, even if you go to a bank as a member of a group, you will still need to prepare yourself properly to get the most out of the visit.

5. THE CREATION OF CREDIT

The whole business-of a bank can be expressed in one sentence — "the bank borrows to lend". This means that a bank accepts deposits at a certain rate of interest—this is simply borrowing. In order to make borrowing profitable, the bank gives loans to its customers at a specific interest rate. By advancing loans, a commercial bank creates money; and this process is known as 'the creation of credit'. This credit money becomes a part of total money supply in a country; and hence Increases the stock of money (See Unit 11).

This is not to say that there is a magic wand in a bank by which credit is created: nor is there a machine with which the bank manager can print currency notes for his borrowers. It is simply a method of authorising a borrower to draw depositors' money to a given extent by using cheques It is obvious that all depositors are unlikely to demand their deposits at the same time. Only a small proportion of total deposits will normally be claimed each day. With this in mind, the bank does not need to hold 100% cash reserves to meet the depositors' demand. Instead, it keeps only a certain percentage of deposits in cash for the day-to-day demands of depositors; and the rest of the deposited money is loaned out to borrowers by opening credit accounts in their names. In this way, a bank creates credit to an extent several times greater than its actual cash reserves.

This can be put in another way—i.e. that the total deposits of a bank shown in the cash book exceed by a number of times the actual cash deposits which have been received. That is why we say that the amount of a loan, or the deposit of credit, is merely cash-book money.

5.1 The Process of Credit Creation

The process of credit creation is an aggregate economic activity and all the banks of a country cooperate with each other to create far more credit money than their total deposits. Let us assume that

(a) There are more than three banks in a country e.g. Allied Bank, Habib Bank, United Bank, Muslim Commercial Bank, National Bank, etc.)
(b) Each bank is committed to keep 25% of its total deposits as cash receives to meet the daily demands of depositors; and
(c) All receipts and payments are made through banks.

Now suppose that a person deposits Rs.800/- in Allied Bank. With this deposit, the assets of the bank go up by Rs.800/- and likewise its liabilities increase to the same extent. The bank has to keep 25% of this amount as its cash reserve; but the remaining 75% is available to be loaned out. In this way, the bank will keep Rs.200/- with it whereas Rs.600/- will be given as loan to a client by opening a deposit of credit in his name. Thus, the balance sheet

of Allied Bank appears as follows:

Table 12/1: Balance Sheet of Allied Bank

Assets			Liabilities		
Reserves	=	+ Rs.200/-	Deposits	=	+ Rs.800/-
Loans	=	+ Rs.600/-			
Total	=	Rs.800/-	Total	=	Rs.800/-

If there were only one bank in the country *(e.g.* Allied Bank) it would enjoy a monopoly position. The monopoly bank can keep its whole deposits as its cash reserve and create credit to a multiple extent. The ratio of cash to liabilities in his case would be 25 : 100 (25 %) or 1: 4 A deposit of Rs.1/- would enable the bank to create deposits of Rs.4/-; or a deposit of Rs.800/- would enable it to create deposits of Rs.3200/-. Thus the balance sheet of a monopoly bank would appear as follows:

Table 12/2: Balance Sheet of A Monopoly Bank

Assets			Liabilities		
Reserves	=	+ Rs.800/-	Deposits	=	+ Rs.3200/-
Loans	=	+ Rs.2400/-			
Total	=	Rs.3200/-	Total	=	Rs.3200/-

According to this balance sheet, the cash deposit of the monopoly bank is Rs.800/- (which is taken as cash reserve) and the bank has created deposits of credit of Rs.2400/- (which is the Creation of credit). In this way, total deposit liabilities of the bank have gone up to Rs.3200/-.

We all know that it is unusual to have only one bank in a country which enjoys the monopoly of creating credit. There are nearly always many banks which undertake banking business simultaneously. In such a case, each of these banks will not function like a monopoly bank. Instead, each bank will operate like the Allied Bank which keeps 25% of its deposit as cash reserve and lends the rest of it. The reasons for such behaviour is that, in the case of many banks, the borrowers of the Allied bank may have accounts in other banks also; and in order to meet the claims of borrowers, the Allied Bank may lose cash to these banks, in this way, it will be forced to reduce its deposits and fall back to the original position. Thus, in a banking system where many banks operate simultaneously, it is required that a bank should maintain its reserve ratio by reducing its cash instead of increasing its deposits. In this way, the banking system as a whole can achieve the same result as a monopoly bank has obtained.

Now let us what happens to Habib Bank when the Allied Bank creates credit of Rs.600/- on the basis of a cash deposit of As. 800/-, its cash reserves being Rs.200/-. A person who gets a loan of Rs.900/-from the Allied Bank purchases commodities from a. person who has an account in Habib Bank. Therefore, this amount of money will be deposited with Habib Bank—whose cash reserves will at once go up. It will hold only 25% of this amount

as cash reserve, and the remaining 75% will be as follows:

Table 12/3: Balance Sheet of Habib Bank

Assets			Liabilities		
Reserves	=	+ Rs.150/-	Deposits	=	+ Rs.600/-
Loans	=	+ Rs.450/-			
Total	=	Rs.600/-	Total	=	Rs.600/-

In this balance sheet, we find that Habib Bank has created a credit of Rs.450/- by advancing a loan of an amount equal to 75% of Rs.600/-. Supposing that the person who borrows Rs.450/- from Habib Bank purchases goods and services from a person who has an account in the United Bank. He will deposit this amount with the United Bank whose cash reserves in turn will go up. The United Bank will also keep 25% of the additional amount as cash reserve and lend the rest of it. United Bank will present its balance sheet in this way

Table 12/4: Balance Sheet of United Bank

Assets			Liabilities		
Reserves	=	+ Rs.112.50	Deposits	=	+ Rs.450/-
Loans	=	+ Rs.337.50			
Total	=	Rs.450/-	Total	=	Rs.450/-

The other banks follow suit and continue to create credit upto 75% of their deposits. In this way, an initial deposit of Rs.800/- will enable the whole banking system to create total deposits of Rs.3200/- out of which deposits of credit will be of Rs.2400/-. Thus, in this process of credit creation, the whole banking system has created credit money of Rs.2400/-. The credit creation process can be summed up and illustrated in the following table

Table 12/5: Credit Creation

Bank	Deposits	Loans (75% of deposits)	Cash Reserves (25% of deposits)
Allied Bank	Rs.800	Rs.600	Rs.200
Habib Bank	Rs.600	Rs.450	Rs.150
United Bank	Rs.450	Rs.337.50	Rs.112.50
Muslim Commercial Bank	Rs.337.50	Rs.253.13	Rs.84.37
National Bank	Rs.253.13	Rs.189.84	Rs.63.28
Other Banks	Rs.759.37	Rs.569.53	Rs.189.85
Total Banking System	Rs.3200	Rs.3400	Rs.800

In this table, the process of credit creation continues until no excess cash reserves are available to create additional deposits.

Now you can see from the above table that the existence of the banking system leads to a multiple expansion of deposits under a reserve ratio of 25%. This process of credit expansion can also be explained with the help of a formula, known as an 'Infinite Geometric Series'. The formula is as follows:

$$S = \frac{a}{1-r}$$

In this this formula:

a = first term
f = Common ratio
S = sum to infinity

According to the formula, the various records of credit expansion can be expressed in the following terms:

Total Amount of Deposits

$$= \frac{800}{1-\frac{75}{100}} = \frac{800}{\frac{25}{100}} = 800\,x\frac{100}{25} = Rs.3200$$

We find that 1– r = $1-\frac{75}{100} = \frac{25}{100}$ or 25% which is the reserve ratio.

Thus the formula can be rewritten as $S = \frac{a}{R}$

where 'a' is the first term or primary deposit and 'R' is the reserve ratio.

Therefore, the total amount of deposits equals:

$$\frac{800}{25\%} = \frac{800}{25/100} = x\frac{100}{25} = Rs.3200.$$

It is interesting to note hero that the process of credit creation also works in the reverse direction. Just as the primary deposit of Rs.800/- has increased the amount of total deposits to Rs.3200/-; so the withdrawal of Rs.800/- from the banking system will reduce the total deposits of banks by Rs.3200/-. This process is known as 'the destruction of credit'. There is no difference between the process of credit destruction and that of 'credit creation'.

5.2 Limitations on the Creation of Credit

_____ not free to create as much credit as they wish. They are limited by certain restrictions. The limitations on the power of commercial banks to create credit are as follows:

(a) Banks' Reserve Ratio

The cash reserve of commercial banks, fixed as a certain percentage of total deposits, is the first and foremost limitation on the creation of credit. In some countries, banks are legally

bound to maintain a particular reserve ratio; whereas in other countries, the reserve ratios are kept on the basis of the bank's experience. For example, commercial banks in the United States keep a specific proportion of their deposits as 'legal reserves'—as a result of which their power to create credit is restricted to a certain extent. In the UK., however, there is no legal obligation on commercial banks to fix a reserve ratio. Instead, they have learnt by experience that they can safely run the process of credit creation with a minimum cash reserves ratio of 8% and more liquid assets' ratio of 28%. Whenever banks' reserve ratio falls below a specified percentage they are forced to bring. down their total deposit liabilities. Thus, as a result of the reserve ratio, limitation is placed on the creation of credit.

(b) The Amount of Cash

The total amount of cash available in a country tends to be regulated by the government through its main monetary authority—usually the central bank. Commercial banks can create credit only on the basis of the amount of cash available in the country. If the monetary authority increases the volume of cash or currency, the bank will be able to create more deposits of credit; and if the amount of cash which can be deposited in the banks i§ reduced, this will lead to a 'contraction of credit'.

(c) Public Demand for Cash

The demand of the population to hold cash for their day-to-day transactions also affects the level of credit creation. People in advanced countries mostly use cheques to make payments for business transactions. Only a small amount of cash is used for the purchase of relatively small things—like eggs, vegetables, ice-cream, etc. The well-established banking habits of the people enable commercial ban to expand the credit network even at a minimum percentage of cash reserves. In developing countries like Pakistan, however, people prefer to hold cash rather than putting it in a bank. The liquidity ratio of banks in such countries is always very high; as a result of which, credit expansion is to some extent restricted.

(d) Acquisition of Valuable Assets

The process of credit creation is limited by the acquisition of valuable assets on the basis of which banks-advance loans. If the loans are not replayed, the banks sell these assets to secure the amount of the loan. Non-liquid assets (like stocks and shares, and buildings) are readily accepted by a bank as security for loans, because these assets can be easily converted into cash. The more the banks can acquire as security, the more credit they can create; but fewer assets will allow the creation of less credit. The amount of available assets, therefore, serves as a reduction on the banks' capacity to create credit.

(e) Willingness of Borrowers

Banks create credit in accordance with the demand of borrowers. If borrowers are not interested in obtaining loans, credit will be severely restricted. Such a situation can arise during the depression phase of the trade cycle. In this phase, the general level of prices goes down, which results in a loss to investors—who close down their factories. Entrepreneurs do not tend to take out loans when future economic prospects seem poor.

(f) Rhythmic Coordination of Bank

It is obvious that one bank, cannot follow a policy of expansion or contraction of credit unless the other banks co-operate with it. Suppose that the Allied Bank adopts a policy of credit creation, but that other banks do not follow this policy. The Allied Bank will fail in its policy because its borrowers will issue cheques in the name of persons who may have their accounts in' other banks –as a result of which a large amount of cash will be shifted from the Allied Bank to other banks. The Allied Bank will fail short of its necessary reserves and be forced to contract its credit. On the other hand, if one bank is so careful of its liquidity position and Creates a smaller amount of credit than the other banks, the first bank's margin of profitability will be reduced. It will, therefore, be compelled to keep itself in line with other banks. Thus, a policy of credit creation can be successfully operated only if all the banks move in a rhythmic fashion.

(g) Control of Credit by the Central Bank

Commercial banks cannot operate independently in the creation or destruction of credit. They have to follow the policy of the central bank in this regard. The central bank can change the rediscount rate and it can also employ the instrument of 'open market operations' to impose restrictions on the volume of credit money. Commercial banks are obliged to follow the policy of the central bank.

Points to Remember (Part-I)

(i) A bank is a financial Institution which deals in money. it receives deposits and pays interest on them. it gives loans and charges interest on them; and thereby makes its own profit.

(ii) Banks have developed into their present form through a process of evolution. There are three ancestors of banks—merchants. money lenders and goldsmiths.

(iii) Present-day banks perform essentially the same functions as their ancestors. Like merchants, they issue documents like bills of exchange to finance foreign trade. Like money lenders, they borrow and lend money, like goldsmiths, they make payments on cheques and keep cash reserves to create credit.

(iv) There are different kinds of banks: commercial banks, agricultural banks, industrial banks, savings banks, exchange banks and the central bank.

(v) Commercial Banks:
- — receive deposits of the people in current accounts, savings accounts and fixed accounts;
- — advance loans by creating deposits of credit, by means of overdraft, by discounting bills, and by purchasing bonds and securities;
- — they have developed the safest medium of exchange in the form of cheques and they transfer money from one place to another by issuing a draft;
- — they not only finance foreign trade, but also provide agency services and general utility services for their clients;

(vi) The major function of a bank is to create credit. It keeps a small proportion of deposits as cash reserves to meet the demand of depositors and tends the rest by opening deposits of credit. In this way, it creates credit in excess of its cash reserves.

(vii) A monopoly bank can keep the whole of its deposits as cash reserve and create credit to a multiple extent. But in a banking system whore many banks operate simultaneously, it is required that a bank should maintain its reserve ratio by reducing its cash instead of increasing its deposits.

(vii) With a deposit of Rs.800/- and a legal reserve ratio of 25%, a monopoly bank or the whole banking system can create credit in this way

$$\text{Total Amount of Deposits} = \frac{a}{R} \text{ or } \frac{\text{Primary deposit}}{\text{Reserve ratio}}$$

$$= \frac{800}{25/100} = \frac{800x100}{25} = \text{Rs.3200.}$$

(ix) There are limitation On the power of a commercial bank to create credit—for example, the banks 'reserve ratio', the amount of cash available in' the country, the banking habits of the people, the availability of valuable assets, the willingness of borrowers; the rhythmic coordination of banks and the authority of central bank to control credit.

SELF-ASSESSMENT QUESTIONS

11. Can you explain in your own words the general process by which the commercial banks create credit?
[Check your answer against the discussion in Section 5.1]

12. Can a commercial bank Create credit independently? if not, explain why this is so?
[Check your answer with Section 5.1. In explaining why banks have to operate collectively, you may find the idea of 'equilibrium' (to which you were introduced in earlier units on the question of the firm) useful. Follow through the process of credit creation for a commercial bank and trace its interaction with other banks — keeping in mind the idea of the bank's equilibrium position when earning normal profits.]

13. Can you briefly outline the main limitations on the creation of credit by the commercial banks?
[Check your answer against the list and discussion given in Section 5.2. Which of these sanctions do you think are likely to be most effective in the limitation (or encouragement) of the creation of credit–and why?]

14. Assuming a new deposit of Rs.500/- and the requirement for 20% legal cash reserves, how much credit can the banking system create?
[Use the formula given towards the end of Section 5.1.
The answer is given at the end of this unit on page 197.]

PART-II: CENTRAL BANKING

6. THE ROLE OF THE CENTRAL BANK

In Part-I we have studied the functions of a commercial bank and in particular the process by which commercial banks create credit. But the question now is whether commercial banks perform their functions independently of supervision? The obvious answer is—No; because there Is an institution which rationalises the activities of commercial banks. This institution is known as the central bank. The central bank of a country coordinates the working of commercial banks, provides them with financial' assistance, controls the credit network, and regulates the money supply in a country. It provides, therefore, a symbol of financial stability for an economy.

The functions of the central banks are quite different from those of ordinary commercial banks. As do Kock puts it:

> The guiding principle of a central bank I. that it should act only in the public interest and for the welfare of the country as a whole and without regard to profit as primary consideration.

It is quite clear, therefore, that the central bank is not a profit-making Institution. Moreover, it does not indulge in, making investments or creating credit. Instead, it works for the welfare of the country and ensures its financial and economic stability.

In order to discharge its obligations in the public interest, a central bank must employ various tools of monetary. policy to control undesirable business fluctuations. It should be efficient enough to regulate the flow of currency and credit; and finally, it must establish the viability of the whole banking system in a country.

7. THE EVOLUTION OF CENTRAL BANKS

Up to the end of the 19th century, there was not a single central bank in any country of the world. In the absence of a central bank, the government used to authorise a bank to perform the functions of a central bank. The bank then had to issue notes and work as a banker to the state. With the passage of time, the importance of this bank Increased enormously because there was a growing realisation that such a bank could help to control the cyclical fluctuation of the economy by Its control over the money supply. After the First World War, this bank played a very crucial role in promoting International trade relations between the countries of the world for this reason, many countries decided to set up central banks. Risk Bank of Sweden was the first to come into existence while the Bank of England was the first to perform its functions a central bank. Later on Germany, France and the United States also established central banks. At the Brussels Conference of 1920, the League of Nations decided that all countries of the world should have central banks in order to stabilise international monetary transactions. Consequently, all countries now have a central bank.

8. THE FUNCTION OF A CENTRAL BANK

The central bank in a country performs the following functions:

8.1 Note Issuing Agency

Before central banking air commercial banks had the privilege of Issuing currency notes; and consequently there was no proper mechanism to control the money supply. Therefore, the quantity of money always tended to exceed Its proper limits and this produced inflationary pressures. Thus, the central banks were empowered to issue notes. instead of the commercial banks. 'Central bank notes are readily accepted and are seldom encashed into gold. Due to the central bank's monopoly of note-issue, it has also been empowered to control the level of credit creation—as a result of which it brings economic and financial stability to an economy. This is because credit is created on the basis of the deposits of currency which largely consists of paper money Issued by the central bank.

Though the central bank enjoys a monopoly in the issue of notes, nevertheless it has to follow certain principles which are outlined below:

(a) Fixed Fiduciary System

According to this system, the government of a country allows the central bank to issue notes up to a specific limit which is reviewed from time to time in the light of changing economic conditions. Beyond this limit, if the central bank prints more currency notes, it is required under law to reserve gold equal to the value of notes. Thus, under this system, 100% gold backing is required to issue notes beyond the specific limit established by government.

Practical experience has shown that this system proves to be quite inelastic—because, in a period of emergency or economic crisis, it becomes exceedingly difficult for the central bank to increase the money supply in the country. Lord Keynes' view was that the limit to issuing notes would need to be kept very high to make the system work effectively without restrictions. In any case, under this system the money supply cannot be increased to any significant extent—as a result of which inflationary pressures remain well under control.

(b) Proportional Reserve System

According to this system, the central bank is required to cover a certain proportion of total currency notes by gold, silver or approved foreign exchange; and, for the remainder of the notes, it is required to keep government securities and trade bills. The ratio of gold, silver and other reserves is decided by the government and it varies from country to country. It is 33% in Pakistan), 40% in U.S.A and 35% in France. The amount of foreign currency government reserves to cover a certain proportion of its notes is not used to balance external payments.

This system has been adopted by most of the countries in the world. One of its effects has been to make the money supply more elastic. Whenever a government requires more money to finance its development projects, it tends to reserve a small quantity of gold and therefore gets a large amount of currency notes. However, an elastic money supply can generate inflationary pressures—because too great a supply of money combined with too

few goods, will raise the general level of prices in this connection. Lord Keynes believed that the proportional reserve system may bring depression to an economy. He argued that if the government did not have a sufficient quantity of gold and foreign exchange to print note currency to finance development projects, the velocity of money circulation would go down—as a result which prices would fall and the economy might remain in depression for a considerable period of time.

8.2 Banker's Bank

The central bank also performs various functions for commercial banks. Some of the more important of these are discussed below:

(a) Custodian of Cash Reserves of Commercial Banks

Commercial banks are required under law to keep a certain percentage of their cash reserves with the central bank. In our country, all scheduled banks deposit 5% of both their 'time' and 'demand' liabilities with the State Bank of Pakistan. These cash reserves play an important role in achieving economic stability in the Country. Whenever credit, money expands to such an extent that there is a danger of generating or increasing inflation, the central bank enhances the reserve ratio as a result of which the power of the commercial banks to create credit is restricted On the other hand, if the Commercial banks are too limited in their capacity to advance loans, the central bank lowers the reserve ratio, and thus enables them to increase the level of their lending. In addition, the central banks are able to provide loans to the commercial banks on demand.

(b) Lender of Last Resort

When' commercial banks exhaust all their cash reserves in the process of credit creation and find themselves with dangerously low funds, the central bank comes to their rescue as the 'lender of last resort'. This means that it gives them loans to supplement their funds and thereby enables them to meet the demand of depositors who wish to withdraw their deposits., The central bank performs this function. by rediscounting the bills of commercial banks. In this way, it makes their assets more elastic and allows them to respond more readily to changing economic conditions. However, commercial banks should normally rely on their own resources for day-to-day business activities; while the central bank should only be called upon for help in emergencies.

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(c) Open Market Operations

The central bank also performs' the function of a 'clearing house' for the commercial banks. In a modern banking system, the customers of one bank draw cheques in favour of the customers of another bank and similarly the customers of the second bank draw cheques in favour of the customers of the first bank. All these cheques pass through the 'clearing house' facility provided by the central bank, where they are settled against each other. The process of clearing and settlement Is carried Out without using cash—because all the commercial banks have their reserves with the central bank; and the various obligations are set off by means of debits and credits in the cash books of the central bank. The clearing house function of the central bank Is productive for the economy in the *sense* that it not only stimulates and supports business transactions, but It also economises on the use of cash.

8.3 Banker to the State

The central bank is the banker to the state; and therefore it performs various functions as an agent and' adviser to the government. All the cash balances of the government are kept with the central bank; and the bank pays no interest on them. It is the custodian of the gold, foreign exchange and securities held by the government. It receives the revenue from government taxes, maintains the accounts of various government departments, and makes payments on behalf of the government. It disburses salaries and pensions to government employees. At does not receives any reward for these various services. Since it is the custodian of foreign exchange, it provides foreign currencies to the government to pay off the instalments on foreign loans. It is also an adviser to government on matters relating to public revenue, expenditure and debts. It keeps the government in touch with trends in the capital and money markets of the country and the world.

The central bank sells government securities to raise the public debt and purchases them to pay off these debts. It gives short-term loans to the government by discounting its treasury bills. It also advances long-period loans to the government in the case of national or economic crises. Short—and long-term borrowing by the government from the central bank can however create or worsen inflationary trends. Therefore, it is advisable that government borrowing from the central bank should not go beyond certain limits.

8.4 Controller of Credit

It has already been mentioned that the central bank is a symbol of economic and financial stability— because it controls the credit network and thereby regulates the country's money supply. This is the case because a major part of the money supply consists of credit created by the commercial banks. As the centroller of credit, the central bank helps to adjust economic forces in such a way that a high and stable level of employment can be achieved. Moreover, rapid economic fluctuations can be slowed down in order to stabilise the general level of prices. Internal price stability leads to stability in the external value of the currency—as a result of which gains from international trade can be promoted. Thus, by virtue of its control over credit, the central bank stabilises the economy as a whole; and this in turn supports and encourages economic development. In order to control credit, the central bank employs various techniques which are discussed below:

(a) Variation of the Reserve Ratio

In order to become a scheduled bank, a commercial bank is required to deposit a specified percentage of its 'time' and 'demand' liabilities with the central bank. Therefore, all commercial banks keep a certain proportion of their cash reserve with the central bank— which is authorized under law to change the percentage these reserves in response to changing economic conditions. Whenever the central bank finds that the expansion of credit is giving rise to an increase in the general price level, it raises the percentage of minimum cash reserves of the bank, and thus reduces the excess reserves of the Commercial banks. Consequently, the commercial banks are unable to create more credit. On the other hand, when the central bank wants to increase credit facilities, it deliberately lowers the reserve ratio - which means that the excess cash reserves of the banks (cash reserves lying in the banks) are increased, and this results in the creation of more credit.

Most of developing countries of the world are using this technique for the control of credit. In order to apply the technique properly, it is necessary that the government should not attempt to keep the interest rate at a lower level; because, by doing so, the banks will not create more credit and the additional excess reserves of the banks will be easily adjusted with changes in reserve ratio.

(b) Discount Rate Policy

The central bank is the 'lender of last resort' to the commercial banks. Whenever commercial banks fail to get loans from other sources to stabilise their financial position, they present their treasury bills, as first class bills, to- the central bank to get them rediscounted. This is how the commercial banks get loans from the central bank. By changing the rediscount rate, the central bank can restrict the creation of credit to a certain extent.

When the central bank has checked the power of the commercial banks to expand credit by raising the reserve ratio, the commercial banks then resort to obtaining loans from the central bank by getting their bills rediscounted. With these loans, they increase their excess cash reserve, and tend to create more credit—as a result of which they reduce the effect of the policy of changing the reserve ratio. In such a situation, it becomes imperative for the central bank to raise the rediscount rate to prevent the loan-hunting policy of commercial banks. If the central bank decides to increase the credit money in the country to combat the adverse effects of depression, it lowers the rediscount rate and encourages commercial banks to obtain more loans. At a low rediscount rate, the banks can easily increase their excess cash reserves— which allows them to advance more loans.

When the central bank establishes a high rediscount rate to control credit and inflation, the rate of interest also goes up. A high interest rate tends to attract foreigners to make investments in the country, the inflow of foreign capital increases the level of investment, income and employment. It also helps to rectify an adverse balance of payments position. It is disturbing to note that the rediscount rate policy has not always proved to be very successful in bringing about the desired results- because the economies of developing Countries are not generally very elastic. Logically speaking, whenever there is a change in the volume of credit money. than wages, rents and interest, etc. should change accordingly. But, duo to rigidity of the economic system, It Is not possible to bring down the rewards paid to the factors of production—and wages in particular. Moreover, joint stock companies are making investments by ploughing back their undistributed corporate profits; and changes in the rediscount rate and the Interest rate do not affect the level of their investment.

(c) Open Market Operations:

In order to control credit more effectively, the central bank can launch 'open market operations'. According to this method of control, the central bank purchases or sells government securities to bring about a change in the quantity of money.

Whenever the central bank finds that the inflationary situation is being worsened in the country, it sells government securities in the control market to the public and to commercial. Institutions and business organizations who issue cheques to their banks for

payment. When these cheques are cleared, the cash reserves of commercial banks fall and they are forced to withdraw some of their loans. In this way, credit money contracts and the general price level tends to fall.

Similarly, when the economy shows a deflationary trend the central bank purchases government securities in order to increase the quantity of money in the hands of people who deposit it with the commercial banks. The cash reserves of the banks go up and they advance more loans as a result of which more credit money comes into circulation. The downward trend of prices is reversed; and this makes investments more profitable and enables the economy to revive.

Open market operations are a drastic measure; but they do produce effect on the economy, provided that a broad and active capital market is available in the country, that transactions are generally carried out through banks, and money is not hoarded in any way.

(d) Credit Rationing

The central bank rations credit by limiting the amount of loans which commercial banks get on the rediscounting of their bills. It clearly indicates that no further loans, beyond a certain specified limit, are to be given to any commercial bank. With this limit in view, the commercial banks become more careful in advancing loans. They restrict themselves to a reasonable extent of credit; because they know that the central bank is not going to assist them If they got into any difficulties. This is without doubt the most effective method of credit control; but it negates the function of the central bank as the lender of last resort. Thus, the technique should not be employed in normal circumstances—but only in particular emergencies.

(e) Moral Suasion

Sometime the central bank exerts moral pressure on the commercial banks to refrain from advancing loans for non-essential business activities. It issues directives to the commercial -banks requesting then? to refrain from excessive loans in a period of inflation, and to create credit when the situation so demands. By doing this, the central bank does not instruct the commercial banks to follow its suggestions; but rather it is expected of the banks that they will voluntarily avoid such activities.

(f) Publicity

The central bank can publish periodical reviews of the money market, trade, industry, credit and business activities. It can also issue statements of its assets and liabilities in the form of balance sheets—to make people realize the probable consequences of undue expansion or contraction of credit.

(g) Direct Action

Sometimes the central bank takes direct action against those scheduled banks which do not follow its instruction and advance loans to non-essential enterprises. In order to impress its policy upon them, it refuses loans On the rediscounting of their bills.

(h) Changing the Margin Requirements

When advancing a loan against a security, a commercial bank does not give money to the full value of the security. Instead, it keeps a certain margin. So the margin requirement of a commercial bank on a security-backed loan is the difference between the value of the security and the amount of loan given against it. The central bank has the authority to change the bank's margin requirements on security-backed loans. In a period of inflation, the central bank raises the margin requirements—as a result of which the commercial banks can only advance loans equal to a smaller proportion of the value of securities. Speculative activities are discouraged and the demand for credit goes down. Conversely, when the central bank wants speculative activities to flourish, it lowers the margin requirements on security-backed loans; and thus a large amount of credit money comes into circulation.

(i) Consumer Credit Regulation

In order to stabilise the general price level, commercial banks have to control consumer credit When durable consumer goods (like refrigerators, T.V. sets, cars, etc.) are available on easy instalments, the demand for them goes up; and in consequence, the general level of prices rises. Thus, the sellers of these products must be directed to require a substantial amount in advance and the remaining proportion of price in a few instalments only. In a period of depression, however, the banks are not required to limit spending on consumer credit. Consumer credit regulation has proved to be a useful instrument in diverting domestic resources to meet national (e.g. war) requirements, rather than being spent on domestic consumption.

Points to Remember (Part-II)

(i) The central bank of a country coordinates the working of the commercial banks; provides them with financial assistance, controls the credit network, and regulates the money supply in a country.

(ii) "The guiding principle of a central bank is that it should act only in the public interest and for the welfare of the country as a whole and without regard to profit as a primary consideration".

(iii) The central bank is the chief bank of a country and is responsible for establishing and maintaining economic and financial stability.

(iv) The central bank enjoys a monopoly of issuing currency notes. Under the Fixed Fiduciary System, it issues notes upto a specific limit: beyond this limit, it reserves gold to the value of additional notes. Under the Proportional Reserve System, the central bank is required to cover a specific proportion of the total notes by gold, silver and acceptable foreign exchange; and for the remainder of notes, it keep government securities and trade bills;

(v) The central bank is the bankers' bank in the sense that it is the custodian of the cash reserves of the commercial banks. It is also the lender of last resort, and provides clearing house facilities for the commercial banks.

(vi) The central bank is the banker td the state and performs various functions as an agent and adviser to the government. It maintains all the government's cash balances, receives governed, taxes and makes payments on behalf of the government. It gives short-and long-term loans to the government and raises public debts against government securities.

(vii) The central bank controls the credit created by the commercial banks to ensure economic stability in the country. In this connection, it changes the ratio of cash reserves which commercial banks deposit with the central bank, and employs the instrument of 'open market operations'. It also changes its rediscount rate to give loans on the bills of commercial banks; and sometimes rations credit by limiting the amount of loans which the banks get. If commercial banks do not co-operate as a result of moral pressure and publicity, the central bank can take direct action against them and them loans on the rediscount/rig of bills. It changes the margin requirements of commercial banks on security—backed loans and directs them to control consumer credit as well. It this way, the central bank keeps credit money well under control and does not allow it to expand and contract unnecessarily.

SELF-ASSESSMENT QUESTIONS

15. Can you explain briefly in your own words how the central bank differs from commercial banks?
[The role of the commercial bank has been discussed at length in Part I. Compare this with the brief description of the job of the central bank in Section 6.1]

16. Can you briefly describe the way in which central banks have evolved?
[Check your answer with the account given in Section 7.1]

17. What are the four main functions of the central bank? Can you explain in just one or two sentences what each of these functions means?
[The answer to this question is to be found in the four sub-sections of Section 8. In addition, to the list of functions, what is also needed is a very brief description of what is meant, for instance, by the phrases 'banker.' bank' and 'banker to the state'. You will need to pick out from the text what is the central idea of each of the four functions.]

18. What are the main principles which govern the central bank's operation as a note-issuing agency?
[Check your answer with the discussion of the fixed fiduciary system and proportional reserve system in Section 8.1. Which of these two systems is now used by most countries of the world? And why?]

19. What services are provided to commercial banks by the central bank?
[Check your answer against the discussion in Section 8.2. Can you extend your answer by explaining in what ways the role of the central bank with regard to the commercial banks helps to provide monetary and financial stability within an economic system? Would it be possible for commercial banks to operate effectively in a modern economy without the services and supervision of a central bank? What problems would arise if the central bank did not carry out its functions?]

20. What services does the central bank provide directly to the government of a country?
[Check your answer with Section 8.3]

21. What are the main ways in which the central bank controls the creation of credit within an economy? Which of these methods seem to be the most effective and which the least effective?

    [This subject is discussed at length in Section 8.4; though you will need to come to your own conclusions (based on the discussion) about which methods are most effective and which seem to have less effect. More generally, can you explain briefly, and in your own words, what contribution the central bank's role as the controller of credit makes to the management of the economy as a whole? What sort of economic problems are likely to be influenced by the monetary policies which the central bank implements?

GLOSSARY OF MAIN TERMS

Balance Sheet:	A statement of a bank's assets and liabilities.
Bank:	A financial institution.
Bill:	A document showing a statement of credit.
Central Bank:	A bank which acts as the note-issuing authority and custodian of the money market.
Cheque:	A slip showing the order for money on a bank.
Commercial Bank:	A bank which deals in money and renders agency services with a profit motive.
Cyclical depression:	A state of affairs in which prices, wages, employment, incomes and profits fall as a result of the trade cycle.
Demand Deposit:	A deposit which may be withdrawn on demand.
Deposit:	To keep money in the bank.
Deposit of Credit:	To open an account for advancing a loan in which the amount of the loan is shown as a despot.
Discount Rate:	The rate at which bills presented by merchants are discounted by commercial banks.
Fixed Deposit:	A deposit which cannot be withdrawn before the expiry of a fixed period.
Fixed Fiduciary System:	A system of note issue whereby a certain amount of notes are issued without gold reserve and a further supply of notes is subjected to 100% gold support.

Liability:	A statement of being liable to pay.
Liquid Asset:	An asset which can easily be converted in cash.
Proportional Reserve System:	A system of note issue where by notes are issued with a specific percentage kept in god and other securities.
Open Market Operation:	The buying and selling of bills by the central bank.

Unit–8

INTERNATIONAL TRADE AND THE RATE OF EXCHANGE

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INTRODUCTION

The aim of this unit is to shed light on the principles that govern international trade and the determination of the rate of exchange. We shall be looking at how domestic trade differs from international trade; how the balance of trade Is. distinguished from the balance of payments; how the rate of exchange is determined under the gold standard and under an inconvertible paper currency system.

The first section deals with the differences between international and internal trade, and also provides an analysis of the advantages and disadvantages of foreign trade. in the second section, we look at the law of comparative cost and the modern version of International trade theory. This section also introduces the idea of the exchange rate and how.it works—though the more detailed discussion of this topic is postponed to a later section. The third section explains the distinction between the balance of trade and the balance of payments, and explores the causes of disequilibrium in the 'balance of payments and the measures that have been suggested to combat the problem. In the fourth and final section we look at the way the rate of exchange is determined both under the gold standard and also with an inconvertible paper currency.

OBJECTIVES

By the end of this unit, you should be able to:

(a) define and distinguish between foreign (international) trade and domestic (inter-regional) trade; and explain the advantages and disadvantages of international trade

(b) outline and illustrate the classical theory of international trade and its more modern counterpart;

(c) define and distinguish between the 'balance of trade' and the 'balance of payments';

(d) explain the structure and content of the balance of payments outline the main factors which cause balance of payments distinguish and suggest some of the main measures that may be taken to rectify long-term imbalance;

(e) explain and illustrate the importance of the rate of exchange in international trade, and the way in which it is determined (i) under the gold standard, and (ii) with a system of inconvertible paper currency.

1. EXTERNAL AND INTERNAL TRADE

1.1 The Definition of International Trade

'International trade', as the name implies, is trade between different countries—just as 'internal' or 'domestic' trade is trade between different parts of the same country. The world is divided into a large number of countries between which goods and capital flow constantly. No country produces everything that it needs all countries are inter-dependent. For instance, the UK can manufacture machinery and Pakistan can manufacture cotton. Pakistan can send cotton to the UK and get machinery in exchange. International trade is thus a special case of division of labour and trade between individuals.

1.2 The Distinction between Foreign and Domestic Trade

Having defined international trade, now let us make an attempt to distinguish it from domestic or inter-regional trade. As a matter of fact, international trade is a special case of domestic or internal trade. Inter-regional trade is a result of the division of labour within the country; while international trade arises out of the international division of labour. The fundamental principle governing both is the same; but there are a number of important differences between them which we need to note:

(a) Factors of production tend to be relatively mobile within a country; but they are much less mobile between two countries. Differences of language, customs, climate, and the laws governing. migration, act as barrier to the free movement of factors of production from one country to another. A labourer may be willing and able to go to any part of the country in which he lives to earn his livelihood; but there are often substantial reasons which prevent his from moving abroad, even if he wants to. Similarly, capitalists may prefer to invest their capital in their own countries, the economic conditions of which they know, rather than risk investing abroad.

(b) Within a country there are usually no tariff restrictions, custom duties or quotas fixed for the quantity of goods to be traded. Here trade moves freely. In international trade, we observe a number of restrictions imposed by importing and exporting countries. In international trade, each country tends to have its own special tariff laws.

(c) Each country has its own currency. Within the country, there is only one unit of account; and prices are quoted in terms of that unit. In international trade this is not so. Internationally, we not only have to take into account the commodities to be exchanged and their prices, but also the rate at which the currency of one country will be exchanged for the currency of the foreign country.

(d) In internal trade, knowledge about market conditions is widely available to the people. of the domestic country; but knowledge. and information about world markets Is much less available.

In the preceding paragraphs we have noted that the fundamental principles governing internal trade and external trade are the same, but that there are some important points of difference between the two. In general, however, the differences between domestic and foreign trade tend to be of degree rather than of kind. Such being the case, the logical question arises as to why International trade should take place?

1.3 The Advantages of International Trade

The reason why international trade takes place is that it is profitable to the parties involved. Some of the reasons will be apparent from the following list of the advantages of foreign trade:

(a) The desire to use goods not locally produced compels people to trade with foreign countries. For instance, motor-cars, wrist watches and electronic goods are not produced in Pakistan but nevertheless we want to use them. Such goods are imported into our country because there exists a market for them. In order to buy foreign goods, we have to import them.

(b) As a result of monopoly, a country may enjoy an absolute advantage in the production of a certain commodity. This advantage may be due to the presence of a certain raw material, the quality of the soil, climatic condition or mineral resources. Other countries which do not produce this commodity must import it. For instance, Pakistan has an absolute advantage in the production of high quality cotton; the same is true of Bangladesh with regard to jute and Indonesia as regards rubber, and so on. Countries which do not possess similar advantages have to obtain these goods through foreign trade.

(c) Foreign trade is the channel through which local surpluses can be disposed of. There are a number of countries which produce goods in plentiful quantity, while their local consumption is far less than their production. Such countries tend to have a large surplus which can then be disposed of in foreign markets through foreign trade. If there were no international trade, for instance, Saudi Arabia would not have outlets for its oil surplus, nor would Brazil for its surplus of coffee.

(d) Frequent problems of food shortage, floods, tidal bores and droughts also compel countries to participate in international trade. it Is only through foreign trade relations that a country hit by natural disasters can be supplied with food and other materials in its hour of urgent need.

(e) Foreign trade also takes place because a country cannot produce a commodity cheaply. “By means of glasses, hot beds and hot walls, very good grapes can be raised in Scotland”, wrote Adam Smith, “and very good wine too can be made from them—at about thirty times the expanse for which at least equally good wine can be brought from foreign countries”. A country may therefore specialize in the production of goods which it can produce more cheaply than other countries; and obtain, through exchange, other goods which are more expensive to produce at home.

(f) Poor countries often use foreign trade in order to develop their economies more rapidly. Through trade, such countries can acquire foreign technology, industrial experience and the latest methods of production. Scientific research is imported through trade into the poorer countries in order to accelerate the pace of economic development.

(g) Foreign trade and imports are Sometimes’ preferred even if a country can produce the goods more cheaply than the foreign country. This is due to the fact that the importing country may find it more profitable to specialize, in the production of alternative goods in which its degree of advantage over the foreign country is still greater. For instance, Sir Winston Churchill, the British Prime Minister in the 1940, was said to be able to cook his food better than his servant Still it was worth his

while to employ a servant to do the cooking and use his time and energy for more profitable and important employment—namely, running the administration of the then British Empire and winning World War II.

1.4 The Disadvantage of International Trade

International trade also has certain disadvantages.

(a) Foreign trade can give rise to worries about the depletion of natural resources This happened in the Indo-Pakistan sub-continent where the reserves of some minerals were depleted as **o** result of regular export to the UK for the past two centuries.

(b) Foreign trade opens the door to the demonstration effect. Through foreign trade, the people of a country come to know about the use of certain goods which are not in fact necessities of life. Goods like telephones, cosmetics. computers, television sets, motor-cars and so on come to be regarded as necessities of life in industrially less-advanced countries, even though the population cannot really afford to buy them.

(c) Foreign trade is a sound tool in the hands of already industrially mature Countries for discouraging industrial growth in the industrially emerging countries. The old industrial nations adopt dumping as a technique to serve their interests. They sometimes bring about an abrupt decline in the prices of their goods and thus shut off the market to the new entrants in the industrial race.

(d) Foreign trade has strongly tied countries ‘with one another - with the result that interdependence has sharply increased. Interdependence brings hardship to all whenever there is a war, blockade, economic crisis or an event such as the closure of the Suez Canal.

(e) Foreign trade depends upon the extent of the market. In order to win foreign markets, different trading countries come into conflict. Trade interests clash. In order to obtain market, a tense situation may be created which could lead to aggression.

After taking a view of the advantages and disadvantages of foreign trade, we now need to compare them. A comparative study reveals that the advantages of international trade have a greater weight and significance than the disadvantages. In view of these advantages, one would cast one’s vote in favour of having international trade rather than not having it.

1.5 Points to Remember

(i) International trade is the flow of goods between different countries. It is a special case of the division of labour.

(ii) The main points of difference between international and domestic trade are as follows:
   (a) Factors of production are less mobile in international trade;
   (b) International trade usually involves tariff restrictions;
   (c) International trade is transacted through many currencies;
   (d) Less information is available in the case of foreign trade then in inter-regional trade.

(iii) The advantages of international trade are summed up as follows:
   (a) People can obtain goods for consumption which are not locally produced.
   (b) Some countries enjoy an absolute advantage over their rivals in the production of a certain commodity;
   (c) Surplus production of many countries, can be disposed of in foreign markets;
   (d) Foreign trade relations are advantageous if a country is exposed to food crises, floods or other natural calamities;
   (e) Foreign trade is resorted to when a country cannot produce certain goods cheaply;
   (f) Foreign trade is the mechanism through which the results of research and the discovery of new methods of production are passed on to developing Countries;
   (g) Foreign trade and Imports are adopted even when a country can produce a commodity cheaply—on the grounds that it is more beneficial to specialise in fields of production where the degree of comparative advantage is greatest.

(iv) The following are the disadvantages of international trade:
   (a) A permanent outflow of goods may lead to over exploitation of natural resources;
   (b) Foreign trade introduces goods for daily use which may not - be necessary and otherwise would not have been consumed;
   (c) Foreign trade enables the industrially developed countries to adopt a policy of dumping towards less developed Countries;
   (d) Interdependence produces hardship when a war breaks out in any part of the world;
   (e) Selfish attempts to occupy foreign markets on the part of developed countries cause military conflicts and global intrigues.

(v) The advantages of international trade outweigh its disadvantage and hence its existence is preferred to its absence.

SELF-ASSESSMENT QUESTIONS

1. What are the main differences between international trade and domestic (or inter-regional) trade?
   [Check your answer against the discussion in Sections 1.1 and 1.2]

2. What are the main advantages that Pakistan can derive from international trade?
   [Check your answer against the general discussion in Section 1.3—but be sure that your answer? applies Specifically to the economic situation of Pakistan]

3. What are the disadvantages (if any) of international trade for Pal1stan?
   [Check your answer against the general discussion in Section 1.4. Can you go on from this and argue whether international trade or foreign aid or a combination of both are likely to be most advantageous for Pakistan?]

2. COMPARATIVE COSTS, INTERNATIONAL TRADE AND THE RATE OF EXCHANGE

In Section 1, we have distinguished between international and interregional trade and also reviewed the advantages and disadvantages of foreign trade. Following this discussion, we now come to the law of comparative cost. In this section$_s$ we will first illustrate the classical theory of comparative cost and find out its shortcomings; and then go on the discuss the more modern version of international trade theory.

2.1 The Classical Theory of Comparative Cost

The theory of comparative cost was applied to international trade in the first place by Ricardo. Whereas Adam Smith spoke only in terms of absolute advantage, Ricardo pointed out that while profits in the same country in different employments tended to equalise, this was not the case between countries. The reason for this was that there was mobility of labour within a country, but not between Countries. According to the classical writers there are differences in natural resources, wages of labourers and the availability of capital between different countries. Consequently, it pays different countries to spcialise in the production of different commodities. Each country specialises in the production of those commodities for which it is best fitted; and gets its other requirements from other countries in exchange for the commodities in which it specializes.

(a) What is Comparative Advantage?

This principle is applicable to individuals as much as to the case of countries and its working may be seen in everyday life. Individuals and countries alike specialise in the production of that commodity or service in which they enjoy greater comparative advantage.

The-classical economists quoted an example. According to them, even if Portugal could produce both cloth and wine more cheaply than England, it would pay Portugal to concentrate on the production of wine in which her comparative advantage was greater and to import her cloth from England.

(b) The Case of Absolute Advantage

The original law of comparative advantage was explained in terms of labour. To differentiate *comparative* advantage from the absolute advantage which a country may enjoy in the production of some commodities; let us assume two countries and two commodities. If each country-can produce one good more cheaply and with less labour than It can be produced in the other, each will have an advantage in the production of jute commodity and a disadvantage in the production of the other. Each country will export the commodity in which it has an advantage. Let us assume the following position for the production of jute and wheat in Pakistan and Bangladesh.

TABLE 13/1: THE PRODUCTION OF ONE MAN IN ONE WEEK

Product	Country	
	In Pakistan	In Bangladesh
Jute	3 bales	6 bales
Wheat	6 maunds	3 maunds

Here the problem is very simple. Pakistan is specialising in the production of wheat and Bangladesh in the production of jute. This is due to the fact that each country has on absolute advantage in the production of one, of the two commodities. However, the problem becomes more complex when the situation is as explained below:

(c) The Case of Comparative Advantage

TABLE 13/2: PRODUCTION OF. ONE MAN IN ONE WEEK

Product	Country	
	In Australia	In Britain
Wheat	6 maunds	2 maunds
Cotton Cloth	10 yards	6 yards

Here labour is more efficient in Australia than in Britain. Trade cannot be regulated by absolute advantage; and the new principle governing international trade in such a case will be that of comparative advantage. Here a country would export the product in which it had the greater advantage or comparative advantage, and import the commodity in which its advantage was less or in which it had less comparative disadvantage.

In the example stated above, according to the principle of comparative advantage or comparative cost, Australia will specialise in the production of wheat and Britain will specialise in the production of cotton cloth.

(d) Exchange Ratio

Now the question arises of the rate at which wheat and cloth will be exchanged between Australia and Britain. In Australia, in the absence of trade, wheat and cloth will exchange for each other at their labour content. So in Australia 6 maunds of wheat will be exchanged against 10 years of cotton cloth; whereas in Britain. 2 maunds of wheat will be exchanged against 6 yards of cotton cloth and (multiplying by 3) 6 maunds of wheat (i.e. 2 x 3) are exchangeable against 18 yards of cotton cloth (i.e. 6 x 3).

In Australia, 6 wheat = 10 cloth, the price ratio being 6 : 10 or 1 : 1.67

In Britain, 6 wheat = 18 cloths, the price ratio being 6 : 18 or 1 : 3.

If these ratios are different in the two countries, trade becomes profitable and specialization pays. Thus if each country produces both the goods at home for its

domestic use, the total production will be:

TABLE 13/3: DOMESTIC PRODUCTION

Country	Products	
In Australia	6 wheat	10 cloth
In Britain	6 wheat	18 cloth
Total:	12 wheat	28 cloth

However, If Australia specialises in wheat and Britian in cloth, total production will be 12 wheat and 36 cloth. In other words, they will be able to produce 8 cloth more due to specialisation. This is the gain from trade.

(e) The Distribution of Gains

The gain from international trade will be divided between two trading countries in relation to the relative intensity of demand for each other's goods. This is called the principle of reciprocal demand. According to this principle, a country will receive the greatest share of gains from the if its exports enjoy intense demand in the other country. On the other hand, if a country's exports do not enjoy intense demand in the other country. its share in the gains from trade will be meagre. In our example, where Australia and Britain specialize in wheat and cloth respectively, Australia will reap the larger proportion from the gains of trade, provided the people of Britain are comparatively more eager to buy Australian-wheat than the Australians, who can do without British cloth. If on the other hand, Australians have a greater intensity of demand for British cloth than the intensity of demand for Australian wheat in the UK, then Britain will secure the large part of the gains from international trade.

The role of the principle of reciprocal demand can be explained further by another example. Suppose that in the above example, the Australian demand for British cloth is 50% more urgent than the British demand for Australian wheat. That is to say, the demand for British goods relative to Australian goods is in the ratio of 3 : 2. In this situation, the gains from international trade will be divided between Australia and England in the ratio of 2 : 3.

(f) Assumptions

The classical theory of comparative cost is based upon the following assumptions

(i) that there exists perfect competition in the trading countries;
(ii) that there is full-employment in the trading countries;
(iii) that labour and capital are immobile between the countries, whereas they are perfectly mobile within each country;
(iv) that tariff restrictions are not practised in the trading countries;
(v) that no cost of transportation is incurred;
(vi) that there are only two goods in which the two countries deal;
(vii) that the law of constant returns operates in the production of goods.

(g) Criticisms

The classical theory of comparative cost has been criticised for the following shortcomings:

(i) The theory is founded on the labour theory of value. This theory of value has already been, condemned for not incorporating the costs of factors of production other than labour.

(ii) Perfect competition is a necessary prerequisite of comparative cost theory. This, however, is utopian: since modern economic life in the real world is characterised by monopolies, trade union pressures, government intervention, and so on.

(iii) The law of comparative cost takes into account only the supply side of production and cost is considered the factor which determines the size and direction of trade. But it is the price rather than the cost which determines who will specialize in what goods. Price, rather than cost, should have been considered as the basis of international trade theory.

(iv) The assumption of two goods is oversimplified. In the real world we find a large number of countries trading in a very wide range of goods.

(v) Differences in efficiency due to factors of production other than labour have not been given appropriate weight in the classical version of comparative cost theory.

2.2 The Modern Version of Trade Theory

The classical theory of Cost has been subjected to severe criticism. It has been replaced by a modern version presented by the Swedish economist, f3ortiIe Ohlin, in 1933. Ohlin based his theory of international trade on the modern theory of value, rather than on the labour theory of virtue. Consequently, according to Ohlin, international trade owes its origin to the difference in comparative cost; but the comparative cost difference appears to be due to differences in the combination of factors *of* production and differences in factor endorsement.

(a) Where to Specialize?

According to the more modern theory, countries with plenty of fertile land and less minerals or capital should specialize in the production of food grains—because here the cost of production will be lower. In contrast, a country having less land and large mineral wealth should specialize in manufacturing because here the cost of production will be low. The real factor underlying international trade is the cost of production. Cost is based upon factor endowment. A country should therefore specialize in the production of those goods which substantially engage the factor of production which is abundantly available to the country. This is the cheapest way to produce a commodity.

The immediate cause of trade, in Bertils Ohlin's view, is that the relative prices of certain goods appear lower abroad than at home. Goods which have lower prices abroad are imported and those which have lover prices at home are exported by each country. However, these relative price differences must be more than the cost of transporting the goods from one country to the other.

(b) Price Differences

The role of "relative price difference" can be illustrated by the following example. Suppose in the absence of international trade the price relationships between cloth and wheat in Pakistan and Britain exist in the following way:

TABLE 13/4: PRICE RELATIONSHIPS BETWEEN CLOTH AND WHEAT IN PAKISTAN AND BRITAIN

Goods	Pakistan	Britain
Cloth per yard	Rs.30	£ 1
Wheat per maund	Rs.20	£.2

Thus in Pakistan the ratio of the prices of cloth and wheat is 30 : 20 or 1 and in Britain it is 1 2. Now let trade begin between the two countries. We know that the relative prices are different in the two countries. The relative prices of the two commodities in terms of each other for instance are

1 Wheat =2/3 cloth in Pakistan

1 Wheat =2 cloth in Britain.

However, we have no means of comparing absolute money prices without knowing the rate of exchange because the two countries have different currency units.

2.3 Rates of Exchange

(a) The Range of Exchange Rates

Let us look at the posh ion from the point of view of Pakistan. in the Pakistan foreign exchange market, there will develop a supply of and demand for British pounds as trade starts. Pounds will be demanded in Pakistan by those now wish to import cloth and supplied by those who have exported wheat. The cloth importer in Pakistan will be willing to purchase pounds at any rate of exchange less than Rs.30/- to the pound. On the other hand, the exporters of wheat will be willing to sell pounds at any rate of exchange above Rs.10 per pound. This is because they can buy wheat in Pakistan at Rs.20 per maund and sell it for £2 in England; and at the above rate of exchange, Rs.10 per pound, they can make a profit. Thus, the rate of exchange will tend to' be established within the range represented by

£l = Rs.30

£1= Rs.10

(b) Exchange Rate Variations

To suit the interests of both 'the countries, the rate of exchange should logically be fixed' at £1 : Rs.20/- (the equilibrium rate of exchange). But the real rate of exchange often will vary from this equilibrium in such a way as to favour one country or the other. If the rate of exchange is fixed within the range of £ 1 : Rs.10 to £1 : Rs.20, such a rate will be considered unfavourable to Pakistan (and favourable to Britain). On the other hand, if the rate of exchange is determined within the range of Rs.20/- to Rs.30/- per pound, the rate of exchange will be in favour of Pakistan (and against Britain).

Let us further illustrate this point. If the rate of exchange, for example, is settled at say £ 1 : As. 15/-, this mean that the wheat exporters of Pakistan would earn only As. 15 by

sending wheat to Britain. Soiling half a maund of wheat in Pakistan can fetch the Pakistan producers Rs. 10/-, Such terms of trade are not very profitable (though it is favourable to some extent). The further rate of exchange drifts from £1 Rs.10/- the more favourable becomes for Pakistan. On the other hand, if the rate of exchange is determined somewhere from Rs.20 to Rs.30 per pound, it would be considered favourable for Pakistan (and unfavourable Britain). Let us suppose the rate of exchange is determined at As. 25/- equals £1. This would mean that Pakistan can import one yard of cloth for As. 25/- while her own production of one yard of cloth is at a price oi As. 30 in Pakistan. Thus. Pakistan can save Rs.5/- on the import of each yard of cloth. Similarly, in the case of wheat exports, Pakistan's position is quite secure. Half a maund of wheat when sold locally earns Rs.10/- in Pakistan; but when the same quantity of wheat is exported to UK, Pakistan earns Rs.25/- the rate of exchange being As. 25/- : £1.

(c) Deviation and Gains of Trade

The rate of exchange may deviate from the equilibrium position (i.e. Rs.20 : £ 1) downward or upward only under the pressure of reciprocal demand. If Pakistan's demand for cotton cloth (prod iced in the UK) is greater than the UK's demand for wheat (produced in Pakistan), then the rate of exchange will drift downward—say to Rs.19/- or Rs.18 or Rs.17/- and soon, equal to £1. Such a downward movement is unfavourable to Pakistan. Consequent upon the downward shift, Pakistan's share of the gains from international trade would be less than 50% (and that of UK more than 50%). Conversely, if the UK's demand for wheat (produced in Pakistan) is greater than Pakistan's demand for cotton, the rate of exchange would swing upwards to Rs.21, Rs.22/- or Re. 23/- and so on, equal to £ 1. Such an upward Inclination of the rate *of* exchange is termed favourable to Pakistan (and unfavourable to the LJK). As a result of the upward movement, Pakistan's share would be more than 50% of the total gain from international trade (and the share *of* the UK would eventually be less than one half).

(d) Reciprocal Demand

The effect of a change in reciprocal demand on the determination of the rate of exchange and the distribution of the gains of international 'trade can be illustrated by the following table:

TABLE 13/5: EFFECTS OF RFCIPROCAL DEMAND

Case No.	Position of reciprocal demand		Rate of Exchange	Distribution of gains of trade	
	In Pakistan (of cotton cloth)	In U.K. (of wheat)	Rs. : £	Share of Pakistan (supposed)	Share of UK (supposed)
1.	Equal to unity	Equal to unity	20 : 1	50%	50%
2.	Greater than unity	Less than unity	25 : 1	70%	30%
3.	Less than unity	Greater than unity	15 : 1	30%	70%

(i) In case No. 1, the reciprocal demand in Pakistan for cotton cloth produced in UK is equal to the demand in UK for wheat produced in Pakistan. Here the rate of exchange will be Rs.20/. £ I and as this is the equilibrium rate of exchange both countries will have an equal share of the gains from foreign trade.

(ii) In Case No. 2, the UK cannot do without Pakistan's wheat. Wheat is more urgently demanded in the UK then cloth of Pakistan. This position is technically described as one in which Pakistan's demand for cotton cloth Is greater than unity; and the UK's demand for wheat is less than unity. Under some circumstances, the rate of exchange will move upward—say to Rs.25 equals to £1. This appreciation in the rate of exchange will bring a large proportion of trade, say 70% of the gains, to Pakistan, and the remaining 30% to the UK. Here the UK is the loser due to an unfavourable rate of exchange.

(iii) In case No. 3, a situation has orison in which Pakistan Is in urgent need of cotton cloth. The UK, on the other hand, is not so concerned to buy wheat from Pakistan. Her, ˉ, It would be said that Pakistan's demand for cotton cloth is *lass then unity* and the UK's demand for wheat is *greater than unity.* Under such conditions, the rate of exchange would move downwards - say to Rs.15 : £1. The new rate of exchange would be advantageous for the UK and unfavourable for Pakistan. On account of the favourable rate of exchange the UK would receive a larger part of the gains from international trade. As a result of the unfavourable rate of gains of exchange Pakistan would receive less than a 50% share from trade, say, 30%.

2.4 Points to Remember

(i) **The law of comparative cost:** was first developed by Adam Smith who spoke in terms of absolute advantage. Ricardo presented the idea of comparative advantage. According to classical writers, there exists a difference regarding the availability of factors of production in different countries. Each country should specialize in the production of those goods for which the not suitable factors are available.

(ii) **The law of comparative advantage:** is applicable to both individuals and nations. Each individual or, each country should specialise in the production of the goods and services in which they have comparatively greater advantage.

(iii) **Absolute Advantage:** The simple case of international trade is when one country produces commodity A more cheaply than the other country; and the other country produces commodity B more cheaply than the first country. This is a case of absoulte advantage and each country should specialize in the production of that one commodity. International trade should take place simply due to the absolute difference in the cost of production. An appropriate example is that Pakistan should specialize in wheat production and Bangladesh in jute.

(iv) **Comparative Advantage:** According to classical economists, foreign trade may also take place due to the comparative advantage enjoyed by a particular country in the production of both commodities A and B. In such a case, a country should specialize in the production of those goods in which It enjoys greater comparative advantage rather than those other goods in which it has an advantage, but to a lesser degree.

(v) **Specialization Gains:** A country should specialise in the production of goods in which It has a greater comparative advantage and leave the production of other goods to another country which has less comparative advantage. Thus Australia should specialise in wheat production (where she has 3 times greater comparative advantage over UK) and should leave the production of cotton to the UK (where Australia has an advantage but only one and a half times). Such specialization helps both countries to produce a greater output than they would if they were producing each good at home. Specialization leads to greater world output of goods. The additional output produced on account of specialization by two countries is called the "gains from international trade".

(vi) **The Distribution of Gains:** Gains from international trade are the creation of co-operation between two countries in trade. These gains should be divided equally between two participants in international trade. In practice, gains are not usually divided equally. The country for whose goods there is an immense demand in the other country takes the larger share of international trade gains. The share of trade g3ins is less if goods are not urgently demanded in the other country.

(vii) **Assumptions:** The theory of comparative cost is based upon the following assumptions: the existence of perfect competition and full employment, immobility of labour and capital, free trade, two goods—two countries, the law of constant returns, and zero transportation costs.

(viii) **Shortcomings:** The classical theory of comparative advantage is criticised for (a) being based on the labour theory of value (b) requiring conditions of perfect competition; (c) being based on the supply side only; (d) taking cost, not price, as the basis of specialization; (e) applying only to the simple case of two countries—two goods; and (f) considering only the difference in efficiency due to labour and no other factors.

(ix) **Modern Trade Theory:** The Swedish economist Bertile Ohlin presented the modern version of international trade in 1933. According to this theory, different countries have endowment. This difference leads to the differences in the costs of production. Difference in the cost of production is the basis of international trade. Goods which have a low price at home should be exported: and goods having low prices abroad should be imported. Unlike classical writers, Ohlin took into consideration both or the supply and the demand side.

(x) There is a particular rate of exchange at which goods are exchanged between two countries. This rate of exchange falls within a range and will be determined somewhere within it. Appreciation a decline from the equilibrium rate of exchange is caused by reciprocal demand. If the elasticity of demand for country A's goods in country B is greater than unity, there will be an increase in the exchange rate toward the 'ceiling' and thus more than a 50% shore of the gains from trade will accrue to country A. On the other hand, if the elasticity of demand for country A's goods in country B is less than unity, there will be a decline in the exchange rate toward the "floor" and thus less than a 50% share of the gains from trade would accrue to country A.

SELF-ASSESSMENT QUESTIONS

4. Can you explain briefly the main features of the classical theory of comparative cost? [In your answer you should outline the man assumptions on which the theory is based, the main concepts 'it uses and the main propositions (hypotheses) it puts forward, Check your answer against the discussion in Section 2,1]

5. What are the main differences between the classical theory of international trade and the more modern theory?
   [Check your answer against the discussion in Section 2.

6. Why is the rate of exchange important to an understanding of international trade?
   [Check your answer against the discussion on Section 2.3. Also, note that. there is a much fuller discussion of how rates of exchange are determined in Section 4]

7. Write shot notes on each of the following
   (a) the concept of "absolute advantage";
   (b) the idea of "gains from international trade";
   (c) the exchange ratio;
   (d) the equilibrium rate of exchange;
   (e) "favourable" and "unfavourable" rates of exchange;
   (f) reciprocal demand.
   [If you are not clear about any of these concepts or their relevance to the theory of international trade, then go back and re-read the relevant parts of the section

3. BALANCE OF TRADE AND BALANCE OF PAYMENTS

In this section, we shall be looking at the concepts of 'balance of trade' and 'balance of payments'. A strong balance of payments position is much more important for a country, since the balance of trade does not portray a real picture of economic conditions. It is only the balance of payments which Is a useful tool for analysing the economic status of a country. We shall also discuss, towards the end of this section, the measures which can be adopted by a country which is suffering from a chronic deficit in its balance of payments.

3.1 The Balance of Trade

(a) Definition

Every country cannot produce every commodity it needs for itself. Some commodities which a country cannot produce, or does not wish to produce, have to be imported. These goods are, imported in exchange for goods which the country produces in surplus and exports. If we work out a detailed record of imports and exports for a country over a year, this is called the balance of trade. The list comprises only officially recorded figures of imports and exports. The balance of trade can be of three types: surplus, deficit and equilibrium. A surplus balanc6 of trade is when the total value of exports exceeds the value of imports. A deficit balance of trade Is when the value of imports exceeds the value of exports. An equilibrium balance of trade is when the value of exports is equal to the value of imports.

(b) Visible items

The balance of trade comprises goods imported and exported. Its accounts are maintained at the points of entry and exist. These goods are technically called 'visible items'. In the case of Pakistan, imported goods, like machinery, refrigerators, steel pipes, motor cars, petroleum, aeroplanes and so on, are goods which can be seen and counted. These are called the 'visible imports' of Pakistan. Similarly, Pakistan also exports a number or goods like cotton bales, Cotton yarn, fruit and dried fruit, vegetables, sports equipment, surgical instruments, leather products, and so on. Again these goods can be seen and counted at the port of export and they are called "visibles exports". The balance of trade is a list which comprises a record of visible exports and visible imports.

3.2 The Balance of Payments

(a) Invisible Items

Professor Kindle Berger defines the balance of payment. as*:* "a systematic record of all economic transactions between the residents of the reporting country and residents of foreign countries". The balance of payments is a for more comprehensive list than the balance of trade, many items of considerable Importance are omitted from the official accounts on both the import end the export side. Those Items of exports which create a claim on a foreign country for payments of wealth in some form, but which do-not find a place in the official trade returns, are known as "invisible" exports. Likewise, any items which represent a claim of a foreign country on the home country, but are not recorded in the trade returns, are called "invisible" imports.

(b) The Balance of Payments: Three Positions

A comparison of the total value of imports and exports for a country is not very useful. What is important is not the balance of trade, but rather the balance of payments. What really matters is the excess of visible and invisible exports over the total of visible and invisible imports. The balance of payments, like the balance of trade, is of three kinds Surplus (or favourable); deficit (or unfavourable). and equilibrium.

A surplus balance of payments is the situation when the total receipts of a country exceed its total payments. A deficit balance of payments is the situation in which total payments are in excess of total receipts. An equilibrium balance of payments is the situation when the value of receipts and the value of payments are equal. The balance of payments usually balances itself. But if there is a continuous adverse balance of payments in a country, that is a serious situation, and steps need to take to rectify it.

3.3 Invisible Items

Now let us consider the invisible' items which are included in the balance of payments. These invisible import and export items Include the following:

(a) Services of Companies

Every country extends to other countries the services of its banking, shipping and insurance companies and receives remuneration as a result of this. Similar services are rendered by the companies of other countries to the home country.

(b) Tourism

People of different countries visit other countries as tourists. When tourists arrive from other countries, the home country receives for foreign exchange. If the expenditure of Incoming tourists outweighs the expenditure of outgoing tourist, the not gain of foreign exchange is considered a favourable point for the home country.

(c) Scholarships

Students very often seek admission to the universities of other countries. In order to obtain this education and training, the students' home country has to pay in international exchange.

(d) Diplomatic Relations

Each country appoints diplomats to other friendly countries. Diplomatic relations sometimes involve substantial expenditure being incurred by all the countries.

(e) Foreign Aid

Different countries help one another financially for economic development. The inflow of foreign financial assistance is considerd a receipt tor the hone country and the outflow of capital is regarded as a payment.

(f) Grants

Another example of an invisible item is what is usually called 'grants'. Grants in money and material form are sometimes extended by various countries to a country which is

suffering from floods, food-crop failure, starvation, earthquakes, or other national disasters. Such grants need not be repaid: consequently, they fall into the category of receipts. Grants that are given to other countries are regarded as payments.

The balance of trade, being an integral part of the balance of payments, fails to depict the real picture of a country's economic condition. For a true representation of its economic status, we have to look at the balance of payments.

3.4 The Structure of the Balance of Payments

The balance of payments is a statistical statement in which items entering into the balance of payments of a country are arranged appropriately.

(a) Components

The balance of payments has three components

(i) The current account consists of two sub-sections called private account and government account. In the 'private' account are included such items as merchandise of a visible and invisible nature in the private sector; whereas the 'government' account consists of the import and export of military equipment and official grants and aid.

(ii) The capital account includes long-term transfers of capital in the official and private sectors, and short-period transfers of capital in the public and private sector.

(iii) The third section of the balance of payments is the transfer of gold and reserve assets.

(b) Autonomous Items

Technically speaking, all the items in the balance of payments may be classified. as autonomous items or 'accommodating items. In the words of Professor Meade, autonomous items are defined as follows:

> "The category of autonomous receipts would contain all normal commercial exports. Gifts such as emigrants' remittances or reparation payments, which are made for motives quite other than to put the balance of payments into balance, as well as all those normal capital movements which are taking place on the initiative of private enterprise because it appears more profitable to invest capital in one country rather than in another.

(c) Accommodating Items

The other category of items in the balance of payments is called accommodating items. These items are defined in the words of Professor Meade, as follows:

> Accommodating payments may be made by private persons or public authorities. They may be automatic, i.e. unplanned and unforeseen (like the changes in the balance of private exchange dealers or the loss of gold reserves by a central bank) or they may be discretionary, i. e. planned and foreseen (like special government aid)—their distinguishing feature is that they have taken place only because the other items in the balance of payments are such as to leave a gap of this size to be filled. On the other hand, the distinguishing feature of autonomous payments is that they take place regardless of the size of other items in the balance of payments.

(d) Balance of Payments Columns

The balance of payments is a statistical statement having three columns in the table. The first column bears the caption 'credits' the second column carries the title 'debits' and the third column Is drawn under the head bet credits Whatever a country is supposed to receive from the rest of the world is entered under the columns 'credits'. Whatever a country is supposed to pay to the rest of the world is shown under the column "debits". The "net credit" column shows the balance under each head or sub —head. A "minus" entry in this column indicates a net payment due to the rest of the world. A "plus" entry shows a net credit from the rest of the world.

3.5 Disequilibrium

After discussing the structural form of the balance of payments, we can now look at one of the major problems of the balance of payments the problem of disequilibrium.

A deficit in the balance of payments appears when autonomous transactions requiring payments exceed autonomous transactions involving receipts. A surplus arises when the opposite happens: i. e. when autonomous transactions creating receipts exceed autonomous transactions requiring payments. When a deficit arises in the balance of payments through autonomous transactions, accommodating finances are needed to cover it.

(a) For Types of Disequilibrium

There are four types of disequilibrium

(i) **Actual deficit** When autonomous imports exceed autonomous exports during a particular period, this is called the actual deficit. Actual deficit is measured by the size of the accommodating finances actually used to cover the gap between autonomous imports and autonomous exports.

(ii) **Potential deficit**: When actual deficit in the balance of payments does not exist, but there is a possibility of a deficit, such a possibility is called potential deficit. Governments make every effort to avoid such a deficit by taking appropriate measures. Potential deficit is indicated by certain symptoms when the government puts restrictions on foreign trade or practises exchange control; when the export of capital is obstructed; when imports face restrictions; or when a deflationary policy is adopted.

(iii) **Temporary disequilibrium:** This disequilibrium in the balance of payment occurs as a result of a sudden decline in exports (for instance, as a result of unfavourable climatic condition or natural disasters) white the quantity of imports remains the same. Temporary disequilibrium also arises on account of unusual bumper crops or extraordinary exports with imports remaining the same.

(iv) **Permanent disequilibrium.** This occurs when there is a disparity between the receipts and payments of a country. Such disequilibrium causes great anxiety and concern. If the receipts of a country fall short of its payments over the long period, serious measures have to be adopted to rectify the situation.

(b) Causes of Disequilibrium

Here we shall explore some of the main causes which bring about disequilibrium in the balance of payments:

(i) **A fall in exports:** When the exports of a country fall in relation to its imports, this produces a disequilibrium in the balance of payments. Exports may fall due to crop failure, floods, or a fall in the foreign demand for local goods, and so on.

(ii) **An increase in imports:** An increase in imports also tends to foster disequilibrium in the balance of payments. Such an increase may take place, for instance, due to a rise in the demand for the foreign goods needed for developmental projects.

(iii) **Inflation:** A rise in the prices of local goods creates disequilibrium in the balance of payments. Such increases in price can take place as a result of an addition to the money in circulation, a fall in individual productivity, a decline in national output owing to strikes and lock-outs, hoarding, smuggling or other social-evils.

(iv) **Depression:** A slum in world markets may also bring about or perpetuate disequilibrium in the balance of payments. Trade crises in the world may cause a decline in the demand for local goods or a fall in their prices. Either way, export earnings are decreased and disequilibrium arises.

(v) **Technical change:** Technical changes in foreign countries can also cause a decline in the demand for the goods of the home country, Technical change may be regarded as the development of a substitute. The discovery of substitutes discourages and depresses the exports of the home country.

(vi) **Foreign aid:** The reduction of aid to a country can also result in disequilibrium in the balance of payments Such a fall implies a set back to the receipts of a Country white payments remain unchanged

(vii) **Invisible items:** Sometimes invisible items create disequilibrium in the balance of payments. A reduction in the banking, insurance and shipping services extended to foreign countries, more students and tourists leaving the home country—those are the invisible items which can seriously affect the 'net credits' a country and eventually bring about disequilibrium in the balance of payments.

(c) How to Rectify Disequilibrium

Temporary disequilibrium need not necessarily be a problem but a permanent disparity in the balance of payments is serious and causes anxiety and distress. Long-term disequilibrium can be rectified by the following remedial measures.

(i) **Correction of the balance of trade:** An improvement may be brought about by accelerating the growth of exports, both in value and volume—through export bonus schemes, export exhibitions, export subsidy schemes. etc. Improvement may also be sought through restricting the volume of imports, fixing import quotas, and subjecting imports to heavy customs duty.

(ii) **Devaluation:** The devaluation of a country's currency can help in restoring equilibrium. Reduction in the official value of a currency renders a country's exports cheaper and its imports more expensive. The reduction in export prices will hopefully attract more orders from abroad; and a rise in import prices should put a check on the free and frequent arrival of foreign goods. These measures should, therefore, improve the balance of payments position.

(iii) **Deflation:** A reduction in the quantity of. currency in Circulation should bring about a decline in the price level in the country; and this should promote the country's exports.

(iv) **Exchange control.** Under this policy, the government restricts the use of foreign exchange. Exporters are required to deposit their foreign exchange against local currency in a country which faces balance of payments difficulties. The International Monetary Fund(IMF)also allows the home country to seek foreign loans, sanctions devaluation and allows the adoption of exchange control, import duties and quota systems.

3.5 Points to Remember

(i) Every country cannot produce every commodity itself. Each country, therefore. has to import what it cannot produce, and has to export in exchange its surplus output. The list which shows a record of all the goods exported and imported in one year is called the balance of trade. The balance of trade can be in surplus, in deficit, or in equilibrium. The balance of trade is in surplus, when the value of exports exceeds the value of imports. It is in deficit when the value of imports exceeds the value of exports. When the value of exports and the value of imports are equal, the balance of payments is said to be in equilibrium.

(ii) In addition to visible imports and exports, there are certain invisible items through which a country can earn foreign exchange and for which it has to make payments. The list which presents an account of both visible and invisible items is called the balance of payments. The balance of trade comprises only visible exports and visible imports: the balance of payments includes not only visible items but also invisible items. Invisible exports are, for instance, the services of banking institutions rendered to foreign countries. These services receive awards and are considered a source of income. Invisible imports comprise scholarships, etc. provided to students to study or train abroad.

(iii) Like the balance of trade, the balance of payments is of three kinds. It can be positive ('in surplus' or 'favourable') it can be

(iv) The balance of payments has three sections—namely, current account, capital account and account of transfer of gold and reserve assets. Balance of payments items may also be classified into two categories: autonomous items and accommodating items. Autonomous items contain all normal commercial exports, gifts. Since the balance of payments has to be balanced, accommodation Items are needed to keep receipts and payments in equilibrium.

(v) The balance of payments is presented in three columns 'Credits', 'Debits' and 'Net Credits'. What a country receives from other countries is classified under 'credits': what a country pays to other countries is entered under "Debits". 'Net credits' are the positive or negative difference between 'credits' and 'debits'.

(vi) Any disparity between receipts and payments is called disequilibrium. Disequilibrium in the balance of payments is of four types. Actual deficit—when autonomous imports exceed autonomous exports; potential deficit—when there is a possibility or probability of a deficit in the future; temporary equilibrium—which can arise as a result of a sudden decline in exports; and permanent disequilibrium—

which occurs when a fundamental disparity emerges between, receipts and payments and continues for a long time.

(vii) Temporary disequilibrium is not necessarily serious; permanent disequilibrium, however, can have very serious Consequences. Permanent disequilibrium can result' from a fall in exports, an increase in imports, inflation, slumps, technical change, external financial assistance and the effects of invisible items.

(viii) Permanent disequilibrium needs to be corrected. Measures to eradicate disequilibrium include the correction of the balance of trade, devaluation, deflation, exchange control, and the assistance of the International Monetary Fund (IMF).

SELF-ASSESSMENT QUESTIONS

8. What is meant by the terms 'balance of trade, and 'balance of payments'? What is the main difference between the two? Which is the most important for a country's economy? [Check your answer against the discussion in Sections 3.1 and 3.2].

9. How is the balance of payments structured?
[Check your answer against the discussion in Section 3.4. You should indicate in your answer the three *components* of the balance of payments *(i.e.* categories of payments) and the three columns used in presenting the balance of payments. You might perhaps illustrate your answer which a 3 x 3 table (i.e. a table with 3 'rows' and 3 'columns' and therefore 9 'cells' in all.]

10. (a) What is meant by 'equilibrium' and 'disequilibrium' in the balance of payments?
(b) What are the main types of disequilibrium?
(e) What are some of the main causes of disequilibrium?
(d) What steps can be taken to rectify long-term disequilibrium in the balance of payments?
[Check your answer against the detailed discussion in Section 3.5.]

11. Can you make a list of some of the main items (goods, services, payments, etc.) that are likely to appear in Pakistan's balance of payment? You should include both *imports* and *exports;* and you should also distinguish clearly between *visible* and *invisible* items. You might present your answer in the form of table using the following heading:

Imports		Exports	
Visible	Invisible	Visible	Invisible

[If you have any difficulty in completing these lists, then look back through the sections for ideas and suggestions on items of different kinds which might be included. Where would you put grants paid to Pakistani students to study abroad or remittances and gifts sent home by Pakistani citizens working abroad?]

4. THE RATE OF EXCHANGE

In this section, we shall discuss the problem of the determination of the rate of exchange. First, we shall look at how it is determined under the gold standard. Than we shall explain how it is determined under a paper currency system — that is, the purchasing power parity theory.

4.1 Definition

The ratio of exchange between two currencies is called the rate of exchange. Every country has its own unit of money which is freely accepted for any payment in the country, but which is not legal tender (official currency) in any other country. To make purchases from another country, therefore, it becomes necessary to convert home money into foreign money before any purchase can be made. The rate at which the home currency will change into foreign currency is called the rate of exchange.

4.2 Different Mechanisms

The mechanism of exchange rate determination is different under different currency systems. Here we are concerned only with the problems of exchange rate determination under two systems the gold standard and inconvertible paper currency.

4.3 The Exchange Rate under the Gold Standard

(a) What is the Gold Standard?

When gold is the ultimate measure of values in a country, the country is said to be 'on the gold standard', Under the gold standard.

— gold coins circulate side by side with paper currency;
— paper notes are convertible into gold coins at par;
— the government assumes a duty of coinage;
— gold coins are unlimited legal tender;
— the export and import of gold is free;
— the value of money is affected by the supply of gold and the value of gold in the open market;
— if the supply of gold is increased, its purchasing power in terms of commodities falls, and so does the purchasing power of gold coins;

(b) Mint Par Exchange

When two countries are on the -gold - standard, their currency is either gold coins or is convertible into gold at fixed rates. The par of exchange between two countries is called the 'mint par of exchange'. This is arrived at by equating the gold content of the currency units, or the gold given in exchange for them by the currency authorities of the two countries.

(c) The Determination of the Exchange Rate: An Example

Let us illustrate the determination of the exchange rate by an example:

(i) Before World War I, Britain and France were both on the gold standard. If. for example, one British pound contained 100 grams of gold and one French unit of currency (called the 'franc') contained 4 grams of gold, the logical equation between

the two currencies would be as follows;

In France:	One franc (was made of) 4 grams of gold hence 25 francs (would be made of) 100 grams of gold.
In Britain:	1 pound (was made of) 100 grams of gold.

Therefore, one pound in Britain and 25 francs in France contained an equal weight (100 grams) of gold. Hence the rate of exchange between Britain and France should be : £ 1 : Fr. 25. This ratio is called the mint par of exchange. If a French merchant had to make a payment of £ 1 in England, and bills of exchange were not available (i.e. commercial banks charge a very high rate, say 35 francs to make a payment of £ 1 in UK), the French merchant would prefer to buy gold worth 25 francs (i.e. 100 grams), melt it, and send the bullion (100 grams) to Britain. The British creditor would present that gold (100 grams) at the mint and get £ 1 in British money. Similarly, a British merchant could make payments to his French creditors by exporting gold at the mint par rate which the French could get converted into their own currency '(francs) in France.

(ii) **Cost of Transport:** Now suppose that the French people have to make more payments to the British people than the British have to make to the French. The demand for British Currency in France will be greater than previously. The value of pound will rise in terms of the franc. The French Importer will have to pay more than 25 francs in order to toot one pound in London. But how much more will he be willing to pay? The importer in France will Send gold if the rate of exchange is higher to the extent of more than the cost of transporting gold from Paris to London (since sending gold involves the cost of transport, including insurance, shipping, interest changes, etc).

(iii) **Upper Specie Point:** Suppose, as a result of greater imports, the French have to make more payments to Britain and the rate of exchange is determined at £ 1 : Fr. 26. If the importers in France consider this rate costlier, they might prefer to send gold to Britain. If the cost of sending 100 grams of gold from Paris to London is 0.5 francs, it will be worthwhile sending gold from France to England—since it will involve less cost, I. e. £ 1 Fr 25.5 (100 grams of gold will be purchased for 25 francs and half a franc will be paid as transport charges. Thus the total cost of sending 100 grams of gold will be 25.5 francs). If the exchange rate is £ 1 : Fr. 26 and sending gold costs £ 1 : Fr. 25.5, then the rate of exchange will naturally be pulled down to the lower rats (i. e. £ 1 : Fr. 25.5). In a market, only one rate can prevail if there is perfect competition, this point is called the "go1d import point" from the point of view of Britain. This point can be obtained by adding the cost of transport to the mint par of exchange for any country on the gold standard. It is also called the upper specific point".

(iv) **Lower Specie point:** There is also a "gold Import point" or lower specie point". Now let us make an attempt to show how this point is obtained. Suppose Britain imports more. from France and therefore has to make more payments to France. Demand for French currency in Britain will rise and the rate of exchange will be changed in favour of France and against Britain. Suppose the new rate of exchange is determined at £1.10: Fr. 25, (Also note that a pound has 100 pence.) It will be said that the rate of exchange has risen 10% for Britain. If the importers consider a 10%

increase too costly, they would prefer to send gold to France—as long as the transport charges are less than 10%. if the transport charges of sending gold from Britain to France are 2 pence per 100 grams, the British importers will find it worthwhile to send 100 grams of gold. to Paris directly, and thus pay off their debts. The total cost of sending 100 grams of gold for the English importers will be £1.02 (one pound will be spent to buy 100 grams of gold and 2 pence will be paid as transport charges). Thus, the rate of exchange will decline from £ 1 . 10 : Fr. 25, as only one rate of exchange can operate at a time when at a cost of £ 1.02 British importers' can send 100 grams of gold to France which would be sold there for 25 francs Thus a payment of 25 francs will be paid at cost of £ 1.02 by the Britain importers. This is called the "import point" for France and the "old export point" for England Another, name for this point is the "lower specie point"

(v) According to our example the lower specie point will be achieved at £ 1.02: Fr 25. The same point can be expressed as £ 1 .0 0 : Franc 24.5—by deducting transport charges from either side (0.2 pounds in Britain and 0.5 francs are the transport costs in each country) The lower specie point can be obtained by deducting the Cost of transport from the mint per of exchange.

(d) Specie Limit

Thus if gold Is available and Is allowed to move frosty between two countries on the gold standard, the rate of exchange will move between the two limits act by the upper and lower specie points, also called "specie limits" or "specie points". If, however, gold is not available, the rate of exchange will pass beyond the specie points. These are the two limits within which the fluctuation will be caused by the changes in the supply of and the demand for foreign currency (i.e. drafts, bills, etc.). The fluctuations can be explained in terms of the following graph:

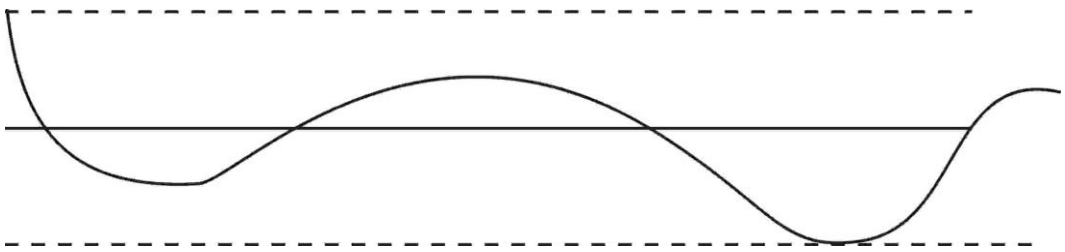


DIAGRAM 13/1: Rate of exchange and specie limits

As long as gold is freely given in exchange for paper currency at the fixed rate, the rate of exchange will fluctuate between these two limits; and will be fixed there when the demand for bills is equal to the supply of bills. These limits would be transferred only when one country gives up the gold standard, or devalues its currency, or when some artificial restrictions are imposed on the movement of gold.

4.4 The Exchange Rate under an Inconvertible Currency

So far we have discussed the determination of exchange rates under the gold standard. Now we turn to the determination of the exchange rate between inconvertible paper currencies.

(a) Definition

Inconvertible paper currency is also sometimes known as "Fiat Money". In the outward form, even inconvertible paper money may carry a promise of convertibility by the issuing authority; but it is generally understood that the issuing authority has no intention or ability to convert it. Instead of giving metallic money, the issuing authority may simply convert paper into paper. This is the case today in Pakistan; and elsewhere It has also been the case.

(b) Purchasing Power Parity Theory

When the countries are using inconvertible paper currency, the rate of exchange will be determined by the relative purchasing power of the two currencies in their respective countries. This Is called the Purchasing-Power Parity Theory. This theory was developed and presented by the Swedish economist, Gustav Cassel.

(c) Exchange Rate Determination

Let us take an example. If a number of goods can be purchased in Pakistan for Rs.25/- and the same number of goods can be purchased in Britain for £ 1, the rate of exchange will be £ 1 Rs.25. This rate of exchange will continue operating until the balance of trade between Pakistan and Britain is in equilibrium. The moment the imports of a country exceed its exports or vice versa, the rate of exchange will vary. Fluctuations in the rate of exchange are due to the rise and fall in exports or imports of the countries concerned. Fluctuations in the exchange rate are termed either favourable or unfavourable. Fluctuations may arise due to changing price levels in the countries concerned. If prices increase in Pakistan, the rate of exchange may vary from £ 1 As. 25 to say £ 1 As. 30; whereas, in the case of failing prices, the exchange rate may go from £ 1 : Rs.75 to say £ 1 Rs.20.

(d) Exchange Rate Limits

Just like the "gold import point" and the "gold export point", there is also a "commodity import point" and a "commodity export point',' The commodity import point is the point at which the rate of exchange moves in such a way that it seems unfavourable for country B and country B prefers to send goods to country A instead of making payments through bills of exchange. The commodity export point is the point at which country A finds the rate of exchange unfavourable and prefers to send goods to country B instead of making payments through bills of exchange. The commodity imports and commodity export points set the limit beyond which the exchange rate cannot Operate. The commodity export point is the upper limit and the commodity import point is the lower limit, between which the exchange rate will be determined. It may vary between the upper and the lower limits but not beyond them.

(e) The Determination of Limits

The upper limit or commodity export point is determined by adding the cost of transport to purchasing power parity. The lower limit or commodity import point is determined by deducting the cost of transport from purchasing power parity. If Re. 5/- is the transport cost for sending goods from Pakistan to Britain, the upper limit will be set at Re.30 : £ 1 (Rs.25/- is the purchasing power parity, plus Rs.5/- for the cost of transport). Similarly, the lower

limit will be set at Rs.20/- : £ 1 ç Rs.25/- being the purchasing power parity, minus Rs.5/- as the cost of transport). The upper and lower limits have a specific role in the trade and payments fields. If the rate of exchange is determined at Rs.31/- or beyond equals £ 1, Pakistan importers will prefer to make payments by sending goods. since the sending of goods will cost them at the most Rs.30 equal to £ 1. Similarly, if the rate of exchange is determined at £ 1 : Rs.19 or less, British importers will find it worthwhile to send goods to Pakistan, since sending goods will enable them to make a payment of Rs.20/- in Pakistan for £ 1. Therefore, Rs.30/- and Rs.20/- set the upper and lower limits within which the rate of exchange will fluctuate and not beyond.

(f) The Upper Limit

If Pakistan's imports from England exceed Pakistan's exports to England, the rate of exchange will move unfavourably for Pakistan. Let us suppose that the rate of exchange is settled at Rs.32/- : £ 1. If Pakistani importers consider this rate a costly one and are able to employ an alternative means of payments, they will prefer to send goods in exchange to Britain. In order to make the payments, Pakistani importers will buy x number of goods from local markets for Rs.25/- and pay Rs.5/- as transport charges. Thus, it would cost them Re. 30/- to send X number of goods which will be sold for £ 1 in Britain' The rate of exchange will naturally decline from Rs.32 : £ 1, as only one rate can prevail in a market at any one time.

(g) The Lower Limit

On the other hand, if Pakistani exports to Britain exceed our imports from the UK (our balance of trade being favourable and that of England unfavourable), the rate of exchange will move favourably to Pakistan and unfavourably to Britain. Suppose that under these conditions, British importers find an exchange rate of Rs.18: £1, which means that E 1 which could make a payment in Pakistan of Rs.25 in the past. now only makes a payment of Rs.18. Under these circumstances, British importers will explore other profitable ways of making payments in Pakistan of more than Rs.10. If Pakistan exporters agree to accept payments in goods from British importers, the British importers will buy x number of goods from local markets for £ 1 and a bear a cost of 20 pence for sending the goods to Pakistan. (Notes £ 1 : 100 pence). Thus, sending x number of goods will involve a cost of £ 1. 20 to the British importers. When x number of goods arrive in Pakistan, they will be sold for Rs.25/-. Thus a payment of Rs.25/- will involve £ 1. 20 for the British importers. If we deduct the cost of transport (which is one-fifth of the purchasing power in each country) from either side, we Will have an exchange rate £ I : Rs.20 (one-fifth of the purchasing power —i e. 20 pence - deducted from £ 1. 20. and Rs.5/- from Rs.25/- in both the countries). By this mechanism, British importers will make a payment of Rs.20/ instead of Rs.10/-. The rate of exchange will also be fixed at £ 1 : Rs.20, since there can only be one rate in a market at one time.

(h) Illustrative Graph

Purchasing power parity and variations in it may be illustrated through the following graph:

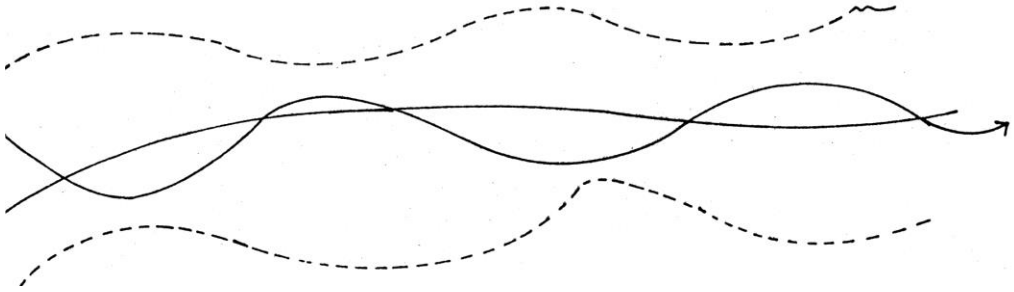


DIAGRAM 13/2: Purchasing power parity and the rate of exchange

Unlike the situation under the gold standard, the central line here is not shown as a straight line. Under the gold standard, the central line is called the mint par of exchange which is a fixed value. Under inconvertible paper currency system, the central line is called 'purchasing power parity' which does not have a fixed value, but rather is a constantly changing rate. Consequently, this central line is shown in a fluctuating shape. The real exchange rate moves upwards and downwards from the central line of purchasing power parity; but overall it remains in close proximity to purchasing power parity. There are two limits called 'commodity export' and 'commodity import' points, within which the rate of exchange fluctuates.

4.5 A Critical Evaluation of the Theory

The purchasing power parity theory has been criticised on several grounds.

(a) Comparison of General Price Levels

The theory compares general price levels in the two countries and not the price levels of the specific goods actually entering into international trade.

(b) Long Run Failure

The theory is only true in the short run. In the longer run, the rate of exchange and price levels will tend to move in the same direction. The theory, therefore, does not hold good; and if it holds good at all in the long period, it is only possible if the essential conditions of international trade remain unchanged. But such conditions seldom remain unchanged.

(c) Changing Exports

There is no permanence about the goods which do or do not enter into international trade. This depends on the rate of exchange itself. If the price of foreign currency goes up, it will make it profitable to export certain domestic goods which would previously have only been used locally, and vice versa.

(d) Invisible Items

Changes may occur in the volume of foreign loans, the cost of transport, or in any other invisible items. Changes in barter terms, brought about in this way, may disturb the

relationship between the price levels and the parities based on such price levels may not correspond to the rate of exchange.

(e) Other Items

Many items in the balance of payments (like insurance and banking transactions, and capital movements) are very little affected by changes in the general price level. But these items do influence the exchange rate by acting on the supply of and demand for foreign currencies.

(f) Elasticities and Capital Movements

J. M. Keynes pointed out two defects in the theory of purchasing power parity. According to Keynes (i) the theory does not take into consideration the elasticities of reciprocal demand, and (ii) it ignores the influence of capital movements. The inflow of capital tends to raise the exchange value of the currency of the capital-receiving country, and the outflow of capital will lower it.

4.6 Conclusion

In conclusion, we may say that the Purchasing Power Parity Theory attempts to explain the ultimate rather than the immediate forces determining the rate of exchange. However, the advantage of the theory lies in the fact that it is applicable to all currencies. It lays proper emphasis on the influence of price levels in determining rates of exchange. Its mark of distinction is that is recognises that the actual rate may differ from the equilibrium rate.

4.7 Points to Remember

(i) The ratio of exchange between two currencies is called the "rate of exchange". For making payments, each country needs to convert its home currency into foreign money. This creates a demand for foreign money. By exporting goods to foreign countries, the home country provides a supply of foreign money. Normally, the demand for and supply of foreign money determines the rate of exchange. The rate of exchange is determined by different mechanisms under the gold standard and under inconvertible paper currency.

(ii) Mint par exchange is obtained by equating the gold content of the currency units of two countries. If one British pound contained 100 grams of gold in weight, and one French franc contained 4 grams of gold in weight, mint par exchange would be fixed at £ 1 : Fr. 25. Mint par exchange works as the rate of exchange as long as the two countries' exports stand at par with their imports. But when the trade balance becomes favourable to one country and unfavourable to the other, then the rate of exchange deviates from mint par exchange. The country having a deficit in its balance of trade will have to offer more of its currency than before (and more than mint par exchange). If the rate of exchange is determined at a substantially higher rate, the country concerned will send gold to the other country. It is here that the cost of transport is involved.

(iii) When the rate of exchange is very 'adverse, an affected country will Start to send gold abroad. The sending of gold involves two costs: the cost of buying the gold and cost of transporting it. If a country finds this total cost. of sending gold to a foreign

country less than the rate of exchange, gold export as a method of repayment will be adopted. Eventually, the rate of exchange will come down to the gold-export cost level. This level is the highest possible limit. This is called the upper specie point of gold.

(iv) Similarly, there is a lower specie point which is also called the gold import point. The lower specie point is arrived at by deducting the cost of transport from the rate of exchange. Both the upper and lower specie points set the "specie limits" within which the rate of exchange will vary. The limits can be crossed over only when a country gives up the gold standard, devalues its currency, or imposes certain restrictions on the movement of gold.

(v) Purchasing Power Parity Theory: When two countries are using inconvertible paper currency, the rate of exchange is determined by the purchasing powers of the two currency units in the two countries. If x number of goods can be purchased for Rs.25/- in Pakistan and the same number of goods can be bought for £ 1 in Britain, then purchasing power parity will be achieved at £ 1 Rs.25/-. Purchasing power parity will serve as the rate of exchange until the balance of trade between the two countries is in equilibrium.

(vi) If country A's balance of trade is unfavourable, the rate of exchange may also become adverse for it. if the exchange rate is very adverse, country A will start sending goods to country B. The sending of goods will involve two costs: the cost of buying the goods and the cost of transporting them If this total cost of sending goods is cheaper to country A, then this will drag down the rate of exchange. This is the highest possible point beyond which rate of exchange cannot rise—i. e. the commodity export point. Similarly, there is a commodity import point. When country B finds the rate of exchange very adverse, it will prefer to send goods to country A. Commodity export and commodity import points set the limits within which the rate of exchange will fluctuate.

(vii) Purchasing power parity presented by Gustav Cassel has been criticised on the grounds that : it compares the general price level and not the price level of exports; it is a failure in the long-run as conditions in the long period change considerably ; it assumes that all countries keep on importing and exporting the same goods - and this is not true ; it does not incorporate changes in the volume of foreign loans and other invisible items in the balance of trade ; and finally, it ignores the elasticities of reciprocal demand and capital movements.

(viii) In general, it can be stated that the purchasing power parity theory attempts to explain the ultimate rather the immediate forces which determine the rate of exchange. However, the theory is useful Since it is applicable to all currencies in the world and is based upon price levels. It also usefully distinguishes between the actual and the fluctuating rate of exchange.

SELF-ASSESSMENT QUESTIONS

12. Can you explain briefly:
(a) What is meant by 'the gold standard' in relation to a country's monetary system?
(b) How the rate of exchange would be determined between two countries both of which were operating under the gold standard?
[Check your answer against the discussion in Section 4.3. In answering part (b) see if you can work out an example of your own which will illustrate the mint par of exchange, the importance of the cost of transport, and the upper and lower specie points (or specie limits). Also see if you can find out whether there are any Countries in the world which are now operating under the gold standard].

13. Can you explain briefly:
(a) What is meant by an inconvertible paper currency? (Inconvertible into what?)
(b) How is the exchange rate determined between two inconvertible paper currencies?
[You can check your answers against the general discussion in Session 4.4. Again, for part (b), see if you can work out your own illustrative example (say between Pakistan and Japan) which brings out the idea of exchange rate limits (commodity import and export points) and how they are-determined. Is transport cost still important when dealing with inconvertible paper currencies?]

14. Following on from your answer to SAQ 13 (b), can you now:
(a) State in general terms the main propositions of the Purchasing Power Parity Theory? What does it seek to explain and how?
(b) Indicate the main strengths of the theory and outline the criticisms that have been made against it.
[Chock your answer against the discussion in Section 4.4-4.6].

15. Can you illustrate in graphical terms the difference between the determination of the exchange rate under the gold standard and -between countries using inconvertible paper currency?
[Check your illustrative graphs against those in Section 4.3 and 4. 4. Make sure that the lines are properly labeled in each case. Why is the central line under gold standard straight, while the central line for the inconvertible paper currency graph moves up and down?]

GLOSSARY OF MAIN TERMS

Absolute advantage	The Superior position of a country in the production of a commodity more cheaply than its rivals in the world market.
Comparative advantage.	When a country enjoys supremacy in the production of both goods over its competitor, but her superiority in one product exceeds her advantage in the other.
Comparative cost theory	The theory which relates to a comparative study of cost patterns of two goods in two countries, and finally helps deciding which country shall specialise in which field and why.
Deflation	Reduction in the money supply in a country.
Devaluation	Reduction in the external value of a currency.
Disequilibrium in the balance of payments	The condition when the payments of a country are greater, than its receipts.
Domestic trade	The flow of goods and services within a country. Also known as inter-regional trade or internal trade.
Exchange rate	The ratio at which one currency may be exchanged with another.
International trade	Transactions of goods and services between the nations of the world. Also known as global or foreign trade.
Inter-regional trade	The buying and selling of goods and services between different regions of a country. Also known as domestic or internal trade.
Invisible items	Items other than physical imports and exports which earn foreign exchange and involve spending it.
Lower specie point	The low rate of exchange under the gold standard below which payments are received by home country in terms of gold and not through banks or in the form of currency.
Mint par exchange	The equation of gold prices of two countries when both of them are on the gold standard.

Purchasing power party	The equation of purchasing power of two currencies in their respective countries.
Upper specie point	The highest rate of exchange under the gold standard, beyond which payments are preferred to be made in gold and not in currency or through banks by home country.
Visible items	Goods imported and exported in physical terms

SUGGESTIONS FOR FURTHER READING

Akhtar, S. M.	*Introduction to Modern Economics.*
Dewett, K. K.	*Modern Economic Theory.*
Elseworth, P. T.	*International Economy.*

Unit–9

FISCAL POLICY

Written by: Abdul Haleem Khawaja

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INTRODUCTION

This Unit deals primarily with fiscal policy and the methods by which it is implemented in order to achieve economic stability and growth. First, we introduce the concept of fiscal policy and its expression in a technical sense. Then we discuss the objectives of fiscal policy in order to illustrate its relevance to practical economic life. Next we deal with the ways in which fiscal policy is operated. Here it is shown with the help of graphs that fiscal policy provides a mechanism through which saving, investment, employment and the income of the country can Increase. This is in fact the way in which government intervention in economic life avoids the upheavals that might occur in the process of exploiting indigenous resources for development. The unit also deals with the tools of fiscal policies and Includes a section on the sources of revenue of federal, provincial and local governments. Finally, the unit deals with 'deficit financing'. This is a recent development in the theory of fiscal policy which is being greatly emphasised in the budget policies of developing countries. At the end of the unit, various aspects of deficit financing are discussed, its role as a part of fiscal policy, its consequences, and the precautionary measures which can be taken to counteract its possible adverse effects.

OBJECTIVES

By the end of this unit, you should be able to:

(i) define fiscal policy and explain its importance;

(ii) outline the objectives of fiscal policy;

(iii) describe the ways in which fiscal policy can contribute to economic stability

(iv) list the limitations of fiscal policy

(v) analyse the effects of government spending and taxation on National Income

(vi) list the main sources of revenue and the main expenditure heads at the federal, provincial and local body levels of government.

(vii) define the concept of 'deficit financing and outline the sources of deficit finance, its objectives, its economic consequences. and the measures which may be taken to Counter its negative effects.

1. FISCAL POLICY

1.1 Definition

In the days of the Roman Empire, the word 'fiscal' was used to denote 'government treasury'. Consequently, the policy of the government with regard to its revenue receipts and revenue expenditure came to be *known as 'fiscal' policy. The fiscal policy is considered as the art of obtaining government revenue, handling government expenditure and managing the borrowing activities of the government for the achievement of pre-determined economic goals.* In line with this statement, Professor Lipsey states; 'Government' revenue raising and revenue spending activities are called 'fiscal policy'. The concept of fiscal policy has been more technically expressed by Professor Lindholm: "Fiscal policy is concerned with the determination of the type, the time and procedure to be followed, in making government expenditure and in obtaining government revenue.",

As we all know, the economic situation in a country does not remain constant. It keeps changing. Keeping in view the dynamics, of an economy, we find that inflationary and deflationary gaps can arise in the process of economic development which pose a serious threat to the economic stability of a country. The fiscal policy generally employed in such situations can be defined as:

> The process of shaping taxation and public expenditure in order (a) to help dampen down the swings of the business cycle and(b) to contribute toward the maintenance of a growing, high employment economy, free from excessive demand inflation or deflation.

The above definition of fiscal policy indicates that it is related to the following economic activities of the government.

— Government revenue based on taxes;
— Government expenditure
— Government debt;
— Government debt management

We shall now explain each of these briefly.

(a) Government Revenue

Fiscal policy is basically concerned with the policy measures of the government to raise revenue by imposing taxes. There are two types of taxes — i.e. taxes like income tax, wealth tax, gift tax etc. and *indirect* taxes like customs duty, sales tax and excise duties Through taxation, the resources of the country are diverted from private hands into the hands of the government. Consequently, taxation policy has a direct bearing on the pattern of national income distribution.

(b) Government Expenditure

In order to promote public welfare and raise the level of employment and production, policy decisions regarding government expenditure form an important part of fiscal policy. Through government expenditure (popularly known as public expenditure') resources are shifted from the government to the people. This is deliberately done with a view to reshaping the aggregate spending of the economy.

(c) Government Debt

Sometimes a government takes deliberate measures to spend more than its actual revenue receipts in order to promote the level of saving and investment and to keep up the pace of economic development. It creates *budget deficit* which is balanced by borrowing from the public. Thus, government debt provides an incentive to the people to save more and hence the resources of the country are diverted again from the people to the government.

(d) Government Debt Management

Debt management policy relates to the government's decision regarding the issue of government securities and bonds for the acquisition of loans from the people, the determination of the rate of interest on these bonds, and the time and procedure of paying back these loans.

This brief analysis of the four aspects of fiscal policy reveals that deliberate attempts are made by the government divert the flow of money from private spending and saving in the desired direction. This exercise helps the economy to achieve stability and growth.

1.2 The Importance of Fiscal Policy

Fiscal policy is a powerful weapon in the hands of government by which economic variables are adjusted to promote levels of output. Income and employment. It is used to accelerate the rate of economic growth. This is the present status of fiscal policy but it is quite different from that of the period of the classical economists. During the classical age, fiscal policy did not play a vital role in the economic policies of the state. Let us see how and why fiscal policy was less important in the past.

Classical economists believed that there is always full employment in the economy of a country; and hence that there is no question of overproduction. This is a normal situation in a laissez-faire economy in which there is the least interference on the part of the government in the economic affairs of the country. Obviously, the economic role of the government is very limited. The philosophy of the laissez-faire economy is that the people are the best judges regarding the collection of resources, the distribution of income and the determination of the general price level and the rewards of the factors of production. It was, therefore, believed that government taxes should not affect the pattern of income distribution or bring about any change in the price level of the production agents. Thus, according to classical economists, taxes should be neutral and play only a passive role in the economic sphere of life. They further believed that government expenditure is always unproductive; and that therefore the budget of the country should always be balanced — with the limited amount of revenue receipts adjusted to equal exactly the amount of expenditure.

The opinion of classical economists, regarding the importance of fiscal policy, is not generally accepted these days—because government, in almost every country, is engaged in gainful and productive activities to foster the rate of economic development. Moreover, the great depression of the 1930's was seen as the result of the economic policies of laissez-faire economics. Hence it was not possible to keep government a mute spectator. Loyd

Keynes pleaded for the effective role of the government to achieve economic stability. Since that time, fiscal measures have become are gular feature of government policies to direct economic forces in the desired direction.

These days, we find that government taxes are raised to the extent of 20°, of G. N. P. in advanced European countries and that government expenditure goes even beyond this limit. Thus, the taxation and expenditure policies of the government play a vital role in promoting the level of income and employment. During the different phases of the business cycle, a balanced budget policy cannot be adopted because It can aggravate the economic condition of the country. For example, In the upper phase of the cycle, a balanced budget will accelerate the rate of Inflation; and in the glower phase, it will accentuate the forces of depression, which in turn produce massive unemployment, Modern economists believe that the government should aim for a surplus budget in the expansion phase of the cycle to slow dawn the rate of money circulation; and a budget deficit should be allowed in the contraction phase so that additional government expenditure may counteract the forces of instability. In this way, counter-cyclical fiscal policy has replaced the concept of the balanced budget which was favoured by the classical economists.

1.3 The Objectives of Fiscal Policy

Fiscal policy is always directed to achieve certain specific objectives. The main objectives are listed below:

— the achievement of desirable price levels;
— the achievement of a desirable consumption level;
— the achievement of a desirable level of income and employment;
— the achievement of a desirable pattern of income distribution;
— the achievement of a desirable rate of economic growth;
— the achievement of equilibrium in the balance of payments;

We shall now discuss each of these objectives in turn.

(a) Desirable Prices

The price-mechanism plays a key role in the mobilisation and exploitation of resources in a free enterprise economy. Basically, demand and supply are the two determinants of the prices of the various goods and services. When the demand for goods and services goes up abruptly, prices in the country tend to shoot up. Consequently, non-' economic practices like hoarding, black-marketing and profiteering take place, which have an adverse effect on the purchasing power of consumers.

On the other hand, when the supply of goods and services is greater than the demand, the general level of prices goes down. Producers suffer from losses and shut down their production units. This situation leads to widespread marginal unemployment. This is an undesirable state of affairs. Fiscal policy is used to control the rapid fluctuation of the general price level which is made to, rise slowly and gradually in keeping with the objective of relative price stability. In this way, fiscal policy can help to safeguard the interests of consumers as well as producers. The government can initiate price support schemes to protect producers against sagging prices. For example, the Government of Pakistan has

adopted such policies to keep up the prices of wheat, cotton and sugarcane. In the interest of consumers, the government on provide a subsidy to consumers on essential consumption articles. For examples, the Government of Pakistan buys wheat and fertilizer at higher prices and sells them to-the users at lower prices. The loss is borne by the government for the stabilisation of prices.

(b) A Desirable Consumption Level

Fiscal policy can be used to bring about changes in the consumption pattern of the people. If the amount bout out of a given level of national Income in a country is very high, saving and investment will fall short of the requirements—as a result of which entrepreneurs will not be in a position to meet the replacement cost of their old capital assets and introduce new technical innovations.

On the other hand, if consumption expenditure out of a given level of income remains low, intended saving tray outstrip intended investment; and the disparity between the two may generate unemployment. The Government can adopt fiscal measures to avoid such extreme situations for the achievement of specific consumption levels. Generally, high tax rates push up prices and discourage consumption and low rates of tax bring down prices and increased consumption. The government can reduce taxes on cloth, shoes, etc. to promote the consumption of these goods. It can also subsidise certain essential articles to make them available at cheaper rates. In order to discourage the consumption of alcoholic drinks, tobacco, etc., the tax rate on these products can be raised to higher levels. As far government borrowing is concerned, it increases consumption and brings about changes in the consumption pattern.

(c) A Desirable Level of Income and Employment

The major objective of fiscal policy in advanced countries is to achieve full-employment and to maintain it without inflation. Unemployment in these countries brings down the national income as a result of which the volume of consumption also goes down. In the-absence of the demand for consumer goods, the level of saving and Investment remains low. Whenever lapses, from full-employment ‘occur in these Countries, government expenditure is increased in order to increase the level of effective demand and so move towards full-employment. There is always the danger. of inflation at full-employment. At this stage, fiscal policy should be properly executed to control the money supply—so that full-employment without inflation can be maintained.

The problem of unemployment is severely obstructing the growth of saving, investment and income in under-developed countries. It is, therefore, desirable that public works programmes like the construction of roads, bridges, buildings etc. should be started to provide job opportunities to unemployed people. The rate of income tax and corporate profit tax should be lowered to encourage entrepreneurs to accumulate more and more savings for investment. These fiscal measures can help to increase income and employment in developing countries. Longer-term fiscal devices can also be adopted to improve the situation with regard to structural unemployment in developing countries.

(d) A Desirable Pattern of Income Distribution

Inequality of income distribution is undesirable economically, as well as socially, because it damages the productive capacity and efficiency of the people. Empirical observation shows that the richer section of society enjoys the luxuries of life and hence are not highly motivated to work; whereas poor people cannot afford a balanced diet, as a result of which their working capacity remains low. Thus it is desirable to have a fairer and more equitable pattern of income distribution. The government should impose strongly progressive taxes to reduce the high incomes of the rich; and at the same time, it should re-allocate large amounts of revenue to schemes like old-age benefit, free education. health facilities and insurance coverage, which mainly benefit the poor. In order to check the concentration of wealth in a few hands, the government should adjust the rate of inheritance, gift and property tax in such a way as to encourage a more equitable distribution of income.

(e) Economic Growth and Development

Developed countries adopt fiscal measures to sustain high rates of economic growth; whereas developing countries employ it to accelerate the rate of economic development. Capital deficiency in poor counties is a major cause of backwardness. It is evident that these countries are inherently poor and cannot mobilise their resources to accumulate a sizeable amount of savings for investment. In order to overcome this problem, the government resorts to deficit financing to create additional capital for investment in agriculture and the industrial sector of the economy Sometimes, the government allows tax holidays to a number of selected Industries for the expansion of investment in the private sector. Deficit financing expands investment activities in the country and therefore the level of income and employment goes up. This is an expansionary fiscal policy which is always inflationary in nature. Thus precautionary measures ‘must be taken to get quick returns on the investment in order to meet the additional demand for goods and services. In addition to these fiscal measures, it is also desirable that government expenditure on health, education, and the means of communication and. transportation, should also be increased—so that domestic, resources may be mobilised to accelerate the pace of economic development.

(f) Equilibrium in the Balance of Payments

Some European countries are faced with deficits in their ‘balance of payments due to enormously high defence expenditure. Underdeveloped Countries are also facing the same problem, as their imports are larger than their exports. In order to rectify the balance of payment position the government can impose heavy taxes on imports to reduce their volume, and reduce tax rates on exports to raise their volume. Similarly, taxes on the earnings of foreigners should not be very high, so that they will be encouraged to bring more capital and new techniques to the country.

1.4 Fiscal Policy and Economic Stability

Economic fluctuations have posed a serious threat to capitalism- in the past. In the absence of stability, free enterprise economies are likely to be doomed to total collapse. Various suggestions have been put forward with respect to fiscal policy for the achievement of economic stability in a free enterprise economy. Some of the main suggestions are as

follows:
— the annually balance budget;
— the cyclically balanced budget;
— built-in stabilisers;
— formula flexibility.
— a fully-managed compensatory fiscal policy.

Now we shall explain each of these in detail:

(a) The Annually Balanced Budget

Classical economists put forward this suggestion. They believed that government expenditure should always be kept exactly equal to the government revenue which is collected by taxes. This means that in the case of inflation, when the amount of revenue increases, either government expenditure should be increased or the rate of taxes should be lowered—in order to bring down revenue to the level of government expenditure.

The idea of a fiscal policy based on the balancing of the budget annually has not proved to be useful in counter-acting economic instability. The reason for this is that, in a period of inflation, a reduction in taxes or increased government expenditure to balance the budget will promote inflation instead of reducing it. On the other hand, during a depression, government revenue would fall due to the low level of national income. In order to balance the budget in this period, either the rate of taxes must be increased or government expenditure must be cut. In either case, effective demand will fall; and the adverse situation would be further aggravated. So this type of fiscal policy cannot be regarded as an effective way of stabilising the economy.

b) The Cyclically Balanced Budget

Some economists believe that fiscal policy should be devised in such a way that government budgets can be balanced over the period of a cycle and not annually. This policy was adopted by Sweden during the 'great depression' of the 1930's and hence such a fiscal policy is known as a "Swedish Budget". According to this policy, public expenditure should be fixed over the period of the business cycle in accordance with the needs of government; and there should not be any deliberate attempt to undertake public expenditure in order to bring about a change in the level of national income. After this issue has been settled, taxes should be adjusted in such a way that budgetary surpluses created during the period of boom are just sufficient.to meet the foreseeable deficits which are likely to take place in the period of depression. In this way, the budget would be balanced cyclically over a long period and not annually: and- this would result in bringing about stability in the national income. The economists who have put forward this proposal also describe the role of built-in stabilizers (see below) to achieve stability, income and employment in the economy.

Though the policy of balancing the budget cyclically has been successfully implemented in Sweden, nevertheless economists have pointed out some serious shortcomings of the policy. Their main criticisms have been as follows:

(i) It is very difficult to predict accurately the exact amount of surplus during the period

of boom which would be sufficient to offset the expected deficit in the period of depression. Sometimes government expenditure is undertaken in emergencies and other unpredictable circumstances. Thus, taxes have to be changed with a change in government expenditure. It is therefore very difficult to implement such a rigid fiscal policy.

(ii) It is possible that a cyclically balanced budget may bring substantial economic stability to the economy in due course of time; it is unlikely that such stability can ever be achieved at the level of full-employment.

(c) Built-in Stabilizers

There are certain fiscal devices which work automatically to counter the forces of instability in an economy. Those are known *as "automatic stabilisers",* or *"built-in stabilisers."* We shall now discuss these in detail:

(i) A Progressive System of Taxation: A tax system under which higher income groups pay at a higher rate, and lower come groups pay at a lower rate, is known as a 'progressive'. system of taxation. For example, income tax and corporate profit tax are progressive taxes which work automatically to bring stability to the economy. During the expansion phase (boom) of the cycle, money incomes increase rapidly. The ceiling of tax exemption being fixed, more people enter into tax bracket—as a result of which the revenue receipts of the government increase in greater proportion than the rise in the money income of the people. In this way, a surplus budget can help to check the upward trend of the income. On the other hand, incomes will fall rapidly during a period of depression. The ceiling of tax exemption being fixed, more people will get the benefits of being exempted from taxes. Hence government revenue will fall more than proportionately as compared with the fall in the incomes of the people. A deficit budget in this phase will automatically check the downward trend of the economy.

(ii) Unemployment Benefits and Welfare Transfer: unemployed persons in advanced capitalistic countries, and this has the effect of stabilising aggregate consumption in the economy. Such benefits are *automatic* stabilising forces. During a depression, economic activities contract; and consequently it is very difficult for labourers to find jobs. At such a time, unemployed persons are paid out of an "Unemployment Compensation Revenue *Fund" which enables them to maintain (or at least approximate) their previous consumption standards. In this way, the de-stabilising forces of the economy are automatically checked; because the level of aggregate demand in the economy remains intact. On the other hand, when the economy revives, and the problem of unemployment starts to be reduced, payments from the reserve fund stop—and contributions to the fund go up. In this way, aggregate demand in the economy is stabilised because consumption expenditure do3s not go up unnecessarily. Government relief payments in case of emergencies are also automatic stabilisers and act as a counter-cyclical measure.

(iii) Farm-Price Support Policy: Price support policy in the agricultural sector has proved to be an automatic stabiliser in advanced European countries. In the U.S.A., farm-price support schemes have been adopted in the form of a 'Federal Farm-Price Parity Programme' to counteract the effects of business fluctuations. Whenever

economic activities recede, the prices of agricultural goods tend to fall. In order to control the situation, the government purchases farm produce at higher prices and stores it i godowns. During the revival of the economy, when the prices of farm products go up, the government releases the stock and sells the products at reasonably low prices. As a result of this policy, greater stability in the general price level is achieved.

(iv) Commitment of the Government in Advance to a Stable Level of Expenditure: A government commitment in advance to a stable level of expenditure can well establish itself as an automatic stabiliser. In the process of the trade cycle, government revenues will go up during the boom and fall during the depression. If government Bxpenditure were stable, the budget would automatically be in surplus during the depression. The surplus budget would retard the upward movement of the economy and the deficit budget will check its downward trend.

(v) Public Investment: Government investment in the public sector is generally more stable than individual investment in the private sector. Practical experience shows that fluctuations in business activity are brought about by private investment, whose volume changes from time to time. Private investment coupled with public investment make the level of aggregate invest-went fairly stable, as a result of which stability of income and employment is achieved.

The above stabilisers are not primarily designed to achieve economic stability. Most of them are by-products of policies adopted for other purposes. Therefore, they can only be helpful in this direction. They are not a sufficient force in themselves to stabilise the economy.

(b) Formula Flexibility

U. S. economists have proposed that a formula of tax rate adjustments should be devised which can operate in different economic situations to ensure economic stability. For instance, when the rate of unemployment reaches a specific level (e. g. 6% or 7%) indicating a downward trend of the general price level and national income, tax rates would automatically be reduced to a certain extent. This would have a cushioning effect on the fall of national income. On the other hand, when the consumers' price index shows a rise of prices by a given amount (say 5%) tax rates would be increased. This would enable the economy to check an unnecessary rise of national income.

The formula flexibility of tax rates is a useful suggestion and it may turn out to be more effective than built-in stabilisers. Moreover, it could be used to vary the tax rates without resort to legislation. However, this proposal places heavy reliance on the consumers' price index as an indicator of basic trends of the economy –and this could prove to be misleading.

(e) A Fully Managed Compensatory Fiscal Policy

This policy is also known as a 'discretionary' fiscal policy. It has been widely adopted in the U. S. A. and European countries. It is embodied in the Employment Act of 1946 in the U. S. A. According to this approach, the balancing of the budget is not given any importance. The role of built-in stabilisers is recognised as helpful, but not in itself

adequate to meet the challenge of the situation. This proposal lays emphasis on ad hoc changes in tax rates and government expenditure to achieve stability in the general price level and full employment. The main technique of the policy are as follows:

— Variation of tax rates;
— Changes in government expenditure;
— Changes in debt policy

Again, we shall look at each of these in more detail:

(i) Variation of Tax Rates: Whenever the government finds that a deflationary situation is developing in the economy, it lowers the tax rates. Reduction in tax rates, particularly personal Income tax and corporate profit tax, increases the disposable personal income of households and business organisations, as a result of which consumption expenditure goes up. In this way, National Income increases under the multiplier effect. On the other hand, when an inflationary situation develops, tax rates are increased to reduce disposable personal income and therefore consumption expenditure. In this way, the volume of the money supply circulating in the economy is controlled.

(ii) Changes in Government Expenditure: Government expenditure is a very, effective instrument for influencing economic activity and dealing with cyclical variations in economic life. In a situation of deflation, caused by a low level of investment in the private sector, the government can take compensatory measures. This is done by increasing government expenditure to raise the level of public investment, as a result of which national income goes up—which in turn stimulate an increase in private investment. Conversely, in the case of inflation caused by too high a level of investment in the private sector, the government can take compensatory action by curtailing government investment in the public sector and thus slowing down the rate of expenditure and economic activity. Compensatory government expenditure policy can show good results if it is properly planned and executed. In the 'deflationary phase, prompt action needs to be taken to increase government expenditure on the construction of roads, hospitals, schools, post-offices, dams, ports, bridges and other labour-intensive projects to promote the level of employment. In the inflationary phase, government expenditure on various types of construction projects should be curtailed or suspended. Welfare transfers can be reduced and price support policy can be done away with.

(iii) Changes in Debt Policy: According to compensatory fiscal policy, a deficit budget should be presented in the deflationary situation; and the budget deficit should increase by raising the level of debt. In the case of inflation, a surplus budget' is designed; and the surplus amount of the budget is used to pay off the government debt.

1.5 Limitations of Fiscal Policy

So far we have discussed various types of fiscal policy without giving much consideration to the operational difficulties and limitations which may hinder their effectivefle3S an1 limit their ability to produce the desired result Some of the main limitations of fiscal

policy are as follows:

(a) Variations in the-tax rate are limited by the need for legislative approval. Tax proposes involve sensitive political issues and legislative discussion may result in serious delays in the implementation of policy decisions.

(b) Abrupt changes in tax rates to counteract economic problems may involve complications - because' such' changes can upset the Investment plans of firms and the consumption plans of households. In this way, the government may lose the cooperation of the private sector as a result of its policy measures.

(c) Investment in big public projects takes time and cannot often be started or stopped quickly enough to meet the particular needs of the economic situation. Once a programme has been started, it has to be completed; otherwise the whole investment may be wasted. For instance, projects like, steel mills, dams and irrigation projects, can neither be started within a very short period, nor can they sensibly be stopped suddenly. Thus, it is often very difficult to adjust government expenditure programmes quickly enough to respond to the cyclical needs of the economy.

(d) Index numbers relating to National Income, wholesale and retail prices, and the level of production, are indicators of the economic situation. The statistical data on which such indices are based is not always very reliable. As a result, government policy decisions may be based on inadequate or inaccurate information.

(e) It is always possible that joint stock companies and incorporated concerns may not follow the investment policies put forward by the government and consequently the effective implementation of government policy may be hindered. During depressions, private investors are generally pessimistic about the future and tend to slow down their business activities. Therefore, public works programmes may fail to raise-the level of aggregate investment. Conversely, in an inflationary period, a reduction in government expenditure may not slow down the rate of private investment sufficiently.

Inspite of these limitations, fiscal policy is a powerful device with which the government can combat the forces of economic instability. It is mainly due to fiscal measures that the effects of cyclical swings have been moderated over the last thirty to forty years; and that we have not, for the most part, experienced the extreme economic instability associated with a laissez-faire approach to economic policy.

1.6 Points to Remember

(i) Fiscal policy is concerned with the determination of the type, the time and the procedures to be followed in handling government expenditure and government revenue.

(ii) Counter-cyclical fiscal policy is defined as "the process of shaping taxation and public expenditure in order (a) to help damp down the swings of the business cycle: and (b) to contribute towards the maintenance of a growing high employment economy, free from excessive demand inflation or deflation."

(iii) Fiscal policy is concerned with government activities relating to its revenue, expenditure and debt.

(iv) Classical economists gave little importance to fiscal policy—since they believed

that the government's budget should be balanced—with a limited amount of expenditure being matched by an equal amount of revenue each year.

(v) Modern economists attach much greater importance to fiscal p9licy since they believe it can play a vital role in promoting the level of income and employment in the economy; and also that it can help achieve economic stability.

(vi) Fiscal policy is designed to achieve price stability and desirable levels of consumption, income and employment; a desirable pattern of income distribution; on appropriate rate of economic growth: and equilibrium in the balance of payments.

(vii) Various suggestions have been made about the ways in which fiscal policy can contribute to the achievement of economic stability e.g. the annually balanced budget, the cyclically balanced budget, built-in stabilisers, formula flexibility, and fully managed compensatory fiscal policy.

(viii) Built-in stablishers include Progressive systems of taxation, unemployment benefits and welfare transfers, farm-price support policies, stable levels of government expenditure and public investment.

(ix) The limitations of fiscal policy include: unreliable index numbers on which the policy measures are based, inelastic investment on big projects, wastage of time for the approval of policy and the possible hostility of the private sector.

(x) With the help of fiscal policy, the effects of cyclical economic fluctuations have to a considerable extent been controlled for the last thirty to forty years.

SELF-ASSESSMENT QUESTIONS

1. Can you define fiscal policy and outline the main areas of government activity with which it is concerned?
   [Check your answer against the discussion in Section 1.1]

2. Can you explain briefly the main differences between the classical laissez-faire approach to fiscal policy and the more modern post-Keynesian approach? In what ways and for what reasons has fiscal policy become more important?
   [Check your answer against the discussion in section 1.2]
3. Can you list and write brief notes on the main objectives of fiscal policy?
   [Check your answer against the list and discussion in section 1.3]

4. In what ways has fiscal policy been used to achieve economic stability? Which of these ways seem likely to be most effective in a modern tree-enterprise economic system?
   [Check your answer against the discussion in section 1.4]

5. Can you explain briefly what is meant by the following terms;
   (a) built-In stabilisers;
   (b) formula flexibility; and
   (c) fully-managed compensatory fiscal policy?

Can you give one or two practical examples to illustrate the working of each policy? [Check your answer against the discussion and examples in section 1.4]

6. What are the main limitations of fiscal policy?
[Check your answer against 'the list given in section 1.5. Which of these limitations seem to you to be the most serious and why?]

2. FISCAL POLICY AND INCOME DETERMINATION

In the preceding section, it has been argued that the government can play a vital role in the achievement of economic stability by introducing, changes in the tax structure and in government expenditure policies. In this section, we shall, discuss how fiscal policy effects the level of saving, Investment, employment and income in a country. We start our analysis with the general assumption that fiscal policy operates in a closed economy.

The simple equation of National Income without government involvement is:

$$Y = C + I \quad \ldots\ldots\ldots\ldots\ldots\ldots \text{(i)}$$

[National Income (Y) is equal to personal consumption expenditure (C) plus private Investment (I)]

By introducing government Involvement in the economy the equation becomes:

$$Y = C + I + G \quad \ldots\ldots\ldots\ldots\ldots\ldots \text{(ii)}$$

[National Income (Y) equals personal consumption expenditure (C) plus private investment (I) plus government expenditure on goods and services (G)]

This equation represents aggregate demand in an economy which is equated with aggregate supply. The National Income equation which represents aggregate supply can be written as:

$$Y = C + S + T \quad \ldots\ldots\ldots\ldots \text{(iii)}$$

[National Income (Y) is equal to personal consumption expenditure (C) plus private savings (S) plus tax revenue collected by the government (T)]

At the equilibrium level of National Income, or at the point of 'effective demand', aggregate demand is always equal to aggregate supply. Thus equation (ii) is equal to equation (iii)*;* and this can be expressed as follows:

$$C + I + G = C + S + T$$

or, cancelling out personal consumption expenditure (C) on each side of the equation:

$$I + G = S + T$$

Keeping this equation in view, we are now going to discuss the effect of (a) government expenditure and (b) government taxation on saving, investment and National Income.

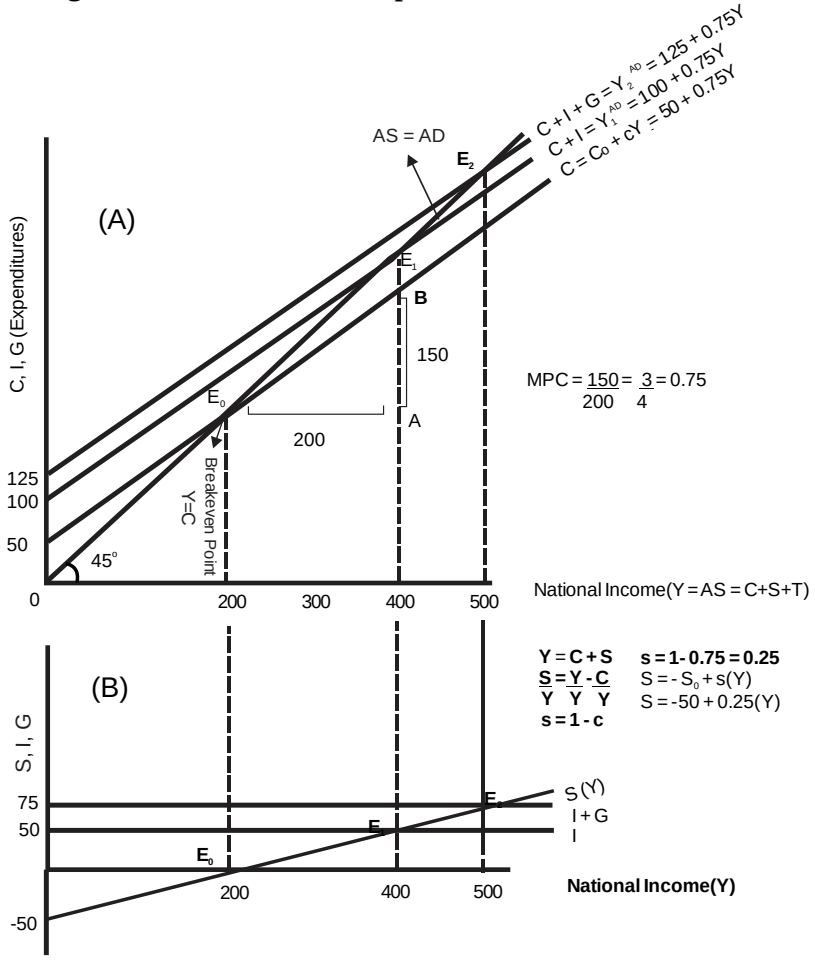
2.1 The Effect of Government Expenditure on National Income

In order to show the effect of government expenditure on National Income, we shall make the following assumptions

(a) that Rs.50 billion is the consumption level at zero National Income
(b) that the marginal propensity to consume (MPC) is 0.75, multiplier = 4
(c) that autonomous investment of Rs.50 billion is being made; and
(d) that the government expenditure is Rs.25 billion; and that this Is made without collecting taxes from the people (T = 0).

With these assumptions, we can now produce a diagram to show exactly the change in National Income:

Diagram 9.1: Government Expenditure and National Income



In diagram 9.1, National Income is measured on the horizonal axis and national expenditure (C+I+G) on the vertical axis. The 45° line, OZ, is the aggregate supply curve AS = C + S + T (in case of 3- sector economy) and also shows equilibrium points between national income (Y) and AD [AS = Y, explained in chapter 6 (see table 6.5)]. C+I (2-sector economy) and C + I + G (3- sector economy) are aggregate demand curves. When the government is not making any expenditure, the level of national income is Rs.200 billion at breakeven point (Y = S) E_0. With increase in autonomous investment of Rs.50 billion Y_1^{AD} is AD curve and equilibrium National Income (NI) is Rs.400 billion as expenditure multiplier = 4. With government expenditure of Rs.25 billion, the aggregate demand curve shifts up to the Y_2^{AD} = C + I + G. The point of effective demand also shifts from E_1 to E_2. In this way, National Income goes up from Rs.400 billion to Rs.500 billion, showing a net increase of Rs.100 billion. Since the MPC is 0.75, Expenditure Multiplier' — which can be expressed as follows:

$$K = \frac{1}{1 - MPC}$$

In the diagram 9.1, the numerical value of the multiplier is 4. This figure is derived as follows:

$$K = \frac{1}{1 - 0.75} = \frac{1}{0.25} = 4$$

Thus the multiplier change in National Income due to Rs.25 billion increase in autonomous Government Expenditures can be expressed as follows:

$$\Delta Y = K \times \Delta G$$

Applying this to our hypothetical example, we get

$$100 = 25 \times 4$$

The effect of autonomous government expenditure on National Income can also be illustrated in panel (B) of diagram 9.1.

In part (B) of diagram 9.1, I represent the autonomous investment curve and S(Y) is a saving function. E_1 is the equilibrium point which determines National Income at Rs.400 billion. When government expenditure of Rs.25 billion is made, the I curve shifts up to be the I+ G curve. E_2 is the new equilibrium point as a result of which National Income goes up to Rs.500 billion. To repeat the previous illustration, we find that a change in National Income to the extent of Rs.100 crores has been brought about by Government Expenditure of Rs.25 billion, indicating that the numerical value of the multiplier KG is 4.

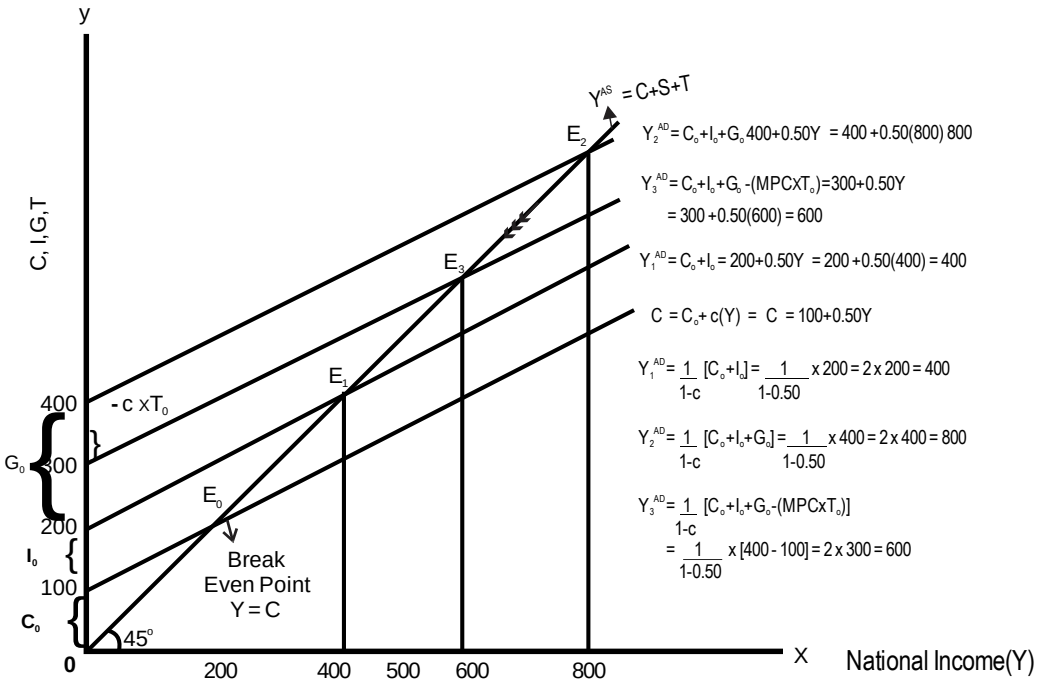
2.2 The Effect of Government Taxation on National Income

In our analysis of the impact of government expenditure on National Income, we assumed that the government is not imposing taxes on the people. This is of course an unrealistic assumption. The government does in fact collect its revenue in the form of taxes. We

shall now therefore modify our assumptions as we are interested in the effect of government taxation on National Income. For this purpose, however, we are also assuming that expenditures are held constant and has no bearing on income and employment.

Government taxation reduces disposable personal income, personal consumption and savings. Supposing that government expenditure of Rs.200 million is matched by government taxes to the same value. This would mean that disposable personal income would go down by Rs.20 crores; personal consumption would be reduced by 16 crores (since MPC = 0.50); and personal saving would go down by Rs.4 crores (i.e. 20–16 = 4). With reference to the previous diagram, we can show that that the consumption function at each level of National Income is reduced.

Diagram 9.2: Government Taxes and National Income



In this diagram, the equilibrium point E shows that the level of National Income is Rs.200 crores before the imposition of taxes. By introducing government taxation of As. 20 crores, National Income is increased by As. 20 crore_ the line. A-B shows this change. Since the MCP is 4/5, the consumption function at each level of national income goes down by Rs.16 crores. The line B-C shows this. We find that the new consumption curve would be C.

Assuming that there is no change in the level of investment, the aggregate demand curve C + I + G at equilibrium point E would be lowered to Ct + I + G. In this way, there will be a new equilibrium point of National Income which is shown in the following diagram:

The new equilibrium point is E which determines the new National Income level at Rs.220 crores. Before imposing taxes, National Income was Rs.200 crores. Government expenditure of Rs.20 crores raised this level to Rs.300 crore. But now government expenditure of Rs.20 crores Is being financed by government tuxes of Re. 20 crores, so that National Income goes up to the extent of Rs.20 crores only— i.e. from Rs.200 crore to Re.220 crore.

You may wonder how National Income has gone by Rs.23 crores in view of the fact that the government took away Rs.20 crores in the form of taxes out of the income stream and put same amount back in the form of government expenditure? The answer to this question is quite simple. Taxes of Rs.20 crores reduce personal consumption by Rs.16 crores and saving by Rs.4 crores. The lower consumption curve (Ct) shows that Rs.16 crores is the net leakage out of the income stream. Even if there had been no taxes, people would still have saved Rs.4 crores to attain the income level of Rs.220 crores. (Since the value of the multiplier is 5.) Thus, allowing a leakage of Rs.16 crores, government expenditure is higher, than the amount of leakage by Rs.4 crores which causes income to go up by Rs.20 crore.

Now look at the other side of the picture. Government expenditure of Rs.20 crores without taxes raised the income level from Rs.200 crores to Rs.300 crores. But taxes of Rs.20 crores to finance government expenditure have brought down the income level from Rs.300 crores to Rs.220 crores. This is all due to the tax multiplier which can be expressed as follows:

$$Ktx = \frac{MPC}{1 - MPC}$$

Applying this to our example, we get:

$$Ktx = \frac{-4/5}{1 - 4/5} = \frac{-4/5}{1/5} = 4/5 \times 5/1 = -4$$

The change in income due to the tax multiplier can be expressed as follows

According to above diagram: $\Delta Y = -4 \times 20 = -$ Rs.80 crore. Thus National Income falls from Rs.300 to Rs.220 crores. In order to understand the impact of taxes on National Income more clearly, look carefully at the following diagram:

In this diagram, I + G is the curve of autonomous investment and government expenditure (i e. 90+20). S is the saving' function before taxation and St is the saving curve after taxes of Rs.20 crores are imposed. The St curve shows that, due to taxes, the level of saving has

gone down by Rs.4 crores at all levels of National Income. The hoe B-C indicates the reduction, in saving. As a result of taxes of Rs.20 crores, income goes up from Rs.200 crores to Rs.220 crores. The line A-B shows this change. Before taxation, I + G = S at E' where National Income is determined at Rs.300 crores. After the collection of taxes, the St-FT curve intersects the I + G curve at E", which is new equilibrium point. At this point, income has been reduced from Rs.300 crores to Rs.200 crores due to the effect of the tax multiplier. In the above diagram, the St + T curve has shifted to the left of St due to the fact that taxes are not leakages from the Income stream.

2.3 The Effect of Government Transfer Expenditure on National Income

Government transfer expenditure promotes' the level of National Income, as opposed to taxes, which tend to reduce it. Transfer payments add to the spending stream and increase it through the multiplier effect. The impact of the transfer expenditure. multiplier is always less than that of the government expenditure multiplier. This is due to the fact that transfer payments become a, part of "disposable income" which is not totally spent. A part of it is saved because the MPC is always less than unity.

The transfer expenditure multiplier is expressed as follows:

$$KTR = \frac{MPC}{1 - MPC}$$

Applying this formula to our previous example, the value of the transfer expenditure multiplier is calculated as follows:

$$KTR = \frac{-4/5}{1 - 4/5} = \frac{-4/5}{1/5} = \frac{4}{5} \times \frac{5}{1} = 4$$

If we now compare the transfer expenditure multiplier with the tax multiplier (expressed as $KTR = \frac{MPC}{1 - MPC}$), we find that the minus sign is the only difference between the two. This is simply due to the fact that taxes reduce National Income, whereas transfer payments increase it.

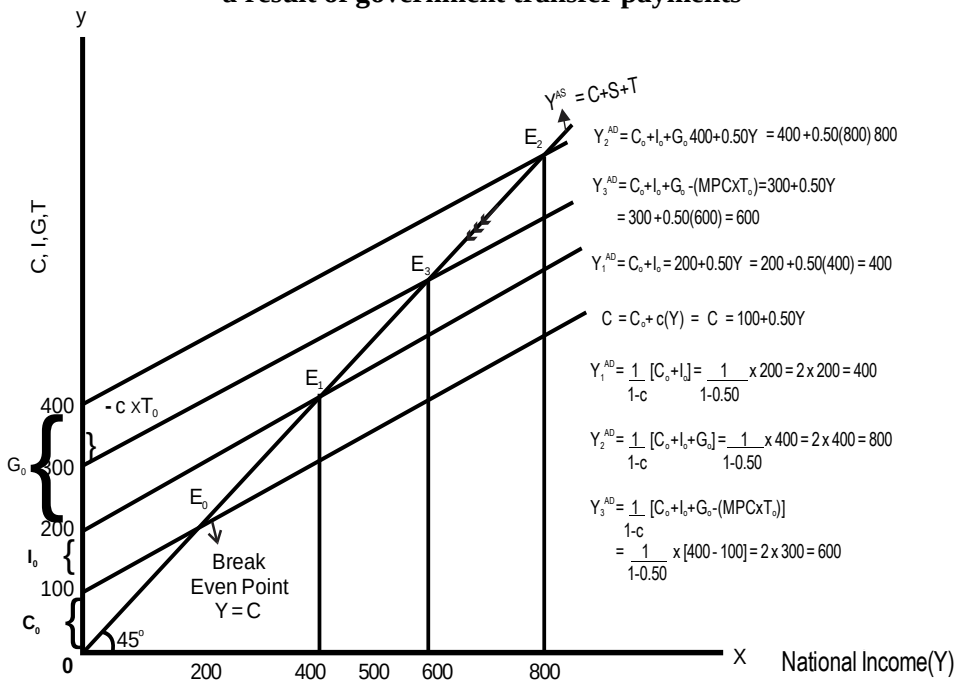
Now suppose that the government spends Rs.20 crores in the form of transfer payments to the people. The change in the level of National Income as a result of the transfer expenditure multiplier will be as follows:

$$\Delta Y = KTR. \Delta TR$$

$$\text{or } \Delta Y = 4 \times 20 = \text{Rs.80 crores}$$

The change is shown in the following diagram:

Diagram 9.3: Change in National Income as a result of government transfer payments



In this diagram, it is assumed that no government expenditure is being undertaken and that the, economy is in equilibrium at Rs.200 crores. Due to government transfer expenditure, an additional amount of Rs.20 crores is pumped into the economy—as a result of which the consumption function goes up by Rs.16 crores at all levels of national income. Therefore, the C + I curve shifts up to a new equilibrium point at 'E'. National Income at this point is Rs.280 crores.

2.4 Points to Remember

(i) The simple National Income equation is Y = C + I.

(ii) With the introduction of government expenditure, the National Income equation becomes Y = C + I + G. This equation represents aggregate demand in an economy. The aggregate supply equation is Y = C + S + T. National Income is determined at the point where I + G = S + T.

(iii) Government expenditure promotes the level of National Income with a multiplier effect. The Government expenditure multiplier is expressed as $KG = \frac{1}{1 - MPC}$

(iv) Government taxes tend• to reduce National Income. The tax multiplier is expressed as $Ktx = \frac{MPC}{1-MPC}$

(v) As against taxes, government transfer expenditure promotes National Income. The transfer expenditure multiplier is $KTB = \frac{MPC}{1-MPC}$ The impact of transfer expenditure multiplier is always less than that of the government expenditure multiplier.

(vi) The difference between the tax multiplier and the transfer expenditure multiplier is simply that the former is negative (i.e. preceded by a minus sign), while the latter has a positive value.

SELF-ASSESSMENT QUESTION

7. Can you explain with the help of the appropriate equations and diagrams:
   (a) the effect of government expenditure on National Income;
   (b) the effect of government taxation on National Income;
   (c) the effect of government transfer expenditure on National Income?

   [Section 2 is a difficult section and you may in consequence have had some difficulty with the above question. If so, work through the section again until you are clear of the method of analysis and explanation being used. At the centre of the analysis is the idea of the 'multiplier' effect and you should be clear about the particular multiplier which operates in each of the three processes you have been asked to explain and illustrate. Can you now write out the formulae for the government expenditure multiplier the tax multiplier and the transfer expenditure multiplier? And can you also write out the equations which express the effect of each of the above multipliers on National Income?

3. PUBLIC REVENUE AND PUBLIC EXPENDITURE.

We have discussed in the preceding section the effect of government taxation and expenditure on National Income. But this discussion gives rise to certain questions. For instance - What are the sources of public revenue or taxation? And under what heads is public expenditure organised? Such questions these from the basis of this section.

Public revenue and public expenditure can be defined as "the income and expenditure of public authorities". — i.e. the federal government, the provincial governments, and local bodies like municipal committees or corporations. We shall now explain the sources of revenue and the types of expenditure at each of these governmental levels -starting with the federal government.

3.1 Sources of Revenue of the Federal Government

A modern state collects its revenue from a number of sources. In the broadest terms, revenue can be classified in terms of its source as Tax Revenue and Non-Tax Revenue.

Tax revenue is derived from various taxes:

– **direct taxes** — e. g. income tax, corporation tax, wealth tax, gift tax, etc.
– **indirect taxes** — e.g. customs duty, excise duty, sales tax, etc.

Non-tax revenue is derived mainly from public undertakings — e. g. post-offices, telephone and telegraph department, interest on loans, currency, defence services and civil administration.

The Government of Pakistan collects 75% of its revenue from taxes and the remaining 25% from other sources. According to the Distribution of Revenue Order, 1971, the Federal Government then distributed 80% of its revenue among the provinces in the following proportions; Punjab, 56.5^{0}%; Sind, 23.5%; NWFP, 15 5% and Baluchistan 4.5%.

(a) Tax Revenue

The following are the main tax revenue sources available to the government at the federal level with particular reference to the Government of Pakistan.

(i) **Customs Duties (Import and Export Duties):** Customs duties are the taxes imposed on goods which are imported and exported by a country. They are indirect taxes and hence they become a part of the product on which they are imposed. The prices of imported products directly affect the general price level. Therefore, import duties should be carefully devised, particularly during a time of inflation. Customs duties on imports and exports are ‘not a stable source of government revenue in a developing country like Pakistan; because the volume of exports and imports inevitably fluctuates from time to time.

(ii) **Excise Duties:** This is a form of tax which is levied on goods manufactured in a country — e g. cotton cloth, tobacco, cigarettes, electric fans, soaps. vegetable ghee sugar, etc. It is an indirect tax which is also included into the price of the product on which it is levied. This form of tax provides an increasing proportion of revenue receipts of the government as a country continues to. develop.

(iii) **Sales Tax:** This tax is levied on the sale of certain products. It is paid by industrialists and wholesalers in connection with the sale of home-produced products, and by importers and exporters on goods which are imported or exported.

(iv) **Income Tax and Corporation Tax:** Income tax is imposed on the annual income earned above a certain level specified in the annual budget. Corporation tax is level on the profits of joint stock companies. Both of these taxes are direct taxes. They are also progressive tax — i. e. their rates increase with an increase in income or profit, and vice versa. In order to promote saving and investment, the government provides tax exemption on incomes turned into investment through various national saving schemes.

(v) **Other Taxes:** Some other taxes - such as a wealth tax, gift tax, estate duty, etc. — also contribute significantly to the federal government, Wealth tax is imposed on an individual's wealth above the ceiling of tax exemption. Similarly, gift tax is charged on gifts above a certain limit. Estate duty is levied on an individual's agricultural holdings after his death.

(b) Non-Tax Revenue

The following are the main sources of non-tax revenue:

(i) **Receipts from Post Office and Telephone and Telegraph Department:** These departments are public enterprises. They provide services to the public and charge a price for them. This provides revenue for the government.

(ii) **Debt Services:** A substantial amount of money is received by the government as interest or service charges on loans given to the provincial governments, financial institutions and autonomous bodies.

(iii) **Miscellaneous Sources of Income:** Additional sources of government non-tax revenue are:
- the printing of currency notes and the minting of coins;
- defence and administrative services; and
- the nationalised banks.

(c) Capital Sources of Revenue

In addition to tax and non-tax revenue, the government also has certain capital sources of revenue:

(i) **Internal Resources:** Capital receipts from the saving schemes introduced by the government — e.g. post office saving bank deposits, cash saving certificates, has deposit certificates; tie seven-year profit-cum-bonus deposit scheme; state provident funds, postal life insurance and annuity funds; also short-and long-run internal debts.

(ii) **External Resources:** Among external sources of capital revenue are the following
- Project Aid — received in foreign exchange;
- Commodity Aid and Rupee Grants which are used to import various commodities;
- Food Aid — used to import food-drains;
- External loans from different countries and international financial institutions.

3.2 Expenditure Heads of the Federal Government

Federal government expenditure can be classified in terms of Non-Development Expenditure and Development Expenditure. Non-development expenditure is incurred on the maintenance of jails, the judiciary, the police and armed forces. Such expenditure yields no significant economic return to the nation. Development expenditure is made on development projects like road and rail transport, agricultural and industrial undertakings, irrigation projects, etc. Expenditure on health, education and research Is also regarded as development expenditure. The following are the non-development heads of the government expenditure at the federal level (again with particular reference to Pakistan):

(a) Non-Development Expenditure

(i) **Defence:** In order to safeguard the frontiers of the country from foreign aggression, expenditure is necessary on defence forces and armaments. Generally, this head involves a large amount of non-development expenditure. Though huge defence expenditure is an impediment to economic development, it can nevertheless, be justified - as Adam Smith put it many years ago. "defence is more important than affluence" - particularly for a country surrounded by enemies. Since independence, the Government of Pakistan has been spending more than 50% of its annual revenue on the defence services; and it is still following the same policy now.

(ii) **Debt Service:** The federal government borrows internally from its own people' and externally from other countries and international financial institutions in order to carry on development activities for the people. A large amount of money is paid annually as interest on these debts. This head occupies significant place in the budget of most developing countries.

(iii) **Subsidies:** In order to stabidise the earnings of producers and to make goods available at a cheaper rate to consumers, the government resorts to providing subsidies on some essential commodities. The total amount of this expenditure on subsidies is borne by the federal government.

(iv) **Civil Admistration:** A large amount of money is spent on administrative departments — i. e. audit, police, foreign affairs, and general administration. The term 'general administration' covers the National Assembly, the Senate, the Election Commission, the Federal Public Service Commission and Ministries and Divisions such as Finance. Commerce, Planning, Industries, Production, Education, Health, Food and Agriculture, etc. The major aim of expenditure on civil administration is the main-tenance of law and order and the implementation government policies.

(v) **Grants to Provinces:** Federal government grants to provinces are non-development grants. Such grants are used to rehabilitate war-and flood- or drought-affected persons, or to meet other emergency needs.

(vi) **Beneficent Departments:** The federal government spends a certain amount of money on health, education and social welfare departments--popularly known as 'beneficent departments'. However, the major part of the expenditure on these departments is borne by provincial governments.

(b) Development Expenditure

The federal government frames annual development programmes to Initiate development plans and to continue projects already in operation. The priorities for development projects and the allocation of development funds to particular sectors differ from country to country in terms of the different development strategies which are followed. The Government of Pakistan is spending is large amount of development funds on the Karachi Steel Mills, the Tarbela Dam, Port Qasim, the Karachi Irrigation Projects (Hub Dam), the Gudu Thermal Power Station, the Chashma Right Bank Canal, the Khanpur Dam, the development of

railways and as subsidies for fertiliser. Development funds are also provided to federal autonomous organisations such as the Board of Industrial Management. WAPDA, the Capital Development Authority (CDA), and all provinces of the country. Thus the federal government's development expenditure covers the development programmes of various sectors of the economy: agriculture, Water, power, fuel, industry, minerals, transport and communications, physical planning and housing, education and training, health, population planning, manpower and employment, and rural development.

3.3 Sources of Revenue of Provincial Governments

The following are the main sources from which the provincial governments receive their **revenues:**

— **Central tax assignments:** Provincial governments get 80% of the revenue collected by the federal government in the form of customs, central excise, income tax, corporation tax **and sales tax,**

— Land revenue: This includes the sale proceeds of state lands, fairs and payments for the use of state lands.

— **Provincial excise**: This is a form of tax levied on the sale of opium, desi wine, etc.

— **Court fees:** These are paid to the provincial government in connection with submission of applications to provincial courts of law.

— **Registration fees:** These are paid on the registration of documents

— **Vehicle taxes:** These consist of registration fees, road tax driving license fees and fines.

— **Water rates:** Farmers pay water rates to the provincial government for the supply of water from canals.

— **Social services department:** These departments are education, health and social welfare. They receive fees for their services.

— **Economic service departments:** These are the departments of agriculture, fisheries, livestock, forests, transport, etc. They supply goods and services to the public; and the income from these is paid to the provincial government.

— **Civil administration departments:** She departments of police, jails, courts, etc., receive a considerable amount of revenue in the form of fees and fines.

— **Interest on loans:** Provincial governments give loans to local bodies, semi-government corporations and farmers; and for this service they receive interest on the loans.

— **Miscellaneous taxes:** In addition to the items listed above, provincial governments are able to impose various taxes such as entertainment tax, agricultural income tax, licence fees on weapons, taxes on petrol, electricity, etc.

3.4 Expenditure Heads of Provincial Governments

The following are the main expenditure heads at the provincial government level:

— Tax collection departments: Provincial governments spend a considerable amount of money on the salaries of that employees of those departments.

— **Civil administration departments:** A large amount of non-development expenditure is involved in running the civil administration departments.

— **Economic services** departments: A major part of provincial revenue is spent on departments like irrigation, agriculture, communication and transportation, etc.

— **Social services Departments:** Expenditure on health, education and social welfare departments is also borne by the provincial governments.

— **Debt services;** Interest has to be paid on loads obtained from the federal government.

— **Development expenditure:** Provincial governments frame their own development budgets and spend a substantial amount of money on development projects in communications and transportation, physical planning, agriculture, education and training health, water, peoples work programmes, manpower training and social welfare.

3.5 Sources of revenue of Local Bodies

The following are the main revenue sources of local bodies, e. g. municipal committees and municipal corporations:

— **Octroi tax:** This is a major source of income for local bodies. It is levied on the movement of goods in the local area and is generally collected by public auction of octroi rights.

— **Property tax:** This is levied on the urban non-movable property e. g. buildings, etc.

— **License fees**: Licences are issued by municipalities for the regulation of dangerous trades and for the sale of articles of food and drink. License fees are charged to meet the expenses of inspection and supervision.

— **Water rates:** These are, collected from the inhabitants of towns and cities in order to regulate the supply and distribution of water.

— **Drainage tax**: This tax is collected in urban areas to pay for the maintenance and Improvement of the system for the removal or refuse.

— **Advertisement text:** This Is a tax paid by businessman for the display of advertisements.

— **Tax on the transfer of non-movable property:** This is a tax which contributes significantly to local revenue receipts.

— **Capital receipts:** The capital receipts of local bodies are derived from the following sources, the sale of property investments; interest grants from the provincial government; and loans.

3.6 Expenditure Heads of Local Bodies

Local bodies spend their income on various non-deveiupm&1t and development functions as follows:

— **General services:** These include revenue collection services; the provision and maintenance of slaughter houses; and the maintenance of cattle enclosures.

— **Economic services:** A substantial amount of money is spent on the execution of commercial schemes.

— **Community and social services:** These services Include information and public relations, public libraries and museums, sports, sanitation and drainage, maternity and child welfare, food Inspection, organising cattle fairs and shows, the supply of drinking water, the provision of civil defence, etc.

— **Development expenditure:** Local bodies also spend their money on development projects involving, construction, investments and loans.

3.7 Points to Remember

(i) Public revenue and expenditure is defined as the income and expenditure of public authorities i.e. the federal government, provincial governments, and local governmental bodies.

(ii) The sources of revenue of the federal government are customs and excise duty, sales tax income tax, corporation tax, wealth tax, gift tax, and receipts from post offices and telephone and telegraph departments, debt services, and internal and external loans.

(iii) The main expenditure heads of the federal government are as follows; defence, debt services, subsidies, civil administration, grants to the provinces, beneficent d pertinents and various heads of development expenditure.

(iv) The main sources of revenue of provincial governments are the following; central tax assignment., land revenue, provincial excise court fees, registration fees, vehicle taxes, water rates. social and economic service departments, civil administration and interest on loans.

(v) The main expenditure heads of provincial governments are tax collecting departments, civil administration, economic and social service departments, debt services and various heads of development expenditure.

(vi) The main revenue sources of baa! bodies are: octroi tax, property tax, license fees, Water rates, drainage tax, advertisement tax and capital receipts.

(vii) The main expenditure heads of local bodies are: general services, economic and social services and development functions.

SELF-ASSESSMENT QUESTIONS

8. Can you list the main sources of revenue for
   (a) the federal government;
   (b) provincial government; and
   (c) local bodies?
   [Check your answer against the lists given in sections 3.1,33. and 3.5]

9. Can you list the main 'expenditure heads'
   (a) at the federal government level;
   (b) at the provincial level; and
   (c) at the local body level?
   [Check you answer against the lists given in sections 3.2. 3.4 and 3,6]

10. What is the difference between 'developmental' and 'non-developmental' expenditure at the federal government level?
    [Check you answer against the distinction presented in Section 3 2. Are developmental expenditures incurred at the provincial and local lev3ls of government?)

    General Note on 8 –10: If it is possible for you to do so, you would probably find it both interesting and useful to discuss the subject matter of this section (i.e. sources of revenue and main expenditure heads at different levels of government) with senior officials who are actually Involved in the administration of public finance. While it may be difficult for you to meet such officials at the federal level It is likely to be less difficult at the provincial or local body levels. As was suggested in connection with the 'Banking' unit, you should first read the section carefully; then make a list of the questions you would like to ask (e. g. what proportions of revenue come from various sources; how are funds allocated to the various expenditure heads; what system of accountability operates with regard to public finance at the regional or local body levels?). Once again, it is important that you should explain clearly the purpose of your enquiries (i.e. because you are a B. A. student of economics) and also prepare yourself carefully so that you do not waste either your own time or that of the official to whom you are talking. If you are to obtain information in this way, then you must approach it in a businesslike and responsible manner. As was suggested in connection with 'Banking' (Unit 12), if you are attending a study group, it may be possible for your tutor to arrange a visit to meet local or provincial government officials., You should discuss this with the tutor and see what practical arrangements can be made.

4. DEFICIT FINANCING

We discussed in section 1 the fact that classical economists believed in the balancing of the budget at all times — which means that government revenue should always be equal to government expenditure. The classical economists argued that since the economy always remains at full — employment, a deliberate attempt to create a budget deficit would inevitable give rise to the problem of inflation. Lord Keynes refuted this argument and established the existence of cyclical unemployment. He argued that in a situation of massive unemployment with unexploited capacity of capital and natural resource., deficit financing would increase the level of income, output and employment, without any serious danger of inflation. Keynes' approach was widely accepted and many economists and governments adopted the idea of deficit financing as a part of fiscal policy and as a way of combating economic instability and maintaining a high and stable level of income and employment. But what exactly is meant by 'deficit financing'?

4.1 The Concept of Deficit Financing

When a budget is designed so that government expenditure exceeds government revenue, this is termed a 'deficit budget'. The budget deficit is financed by borrowing from the banking system or direct from the public. Thus the financing of the deficit in the budget is known as 'definancing'. The additional government expenditure made possible through the process of deficit financing provides a base for pumping more money into the economy, a result of which the general level of purchasing power goes up.

4.2 How to Finance the Budget Deficit

In order to cover the deficit built into the budget, the government borrows from the three main sources discussed below:

(a) **The Central Bank:** The government sells its securities to the central bank which issues paper currency against these securities. When the government spends. the additional amount of money, more money comes into the hands of individuals and business enterprises. They deposit this money with the commercial banks; as a result of which, the cash reserves of these banks go up. The commercial banks can then expand their credit facilities and in this way, the credit network and the availability of credit in the economy expands.

(b) **The Commercial Banks:** This is another source of government borrowing. When the government sells its securities to the commercial banks, new demand deposits are created in order to advance loans to the government. Additional credit, money comes into circulation, due to which the total money supply in the economy goes up.

(c) **The Non-Banking Public:** When the government sells its securities to the public, their demand deposits are reduced and the required amount of money is transferred to the government. This method of public borrowing does not lead to the creation of new credit money in the country; but when the government spends the borrowed money, business activities expand and the velocity of money circulation goes up.

4.3 The Objectives of Deficit Financing

Deficit financing is used to achieve the following general objectives:

(a) meeting the cost of war;
(b) combatting the affect of depression;
(c) initiating development projects.

During a period of war, the resources of a country have to be diverted to meet war expenditure. When these resources fall short of the requirements, the government resorts to deficit financing to meet the heavy additional expenditures of war. A period of depression is characterised by cyclical unemployment, due to a deficiency of effective demand. In order to overcome this situation, the government resorts to deficit financing in order to launch public works programme which help promote the level of investment, output and employment. Deficit financing is also used to initiate development projects in under-developed countries. People in these countries are very poor and they cannot easily increase the volume of domestic savings. Their taxable capacity is also very low; and the government therefore lacks adequate resources to start development projects. Thus deficit financing becomes necessary to achieve the objective of economic development.

4.4 The Effects of Deficit Financing

Deficit financing is always associated with inflationary pressures; because the total money supply and the velocity of its circulation increase as result of increased government expenditure. The immediate acts of deficit financing are

(a) A rise in money incomes; and
(b) A rise in the general price level.

An increase in is government expenditure through deficit financing promotes the level of public investment and thus raises incomes in the form of wages, interests, rents and profits. These increased incomes create additional demand for goods and services, whose supply is generally not very elastic. This results in a rise in the general price level. An inflationary situation based on deficit financing is a particular feature of developing economies because they do not generally possess excess productive capacity in the industrial. Sector which can be brought into use by additional government spending. Moreover, a shortage of capital and a stagnant agricultural sector are additional obstacles in the way of increasing output. The agricultural sector suffers from such problems as the sub-division and fragmentation of holdings, and a lack of Irrigation facilities, high quality seeds and an adequate supply of fertiliser. Illiterate farmers often lack the motivation and ability to raise production levels. The government in a developing country spends a large amount of money on the development of means of communication and transportation. In addition, a large amount of non-development expenditure is incurred on health, education and social welfare. Such expenditures, however, do not add directly to the supply of consumer goods in a developing economy. Therefore, deficit financing tends to stimulate Inflationary trends which may pose a serious threat to economic stability.

4.5 Deficit Financing and Economic Stability

Nevertheless, deficit financing has a definite place in the process of exploiting unused human and physical resources in a country. However, in order to ensure economic growth and stability, we must take suitable measures to control inflation. The following proposals have been put forward in this connection:

(a) Deficit financing must be kept within safe limits; and therefore its extent should depend on our ability to control inflation. For this purpose, we should carefully monitor the price index.

(b) The prices of essential articles and raw materials need to be effectively controlled. The government must influence the behaviour of the private investor, ration scarce essential materials and improve the supply of goods.

(c) Government expenditure should be made on projects where, results can be achieved fairly quickly; so that goods and services may be made available quickly to meet the additional demand.

(d) In order to reduce excess purchasing power, a progressive system of taxation should be effectively operated.

(e) To reduce the pressure of demand on available goods and services, well-calculated anti-inflationary monetary and fiscal policies need to be employed. A restrictive monetary policy should allow the use of credit on a desirable pattern of investment; and, similarly, a discretionary fiscal policy should discourage conspicuous Consumption by the public and non-development expenditure by the government.

(f) A farm-price support policy should be adopted to encourage farmers to grow more food grains.

(g) Attractive small saving schemes should be introduced to promote savings for investment in productive enterprises.

4.6 Points to Remember

(i) When government expenditure exceeds government revenue, this is termed a deficit budget. The financing of the deficit in the budget is known as ‘deficit financing’.

(ii) The deficit in the budget is financed either by borrowing from the central bank, from commercial banks, or from the non-banking public.

(iii) Deficit financing is used to meet the recurring expenditures of war. to combat depression and to initiate development projects.

(iv) The natural outcome of deficit financing is inflation or a rise in the general price level.

(v) In order to achieve economic growth and stability, inflation must be controlled by employing anti-inflationary monetary and fiscal policies.

SELF-ASSESSMENT QUESTIONS

11. Can you explain in simple terms what is meant by the expression ‘deficit financing’?
[Check you answer against the explanation given in Section 4.1]

12. What are the three main sources from which government can borrow in order to finance a deficit budget?
[Check your answer against the discussion in Section 4.2]

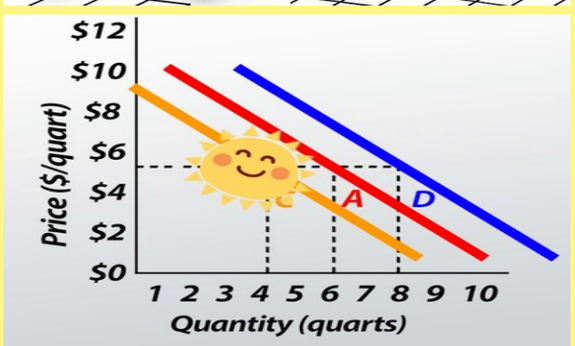
13. What are considered to be the main objectives of deficit financing?
[Cheek your answer against the discussion in Section 4.3. Which of these do you think are the more important in terms of the recent history of Pakistan?]

14. (a) What is the main danger involved in deficit financing?
(b) Why is this the case?
(c) What measures can be taken by a government to counteract and control this danger?
[This question obviously involves the problem of inflation. Why are inflationary trends inevitably associated with deficit financing 7 What measure should a government take to contain the problem? Check your answer against the discussion of the problem in Section 4.4 and the suggested policies in Section 4.5.]









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