STUDY PACK

ON

FUNDAMENTALS OF ECONOMICS

INTERMEDIATE I

FUNDAMENTALS OF ECONOMICS

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CHARTERED INSTITUTE OF PERSONNEL MANAGEMENT OF NIGERIA

CIPM House, 1 CIPM Avenue, Off Obafemi Awolowo Way,

Opposite Lagos State Secretariat, Alausa, Ikeja, Lagos.

Tel: 07001237555

E-mail: info@cipmnigeria.org, exams@cipmnigeria.org

Website: www.cipmnigeria.org

Facebook/X/Instagram/Youtube: @cipmnigeria

LinkedIn: Chartered Institute of Personnel Management of Nigeria

FOREWORD

This fourth edition of the CIPM study pack is one of the learning resources recommended to persons preparing for certification through professional examinations. It is uniquely prepared to meet the knowledge standards of HR certification bodies and/or degree awarding institutions. The study pack is highly recommended to researchers, people managers and organisations responsible for human capital development in its entirety.

Each chapter in the text has been logically arranged to sufficiently cover all the various sections of this subject as itemised in the CIPM examination syllabus. This is to enhance systematic learning and understanding of the users. The document, a product of in-depth study and research, is practical and original. We have ensured that topics and sub-topics are based on the syllabus and on contemporary HR best practices.

Although concerted effort has been made to ensure that the text is up to date in matters relating to theories and practices of contemporary issues in HR, nevertheless, we advise and encourage students to complement the study text with other study materials recommended in the syllabus. This is to ensure total coverage of the elastic scope and dynamics of the HR profession.

Thank you and do have a productive preparation as you navigate through the process of becoming a seasoned Human Resources Management professional.

Olusegun Mojeed, FCIPM, fnli
President & Chairman of the Governing Council

ACKNOWLEDGEMENTS

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CHAPTER ONE
NATURE AND SCOPE OF ECONOMICS

1.1   Learning Objectives

After studying this chapter, students should be able to;

  i.   Define and explain Economics as a subject;
  ii.   Explain the importance or uses of Economics;
  iii. Identify Basic Economic Concepts;
  iv.   Discuss basic economic problems; and
  v.   Explain various economic systems, and analyse the operation of the price mechanism / system.

1.2   Introduction

In everyday life, individuals, firms and governments engage in the production of goods and services to satisfy human wants. These wants are unlimited and individual may want a befitting house, a luxurious car and good clothing, a firm may want to increase its market share and profitability and the government may want to attain a higher rate of economic growth and at the same time may want to be militarily strong. Resources needed to achieve these objectives are limited; the individual has limited resources in terms of his income, while the firm and government have limited resources in terms of land and capital. Also, all resources have alternative uses. The economic problem therefore aimed at satisfying unlimited wants within the limits imposed by limited available resources. Hence, the starting point of studying economics is the ability to define it, identify the challenges of the subject, as well as its importance to public policies. Thus, eeconomics can be described as the study of how society makes choices under conditions of limited resources. This chapter discusses the various definitions of economics and the relevance of the study of economics to microeconomics decision units-household and business firms. In addition, the basic concepts of economics and the methodology of economics are discussed.

1.3 Meaning and Definitions of Economics

Economics can, therefore, be defined as the science which studies the process and institutions whereby the insatiable human wants are satisfied within the limits imposed by availability of resources which have alternative uses. Economics is essentially concerned with explaining how an economy can obtain the maximum possible benefits using the limited resources available. As a branch of social science, economics has several definitions. Nonetheless, the term economics comes from two Greek words- *iokos* (meaning house) and *nemein* (meaning manage). Therefore, economics originally means "house management". However, the meaning of the word economics has changed over time and has resulted into various definitions from different schools of thoughts like those listed below.

(i)   Classical
(ii) Neoclassical
(iii) Scarcity

1.3.1 Classical Economics Thought

The classical economics is the foremost economics school of thought led by the father of economics, Adam Smith and followed by other classical economists often called Wealth economists. The various definitions of economics by the following classical economists are:

According to Adam Smith (1776) in his book titled, "The Nature and Causes of Wealth of Nations" economics is "an enquiry into the nature and causes of wealth of nations". John Stuart Mill (1884) defines economics as the practical science of production and distribution of wealth. In addition, Jean Baptist Say (1803) defines economics as the study of the laws that governs wealth.

Following the wealth definitions above, it indicates that early scholars' economics definitions are lopsided as they concentrate on direct wealth creation and ignore other aspects of economics that do not create wealth directly such as services.

1.3.2 Neoclassical Economics Thought

The neoclassical economics was developed in the late 18th century and early 19th century, and was led by Professor Alfred Marshall and others. They criticised classical economists on the basis of the emphasis on

wealth only. The definitions by neoclassical economists include;

Alfred Marshall (1890) defined economics as the study of mankind in the ordinary business life. Vilfredo Pareto (1900) defined economics as a criterion of making someone better off without making at least a person worse-off. Arthur Cecil Pigou (1920) defines economics as the component of social welfare which can be measured with the provision of money.

1.3.3 Scarcity Definition

The scarcity definition of economics was advanced by Prof. Lord Lionel Robbins in his book titled The Nature and Significance of Economics published in 1932. He defined economics as a science that studies human behaviour as a relationship between ends and scarce means which have alternative uses. More importantly, Robbin's definition is the most widely acceptable definition among economists for its comprehensive explanation of basic concepts. Robbins' definition clearly highlighted the following points:

i. that human wants are unlimited;
ii. that the means to satisfy human wants are limited;
iii. that the limited resources may be used alternatively; and
iv. that one has to make a choice as to which want to satisfy first and by which means.

The definition has the following features:
1. The definition deals with unlimited wants. Robbins refers to wants as ends. Ends are of economic or non - economic type. The wants concerned with the consumption of goods and services may be known as economic ends. These are unlimited, as one want is satisfied many others come up or crop up. It is impossible to satisfy all wants of a man. Economics does not judge the propriety or impropriety of the wants.
2. The definition deals with scarce means. Most of the resources which can be utilized to satisfy them are scarce. Hence, we are forced to postpone the satisfaction of many of our wants. At the same time, we work harder and harder to generate more resources.
3. According to Robbins, another important cause for the existence of economic problem is the alternative utilisation of resources. Some resources have a large number of uses while others have few. Thus, man is always faced with the problem of allocation of limited resources.
4. Furthermore, all the wants are not of equal intensity. Some wants need immediate satisfaction while

others can wait. Thus, a man is forced to select between wants due to their different intensity.

5. Last feature is problem of choice. According to the Robbins, choice making is really an economic activity. Choice is the main problem of economics because man is faced with scarcity of resources needed to satisfy present and future wants.

1.3.3.1 Merits of Robbins' Definition

The major merits of this definition are:

1. Robbins tried to make the subject a more exact science. He wanted economics to be a positive science, that is, a science which has nothing to do with good or bad nature of the ends. Robbins studied all economic activities without considering welfare.

2. Robbins' definition is an analytical definition. He provided the reasons for the study of economic problems.

3. This definition provides clear concept of human behaviour for economics. According to Robbins, it is human behaviour that makes for choice between means and ends.

4. The definition makes the scope of economics clear or it has delimited its scope.

5. Robbins' definition is universal and applicable everywhere.

1.3.3.2 Criticism of Robbins' Definition

The definition given by Robbins is logical and scientific. But it has been criticized by some economists on different grounds.

1. The definition is self-contradictory. At one place it has been contended that economics is neutral as regards ends and secondly economics has been considered as the science of choice. These two contentions are mutually contradictory since selection between ends and the allocation of resources is not possible without the knowledge of the relative importance of different ends.

2. This definition has cancelled the concept of welfare. According to this definition, economics is concerned with the choice between ends and allocation of resources. So, it is nothing else than maximisation of satisfaction.

3. This definition presents a hazy view of the scope of economics. Robbins has laid down the subject matter of economics in general terms. So, it is difficult to decide in particular cases whether it is the

scope of economics or not.

4. It is an ineffective attempt to make economics a positive science. Critics have charged Robbins with trying in vain to make economics a positive science.

5. It is an impractical definition since according to this definition economics is merely an intellectual exercise.

6. The definition is not applicable to very rich countries. Economic problems of some very rich countries may be due to plentiful incomes rather than scarcity.

7. Robbins' definition is inapplicable to socialist economies. This is because a socialist economy is a planned economy where collective choice is more important than individual choice. The choice of ends and means have to be judged by planners themselves.

1.4 Modern Definitions

According to Robbins, economics is concerned with the best possible utilisation of the limited resources. But now it is considered that economics is much more than merely a theory of value or of resource allocation. This change in economics thinking goes to late lord J. M. Keynes. According to Keynes, Economics studies how the levels of income and employment in community are determined. Thus, he defined economics as the study of the administration of scarce resources and of the determinants of income and employment. In other words, it studies the causes of economic fluctuations to determine how economic stability could be promoted. Benham also defined economics as the study of factors affecting the size of distribution and stability of a country's national income or employment and the standard of living.

1.5 Basic Economic Concepts

Prof. Robbins further explains the five basic concepts of economics as found in his definition.

1. Want
The term want is simply defined as desire not backed up with purchasing power. By nature, human wants are unlimited and insatiable. Of all the human wants that are insatiable, the three basic necessities of life - Food, Shelter and Clothing -are often met despite the limited resources.

Differences between Wants and Needs

Wants and Needs are different on the following basis:

  i.   Time: Wants are long-time desires while Needs are short-time desires.
  ii.   Nature of satisfaction: Wants are unlimited in nature while Needs are current states of deprivation.

2. Scarcity

The term scarcity simply means limited available resources used in satisfying unlimited want. The study of economics arises due to problem of scarcity of human and non-human resources (machine, raw materials and so on). The study of economics emanated from scarcity. If there is no scarcity, there would be no economic problem. Economics is essentially concerned with explaining how an economy can obtain the maximum possible benefit from using the limited resources available, or how an individual or even a firm uses their limited resources. As individual endeavours to satisfy a particular want, another one crops up. The problem of scarce resources confronts both the rich and the poor and transcends all the levels of incomes. It is as a result of scarcity of resources that we lack something we actually need because the resources are limited or insufficient to satisfy the unlimited wants. This implies in essence that the amounts of goods and services that can be produced are limited and inadequate. In every society or country, the populace is often imaginarily stratified into the poor, the middle class and the rich. The poor and middle class aspire to be rich and no matter how rich a man is or how wealthy a nation is a long list of unsatisfied wants and needs still exist. It should therefore be noted that it is because goods and services are scarce and not free but command price. Therefore, a good or service is called an economic good if it is scarce and can only be obtained upon the payment of a price. In addition, time and energy are other resources that are scarce.

3. Choice

Choice, as a basic concept of economics, arises due to limited resources in the face of unlimited human wants which compel people to select out of available alternatives. It can be defined as the act of selecting one or more out of a range or several wants at a given period of time. In as much as the available resources in any society are not enough to produce all goods and services required for complete satisfaction of the numerous wants, choices must be made regarding *what goods and services to produce*, *how each of the goods and services identified to be produced* (i.e., which method of production to be employed – capital intensive or labour intensive) and *for whom to produce* (i.e., whose wants to satisfy and whose wants not to satisfy. This

implies the distribution of the goods and services produced to those who can afford them at the prevailing market prices); *as well as how much of the resources to use*. In the light of the above analysis, every consumer must choose among types of goods and services and between present and future consumption because of his limited money income. The choice made by an individual depends to a large extent on physical need and on cultural influences. In addition, the producers attempt to influence consumer's choice through advertising and sales promotion strategies. The firm with its limited resources must decide what to produce and what not to produce. If a firm is producing two types of goods and with no excess capacity, the decision, however, to produce more of one would mean to resolve to produce less of the other. In its decision the firm would be influenced mostly by consumers' preference and the desire to maximize profit. Further, Government is also forced to decide on what public goods and services to provide for the people, because the government's limited resources are for hospital, pipe borne water, schools, roads and dams but to mention just a few. These public goods are non-exclusive for enjoyment. It is the duty of the government to utilize the scarce resources effectively to improve the welfare of the society as a whole.

4. **Scale of Preference**

Scale of preference refers to the list of unsatisfied wants according to degree of importance. Scale of preference is a function of scarcity and rational choice simultaneously. Since man is always very rational in his choice when faced with problem of choosing between one thing and another, he will always choose the alternative that will yield him greater satisfaction. This is also applicable to firms and the government. Thus, this presupposes that each person, firm or government has a scale of preference. The scale of preference is precisely explained as the list of all wants arranged in order of relative importance. The most pressing wants will be listed first in the scale with the least pressing one appearing last.

Importance of Scale of Preference

The importance of scale of preference cannot be overemphasized. It enables individual, firm or government to;

    i.   make a rational choice.

    ii.   be prudence in their financial activities.

    iii.   order their satisfaction of wants in degree of priority.

    iv.   ensure satisfaction of the pressing needs before the last need.

v.   budgeting and reduction of waste spending.

5. Opportunity Cost

The concept of opportunity cost borders on every decision on what to consume or what to produce (by individuals, firm or government) and the decision to go for something else. For instance, the cost of engaging in an activity, say going to a football game, includes the value of what is given up in order to participate in the activity. Economists use the term opportunity cost or real cost to denote the concept of cost. Therefore, the opportunity cost of satisfying one want is not the amount of money spent in order to satisfy that want, rather, it is the want that is left unsatisfied or forgone. For example, a student having N1000 to spend on either an English textbook or a pair of trousers, each is carrying a price tag of N1000. If he opts for the English textbook, the opportunity cost of the English textbook is the pair of trousers that is not bought. At the production level of a firm, let's assume the firm produces commodities X and Y. If for one reason or the other it decides to produce more of X, the opportunity cost of additional output of X is the quantity of Y sacrificed or forgone. The same explanation applies to the government that provides services for the society as a whole. If the government decided to construct a 100-kilometer road and forgo the purchase of hospital equipment and drugs, the opportunity cost of the 100-kilometer road is the hospital equipment and drugs forgone. In this concept, not money cost is considered but a broader view of all the alternatives or options forgone (opportunity cost or real cost).

Opportunity cost is also known as alternative forgone or real cost or true cost. It could be defined as the act of satisfying one want at the expense of another.

Differences between Opportunity Cost and Money Cost

The main differences between opportunity cost and money cost are:

i.   Opportunity cost is real cost while money cost is the financial amount expended in satisfying a particular want.
ii.   Opportunity cost is perceived as the economists' concept of cost while money cost is perceived as the accountants' concept of cost.
iii.   Opportunity cost is the item left unsatisfied while money cost is the monetary value.

iv.   Opportunity cost is a stock concept while money cost is a flow concept.

1.6 Scope of Economics

The controversy over the definition of economics has been largely centred on determining the exact scope of Economics. Once it is known, the definition automatically follows. In determining the correct scope of economics, we have to settle the question of economics being a pure science, an art or social science. There is a considerable disagreement among economists whether economics is a science and if it is so, is it a positive or a normative science? In other to answer such questions, we must know what science is and to what extent the characteristics of science are applicable to economics. Science is generally defined, as a systematic body of knowledge ascertainable by observation and experimentation. The primary purpose of a science is to get facts, analyse or explain the cause-and-effect relationship; it builds up principles or theories through research. Thus, science is a body of generalisations, principles, theories or laws which trace out a causal relationship between cause and effect. For any discipline to be science, it should have the following features:

i.   It must be a systematized body of knowledge.
ii.   It must have its own laws and theories which are tested by observations and experimentation.
iii. It should be able to make predictions.
iv.   It should be self-corrective.
v.   It must have universal validity.

In view of these features of science, it can be said that economics is a science. In this case, economic facts are studied and analysed in a systematic manner. Therefore, Economics is a systematized body of knowledge. For instance, economics is divided into production, consumption, exchange, distribution and public finance which have their laws and theories, on the basis of which matters are analysed and studied in a systematic way. The generalisation, theories or laws of economics trace out a causal relationship among two or more phenomena like other sciences. In economics, like all other sciences, a definite result is expected to follow from a particular cause or reason, similar to the laws followed in natural sciences. For instance, the law of demand reveals that other thing remaining the same, a fall in price leads to an increase in quantity demanded and a rise in price leads to a fall in quantity demanded. In addition to

this, Economics is also a science because its laws pose universal validity such as the law of demand, law of diminishing returns and the law of diminishing marginal utility among others. Again, Economics may be considered science because of its self-corrective nature. It keeps on revising its conclusions in view of new facts based on observations. Economic principles are being revised in the areas of macroeconomics, monetary economics, public finance, international economics and economic development. Economists like Alfred Marshal, do not accord economics the status of a pure science because it does not possess other features of pure science.

The main reasons for not regarding economics as a pure science are as follows:

i. The laws of economics are based on the tastes and habits of the people. These laws are different for different countries.

ii. The laws of economics are not so exact like the laws of pure sciences. Normally, all economic laws are conditional since they use the phrase '*ceteris paribus*' meaning 'all other things being equal' or 'other things remaining the same'.

iii. There is no possibility of experimentation in laboratories for economic laws. In pure sciences, we conduct controlled experiments in the laboratories. The impossibility of laboratory experimentation in economics is because of the facts that objects of study in this case are man and conditions around man are not fully controllable. As such, economics is not a pure science.

iv. Difficulty in making accurate predictions: Pure science can make accurate predictions whereas economics cannot. The reason behind it is its inexact laws. Economics is life meteorology where weather forecasting is not always found correct.

v. Conflicting views of various economists: In view of the above discussions, economics has some laws that are of universal application and can measure economic phenomenon with the help of money. The measurement may be imperfect. It is not pure science. But it is a social science.

1.7 Economics as an Art

There is a lot of controversy on whether economics is an art. An art is also a systematised body of knowledge, but the laws forming its basis are not

observed like scientific principles establishing a cause-and-effect relationship. On the basis of some largely accepted rules, it pronounces judgments on various solutions to specific problems. According to Keynes, "an art is a system of rules for the achievement of a given end". The rules are not scientifically derived. The difference between an art and a science is, a science, rigorously so called, "is any reasoned or theoretical body of knowledge ... the function of an art is to supply norms, rules, maxims, choose what name you will, and to indicate what means are most appropriate to a given end". An art has nothing to do with truth beyond taking it for granted. Art does not explain theorems; it solves general problems. Its aim is not speculative, but operative and it is not concerned with laws, but only with rules.

1.8 Positive and Normative Science

In discussing the nature of Economics, we have also to consider whether Economics is a positive or a normative science. A positive science may be defined as a body of systematized knowledge concerning what is happening. While normative science refers to a body of systematized knowledge concerning what ought to be. In other words, positive economics deal with what we know or what can be predicted while normative economics makes a value judgement about what should be. The positive economics is an aspect of economics that is concerned with scientific working of the economy which is based on principles and concepts. In other words, positive economics simply refers to "what is happening" without considering the consequences of the actions. For instance, the removal of petroleum subsidy from a positive economic standpoint will result to increase in petroleum prices. Therefore, positive economics is objective and devoid of personal value judgment.

On the other hand, normative economics is concerned with the consequences of an economic decision in an economy. However, the solutions of these economic consequences are not objective but based on personal value judgment. In other words, it is defined as "what ought to happen". Following the example above of removal of petroleum subsidy which leads to rise in petroleum prices, the normative economics consider the following economic consequences: inflationary pressure, government spending, and elimination of corruption, increase in petroleum output and reduction of petroleum scarcity from the investors' side.

1.9 Microeconomics and Macro Economics

The subject matter of Economics is divided into two parts: Microeconomics and Macroeconomics. The term microeconomics is derived from the Greek Word **'Mikros'** meaning **'Small'** and macroeconomics from **'Makros'** means **'Large'.** We can therefore say that microeconomics deals with the analysis of small individual units of the economy such as individual consumers, individual firms and small aggregates or groups of individual units of industries and markets. Microeconomics concerned about the study of individual units such as individual firms, individual households' consumption, individual prices, wages, incomes, individual industries and individual markets etc. It also examines the economy microscopically with how these individual units of the economy are interrelated and how they make equilibrium adjustment (static to general equilibrium) together within the economy. Microeconomics occupies a vital place in Economics. It has both theoretical and practical importance as follows:

1. Microeconomics is found to be helpful in the formulation of economic policies that will promote the wellbeing of the masses.
2. Microeconomics tells us how the goods and services produced are distributed among the people for consumption through price or market mechanism. Moreover, it explains the conditions of efficiency in consumption and production and highlights the factors, which are responsible for the departure from the efficiency, or economic optimum.
3. It brings to light the fact that the functioning of a completely centrally directed economy with efficiency is impossible. Modern economies of the world have become so complex that a central planning authority will find it too difficult to get all the direction to thousands of production units with peculiar problems of their own so as to ensure efficiency in the use of resources. The way to achieve efficient productive uses of resources is to decentralize the economic system.
4. Microeconomics shows that welfare optimum of economic efficiency is achieved when there prevails perfect competition in the product and factor markets (a situation of many buyers and sellers in the market). Departure from perfect competition leads to a lower level of welfare, thus there is loss of economic efficiency. Microeconomics tells us how monopoly leads to misallocation of resources therefore involving loss of economic efficiency or welfare. A typical example in Nigeria is the then Power Holding Company of Nigeria (PHCN) now divided into Generation Companies (GENCOs), Transmission Company of Nigeria (TCN) and Distribution Companies (DISCOs). The same thing goes for a monopolist. This is a situation where a large buyer or a combination of buyers exercises controls over the price. This also leads to the loss of welfare.
5. There is this problem of externalities: Externalities are said to exist when the production or consumption

of a commodity affects other people other than those who produce, sell or buy it. These externalities could be in form of external economies or external diseconomies. External economies prevail when the production or the consumption of commodity by an individual benefits other individuals and external diseconomies prevail when the production or consumption of a commodity by an individual harm another individual.

6. Microeconomics is used to explain factors that determine the incidence or burden of taxation (especially of a commodity tax) between producers or sellers on the one hand and consumers on the other. Finally, microeconomics analysis is also applied to international economics. Whether devaluation will succeed in correcting the disequilibrium in the balance of payments depends upon the elasticity of demand and supply of exports and imports. In addition, determination of the foreign exchange rate of currency is free to vary. This depends upon the demand and supply of that currency. Thus, we see that microeconomics analysis is useful and important in modern economic theory.

On the other hand, macroeconomics deals not with individual quantities but with the aggregates of variables like national income, national output, investment, unemployment, etc. The term macroeconomics can be defined as the study of aggregate variables in an economy such as national income, national output, investment, unemployment, inflation, consumption, and government expenditure to mention but a few. That is, it studies all the sectors of the whole economy. In other words, the study of macroeconomics generally involves the study of a number of variables that affect the whole economy.

There are certain limitations of macroeconomic analysis and these are as follows:

1. Fallacy of Composition: In macroeconomic analysis the aggregate economic behaviour is the sum total of individual activities. But what is true of individuals is not necessarily true of the economy as a whole. For example, if total savings in the economy increases, it will bring about a depression unless the savings is invested. Also, if an individual depositor does this simultaneously, there will be a run on the banks and the banking system will be adversely affected.

2. Macroeconomic analysis regards the aggregates as homogenous without caring about their internal composition and structure. The average wage in a country is the sum total of wages in all occupations, i.e., wages of clerks, typists, teachers, nurses, etc. But the volume of aggregate employment depends on the relative structure of wages rather than on the average wage. For instances, if wages of nurses increase but

that of typists fall, the average may remain unchanged. But if the employment of nurses falls a little and that of typists rises, aggregate employment would increase.

3.   Aggregate variables may not be necessarily important: The aggregate variables which form the economic system may not be of much significance. For instance, the national income of a country is the total of all incomes that accrue to all factors of production. A rise in national income does not mean that individual income has risen. The increase in national income might be the result of the increase in the incomes of a few rich people in the country. Thus, a rise in the national income may have little significance from the point of view of the community.

4.   Indiscriminate use of macroeconomic analysis: An indiscriminate use of macroeconomics in analysing the problems of the real world can often be misleading. For example, if the policy measures needed to achieve and maintain full employment in the economy are applied to structural unemployment in individual firms and industries, they become irrelevant. Also, measures aimed at controlling general prices cannot be applied with much advantage for controlling prices of individual products.

5.   Statistical and conceptual difficulties: The measurement of macroeconomic variables involves a number of statistical and conceptual difficulties. These problems relate to the aggregation of microeconomic variables. If individual units are similar, aggregation does not present much difficulty. But, if microeconomic variables relate to different individual units, their aggregation into one macroeconomic variable may be wrong.

1.9.1   Interdependence of Microeconomics and Macroeconomics

Both Microeconomics and Macroeconomics are interrelated. For example, the determination of exchange rate in the Macroeconomic analysis of the monetary relations in international trade is exactly the same as price determination in Microeconomic theory. Furthermore, the knowledge of the microeconomics of price elasticity of demand and supply is required in determining the relevance of trade restrictive measures to the macroeconomic problems of Balance of payments (BOP) deficits. It follows, therefore that to be a complete student of economics, one must be sufficiently grounded in both microeconomics and macroeconomics.

1.9.2   Importance of Economics

The importance of economics for economic units includes:

i.   Price determination of goods and services.

ii.   Understanding the economic policies of the country and even the global world.

iii.   Optimisation of the limited resources for all economic units.

iv.   Measurement of economic growth and development of a country.

v.   Reallocation of limited resources to reduce the gap between the rich and the poor.

1.9.3   Methodology of Economics

The nature of a subject is closely linked with the methodology utilized to build its principles. The controversy regarding nature of economics has been mainly concerned with the nature of methods used in the subject and the nature of laws formed out of them. One basis on which Economics has been recognized as a science is that, like other sciences, it also utilizes scientific techniques or method. Methodology means the logical process of demonstrating the truth. There are two methods of investigation that an economist can adopt for exploration. They are deductive and inductive methods.

1.   The deductive method refers to reasoning or inference from the general to the particular or from universal to the individual.

2.   The inductive method is the process of reasoning from a part to the whole, from the particular to the general or from the individual to the universal.

The Deductive Method

This involves the method of observing or studying economic phenomenon by taking some assumptions and deduction. This involves three stages.

1.   In the first stage, the common economic behaviour is observed. This involves selection of the problem and general assumptions about them are laid down.

2.   In the second stage, conclusions are obtained or inferences are drawn from the formulation of

hypothesis through the process of logical reasoning.

3.   The third stage consists of verification of hypothesis or conclusions derived.

The steps in the deductive method are discussed as follows:

According to modern economists, it can be broken down into four steps.

1.   **Selecting or the exploration of the problems:** It is essential that the problem which an investigator selects for investigation must be stated clearly. The problem may be either wide or narrow, but the narrower the problem, the better it is to conduct the investigation.

2.   **Setting up or formatting assumptions:** The next step is the selection of assumptions, which will form the basis of the hypothesis. The assumption must be general. For a fruitful enquiry, more than one set of assumptions should be made. On the basis of a suitably-chosen set of assumptions, hypothesis may be formulated.

3.   **Theoretical development of the hypothesis:** A hypothesis is a proposition based on facts which is utilized as a basis for logical reasoning whereby conclusions are drawn from the propositions. The hypothesis developed in step '2' above cannot be tested out-rightly. This step, then, considers the logical basis and logical implications of the hypothesis. Simplifying assumptions may have to be introduced or nature of the hypothesis should be suitably modified, on the basis of the result of the above analysis. Mathematics is mostly used in this method of logical deduction.

4.   **Verification of the hypothesis or theories:** The final step in this method is the verification of hypothesis. Verification involves confirming whether the theories developed are in agreement with the facts. It is possible to verify a hypothesis whether true or false by observation and experiment. Since economics is related with human behaviour, there are difficulties in making observations and testing a hypothesis whether true or false by observations and testing a hypothesis. Thus, it remains unverified due to complexity of factors involved in human behaviour which further depends upon social, political and economic factors. Hence, the idea of hypothesis verification is based on a prior knowledge which will continue to be accepted so long as the conclusions drawn from it are consistent with the fact.

Merits of Deductive Method

The deductive method has the following advantages:

1. The utilisation of mathematics in this technique brings exactness and clarity in economic analysis. Further in this method, logically consistent theorems can be derived without any tedious collection and analysis of data.

2. A good substitute for experimentation. In view of the fact that there is a limited scope for experimentation in economics, this technique is the only technique for the development of economics.

3. This method is simple because of its analytical nature. It involves abstraction and simplifies a complicated problem by dividing it into component parts.

4. It is a powerful analysis technique for deducing conclusions from certain facts.

5. The inferences drawn in the deductive method are based on general principles which are of universal nature such as the law of diminishing returns.

Limitations of Deductive Method

1. Though this method is simple, effective and certain, there is indeed a big shortcoming. Mostly, the assumptions turn out to be true or untrue or only partially true. Thus, the application of deductive method maybe misleading.

2. When universal validity of the deductive method is claimed for every generalisation based on incorrect assumptions, this method proves dangerous.

3. The deductive method sometimes makes economics dogmatic.

4. The method requires high competence in logic.

Inductive Method

This method is against the abstract approach of the deductive method. The inductive method also known as empirical method has a practical approach for formulating generalisations. This method insists on the examination of facts and laying down general principles. Here, we move from 'particulars' to 'generals' or draw generalisations, and verify the conclusions by applying them to subsequent events.

Merits of Inductive Method

1. This method is realistic since it is based on the facts and explains them as they are.

2. The inductive method is more useful since its propositions can be tested and verified.

3. This method pays proper attention to complexities of relationships found in real life.

4. It is a dynamic method. It does not consider the facts to be stable. This method considers the changeable nature of assumptions in its analysis.

Limitations of Inductive Method

1. The method is difficult to use for a common man since it is impossible for him to collect facts, study them and derive some conclusions out of them.

2. There is limited scope of verification of conclusions of them.

3. This method has limited usefulness in Economics.

4. The conclusion of this method is based upon data collected by an investigator. Therefore, investigator bias can impede the conclusions of the method.

5. This method is inadequate for Economics since we have to base our conclusions on some well-known and well accepted observations made by others.

1.10 Nature of Assumptions in Economic Theories

Economic theories are based on certain assumptions which are broadly classified into the following categories:

Behavioural or Psychologists Assumptions

These assumptions are concerned with human behaviour. They refer to rational behaviour of individuals as producers and consumers. Producers include entrepreneurs, firms and businessmen while consumers include families and individuals. A rational consumer's goal is the maximisation of his satisfaction from given resources, i.e., income and his expenditure on goods and services. On the other hand, a rational manufacturer or producer aims at maximisation of his profits. The assumptions under consideration are at the root of microeconomic theories in which rational producers and consumers interact with one another through the market system.

Institutional Assumptions

The assumptions in economic theory relate to political, social and economic

institutions. All economic theories discussed have been developed on the assumption of a capitalist economy where the means of production and distribution are privately owned and utilized for personal profit.

Structural Assumptions

These assumptions are related to physical structure or topography of the economy, nature and the state of technology. In the long-run, resources like labour, money and technology are assumed to change in certain theories. But in the short run, economic theories are dependent on the assumptions of given resources and technology. In this manner, structural assumptions are utilized in production functions of various types.

Role and Significance of Assumptions

According to classical and neoclassical economists, for economic theories to be realistic, they must be based on realistic assumptions. Assumptions taken are indirectly tested by comparing their implications with the facts in the real world. However, theories are subject to be refuted as a result of time lag thus becoming impracticable to the real world. But an economist like Friedman is of the view that a theory cannot be judged on the realism of its assumptions. Rather in economics, the validity of a good theory is its predictive power and its implication for the real world. He maintains that if the conclusion is verified by accurate predictions, then the theory as a whole is valid, therefore, realism of assumptions is irrelevant.

According to Friedman, there are three different positive roles assigned to assumptions in economic theory. These are:

They present an economical mode for describing a theory.

i.   They sometimes provide an indirect test of conclusion by its implications.

ii.   They are sometimes a convenient mode of specifying the conditions under which a theory is expected to be valid.

A theory is formulated on the basis of some crucial assumptions. In general, there is more than one set of assumptions for formulating a theory. In view of Friedman's view, the choice among such assumptions can be made on the following grounds.

i.   Economy, clarity and precision in presenting the hypothesis.

ii.   Their capacity to provide indirect evidence to bear on the validity of hypothesis.

iii.   By providing or suggesting some of the implications of the hypothesis which can be tested with observations.

But it does not matter whether the assumptions taken are realistic or not. It is only the predictive power of the theory which matters. Thus, Friedman insisted that the only criterion of the validity of a theory is predictive accuracy. According to Samuelson, the more unrealistic the assumptions, the better the theory and he named it "F-Twist". Friedman found that truly, important and significant hypothesis were based on assumptions which are widely wrong descriptions of reality. For example, it is agreed on useful economic theory that businessmen normally aim at profit maximisation. The assumptions on which the profit maximisation approach is based are quite unrealistic. Businessmen never calculate marginal and average costs and revenues. They are unable to solve complex simultaneous equations in order to know whether profits are maximized or not. Rather, they are dependent upon their own expertise and knowledge about market conditions and trade secrets. But at the same time the profit maximisation theory or hypothesis is perfectly valid.

The profit maximisation theory utilized in economics is simple and useful. Hence, it is not invalid simply because of the fact that its assumptions are not realistic. An economist, who tries to verify realism, falls into a net of complexity. It is not possible for him to interview all the concerned people, for instance, businessmen in order to determine how they calculate their profits and acknowledge what is correct or incorrect in order to put forward findings and observations on the realism of assumptions. Friedman concluded that a theory's assumption may not be fully realistic in the immediate descriptive senses often assigned to this term. Rather, it is the capacity to predict and control events which gives a theory its usefulness rather than the realism of its assumptions.

1.11 Major Problems of an Economy

In view of the scarcity of resources at our disposal and the multiplicity of wants we seek to achieve, an economic problem is concerned with the best possible utilisation of resources so as to achieve maximum satisfaction in case of consumer, and maximum production (output) or profit for the producer. Hence, an economic problem is concerned with making decisions regarding ends to be met and the goods to be produced and the means to be utilized for the achievement of certain ends or satisfaction of certain wants.

From the above definition of economic problem, we can derive that an economy has to tackle the following fundamental problems:

1. **What to produce:** The first central problem of an economy is to decide what goods and services are to be produced. Since the resources are limited, we must select between different alternative collection of goods and services that may be produced. It also implies the allocation of means or resources among different types of goods e.g. consumer goods and capital goods.

2. **How to Produce:** The next problem of an economy is to decide on how to produce goods and services and with what methods of production e.g. labour intensive or capital intensive should be employed.

3. **For Whom to Produce:** The third problem to be decided is the allocation of goods and services produced among the members of society. This means how the national product is to be distributed, i.e., who should get how much. This is the problem of distribution of income and production of goods and services which leads to maximum social welfare.

4. **How efficiently are the resources being utilized:** This is the problem of economic efficiency or welfare maximisation. In view of scarcity of resources, it has to be seen that there is no waste or misuse of available resources.

1.12 Economic Agents

The pervasive economic problem is that of scarcity, which is normally solved by three agents in an economy. They are the individuals, firms or enterprises and government. They are actively engaged in economic activities of production, distribution, exchange of goods and services and consumption. These decision makers act or react in such a way that all the economic activities move in a circular flow or complete the process of economic activities in a circular form. Let us examine the role of these decision makers.

Individuals*:* These are the consumers who may be single individuals or a group of individuals who take a joint decision on consumption e.g., members of families. Their ultimate aim is satisfaction of the wants of their members with limited financial means. At the same time, the individuals are owners of the factors of production like land, labour, capital and entrepreneurial ability. They receive

money in form of rents, salaries/wages, interest and profits by selling (hiring out) the services of these factors.

Enterprises/firms*:* This term is used interchangeably with the term "producer" in economics. Decisions are taken by the enterprise to produce goods and services. Factors of production are employed for this purpose and payments are made to their owners. It is similar to the manner in which households or individuals consume goods and services for satisfaction of wants, as enterprises produce goods and services to make profits.

Government*:* The role of the government is unique in different economic systems like socialist, mixed or capitalist. In the capitalist economy, the government does not interfere; it simply protects rights and property of individuals. It regulates monetary system and sets standards for weights and measures. The entire production and consumption processes of the economy are owned and regulated by government. The role of government is to strengthen the market system and regulate the activities of the private sector by providing incentives. Sometimes, government utilizes resources to produce goods and services which are sold to households and other enterprises. In this way, these decision-making agencies take economic decisions to produce goods and services and to exchange them for the satisfaction of wants within the whole economy.

1.13 Economic Systems

Definition of Economic Systems

An economic system may be defined as an organized way by which the means of production in a state are utilized in order to satisfy human wants. In other words, an economic system refers to the way in which the available productive resources in a state are owned, managed or utilized for the satisfaction of human wants.

The type of economic system practiced in any society or nation depends on the way the available productive resources are owned and the way society takes decisions on issues relating to basic economic problems. The ownership of the means of production (whether private or, public), how the choice is made and by who that determines the type of economic system. The major types of economic systems of the world are divided into three major groups: capitalism or free market economy, socialism and the mixed economy.

Capitalism or Free Market Economy

Definition: Capitalism or free market economy may be defined as the type of economic system in which the

means of production are owned and controlled by private individuals. In other words, it is the type of economic system characterized by private ownership of the means of production. In this case, private individuals play greater role than government in taking decisions on what to produce, how to produce and for whom to produce. The private individuals utilize their means of production for making of profit. Capitalism does encourage or give incentives and freedom to individuals to manage their available resources to maximize their profits. Examples of countries which practice capitalism include the United States of America, Japan, Australia, France, Italy, etc.

Features of capitalism

1. **Private Ownership of properties:** There is high degree of private ownership and control of means of production with minimal participation by the state.

2. **Existence of Competition:** There is also a greater existence of competition among individuals and firms as a result of an effort to acquire wealth or control means of production.

3. **Maximisation of profits:** Capitalism is characterized by high level of profit maximisation by private investors.

4. **Individual satisfaction:** Capitalism enables individuals to embark on actions that would give him the greatest amount of satisfaction.

5. **Free market enterprise:** Capitalism enables individuals the freedom to choose their occupations based on their capabilities.

6. **Production and consumption are regulated by price system:** The price system determines what producers have to produce, taking into consideration the demand of the consumers and the price offered for the goods.

7. **Accumulation of Wealth:** As a result of individual ownership of means of production, capitalism helps him to accumulate wealth.

8. **Exercise of individual initiatives:** Individuals are free to initiate their own kind of production of commodities that give them satisfaction and profits.

9. **Economic activities are market-oriented:** All economic activities in an effort to maximize profits are geared towards the market forces of demand and supply.

10. **Freedom of choice:** In a capitalist system, so many commodities are produced and these enable consumers to have a wide range of choice.

Merits of Capitalism

1. Free enterprise: Capitalism encourages maximum freedom of enterprise.

2. It encourages hard work: In capitalism, people are free to own properties and this encourages hard work.

3. It leads to specialisation: Capitalism also boosts specialisation due to increased and large-scale production of commodities.

4. It encourages economic competition: As a result of individuals controlling the means of production, it generally leads to competition in the production of goods and services.

5. It hastens economic development: The effort of many individuals in the production of goods and services generally lead to economic development in all sectors of the economy.

6. Provision of alternative choice: The availability of goods and services produced by private individuals enables consumers to have a wide range of choice.

7. It encourages self-regulation and reliance: Capitalism encourages individuals to regulate their economic activities as well as helps them to be self-reliant.

8. It promotes different forms of production: Individuals pursue different forms of production unlike when the state pursues a single form of production.

9. It enhances technological development: The creativities among private individuals coupled with the use of machines in production leads to technological development.

Demerits of Capitalism

1. It may lead to monopoly power: As a result of the economic activities of a few individual investors, monopoly can easily be created.

2. It leads to economic inequality: Only few individuals have full control of the means of production and this can lead to inequality in the distribution of wealth.

3. Few individuals are enriched: In capitalism, only a few individuals are enriched while many are poor.

4. It leads to economic exploitation: Exploitation of the majority by a few individuals is one of the problems of capitalism.

5. It causes economic insecurity: Job insecurity and unemployment are some of the negative characteristics of capitalism.

6. Unhealthy rivalry: As a result of competition in a capitalist economy, it does lead to unhealthy rivalry among investors/persons.

7. It increases crime rate: In an effort to acquire wealth at all cost, many embrace crimes.

8. Profit maximisation at all cost: In a capitalist economy, private individuals are interested in making profit by all means.

9. It Causes wastes and inefficiency: Lots of wastes and inefficiency are recorded in a capitalist economy in an effort to produce goods and services.

Socialism

Socialism is also called centrally planned or controlled economic system. It is defined as the type of economic system in which the means of production and distribution are collectively owned and controlled by the state (the government). Companies and industries or corporations that are responsible for the production of goods and services required in the country are owned and controlled by government. The major aim of socialist economy is to produce goods and services for the general welfare of the citizens. Thus, profit maximisation is not a feature of the socialist economic system. Socialist economic system has a restricted market. It is a centrally planned economy of which there is no private ownership of means of production.

In this system, individuals or citizens work collectively for the advancement of the country while the government on the other hand caters for the welfare of the citizens. Goods and services produced are shared to individuals according to their needs and their contributions to the advancement of the country. But where private individuals may want to produce goods and services, they do so in trust and under very close and strict supervision by the state. Examples of countries that operated socialist economy system in the past include the former Soviet Union, China, Czechoslovakia, Romania, Poland, Bulgaria, etc. In Africa, they include Ethiopia, Angola, Burkina Faso, Mozambique, etc.

Features of Socialism

1. Joint decision-making: A greater number of the citizens take collective decision on what to produce, how to produce and for whom to produce.

2. State ownership of means of production: All means of production and distribution is owned and controlled by the state.

3. Non - market economy: Means of production are not purchased in the market and not all goods purchased are meant for sale.

4. Non-profit motive: The motive of socialist economic system is not to make profits.

5. Promotion of welfare: The primary aim of socialism is to provide goods and services for the welfare

of the citizens.

6.   Equitable distribution: Income is equitably distributed to all citizens in the state.

7.   Absence of economic rivalry: Rivalry in a socialist economy is reduced to the minimum level as resources belong to the government.

8.   Non- price competition: Prices of commodities are fairly stable unlike price competition in a capitalist economy.

9.   Optimum utilisation of factors of production: The factors of production are optimally utilized to produce the desired goods and services.

Merits of Socialism

1.   Equitable distribution of resources: Resources within the state are equitably distributed among the citizens.

2.   Absence of exploitation: There is always absence of exploitation since government provides all the goods and services required by the citizens.

3.   Centrally planned market: Government takes decisions on goods and services to be produced and their markets. This makes it to be centrally controlled by the government.

4.   Employment opportunity: Employment opportunities are readily available in a socialist economic system.

5.   Prevention of private monopoly: Private monopoly that exists in capitalist economy is prevented because means of production are controlled by the government.

6.   Economic security: Jobs and employment for the citizens are guaranteed and secured.

7.   Absence of economic rivalry: Economic rivalries among private individuals are absent in a socialist economic system.

8.   Provision of more goods: Goods or commodities are produced in large quantities for the general citizens.

9.   Equitable distribution of income: Since everybody in a socialist economy is gainfully employed, income is evenly distributed among the citizens.

Demerits of Socialism

1.   Absence of alternative choice: Consumers have limited alternative goods produced. They are limited to whatever is produced.

2. It reduces individual initiatives: Socialism reduces individual's initiatives as the citizens depend solely on government for everything.

3. It creates room for laziness: Since government provides everything for the people, it breeds laziness among the citizens.

4. It slows down economic development: Since government alone provides means of livelihood, it tends to reduce or slow down the pace of economic development.

5. Lack of specialisation: Socialism does not encourage division of labour and specialisation.

6. Absence of competition: There is complete absence of competition in socialist economy as all goods and services are provided by the government.

7. It leads to state monopoly: It leads to state monopoly as the state provides all essential goods and services for the citizens.

8. Absence of creativity and innovation: Creativity and innovations in socialist economic system are completely absent as citizens rely solely on government for all their needs.

Mixed Economy

Mixed economy may be defined as the type of economic system in which both the private and public ownership of means of production and distribution exist together in a country. Under this economic system, resources or means of production are jointly owned and managed by both public and private interests. The system is a mixture of elements of both capitalism and socialism. Examples of countries which operate mixed economy are Britain, Egypt, Peru; Tanzania, Nigeria, Kenya, Mexico, etc.

Features of Mixed Economic System

1. **Joint participation:** In a mixed economic system, there is joint participation of both the private sector and the state in the provision of goods and services.

2. **Joint decisions:** Decisions on what is to be produced and the quantity are jointly taken by both the private and public sectors.

3. **Freedom of choice:** Consumers in this system have freedom of choice.

4. **Checks and Balances:** The combination of both private and public sectors puts a lot of checks and balances in the economy.

5. **Economic freedom:** There is also economic freedom in the area of production, consumption and distribution of commodities.

6. **Fair competition:** Since the system accommodates the private and state ownership of means of production, it results in fair competition.

Advantages of Mixed Economy

1. **It encourages private initiatives:** Private initiatives in this type of economic system are highly encouraged.
2. **There is freedom of choice:** Consumers and even producer in this type of economic system have a wide range of choice to make.
3. **Combines the good qualities of capitalism and socialism:** Mixed economy combines the good qualities of both capitalism and socialism.
4. **Equitable distribution of income:** Mixed economy ensures that incomes are equitably distributed among the citizens.
5. **It ensures economic development:** The mixed economic system promote economic activities thereby leading to economic growth of a nation.
6. **It ensures job security:** This system also promotes the security of job and employment.
7. **It prevents monopoly:** Monopoly is prevented because of the joint participation in economic activities by both the private sector and the state.

Disadvantages of Mixed Economy

1. **Inequality of wealth:** Wealth is not equitably distributed as there is a wide gap between the rich and the poor.
2. **Emphasis is on profit:** There is more emphasis on profit maximisation at the expense of the welfare for the citizens.
3. **Lack of efficiency:** Efficiency scarcely occurs in this type of economic system because of the involvement of the state.
4. **Mix-up problem:** Mixing up the capitalist and the Socialist economic systems create a lot of problems in the society. Such problems include difficulty in reaching a workable understanding and domineering influence.
5. **Corruption and mismanagement:** There is a high level of corruption and mismanagement of resources in a mixed economy.

6. **Exploitation of labour:** Labour is usually exploited heavily in a mixed economic system.

It should be noted that there is no country in the world which has absolute socialism or capitalism. In each country, there is a degree of private and state ownership of means of production. It is therefore the level of private and state ownership of means of production that determines whether such a state is a capitalist or a socialist state.

1.14 Production Possibility Theory

Production Possibility Curve (PPC) also known as Production Possibility Boundary or Frontier is used by Economists to explain among other things the concept of opportunity cost. Production possibility curve can be defined as the curve that shows the maximum combination of goods and services that can be produced in a country when all the available resources are fully and efficiently utilized given a level of technology. Production Possibility Curve can be used to illustrate several economic concepts such as economic growth, efficient allocation of resources, unemployment/underemployment, and opportunity cost (or marginal rate of transformation). Because of cost constraints, the factors of production can be used according to the scale of production and the intensiveness of the relevant factors. However, for easy understanding, let us assume that country produces capital good (Gun) and consumer good (Butter). Let us further assume that there is full employment and a given level of technology. The diagram illustrating Production Possibilities Curve is shown below.

COMM X (GUNS)

Figure 3.0: Production Possibility Curve

In the above diagram, points A, B, C, D, E, F, and G show the Production possibility curve at the level of full employment of available resources. The country is at full employment level at any point along the curve where the available resources are fully and efficiently employed. For a country to produce more units of commodity X (i.e. gun), the country must give up some units of commodity Y (i.e. butter).The units of commodity Y sacrificed or given up is the opportunity cost of the additional units of commodity X produced. The slope of the PPC defined as $\Delta Y/\Delta X$ is called Marginal Rate of Transformation which implies that for more units of commodity X to be produced, resources must be transferred from the production of commodity Y to the production of commodity X.

If the country happens to produce the combination of commodities X and Y at any point inside the curve, say point K, the country is experiencing unemployment or underemployment where the available resources are not fully utilized. And any point outside the curve, say point H, is unattainable point because the resources available are not sufficient to produce such combination of X and Y at the given level of technology. However, if the assumption of constant level of technology is relaxed and/or available resources increases, the production of the combination of commodities X and Y will increase, resulting to an outward shift of the PPC; and the country is said to be experiencing economic growth.

Assumptions of the Theory

1. The economy produces two types of goods X and Y.
2. The same resources can be used to produce either or both classes of goods and the resources can be shifted freely between the two goods.
3. The supply of resources and technology is fixed.
4. Society's resources are fully employed in an efficient way.

Points A &G are extremes but in the real sense, the society tends to seek balance between the two extremes. As the society tries to increase the production of a commodity X by choosing alternatives B, C, D, etc., it finds that it must sacrifice or give up some units of commodity Y.

Importance of Production Possibility Curve (PPC)

1. The concept shows the influence of increasing opportunity cost in production either at the national economic level or at the business enterprises level. At the national level, the government may be faced with guns and butter production during wartime.

2. It explains the concept of unemployment. Suppose the economy is operating at any point inside the PPC. This may result to economic dislocations that cause workers, factories, land and machines to be unemployed. This is under-utilisation of human and material resources.

3. The concept of PPC also explains the issue of economic growth. If we simply drop the assumption of constant technology, say, technology improves, what we have is a rightward shift of the PPC meaning increases in the production of X and Y (economic growth).

1.15 Nature and Scope of Economics and HR Practices

Economics and HR practices are two distinct fields that intersect in several ways within the context of organisations. Here are some key connections between economics and HR practices:

1. **Labour Economics:** Labour economics is a branch of economics that specifically focuses on the study of the labour market, including employment, wages, and labour supply and demand. HR practices play a crucial role in managing the organisation's workforce, which directly impacts labour market dynamics. HR professionals analyze labour market trends, wage structures, and labour supply to inform their recruitment, compensation, and talent management strategies.

2. **Human Capital Theory:** Human capital refers to the knowledge, skills, experience, and capabilities that individuals bring to the workplace. According to human capital theory, investments in human capital can lead to increased productivity and economic growth. HR practices play a central role in developing and managing human capital within organisations. They are responsible for talent acquisition, training and development, performance management, and employee engagement, which all contribute to enhancing human capital.

3. **Compensation and Benefits:** Economics provides insights into the design and implementation of compensation and benefits systems within organisations. Economic theories, such as labour market equilibrium and the concept of marginal productivity, help inform decisions related to wage setting, incentives, and benefits packages. HR professionals use economic principles to ensure fair and

competitive compensation structures that align with market conditions and attract and retain talented employees.

4. **Organisational Performance:** Economics and HR practices are both concerned with improving organisational performance. Economics examines the factors that influence overall economic performance, while HR practices focus on enhancing individual and team performance within organisations. By implementing effective HR practices, such as performance management, employee development, and employee engagement initiatives, organisations aim to improve productivity and ultimately achieve better economic outcomes.

5. **Labour Market Dynamics:** Economics provides insights into how labour market conditions, such as unemployment rates, inflation, and economic growth, impact HR practices. Organisations need to consider macroeconomic factors when making decisions related to workforce planning, recruitment, and compensation. Understanding economic trends and their implications allows HR professionals to make informed decisions to navigate labor market fluctuations.

6. **Human Resource Planning:** Economic principles, such as supply and demand analysis, can be applied to human resource planning. HR professionals assess the demand for various skills within the organisation and analyze the supply of available talent in the labor market. This information helps in identifying skills gaps, implementing recruitment strategies, and developing training and development programs to align the organisation's human resources with its strategic goals.

Economics and HR practices are intertwined within organisations. Economic principles provide a foundation for understanding labour market dynamics, compensation strategies, and organisational performance, which HR professionals incorporate into their decision-making processes to effectively manage human capital and achieve organisational objectives.

1.16 Summary

Economics is a social science that studies human behaviour as a relationship between ends and scare means, which have alternatives uses. Its subject matters are: micro economics and macroeconomics. The study of Economics helps in policy formulation that will promote economic welfare of the masses, how to produce goods and services, and how to compare a country with other countries. The basic economic problems are scarcity and choice, scale of preference and the concept of opportunity cost. The production possibility curve theory is significant because it helps to explain and illustrate the concept of opportunity cost more graphically in practical terms.

1.17 Review Questions

Multiple Choice Questions

1. A system in which the means of production is held in trust for the people by government is known as
   a. Capitalist economy
   b. Mixed economy
   c. Socialist economy
   d. Substance economy

2. The slope of the production possibility curve is called
   a. The marginal productivity theory (MPT)
   b. The marginal rate of transformation (MRT)

c. The marginal rate of substitution (MRS)

d. None of the above

3. Scarcity in Economics means that

   a. The economy can scarcely produce anything

   b. Human wants are limitless

   c. The economy has few resources

   d. Resources are limited, relative to wants.

4. The study of economics enables individual to:

   a. Accumulate huge wealth

   b. Make rational decisions

   c. Reduces wants

   d. Establish cottage industries

5. Economics can best be described as

   a. The study of how to reduce inflation and unemployment

   b. A normative science

   c. The study of the use of scarce resources to satisfy unlimited human wants

   d. The study of the use of unlimited human wants to satisfy scarce resources

6. Goods and services that are necessary for living such as food, clothing and shelter are

   a. Needs

   b. Wants

   c. Advertising

   d. Choice

7. A person who supports a centrally planned economy would most value

   a. Competition

   b. Cooperation

   c. Individuality

   d. Materialism

8. The fundamental economic problem of each society is that resources are scarce in relation to

a. Choice

b. Opportunity cost

c. Their scale of preference

d. The demand for them

9. The outward shift of the production possibly curve could be due to

    a. Increase money supply

    b. Inflation

    c. Economic growth

    d. Massive importation

10. Positive statements are said to be correct when

    a. They have been verified by appeal to factual evidence

    b. Are seldom employed in social sciences like economics

    c. Are falsifiable in principle by appeal to factual evidence

    d. Form the basis of all normative arguments

11. The term 'investment' in macroeconomics means

    a. The total amount of capital goods in the country

    b. Total amount of money invested in bonds and stocks

    c. Profit

    d. The production of goods for immediate consumption.

12. Which of these is an example of a free good?

    a. Dinner you did not pay for

    b. Money given to you by your parents

    c. Water in the ocean

    d. The house you inherited from your grand father

13. The concept of economics that helps to ensure people's needs and wants are met in accordance to their priorities is

    a. Scarcity

    b. Advertising

    c. Distribution

d.   Scale of preference

14.   Which of these is a normative statement?

a.   A mixed economy includes both a private sector and a public sector.

b.   Public goods are likely to be provided in a planned economy.

c.   The government should play a large role in a mixed economy than it does.

d.   The price mechanism plays a key role in a market economy.

15.   The Production Possibilities Frontier

a.   Shows functions curves

b.   Shows the maximum combination of output that the economy can produce using all available resources

c.   Represents a trade-off where more of the one commodity implies less of the other

d.   Only B and c are correct

16. The study of aggregate economic behaviour in an economy is

a Microeconomics

b National income

c Macroeconomics

d Econometrics

17. In economics, a market is defined as

a.   A meeting point for buyers and sellers of any product

b.   A meeting point for two parties

c.   A meeting point for two friends

d.   A meeting point for buyers to argue with sellers

Suggested answers

1.	**C**	**11. A**
2.	**B**	**12. C**
3.	**C**	**13. D**
4.	**B**	**14. C**

5. C	15. B
6. A	16. C
7. B	17. A
8. D	
9. C	
10. A	

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CHAPTER TWO
THEORY OF CONSUMER BEHAVIOUR

2.1 Learning Objectives

After studying this chapter, students should be able to;

i.   Understand the concept of consumer behaviour;

ii.   Understand the approaches to consumer behaviour;

iii.   Explain the law of diminishing marginal utility under the cardinal utility approach; and

iv.   Explain the concept of indifference curve under the ordinal utility approach.

2.2 Introduction

Two different approaches have been found to explain and analyse the theory of consumer behaviour. We have the cardinal approach otherwise called the marginal utility theory and the ordinal approach otherwise called the indifference curve theory. According to the marginal utility theory, consumers buy goods and services because such items give utility (satisfaction). They postulated that utility is measurable and additive i.e., it can be quantified or measured numerically in subjective units, called *utils*. However, a problem which arises in using *utils* is how do we compute or determine the number of utils (or amount of satisfaction) derived in any particular consumption? The indifference curve theory provides an alternative explanation to the marginal utility theory. They (the Ordinalist) postulated that utility is not measurable cardinally and that cardinal measurement was not realistic to explain consumer behaviour. They claimed that utility derived in consumption of any given commodity can only be ranked in order of preference. In making their choices, most people spread their income over many different kinds of goods. One reason people prefer variety is that consuming more of any one good reduces the marginal or extra satisfaction they get from further consumption of the same good. Formally, marginal utility (MU) is the additional satisfaction gained by the consumption or use of one more unit of a particular commodity.

2.3 Concepts in Cardinal Approach

The understanding of these concepts will definitely facilitate the understanding of the law of diminishing marginal utility theory and the cardinalist approach to consumer behaviour theory.

i. **Total Utility:** This refers to the total amount of satisfaction obtained by a consumer from the consumption of some quantity of a good or service. Total utility increases with successive consumption of units of given commodity. The total utility from a commodity consumed can be expressed as $TU_x = f(Q_x)$

ii **Marginal Utility:** This is the additional satisfaction a consumer derives from the consumption of an additional unit of a commodity, when the level of consumption of all other commodities are held constant. It is obtained as the ratio of change in total utility to change in quantity consumed. Symbolically, it is expressed as $MU = {}^{\Delta TU}/_{\Delta Q}$

where: $\Delta TU = TU_n - TU_{n-1}$ and $\Delta Q = Q_n - Q_{n-1}$

TU_n = Current total utility

TU_{n-1} = Previous total utility

Q_n = Current units of item consumed

Q_{n-1} = Previous unit of item consumed

2.4   Law of Diminishing Marginal Utility

The law of diminishing marginal utility posits that as more and more units of a particular good is consumed during a specific period of time, total utility increases but at a diminishing rate, the consumption of all other goods being held constant.

This is illustrated in the table below;

Table 1: Total and Marginal Utility of Banana

Quantity of Banana Consumed(Q_B)	Total Utility from Banana Consumed (TU_B)	Marginal Utility of Banana Consumed $MU = \frac{\Delta TUB}{\Delta QB}$
0	0	-
1	40	40
2	70	30
3	90	20
4	100	10
5	100	0
6	90	-10

From Table 2.0 above, we can see that the consumer derives the highest satisfaction from the first unit of banana. Every other unit up to the fourth continues to increase total utility but at a decreasing rate so that marginal utility is falling. The fifth unit of banana gives him zero marginal utility meaning that no extra satisfaction is being derived at that level of consumption. Having totally been satisfied with the units of banana already taken, the sixth one leads to a fall in total utility to negative one at -10. This is technically known as disutility which can lead to inconveniences, associated with overeating like vomiting. This illustration is applicable to most commodities. We can therefore conclude that the more of a commodity

consumed, the less utility an individual is likely to derive from the consumption of additional units consecutively.

TU

90
80
60
40
20
0

41

0   01   2   3   4   5   6   Units Consumed

MU

40

Figure 1: Relationship between TU and MU

The above figure shows that quantity demanded or consumed of banana varies inversely with the marginal utility obtained from every successive banana. First unit of banana gives the consumer a marginal utility of 40 utile, the second gives 30 utile and so on. It means that for as lesser marginal utility, a consumer should consume more and for a greater marginal utility, a lesser quantity should be consumed.

Exceptions to the Law of Diminishing Marginal Utility

Some economists point out the following exceptions to the law of diminishing marginal utility. It means that the law does not apply under the following situations.

1. Misers: It seems as if the law does not apply to misers, who go out to acquire more and more wealth. Their desire for money seems to be insatiable.

2. Curiosity of Rare Things: The people who collect old coins, postage, stamps, rare portraits etc. have increasing MU as the stock of these rare items goes on increasing.

3. Initial units: When the initial unit of a commodity used is less than the appropriate quantity, the

marginal utility from additional units goes on increasing.

Importance of the Law

1. Advantage to the consumers: The law of diminishing marginal utility governs our daily life expenditure. Since we know that a larger purchase would lead to lower marginal utility, we are restrained to purchase only the commodity whose marginal utility is equal to its price.
    .

2. Price determination: Price of every commodity is determined by its demand and supply. Demand for a commodity depends on its marginal utility. If a seller wants to sell more units of a commodity, he will be forced to reduce the price of that commodity. It is so because more units yield less marginal utility. The consumer therefore buys more units only when price per unit falls.

3. Basis of progressive taxation: This taxation system refers to those systems of taxation in which the rate of taxation increases as the income of a person increases. Also, it is so because with increase in income, marginal utility of money goes on decreasing. Progressive system of taxation which imposes a heavier burden on the rich people is a practical application of this principle in the field of public finance. The richer a person is, the higher is the rate of the tax he has to pay since the marginal utility of money to him is less.

4. Variety in production and consumption: This law guides the producer to change the design, pattern and packaging of commodities very often. It is a known fact that same commodity makes consumers feel bored, thus utility goes down on estimation. People want variety in soaps, shaving creams and tooth pastes etc. This law helps to bring variety in production and consumption.

5. The diamond-water paradox: Diamond possesses relative scarcity and high marginal utility thus high price. Water on the other hand, is available in abundance and possesses low marginal utility and hence low price even though its total utility is high.

6. Basis of redistribution: The marginal utility of money to the rich is low. The socialists take the stand on this law when they advocate redistribution in favour of poor. This is true in view of the fact that the poor possess high marginal utility for money thus total welfare of the society would improve.

Marginal Utility: Consumer Equilibrium

Economists assume that when a consumer is faced with a choice among feasible alternatives, he/she will select the alternative that provides the highest level of utility. Suppose a consumer has a given income that can be spent on alternative combinations of goods and services, a utility maximising consumer will select the bundle of goods at which the following two conditions are satisfied:

1. $\frac{MUa}{Pa} = \frac{MUb}{Pb} = \frac{MUc}{Pc} \dots = \frac{MUz}{Pz}$, for all commodities (A-Z), and

2. All income earned is spent.

The first of these conditions requires that the marginal utility per naira of spending be equated for all commodities. To see why this condition must be satisfied, suppose that the condition is violated, let us assume that the marginal utility resulting from the last naira spent on good X equals 10 while the marginal utility received from the last naira spent on good Y equals 5. Since an additional naira spent on good X provides more additional utility than the last naira spent on good Y, a utility-maximising consumer would spend more on good X and less on good Y. The first condition listed above is sometimes referred to as the equi-marginal principle. The reason for the assumption that all income is spent is because this relatively simple model is a single-period model in which there is no possibility of saving or borrowing. When the two conditions above are satisfied, a state of consumer equilibrium is said to occur. This is equilibrium because the consumer has no reason to change the mix of goods and services consumed once this outcome is achieved (unless there is a change in tastes, income, or relative prices).

2.5 Assumptions of the Cardinalist Approach

1. The degree of satisfaction derived from the consumption of a commodity is measurable in cardinal terms i.e., in numerical units; we therefore, use the amount of money that the consumer is ready to pay for an addition of unit of the commodity.
2. The satisfaction derived from the consumption of an additional unit of a commodity (i.e., marginal utility) diminishes as more of it is consumed.
3. The marginal utility of money remains constant as income increases or decreases.

4. The total utility of a basket of goods depends on the quantities of the individual commodities. If there are some numbers of commodities in a given basket with quantities $Q_1, Q_2, \ldots Q_n$, then total utility is a function of those quantities. Its equation will be $TU = f(Q_1, Q_2, \ldots Q_n)$

5. It is assumed that the consumer behaves rationally in a sense that he will allocate the given money income to the various purchases so as to derive maximum util.

2.6 Criticisms of Cardinal Utility Analysis

The utility analysis has many defects or weaknesses as follows:

1. It only considers a single commodity which is not really rational by the consumer.
2. The cardinal ideology that utility is measurable is neither realistic nor practicable.
3. The assumption of marginal utility of money being constant is a fallacy and unrealistic.
4. It fails to recognize the price effect and income effect on utility analysis.

2.7 The Indifference Curve Analysis

This is an alternative approach to consumer choice based on the concept of ordinal utility. The indifference curve introduces a technique of analysing consumer behaviour which does not require the concept of cardinal or measurable utility. The analysis was originated by economists called Pareto and Edge worth but was popularized by Sir John Hicks. It is an improvement upon the cardinal utility theory which has a lot of pitfalls. All that is necessary in this analysis is that consumers are able to rank bundles of commodities from the least to the most preferred.

There are three main concepts that are used in explaining the theory. These are: the budget line, the indifference curve itself and the law of diminishing marginal rate of substitution.

Assumption of Ordinalist/ Indifference Curve Analysis

The following are the assumptions underlying the indifference curve analysis:

1. Rational Consumer Behaviour: Consumer behaviour is assumed rational which means that the consumer tries to obtain the maximum satisfaction from his expenditure on consumer items. The

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consumer is supposed to select such a combination of his required consumer goods which provide him maximum possible satisfaction.

2. Preference Scale: The consumer is able to arrange the available combinations of goods as per his preference or indifference for them. Between two combinations he is assumed to be either indifferent or prefer one to the other. This assumption may be known as the assumption of ordering ability.

3. Ordinal Utility Concept: It implies that the consumer is able to rank the alternative combinations available to him by a simple comparison of the satisfaction obtainable from the combinations. Quantitative measurement of utilities of different combinations is not required in ordinal utility.

4. Diminishing Marginal Rate of Substitution: The idea behind it is that as the quantity of commodity with the consumer goes on increasing, he is prepared to exchange lesser and lesser quantity of the other commodity for equal units of the commodity whose quantity is increasing.

5. Consistency in Consumer Behaviour: The consumer's behaviour is assumed consistent. If he is indifferent between combinations A and B and also between B and C, then he must be indifferent between combination A and C.

6. Market Prices Don't Affect the Scale of Preference: The consumer is not affected in his preference or indifference between combinations by the market prices of different goods. In other words, high priced commodity is not considered superior than low priced commodity.

7. Assumption of Transitivity: It means that if the consumer prefers A to B, B to C, and C to D then, he also prefers A to D. Similarly, if he declares his indifference between pairs of combinations separately then he is indifferent to all of them.

8. Assumption of Continuity: Meaning of continuity is that the consumer is able to rank all conceivable combinations of the goods required as per his preference or indifference. The meaning is that the consumer is never of ordering the combinations available to him, howsoever small the difference in satisfaction may be between the combinations.

Concept of Indifference Curve

Indifference curve is defined as a convex curve that shows the combination of only two commodities which give the same level of satisfaction regardless of the differences in the unit of the commodities consumed over a relative period of time. Indifference curve can also be defined as the locus of points of particular combination of goods, which yield the same utility to the consumer, so that he is indifferent as to the particular combination he consumes. The consumer therefore has same satisfaction at any combinations

indicated in the diagram below. Hence, the total satisfaction is same for all the combinations. The line /curve which joins A, B, C, D, E, F is called an indifference curve.

Figure 2: Indifference Curve

A single indifference curve gives only one level of satisfaction to the consumer. But there can be a number of curves as shown below. As the distance from origin increases, the satisfaction level will also increase because the curve which is at higher distance from origin has bigger combinations of N and M as compared to the ones nearer to origin.

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Figure 3: Indifference Map

Characteristics of Indifference Curves

1. **Higher indifference curve represents higher level of satisfaction:** A higher indifference curves to the right of another represents a higher level of satisfaction and a preferable combination of two goods. In the diagram below, the indifference curve IC_2 lies above and to the right of the IC_1 which implies that more unit of MN at point (K_2) gives higher satisfaction than the lower indifference curve at point (K_1). Therefore, it is evident that the higher the indifference curve is to the right, the higher the level of satisfaction it represents.

Figure 4:

2. **The indifference curves are neither intersecting nor tangential:** Consider the diagram below (fig. 2.4) where indifference curve IC_1 and IC_2 intersect at point K. On IC_1 points K and A are on the same indifference curve, meaning an equal level of satisfaction. On IC_2, points K and C are also equal showing same level of satisfaction. This means $K = A = C$. But at point C, the consumer is on a higher indifference curve than point A on IC_1. This implies that the consumer prefers point C to A. The implication of this is that the consumer cannot at the same time be indifferent between A and C. This is a fundamental contraction.

Figure 5:

3. **An indifference curve cannot touch any of the axes:** This situation can be expressed by the graph shown below. If we take I_{D1} curve, when it touches x-axis, good M will be consumed but N will be zero which is not possible in an indifference analysis. Similarly, for ID2, when it touches the y-axis, good N will be consumed but M will be zero which is again not possible.

Figure 6:

3. **Indifference curves are convex to the origin:** This means that the marginal rate of substitution between the commodities diminishes as we move from left down to the right along the indifference curve.

Figure 7:

A property of indifference curves is that the indifference curve is convex to the origin; it cannot be of any other shape, neither concave nor straight line. The indifference curve can be represented by a curve convex to origin where the marginal rate of substitution decreases rightward as in the case of the indifference curve as shown above.

5. **Indifference curves need not be parallel to each other:** They can be commodities / goods shown on the horizontal axis and the vertical axis as independent of each other in the sense that they are neither complementary nor substitute commodities.

Figure 8:

Though the indifference curves are negatively sloped, the rate of fall may not be same for all indifference curves. It means, the diminishing marginal rate of substitution between M and N is essentially not the same in the case of all indifference schedules. The two curves I_{D1} and I_{D2} shown above are not parallel to each other.

2.8 Marginal Rate of Substitution (MRS)

The marginal rate of substitution is the rate of exchange between some units of goods M and N which are equally preferred. The marginal rate of substitution of M for N (MRS_{MN}) is the amount of N that will be given up for obtaining each additional unit of M. The behaviour of the consumer is called the principle of diminishing marginal rate of substitution. The marginal rate of substitution represents the consumer's behaviour, that is, when we substitute more and more of M for N, the marginal rate of substitution decreases. The marginal rate of substitution of M for N (MRS_{MN}) is in fact the slope of the curve at a point on the indifference curve. Thus, $MRS = \Delta N/\Delta M$. Therefore, from the diagram it can be seen that MRS_{MN} is the rate of change in commodity M to a given change in N or as M increases, it will decrease N and vice versa. This shows that as the consumer moves downwards along the IC curve, he possesses more and more units of M and gives up lesser units of N. In other words, MRS_{MN} decreases. It is visible from the above diagram that as we move from left to right, N will decrease and M will increase. The explanation can be shown in a hypothetical table below as:

Combination	X	Y	MRS yx (x:y)
A	10	30	-
B	15	18	5x : 12y
C	25	10	10x : 8y

Table 2:

This is demonstrated graphically below as:

Figure 9:

Exceptions to the Laws of Marginal Rate of Substitution (Mrs)

If the marginal rate of substitution of M for N or N for M is decreasing, the indifference curve must be convex to the origin. If it is constant, the indifference curve will be a straight line slopping downwards from left to right at an angle of 45 degrees. If the marginal rate of substitution is increasing, the indifference curve will be concave to the origin, as shown in the diagrams below:

Figure 10:

In case of the perfect complementary, the MRS_{MN} is zero and the indifference curve will acquire L shape as shown in diagram (a) above, but when the rate of substitution is very low or near the curvature of the curve as shown in diagram (b) above, the indifference curve will have a 'C' shape. When the rate of substitution is becoming very large or positive, then the indifference curve will be concave. The major curve which arises generally is of convex nature to the origin.

2.9 Consumer's Equilibrium under the Ordinal Approach

A consumer is said to be at equilibrium when he/she maximizes his/her utility within the limited income and there is no net or inherent tendency to change. Under this approach, equilibrium can be obtained in two ways, namely graphical approach and geometrical approach.

It should be noted that for consumer to be in equilibrium, two conditions must be met and they are (i) Necessary condition (ii) sufficient condition.

   i. Necessary condition: This condition states that consumer is at equilibrium when the indifference curve is tangential to the budget line. In other words, it is the point at which the slope of indifference curve is equal to the slope of budget line.

   ii. Sufficient condition: The second order condition states that for, consumer to be in equilibrium, the indifference curve must be convex to the origin.

2.10 Concept of Budget Line

Budget line could be defined as the total amount of money income available to a consumer which he or she is willing and ready to spend on two commodities which give him or her satisfaction, assuming the market price of the two commodities are known. It is also known as budget constraint. It is expressed in an equation form $M = P_x X + P_y Y$ ... ... (i)

Where; M = Total Money Income

P_x=Price of Commodity X

X =Unit of Commodity X consumed

P_y =Price of Commodity Y

Y =Unit of Commodity Y consumed

Assuming the consumer spent all his/her money on one commodity at the expense of other commodities. For instance, if commodity (x) is bought alone, then;

$$M = P_x X + P_y Y \quad \text{... ... ...} (ii)$$

$$M - Y P_y = X P_x \quad \text{... ... ...} (iii)$$

Thus, $X = {}^M/_{P_x} - {}^{P_y}/_{P_x}$

If Y = 0, then X = ${}^M/_{P_x}$ ... ... (iv)

Also, equation can be used to produce that amount of commodity (y) which the consumer can buy with its given income which is expressed as Y = ${}^M/_{P_y}$ ... ... (v)

Therefore, combining equations iv and v produces the slope of the budget line as the ratio of the market price of the two commodities. Geometrically, the slope of the budget line is derived as:

$$ {}^{OA}/_{OB} = {}^{(^M/_{P_y})}/_{^M/_{P_x}} = {}^M/_{P_y} X {}^{P_x}/_M $$

Therefore, the slope of the budget line = ${}^{P_x}/_{P_y}$ ... ... (vi)

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Graphically, the above equations (iv), (v) and (vi) can be represented diagrammatically as

Figure 11:

Commodity A

$\frac{Y}{P_a}$

Budget line

$\frac{Y}{P_b}$

Shifts in the Budget Line

The budget line of a consumer could shift either parallel or unparallel to either right or left. A shift in the budget line parallel to the right or left arises as a result of changes in consumer's income (M), prices remaining the same. Thus, an increase in income leads to a shift in budget line to the right as shown in diagram (a) However, a shift in budget line unparallel to either right or left arises as a result of changes in the market price of the two commodities while income remains unchanged. This is also shown in diagram (b) and diagram (c) respectively.

Good (y)

(a)

M_0 M_1 M_2 Good (x)

Y

(b)

X

Y

(c)

X

Figure 12:

From the diagram above, it reveals that diagram (a) above indicates a parallel shift in the budget line due to changes in income only while relative prices are held constant. The shift of budget lines from OM_1 to OM_2 indicates an increase in income while prices are held constant. This leads to increase in the quality and quantity consumed of both commodities X and Y respectively and vice versa, as in shift from OM_1 to OM_0 which implies that decrease in income with decrease in quantity and quality consumed of both commodities x and y.

In diagram (b) above, there exists a change in the relative price of commodity X which leads to change in commodity X consumed while commodity Y is constant as well as income remain unchanged. The fall in price of commodity X has led to increase in quantity of commodity X consumed than previously when there was no change in price and income. Also, diagram (c) above shows the opposite of diagram (b) when a fall in price of commodity Y leads to an increase in quantity of commodity Y at the expense of income while the market price of commodity X remains unchanged.

2.11 Graphical Analysis of Consumer's Equilibrium under the Ordinal Approach
The underlying basis for consumer's equilibrium under indifference curve analysis in both graphical and mathematical approach is as follows:
  i.   The indifference curve must be tangential to budget line
  ii. The indifference curve must be convex to the origin:

Figure 13:

At point e, the consumer is at equilibrium and he does not have any tendency to change. If the consumer stays at point K, he will be on a higher budget line L_2M_2 meaning that he will be spending more to get the same level of satisfaction he gets at e. At equilibrium the consumer's budget on the goods is lower than any other point on the indifference curve. Here, there is no inherent tendency to change from point e to any other point on the indifference curve.

2.12 Economic Effects of Indifference Curve and the Budget Line

Whenever a change occurs in one of the relative prices, money income and the other price remain unchanged. The following three effects arise;
    i.   Income Effect
    ii. Substitution effect
    iii. Price Effects

Income Effect

This arises when a change occurs in nominal income while the prices of the goods remain constant. If we consider the effect on consumer's equilibrium of a change in consumer's income, with the condition that the prices of commodities remain the same, the resultant effect is known as income effect. Income effect is the effect on quantity demanded exclusively as a result of a change in money income when prices of all goods remain constant.

In the diagram below (figure 2.18), given price-income line X_1Y_1, the consumer is in equilibrium at point K_1. Now, if the income of the consumer rises, price income line shifts to X_2Y_2. The consumer will move to a new equilibrium position at point K_2 on a higher indifference curve C_2. Corresponding to the new equilibrium level, the consumer will move to a higher level of satisfaction as a result of the increase in his income. Therefore, we get various points of equilibrium as K_1, K_2, K_3 and K_4 for different levels of income changes while the relative prices of goods are held constant.

Figure 14: Income Effect for a Normal Good

Income Effect on Inferior Good M and Normal Good N

The income effect for goods M and N is shown in the diagram below. The income consumption curve begins to move towards Y axis on which we measure quantity of goods N, indicating that after a certain point as income increases, less quantity of commodity M is bought. This makes good M to be an inferior good. But from origin to e_2, as income rises, more and more of the commodity is consumed. This is the case of a normal good.

Good N Y_3 Y_2 Y_1 N_2 N_1

Income Consumption Curve
ICC

e_3
e_2
e_1

IC_3
IC_2
IC_1

0 M_1 M_2 X_1 X_2 X_3

Good M (Inferior)

Figure 15

Income Effect of Inferior Good N and Normal Good M

In the diagram below, the curve bends toward X-axis on which we measure the commodity M, indicating that as income increases after a certain point, less quantity of commodity N is bought. That is demand for commodity X falls as income of consumer rises. The income elasticity of demand of an inferior good is thus negative. In the following diagram, Good N is an inferior good, implying that Inferior goods may, therefore, be defined as goods for which income effect is negative.

Figure 16

Substitution Effect

The term substitution effect arises when there are changes in the consumption or demand for either of the two goods due to their relative change in prices, while the real income remains constant. In other words, substitution effects arise when a change in the relative price of any of the two commodities forces the consumer to re-arrange or re-prioritize his purchases and ensure that they give him same level of satisfaction. Here, the consumer substitutes the cheaper commodity for the other good. However, there are two different perspectives to the concept of substitution effect.

    i.   Hicksian Substitution Effect; and
    ii. Slutsky Substitution Effect

Hicksians Substitution Effect

Hicks postulated that changes in the relative prices of the two commodities lead to an increase in the real income of the consumer. This makes him to buy more of such cheaper commodity than the relatively expensive commodity. Hicksian's substitution effect is illustrated in the diagram (Fig. 2.21) below. Let the money income and prices of the two commodities be represented by the budget line MN, the consumer is in equilibrium at point e_i on the indifference curve IC_1 and purchases oa_1 of good X and ob_1 of good Y. Suppose that the price of good X falls (price of Y remaining unchanged) so that the budget line now rotates outwards to MN_1 with the fall in price of X, the consumer's real income or purchasing power will increase; which makes the demand for good X to change from oa_l to oa_2 and on another level of satisfaction/indifference curve of IC_2 at e_2. This is known as total effect of the price which is the combination of substitution effect and income effect. However, in order to differentiate the substitution effect, Hicks advocated that the gain in real income of the consumer should be wiped out through a mechanism called compensating variation in income thus, forcing him to go back to the previous level of satisfaction before the price change, i.e. on IC_1 at e_1. Therefore, the movement along the indifference curves from point e to point e_1, is what Hicks called the substitution effect which makes real income and level of satisfaction remain unchanged. Furthermore, Hicks was able to make a distinction between substitution effect and income effect from the diagram below;

e

Figure 17

Total Effect (TE) = Substitution effect + Income effect. From the diagram, Hicks reveals that price changes result in two effects which are known as substitution effect and income effect. The summation of both effects i.e., S.E and I.E produces Total Effect (TE).

Slutsky's Substitution Effect

The Slutskian principle of substitution effect is similar to the Hicksian principle but different in the methods of measuring the real income-effect of a fall in price of a commodity. Unlike Hicks that advocated that real income effect of a fall in the price of a commodity must be equal to the amount of real income which brings the consumer back to the original indifference curve. Slutsky advocated that the real income effect of a fall in the price of a commodity must be equal to cost of difference which will enable the consumer to buy the same original combination of commodity X and Y, and only bring back to the same level of satisfaction but not to the original indifference curve. Further, it should be noted that both Hicksian and Slutskian approaches have the same measurement for total effect but differ in substitution effect as well as income effect respectively. This can be demonstrated diagrammatically as follows

Figure 18

Total Effect (TE)

Differences between Hicksian and Slutskian Approaches

1. Hicksian Substitution effect takes place on the same indifference curve while Slutsky's substitution effect involves the movement from lower indifference curve to another higher indifference curve.

2. The substitution effect margin under Hicks is smaller while under Slutsky the income effect margin is smaller.

3. Slutsky's method is more realistic than Hicks's method.

2.13 Summary

The theory of diminishing marginal utility is the additional satisfaction a consumer derives from an additional unit of a commodity consumed, when the level of consumption of all other commodities are held constant. Indifference curve on the other hand shows the same level of satisfaction when a consumer consumes different bundles of given two commodities. When he wants to increase the units of consumption of one commodity, he will decrease the consumption of the other, given a fixed money income at that time. These changes are subject to increase and decrease in the price of any of the two commodities as well as the income of the consumer.

2.14 Review Questions

1. The satisfaction which a consumer derives from the consumption of commodity is known as
    a. Indifference curve
    b. Isoquant
    c. Isocost
    d. Utility
2. An indifference map shows different
    a. combinations of commodities consumed
    b. commodities with the same satisfaction
    c. levels of satisfaction

    d. levels of consumer's income

3. Cardinality of utility means
    a. Ranking of utility
    b. Measuring utility
    c. Deriving utility
    d. Combining utility

4. A consumer maximizes his utility in consuming a good X when
    a. $MU_x = P_x$
    b. $P_x > MU_x$
    c. $MU_x < P_x$
    d. All of the options

5. Ranking is the method used in measuring
    a. Marginal utility
    b. Ordinal utility
    c. Cardinal utility
    d. Total utility

Suggested answers
    1. D
    2. C
    3. C
    4. A
    5. B

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THEORY OF DEMAND, SUPPLY AND RESOURCES ALLOCATION

3.1 Learning Objectives

After studying this chapter, students should be able to;

i.   Explain the theory of demand and supply.

ii.   Explain the equilibrium between demands and supply.

iii.   State and explain factors affecting demand and supply.

3.2 Introduction

Demand for and supply of goods and services are some of the fundamental theories in economics. When it is believed that consumers buy goods and services, the producers go ahead to produce and supply the goods and services to the market. This is the focus of this chapter. The interaction of the two forces of demand and supply as they determine the market price shall also be discussed with some subtle mathematical illustrations. Where the quantity demanded is equal to the quantity supplied to the market, we have a situation described as state of equilibrium. The price that equates demand and supply is called equilibrium price and the relevant quantity is called equilibrium quantity.

3.3 Theory of Demand

Demand is defined as the quantity of goods and services consumers are willing and ready to buy at a particular price and at a given time. It refers to a whole set of price-quantity combinations while quantity demanded is the amount we want to buy at a particular price and time.

THE LAW OF DEMAND: The Law of demand states that the quantity demanded of a good and service is negatively related to its price, *ceteris paribus* all other factors remaining constant. In other words, consumers will buy more of a good or service at a lower price than that of a higher price. As price increases, (all other things being equal) consumers will demand a smaller quantity of a good or service. Demand and price are therefore inversely related i.e., the quantity demanded of a good or service is negatively related to its prices, *ceteris paribus.* A hypothetical demand schedule and demand curve to demonstrate the law of

demand are respectively as follows:

Table 3: DEMAND SCHEDULE FOR BEANS

Price of Beans (per kilo)	Amount bought per month (in kilo)
₦10	60
₦20	50
₦25	40
₦30	30
₦40	20
₦50	10

The Table lists the possible purchases of beans the consumer could make at a particular time (say in a month) at various prices. His income and other factors affecting demand are fixed but the price changes. When we plot the various price points and the corresponding quantities in a diagram, we obtain a downward sloping demand curve which shows an inverse relationship price and the quantity demanded for a normal good.

Quantity demanded (BEANS)

The demand curve for beans

Under normal situation, we know that increase in the price of beans causes a decrease in the demand for beans.

3.3.1 Types of Demand

Three are four main types of demand.

1. **Competitive Demand:** This is a case in which two commodities are close substitutes for one another and are competing for the purchase of the consumers e.g., tea &Coffee, Bournvita and Milo etc.
2. **Complementary Demand:** This is the type of demand in which two goods go hand-in-hand. The demand for one necessitates the demand for the other e.g., car and petrol, tea and sugar, skirt and blouse, etc.
3. **Derived Demand:** This is a case whereby a commodity demanded is further used to make or produce other goods and services. For example, the demands for factors of production are meant to produce goods and services; thus, demand for factors of production is a derived demand.
4. **Composite Demand:** This is a case whereby a commodity is wanted to satisfy various purposes or different wants. e.g., palm oil for cooking, or manufacturing of Soap or Pomade.

3.3.2 Factors Affecting Demand

1. **Price:** The higher the price of a product, the lower the quantity of goods and services that will be demanded and vice versa.
2. **Price of related commodities:** - This applies to commodities that have close substitutes e.g., travelling by air and travelling by road. If the air fare is too high, travellers may demand for buses to travel by road.
3. **Income of the consumer:** - The higher the income of a consumer, the higher the quantity of commodities he will buy and vice versa.
4. **Changes in taste and fashion: -** It is usual for taste and fashion of people to change. If consumers change their taste or fashion for a particular commodity, the demand for such commodity will also change.

5. **Population:** The higher the population of a state or country, the higher the demand for various commodities consumed by them.

6. **Seasonal Goods:** A period of festival usually increases the demand for specific commodities used during the festival period.

7. **Expectation of future changes in price: -** If consumers expect that there will be high prices of certain commodities in the nearest future, demand will increase and vice -versa.

8. **Taxation:** Higher tax levies (e.g., VAT) on commodities will mean the reduction in the purchasing power of the consumers which may result in decrease in the demand for certain commodities.

9. **Weather and climate:** Variations in weather and climate or season may affect the demand for certain commodities. For instance, the demand for rain coat, umbrellas, shower caps, etc. goes up during the raining season and goes down during dry harmattan season.

10. **Advertisement: -** A good advertisement and sales promotion for a certain commodity can lead to an increase in demand for it and vice-versa.

11. **Invention of new commodity: -** When a new product is invented and produced, its demand tends to rise thereby making the demand for the old model product to decrease.

12. **Government Policy: -** Government policy over the consumption of some commodities may either encourage or discourage the demand for such commodities.

3.4   Changes in **Demand Vs Change in Quantity Demanded**

When different quantity of goods and *services* are demanded at a particular price, we talk of a change in demand. It is caused by any other factor listed above except the price of the commodity or service in question. While price remains constant, other factors will bring about increase or decrease in the quantity of goods and services bought, thus making the demand curves to shift either to the right or left. This is shown as follows:

Figure 19

From the above, **DD** is the original curve. A change can cause the shift either to the right D_1D_1, or to the Left D_2D_2. The shift to the right D_1D_1 is referred to as an increase in demand while a shift to the left D_2D_2 is decrease in demand.

A change in quantity demanded will occur if there is a change in the price of the commodity while all other factors that influence demand remain constant (unchanged). The below diagram illustrates it clearer.

Price   D

P_1 A

                      70

P_2 B

                   D

3.5   Theory of Supply

Supply may be defined as the amount or quantity of a given commodity or services which a producer or seller is willing to offer for sale at different prices at different times. Quantity offered for sale in the market, like demand, is known as effective supply.

Law of Supply

Unlike demand, supply moves in the same direction with price, more goods and services would be supplied to the market when their prices are higher than when their prices are lower because every producer wants to maximize his profit. Hence, the law states that the higher the price, the higher the quantity supplied.

Types of Supply

1. **Joint/Complementary Supply:** This is when two or more goods are produced and supplied from one source. Increase in demand for one commodity can lead to an increase in its production and supply of it which leads automatically to increase in the production and supply of the other commodities that are produced together and vice versa e.g., palm oil and palm kernels.
2. **Competitive Supply:** This is when a commodity (like palm oil) can serve two or more purposes. The supply of palm oil for soap will affect its supply for domestic consumption or vice versa.

3. **Composite Supply:** This is when many commodities are supplied for the satisfaction of a particular want. The supply of meat, salt, pepper, palm oil, vegetable, magi cube etc. may be collectively supplied as soup ingredient

Supply Schedule and Curve

Supply schedule is a table that shows the relationship between the quantity of goods suppliers are willing to supply at a particular time and at a given market price. It shows the amount of goods that can be supplied as the price of goods changes. It increases when price increases and it decreases when price decreases.

Figure 20: Market Supply Curve

Table 4: A Farmer's Supply Schedule of Yam Tubers

Price (Per Tuber)	Quantity of Tubers
₦100	600
₦20	500
₦25	400
₦30	300
₦40	200
₦50	100

The supply points are drawn from data of supply schedule. Both the schedule and the curve conform to the law of supply i.e., the higher the price, the greater the quantity supplied and vice versa, *ceteris paribus*.

Factors Affecting Supply

1. **Price:** The higher the price of a commodity, the higher and more profitable the quantity supplied and vice versa.

2. **Level of Technology:** Advanced technology reduces cost per unit of product and increases output or supply.

3. **Cost of production:** If the cost of production increases, the producer tends to produce less of a commodity and vice versa.

4. **Weather:** If the weather of a particular area is favourable at a particular period, more agricultural products will be produced and their supply to the market will increase.

5. **Price of related goods:** The supply of a commodity will be affected if the prices of other related commodities rise. If the price of a substitute like maize rises, the quantity of rice produced and subsequently supplied will fall.

6. **Nature of Goods:** The more producers we have in producing a commodity, the more supply of such commodity will be made available to the prospective buyers. If the number of producers reduces, the quantity produced / supplied will also reduce.

7. **Natural Disaster:** Incidence of flood, war, cyclone, drought or fire, will negatively affect the supply of a commodity.

3.6 Changes in the Quantity Supplied Versus Changes in Supply

A change in quantity supplied refers to the movement from one point to another point on the same supply curve which is caused only by changes in the product's price. A change in supply by contrast, refers to a shift of the supply curve due to changes in other factors that influence supply except the price of the product. In other words, the price of the product remains unchanged in case of a change in supply. This is illustrated as follows;

From the below diagram, an increase in the quantity supplied is an upward movement along the same supply curve as displayed in figure 3.5 while a change or shift in supply is a parallel shift in the supply curve as displayed in figure 3.6.

Figure 21

3.7 Market Equilibrium and Price

The forces of demand and supply which Marshal likened to the "two blades of a pair of scissors" interact to determine the price of a product and the actual quantity traded in the market. The equilibrium price or the market price is the price at which the quantity demanded is equal to the quantity supplied. In figure 3.7 below, the equilibrium price is 13 while the equilibrium quantity is 400 units. Sometimes, it is referred to as the market clearing price because it is the price at which there is neither excess supply (surplus) nor excess demand (shortage). All these are explained in the hypothetical schedules and diagram below. The excess supply is the portion where supply outweighs demand. That is a any price beyond 13 naira, the quantity supply will be more quantity demand while at any price below 13 naira, the quantity demand will be more than supply.

Table 5: Demand and Supply of Lemon Juice

Price per bottle	Quantity demanded (1,000 bottles per week)	Quantity Supplied (1,000 bottles per week)	Surplus (+) or Shortage (-)	Pressure on price
₦17	100	540	+440	Downward
₦16	200	420	+220	↓
₦15	300	300	0	Equilibrium
₦14	400	200	-200	↑
₦13	500	100	-400	Upward

Figure 22: Equilibrium Point

The equilibrium in the market for soft drinks (Lemon juice) illustrated above is a case of a stable equilibrium. Equilibrium is said to be stable if or when the equilibrium price is displaced a little, new price sets up economic forces which tend to restore it. In the figure above, the equilibrium price and equilibrium quantity are respectively ₦15 and 300. The disequilibrium price of ₦13 and ₦14 set up economic forces that lead to

excess demand or shortage while disequilibrium price of ₦16 and ₦17 set up excess supply with competition among buyers and sellers that tend to push the price to ₦15.

3.10 Mathematical Determination of Equilibrium Price and Quantity

Example 1

Suppose the demand and supply function for a commodity are given as $Q_d = 100 - 10P$, $and\ Q_s = 20 + 10P$ respectively. Estimate the equilibrium price and quantity.

Solution

Since at equilibrium situation, $Q_d = Q_s$

Therefore, $100 - 10P = 20 + 10P$

Thus, $-10P - 10P = 20 - 100$

$-20P = -80$

Then, $P = {}^{-80}/_{-20} = $ ₦4

If price is ₦4, substituting 4 for price in the demand or supply model will give

$$Q = 100 - 10(4) = 100 - 40 = 60$$

Thus, equilibrium price is ₦4, while equilibrium quantity 60 units will be bought and sold.

EXAMPLE 2

The market demand and supply function for a commodity are given as $Q_d = 18 - 13P\ while\ Q_s = 3P$. Where P is price, $Q_d\ and\ Q_s$ are quantity demanded and supplied respectively. Estimate the equilibrium price and quantity.

Solution

At equilibrium, $Q_d = Q_s$

Therefore, $18 - 13P = 3P$

Hence, $18 = 16P$

$P = {}^{18}/_{16} = ₦1.125$

Substituting 1.125 for price into either the demand and supply model, we have:

$$Q_d = 18 - 13(1.13) = 3.31$$

EXAMPLE 3

There are 10,000 individuals in a market for a commodity X, each with a demand function $Qd_x = 12 - 2P_x$. The market also has 1000 identical producers of commodity X, each with a supply function $Qs_x = 20P_x$. P_x is given in Naira.

Required:

i.   Draw the market demand schedule and the market supply schedule for commodity X. Estimate the equilibrium quantity.

ii.   Plot, on one set of axes, the market demand curve and the market supply curve for commodity x and show the equilibrium point.

iii.   Obtain the equilibrium price and the equilibrium quantity mathematically.

Solutions

i. $Qd_x = 10000 (12 - 2P_x) = 120000 - 20000P_x; Qs_x = 1000 (20P_x) = 20000P_x$

Demand and Supply Schedules for commodity X

P_x	Qd_x	Qs_x
0	120000	0
1	100000	20000
2	80000	40000
3	60000	60000
4	40000	80000
5	20000	100000
6	0	120000

ii.

Fig. 3.9

iii.   At equilibrium, Qd = Qs

$$120000 - 20000P_x = 20000P_x$$

$$40000P_x = 120000$$

$$P_x = ₦3$$

To obtain the equilibrium quantity, substitute the price in either the demand or supply equation. Using the supply equation, we have

$$20000(3) = 60000 \; units$$

3.8   Allocation of Resources through Price Mechanism

The price mechanism or price system can be defined as that which determines the rate at which goods and services are produced, exchanged and distributed. In the course of exchange, different names arise for the goods and services exchanged. For example, the reward for land on lease is never called price but rent. The payment for labour services is called salary or wages. Also, reward for capital is interest and for the entrepreneur, the reward is profit or loss. The way to appreciate the analysis of the price system is to examine its functions.

Functions of Price Mechanism

1. It enhances the distribution of scarce resources among private individuals and firms (entrepreneur). In this way, resources are guided to produce the goods most wanted by consumers. This is referred to as allocation efficiency.
2. It induces supply of goods and services to respond to changes in demand. We can therefore say that the market price communicates a great deal of complex information to the consumers and the producers in different manners. When price rises, suppliers increase the quantity supplied. For consumers, if market price rises, consumers decrease the quantity demanded.
3. It helps in facilitating the appropriate rewards to the various factors of production. For instance, in a deregulated economy, the interest rates payable on loanable funds are determined by the price system. Even, the foreign exchange market is subject to the price mechanism based on the demand for and supply of foreign currencies.
4. Price system motivates market participants to produce goods or develop those skills that are highly deserved by others. It thus influences the type, quantity and quality of goods to be produced. No one has to tell a gas (petrol) station to open. No one has to tell a tall and co-ordinated young person to practice basketball skills.
5. Market price maximizes individual freedom. As long as effective freedom of exchange is maintained, the price system prevents one person from interfering with another. The seller because of the presence of other sellers, with whom he can deal, protects the consumers from coercion. However, the various points put up can fail if big firms or monopolists exist. They then interfere with freedom of choice. It is in this vein that the government can play some roles in stabilizing the fluctuating economic movement of the price.

Price Legislation

Price legislation is the act of using the law to regulate the prices below or above which the goods and services should be sold. Instead of allowing the market forces of demand and supply to do so, the government fixes objectively.

Types of Price Legislation

1.   Price floor

2.   Minimum wage legislation

3.   Maximum wage legislation

4.   Price ceiling

Maximum and Minimum Legislation

Let us now apply the tool of demand and supply analysis to see why and / or how a surplus or shortage will develop if price is fixed higher than the equilibrium price by such a device as price support performance to help farmers. Consider a price support programme for an agricultural product whose equilibrium price (P) is considered by the government to be too low for the farmers i.e., price (P) in the graph below:

Figure 23: Maximum and Minimum Price Control

The government therefore establishes price F as the support or minimum price legislation at which the government guarantees to purchase all output offered to it at F per unit. The quantity demanded is FA while quantity supplied is FB, thus a surplus of AB in the market. AB is bought to be stored by the government. It is clear that the programme benefits the farmers whose produce were supported. They will not only produce more but sell their output at a higher price. But who pays for the programme?

a.   The consumers who pay higher prices.

b.   The government that uses public funds.

c.   The society by way of opportunity cost.

3.9 Summary

Demand is the amount of goods and services consumers are willing to buy at a given price and at a particular time. Supply is the amount of goods and services producers/sellers are to offer for sale to the consumers/buyers at a given price and at a particular time. When quantity demanded is the same as the quantity supplied, it is a situation of equilibrium. These two forces are allowed to determine the market price from time to time in a free (capitalist) economy.

3.10 Review Questions

1. Which of the following is a derived demand?
   a. Labour

b. Bread

c. Motor cars

d. Butter.

2. A change in demand implies a

    a. Movement along the demand curve

    b. Fall in the price and quantity demanded

    c. Shift in the demand curve to the left or to the right

    d. All of the above.

3. An exceptional demand is one in which the

    a. Consumers are eager to buy if prices fall

    b. Consumers do not buy from the market

    c. Quantity demanded falls as price falls

    d. None of the above.

4. The price of pen in a certain market rises from N100 to N150 inducing a decrease in the quantity demanded per week from 60 to 40. What is the price elasticity of demand?

    a. 0.33

    b. -0.66

    c. 0.66

    d. 0.67

5. Automobiles and fuel are likely to be

    a. Substitute goods

    b. Complementary goods

    c. Inferior goods

    d. Independent goods

6. A change in demand is said to take place when there is a

    a. Price change

    b. Movement alone the demand curve

    c. Shift of the supply curve

    d. Shift of the demand curve

7. If James' demand and supply functions are given as $Q = 20 - 2P$ and $S = 10 + 3P$ respectively; what will be his equilibrium price and quantity?

a. 12 and 6

b. 4 and 10

c. 8 and 12

d. 2 and 16

8. The demand for labour is

    a.   Derived demand

    b.   Complimentary demand

    c.   Joint demand

    d.   Composite demand

9. What causes a movement along a demand curve?

    a   A change in population size.

    b   A change in price.

    c   A change in taste.

    d   A change in income

10. What would cause the demand curve for the cinema tickets to shifts to the right?

    a   A fall in the price of Cinema tickets.

    b   A rise in the price of transport to cinemas.

    c   Removal of a tax on cinema tickets.

    d   Release of a number of very popular films.

11. Minimum wage occurs when the wage rate is fixed ………………… the equilibrium wage rate

    a.   Above

    b.   Below

    c.   In-between

    d.   None of the above

Suggested answers

1. **A**
2. **C**
3. **C**
4. **D**

5. **B**
6. **D**
7. **D**
8. **D**
9. **B**
10. **D**
11. **A**

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CHAPTER FOUR

ELASTICITY OF DEMAND AND SUPPLY

4.1 Learning Objectives

At the end this chapter, the students should be able to understand the followings:

i.   meaning, types and measurement of price elasticity of demand;

ii.   Income elasticity of demand;

iii.   Cross elasticity of demand;

iv.   How to measure types of elasticity and the importance of elasticity concepts; and

v.   How to use forecasting method to estimate future demand for labour and other factors.

4.2 Introduction

In the previous chapter, we considered the concept of demand and supply of goods and services. Incidentally, the concept of demand and supply only indicate that there exists a relationship between demand or supply and the prices of commodities. That is, the concept and demand and supply only show us the relationship that exists between demand or supply and their respective prices. The concept of demand and supply was limited in that it could only show the existence of the direction that occur between the variables but does not tell us the magnitude of the relationship that exist between these variables. Thus, the concept of elasticity tries to fill this gap.

4.3 Elasticity of Demand

Elasticity of demand measures the degrees of responsiveness of a change in quantity demanded to a change in the determinants of demand, such as change in price, Income, and others at a given period of time. The concept of demand tells us the direction of the relationship between the quantity demanded of a commodity and its corresponding price without telling us the magnitude of the relationship in specific terms. Hence, elasticity moves a step further from the concept of demand and tells the direction of the relationship between price and quantity demanded given the specific numerical values. Therefore, elasticity of demand is defined as a measure of the degree of responsiveness of a change in quantity demanded to a change in the market price of a product.

$$\epsilon_d = \frac{\% \ change \ in \ quantity \ demanded}{\% \ change \ in \ price}$$

Hence, $\frac{(Q_2 - Q_1)/Q_1}{(P_2 - P_1)/P_1} = \frac{\Delta Q}{\Delta P} \ X \ \frac{P_1}{Q_1}$

Where, Q_1 is first quantity, Q_2 is the second quantity; P_1 is the first price and P_2 the second price.

There are different types of elasticity of demand:

    i.   Price elasticity of demand

    ii.   Income elasticity of demand

    iii.   Cross Price elasticity of demand

4.4 Price Elasticity of Demand

Price elasticity of demand can be defined as the measure of the degree of responsiveness of a change in quantity demanded to a change in market price of a commodity, while other determinants of demand are held constant at a given period of time. In other words, it measures the ratio of the percentage change in quantity demand to the percentage change in the price. It may be written as:

$$e_d = \frac{\%\ Change\ in\ quantity\ demanded}{\%\ Change\ in\ price}$$

Types of Price Elasticity of Demand

There are five types of price elasticity of demand which are explained below:

a.   **Elastic demand:** This type of price elasticity of demand exists when the proportionate change in demand is more than the proportionate change in price. The coefficient of elastic demand is greater than one ($\epsilon_d > 1$).

b.   **Inelastic demand:** This refers to a situation whereby the change in demand is less than the proportionate change in price. The coefficient of inelastic demand is less than one ($\epsilon_d < 1$).

c.   **Unit demand:** This exist when the change in demand is exactly equal to proportionate change in price. The coefficient of unit demand is equal to one ($\epsilon_d = 1$).

d.   **Perfectly elastic demand:** This refers to a situation whereby changes in demand without no proportional change in price. In other words, it is a situation in which a little change in price will cause no change in demand. It is also known as Infinity elasticity of demand.

e.   **Perfectly Inelastic demand:** This type of elasticity of demand exists when there is no absolute change in demand as price changes. Thus, change in price causes no change in

demand. It is also known as Zero elasticity of demand.

a. **RELATIVELY INELASTIC DEMAND:** When a change in price leads to a less than proportionate change in quantity demanded is referred to as inelastic demand. In Fig. 4.1 below, a fall in the price of the commodity results to a less than proportionate increase in quantity demanded. Thus, percentage change in quantity demanded is less than the percentage change in price. That is $\epsilon_d < 1$. Here, the coefficient of price elasticity of demand is less than one.

Figure 24:

PRICE

Quantity demanded

b. **Relatively Elastic Demand:** This happens when a little change in price causes a greater change in the quantity demanded ($\epsilon_d > 1$).

Figure 25:

PRICE

c. **Unitary Elastic Demand:** When a percentage change in price results in an exactly the same percentage change in the quantity demanded. This results is exactly unity elasticity of demand ($\epsilon_d =$

Quantity demanded

1).

Figure 26:

Quantity demanded

d. **Perfectly Elastic Demand:** Here, price is assumed to be constant. The demand curve will be horizontal and parallel to the quantity axis. No single individual is strong enough to influence the price in the market. Thus, in perfectly elastic demand, infinite quantity is demanded at a given price.

Figure 27:

e. **Perfectly Inelastic Demand:** Here, whatever is the price level or change in the price, the quantity demanded remains unchanged. The demand curve is vertical and parallel to straight line. It can also be called zero elasticity of demand.

Figure 28:

4.5 Factors Determining Price Elasticity of Demand

The principal factors determining price elasticity of demand are:

l.   **Time:** In a short period, a change in price may have little or no influence on demand since it may take some time before all consumers become aware of the price change.

2.   **Availability of Substitutes:** Where the available substitutes of a commodity are very close, the demand for the commodity is more likely to be elastic. Consequently, a change in the price will cause consumers to switch either to or from a substitute (consider Bournvita and Milo)

3.   **Degree of Necessity:** The greater the degree of necessity, the more likely is the demand for a commodity to be inelastic at least over a moderate price range e. g. cooking salt and vegetables.

4.   **Habit:** People's purchases are to some extent determined by habit with the result for small changes in price; their demand is fairly inelastic as in the case of tobacco/cigarette smokers.

4.6   Income Elasticity of Demand

Income elasticity of demand (ε_y) can be defined as the measure of the degree of responsiveness of a change in quantity demanded to a change in income of the consumer over a given period of time. This measurement is shown with the help of the following formula.

$$\varepsilon_y = \frac{\% \text{ change in quantity demanded}}{\% \text{ change in income}} = \frac{(Q_2 - Q_1) \times 100\%}{} = \frac{\Delta Q}{\Delta Y} \; x \; \frac{Y1}{Q1}$$

Q_1

$(Y_2 - Y_1) \times 100\%$

Y₁

4.7   Cross Price Elasticity of Demand

Cross price elasticity of demand measures the degree of responsiveness of demand for one commodity, say X, to a change in the price of another related commodity say Y. This happens when two commodities are related to each other. If these commodities are substitutes like tea and coffee, a rise in the price of tea will lead to an increase in demand for coffee (elasticity coefficient must be a positive sign). On the other hand, if the two commodities are complementary like petrol and car, then a rise in the price of petrol will result to a decrease in demand for cars (negative coefficient): The formula for measuring cross price elasticity of demand is

$$\varepsilon_c = \frac{\% \text{ change in the demand for comm. X}}{\% \text{ change in the price of comm. Y}}$$

4.8   Elasticity of Supply

Price elasticity of supply is analogous to the price elasticity of demand. The only difference is that we focus on the supply side of the market. It is simply defined as the ratio of percentage change in quantity supplied to the percentage change in commodity's own price. Types of price elasticity of supply are expressed in diagrams below:

Figure 29: Unitary price elasticity of supply

90

Figure 30: Perfectly price inelasticity of supply

4.9 Relationship between Price Elasticity of Demand and Revenue

In this section, we shall examine the relationships between demand, price elasticity of demand and

revenue concept respectively. When marginal revenue (MR) becomes zero, total revenue reaches its maximum and the price elasticity of demand is unitary demand. Also, when MR is positive, total revenue is increasing, hence, the price elasticity of demand is greater than one. Furthermore, when MR is negative, total revenue is decreasing, hence, the demand is inelastic. The above explanation is demonstrated graphically below;

Price
TR
MR
PED

PED > 1

PED = 1

D TR

0

0

Qty DD

MR

From the above diagram, the relationship between MR, Price and price elasticity of demand (ε_p) can be mathematically expressed as $MR = P(1 + {}^{1}/_{\varepsilon_p})$

Illustration: Given the market price and quantity demanded for two commodities:

Price of Commodity (X)	Qty DD of Commodity (X)	Qty DD of Commodity Y
2.10	2, 500	3, 000
1.30	4, 800	7, 000

Required:

Calculate

a.   Price elasticity of demand for commodity X

b.   Cross price elasticity of demand for commodities X and Y

c.   What is the coefficient of price elasticity of demand?

d.   What is the coefficient of cross price elastic of demand and the kind of goods X and Y are?

Solution:

a. $\varepsilon_p = {-\Delta Q_x}/{\Delta P_x} \ X \ {P_x}/{Q_x} = {-(4800 - 2500)}/{(1.30 - 2.10)} \ X \left({2.10}/{2500}\right)$

$$= {4830}/{2000} = 2.42$$

b. $\varepsilon_{xy} = {\Delta Q_y}/{\Delta P_x} \ X \ {P_x}/{Q_y} = {(700 - 300)}/{(1.30 - 2.10)} \ X \left({2.10}/{300}\right)$

$$= {840}/{-240} = -3.5$$

c.   Based on the answer in 'a' above, the co-efficient of price elasticity of demand is 2.42, hence it is elastic demand.

d.   Based on the answer in 'b' above, the co-efficient of cross price elasticity of demand is -3.5; hence, it is complementary demand.

4.10   Demand Forecasting

The foundation of every effective demand forecasting lies on a good strategic planning by the manager to determine the buyers' taste and preferences over time. Therefore, forecasting is defined as prediction or estimation of a future situation from the past and present events. The most successful firm is that one whose estimates of demand are nearer the actual demand.

Meaning of Demand Forecasting

Demand forecasting for a product is the technique of estimating its demand in the immediate or distant future. Demand forecast is an important basis for formulating inventory policy, production policy, marketing policy, sales strategy, manpower planning etc.

Demand forecasts are also used to plan personnel requirement of a firm. It can be classified into two categories namely; (i) Passive forecast and (ii) Active forecast. The former exists, when prediction about the future is done on the assumption that the firm does not change the course of its action while the latter mean when forecasting is done under the condition of likely future changes in the action by the firm. For example, if **MTN** does not intend to initiate any action (Advertisement, quality control, manpowerplanning etc) to influence sales in near future, then the prediction about sales by its marketing department are called a passive forecasting.

Purpose of Demand Forecasting

Usually, there are two types of forecasts: Short-run forecast and long-run forecast. The purpose of demand forecasting differs according to the type of forecasts, i.e. (a) short-term forecasting (b) long-term forecasting

a.   **Purpose of Short-term Forecasting**

It is difficult to define the short-run for a firm because its duration may differ according to the nature of the commodity. For a highly sophisticated automatic plant, three months' time may be considered as short-run, while for another plant, the duration may extend to 6 months or one year. Time-duration may be set for demand forecasting depending upon how frequent the fluctuations in demand are. The following are the benefits;

i.   For evolving appropriate production policy in order to avoid problems of over-production and under-production.

ii.   Proper management of inventories, i.e., purchasing raw materials at appropriate time, when their prices are low and avoiding over-stocking.

iii.   Setting-up reasonable sales targets.

iv.   Formulating a suitable sales strategy in accordance with the changing pattern of demand and extent of competition among the firms.

v.   Forecasting financial requirements for the short period: Cash requirements depend largely on sales level and production operations and hence, by forecasting sales and production level, financial requirements can be appropriately assessed.

b.   Purpose of Long-term Forecasting:

The concept of demand forecasting is more relevant to the long-run than the short-run. It is comparatively easy to forecast the immediate future than to forecast the distant future. Fluctuations of a larger magnitude may take place in the distant future. It is again difficult to give a precise definition of long-run. In a fast-developing economy, the duration may go up to 5 or 10 years, while in a stagnant economy, it may go up to 20 years. Moreover, the time duration also depends upon the nature of the product for which demand forecasting is to be made.

i.   Planning for a new project, expansion and modernisation of an existing unit, diversification and technology upgrading. A firm which can easily forecast the demand for a new product can better compete as compare to its rival firms and consolidate its position.

ii.   Assessing long-term financial needs: It takes time to raise financial resources, more particularly when the size of finance needed for expansion, modernisation and diversification is very large.

iii.   Arranging suitable manpower: In the long-run, techniques of production may change; and trained and skilled labour and business executives might be needed for the new type of job responsibilities. Demand forecasting can help a firm to arrange for specialized labour force and personnel.

iv.   Evolving a suitable strategy for changing pattern of consumption: The merging pattern of industrialisation, urbanisation, education, degree of contact with the rest of the world could be closely studied by a firm for forecasting demand, and this may help it to formulate a suitable strategy to produce goods in accordance with the changing needs of the commodity.

Steps Involved in Demand Forecasting

For demand forecasting to be efficient, accurate and meaningful it should proceed according to a systematic plan. Therefore, there are various steps involved in demand forecasting and they are as follows:

1. **Setting the Objective:** Clarity of objective makes the process of demand forecasting easier. The firm should be clear as to the purpose of demand forecasting. The firm may use demand forecasting for determining the rise of output, fixation of price, allocation of funds for sales promotion, mode of raising capital resources, inventory control change in product- mix, upgrading of technology etc. The approach for forecasting will differ accordingly.

2. **Selection of Goods:** Categorisation of goods facilitates the selection of approach for demand forecasting. Broadly speaking, two-fold classifications of goods may be resorted to for forecasting, vis-a-vis, (i) consumer goods and capital goods, (ii) existing goods and new goods. Method of demand forecasting will differ according to the nature of goods.

3. **Determinants of Demand:** Depending on the nature of product and nature of forecasts, different determinants will assume different degree of importance in different demand functions. In addition, it is important to consider socio-psychological determinants, specifically demographic, sociological and psychological factors affecting the demand.

4. **Analysis of Factors:** In an analysis of statistical demand function, it is customary to classify the explanatory factors into (i) trend factors, (ii) cyclical factors, (iii) seasonal factors, and (iv) Random factors. An analysis of factors is especially important depending upon whether it is the aggregate demand in the economy or the industry's demand or the company's demand or the consumer's demand, which is being predicted.

5. **Selection of Method:** Different methods could be used for demand forecasting. The scope and success of a particular method depends upon, area of investigation, resources monetary and time available for the firms, degree of accuracy required, availability of data, availability of trained personnel, etc. similarly, different methods may be needed for short term and long-term forecasting.

6. **Testing Accuracy:** There are various methods for testing statistical accuracy in a given forecast. Some of them are simple and inexpensive; others are quite complex and difficult. This testing is needed to avoid or reduce the margin of forecasting error and thereby improving the decision-making process. The absolute level of forecasting error is equal to the difference between the actual value and the forecast value. Graphically, it is measured by the vertical distance between the forecast value curve and the 45^0line (showing perfect accuracy due to coincidence of forecast value and realized value) for a particular period. If forecasts are made for more than one year, then average absolute level of error is found out by taking the arithmetic mean of the absolute values of forecasting errors of different periods.

7. **Interpreting the Results:** This is the most important step in demand forecasting. The results of demand forecasting should be very carefully analysed before any inference is drawn out of them. Forecasting is based on a number of assumptions. If these assumptions change, as they may, due to changes in political, economic, social and international factors, the revision of forecast may become inevitable.

Techniques of Demand Forecasting

Demand forecasting is a very complex exercise because it is very difficult to estimate future demand of a product under a changing condition which are motivated and influenced by multiplicity of forces. Hence, there is no single way of forecasting demand of a product. However, for the purpose of this concept, there are two broad techniques of forecasting demand namely:

i. Qualitative Techniques and,

ii. Quantitative Techniques

Qualitative Technique

Under this technique, forecast for products is not scientific in nature; and hence, it is sometimes known as survey method. Therefore, such demand forecast is based on people's judgment or opinion on consumers' interest. This method is very ambiguous thus this degenerated into different methods of sourcing quantitative demand forecasting as follow:

i. Consumer's Survey Method

ii. Opinion Poll Method

Consumer's Survey Method

In this method, demand forecasting for a product involves direct interview of the potential consumers to know buyers' view about a particular product as well as their intentions for their likely purchases at a given price in the future.

Therefore, this method is sub-divided into three methods as follows:

a. Complete Enumeration Method

b. Sample Survey, and

c. End-Use Method

a. **Complete Enumeration Method**: In this method, almost all potential users of the product are

contacted and are asked about their future plan of purchasing the product in particular. The quantities indicated by the consumers are added together to obtain the probable demand for the product. For example, if majority of households in a city report the quantity (q) they are willing to purchase of a particular commodity, then total probable demand (D_p) may be calculated as

$$D_p = q_1 + q_2 + q_3 + \cdots \ldots \ldots \ldots + q_n = q_1$$

Where q_1, q_2, q_3 etc. denotes demand by the individual households 1, 2, 3,... n. This method has certain limitations. It can be used successfully only in case of those products whose consumers are concentrated in a certain region or locality. In case of a widely dispersed market, this method may not be physically possible or may prove very costly in terms of both money and time.

b.   **Sample Survey Method:** Sample survey method is used when population of the target market is very large. Under sample survey method, only a sample of potential consumers or users is selected for interview. Consumers to be surveyed are selected from the relevant market through a sampling method.
Survey method may be direct interview or mailed questionnaire to the sample consumers. This method   is   simpler,   less   costly   and   less   time-consuming compared to the comprehensive survey method. This method is generally used to estimate short-term demand of business firms, government departments and agencies and also of the households who plan their future purchases.

c.   **The   End-Use   Method:**   The   end-use   method   of   demand   forecasting   has   a considerable theoretical and practical value in forecasting demand for inputs. Making forecasts by this method requires building up a schedule and various other sectors. Inthis method, technological, structural and other changes that might influence the demand are taken into account in the very process of estimation.

Opinion Poll Method

The opinion poll method aims at collecting opinions of those who are supposed to possess knowledge of the market, e.g., sales representatives, sales executives, professional marketing experts and consultants. Unlike consumers survey which information forces only on consumers. The opinion poll method includes:

a.   Expert-opinion method,

b.   Delphi method, and

c.	Market studies and experiments.

a.	**Expert-Opinion Method:** Firms having a good network of sales representatives can put them into the work of assessing the demand of the target product in the areas, regions or cities that they represent. Sales representatives being in close touch with the consumers or users of goods are supposed to know the future purchase plans of their customers, their reactions to the market changes, their response to the introduction of a new product, and the demand for competing product. They are, therefore, in a position to provide at least an approximate, if not accurate estimate of likely demand for their firm's product in their region or area.

Although this method too is simple and inexpensive, it has its own limitations which includes;

Firstly, estimates provided by the sales representatives or professional experts are reliable only to an extent depending on their skills, experience and expertise to analysethe market. Secondly, demand estimates may involve the subjective judgment of the assessor which may lead to over or under-estimation.

b.	**Delphi Method:** Delphi method of demand forecasting is an extension of the simple expert opinion poll method. This method is used to consolidate the divergent expert opinions and to arrive at a compromise estimate of future demand. The process is simple. Under the Delphi method, the experts are provided information on estimates of forecasts of other experts along with the underlying assumptions. The experts may revise their own estimates in the light of forecasts made by other experts. The consensus of experts about the forecasts constitutes the final forecast. The Delphi technique can be used for cross checking information on forecast.

c.	**Market Studies and Experiments:** An alternative method of collecting necessary information regarding current and also future demand for a product is to carry out market studies and experiments on consumer's behaviour under actual market conditions. This method is known in common parlance as market experiment method. Under this method, firms first select some areas of the representative markets-three or four cities having similar features, viz., population, income levels, cultural and social background, occupational distribution, choices and preferences of consumers. Then, they carry out market experiments by changing prices, advertisement expenditure and other things remain the same. The controlled variables may be changed over time either simultaneously in all the markets or in the selected markets. After such changes are introduced in the market, the consequent changes in the demand over a period

of time (a week, a fortnight, or a month) are recorded. On the basis of data collected, elasticity coefficients are computed. These Coefficients are then used along with the variables of the demand function to assess the future demand for the product.

Limitations: The market experiment methods have certain serious limitations and disadvantages that reduce the usability and reliability of this method. First a very important limitation of the experiment methods is that they are very expensive. Therefore, experimental method cannot be afforded by small firms.

Secondly, being a costly affair, experiment is usually carried out on a scale too small to permit generalisation with a high degree of reliability.

Quantitative Methods

This quantitative technique has been proved to be more reliable and characterized as value-based judgment, which is scientific in nature. It is sometimes known as statistical methods. Therefore, statistical methods are considered to be more superior to the consumer's survey technique of demand forecasting for a product based on the following reasons.

l.   In the statistical method, the element of subjectivity is minimized

2.   The method is based on scientific nature which is provable.

3.   The estimates are relatively more reliable, and

4.   The estimation involves smaller cost.

By and large, the regression technique method of estimating demand forecasting under quantitative method will be discussed as follows:

Regression Method

Regression analysis is the most popular method of demand estimation. This method combines economic theory and statistical techniques of estimation. Economic theory is employed to specify the determinants of demand and to determine the nature of the relationship between the demand for a product and its determinants. Economic theory thus helps in determining the general form of demand function. Statistical techniques are employed to estimate the values of parameters in the essential equation.

In regression technique of demand forecasting, one needs to estimate the demand function for a product.

Recall that in estimating a demand function, demand is a dependent variable and the variables that determine the demand are called independent or explanatory variables. For example, demand for cold drinks in a city may be said to depend largely on per capita income of the city and its populace. Here, demand for cold drinks is a dependent variable and per capita income and population is the explanatory variables.

For example, in a city demand for such items like salt and sugar is found to depend largely on the population of the city. If this is so, then demand functions for salt and sugar are single-variable demand functions. On the other hand, the analyst may find that demand for sweets, fruits and vegetables, etc. depends on a number of variables like commodity's own price, price of its substitutes, household incomes, population, etc. such demand functions are called multi-variable demand functions. For a single-variable demand function, simple regression equation is used and for multi variable functions, multiple regression equation is used for estimating demand function. The single-variable and multi-variable regressions are explained below.

a. **Simple or Bivariate Regression Technique:** In a simple regression technique, a single independent variable is used to estimate a statistical value of the 'dependent variable'. The technique is similar to trend fitting.

A simple regression is expressed as

$\quad$ Y= f(x) -- (1)

$\quad$ Y = a + bX -- (2)

$\quad$ Where;

'a' and 'b' are the parameters of the regression. Their values are obtained with the formulae:

$$a = \overline{Y} - b\,\overline{X}$$

$$b = \frac{N(\Sigma XY) - (\Sigma X)(\Sigma Y)}{N\Sigma X2 - (\Sigma X)2}$$

Illustration: Suppose a linear relationship exists between manpower requirement of a firm and the demand for rice produced from 2000 – 2007

Year	Rice Produced (tones)	Manpower requirement
2000	20	80

2001	24	100
2002	30	120
2003	40	140
2004	50	160
2005	60	180
2006	80	200
2007	100	160

Required:

(i)   Estimate the simple linear regression.

(ii)   Given the time series, forecast the quantity of rice that will be produced if 125 units of manpower is employed.

Solution:

(i)   The simple linear regression is expressed as

$Y = b_0 + b_1 X$

Where Y = Rice consumed

X = Manpower requirement

b_o = Intercept

b_1 = Slope of regression line.

The formula for both intercept 'a' and slope 'b' is given as

$a = \overline{Y} - b\overline{X}$

$b = N(\Sigma XY) - (\Sigma X)(\Sigma Y) / N(\Sigma X)^2 - (\Sigma X)^2$

Year	N	X	Y	XY	X^2
2000	1	20	80	1600	400
2001	2	24	100	2400	576
2002	3	30	120	3600	900
2003	4	40	140	5600	1600
2004	5	50	160	8000	2500
2005	6	60	180	10800	3600
2006	7	80	200	16000	6400

2007	8	100	160	16000	10000
Total		404	1,140	64,000	25,976

b = (8) (64000) – (404) (1140) / (8) (25976) – (404)

b = 512000 – 460560 / 207808 - 163216

b = 51440/ 44592

b = 1.153

b = 1.15

$a = \overline{Y} - b\overline{X}$

a = 1140/8 – (1.15) (404)/ 8

a = 142.5 – (1.15) (50.5)

= 142.5 – 58.08

= 84.42

Therefore, the parameters of the regression line are 84.42 and 1.15 respectively; and the regression equation is **Y =84.42 + 1.15X**

ii.   Y = a + bX

        Y =84.42 + 1.15X

        If X = 125

         Y = 84.42 + 1.15 (125)

        Y forecast = 84.42 + 143.75

        Y forecast = **228.17**

4.11   Summary

The concept of demand tells us the direction of relationship between the quantity demanded of a commodity and its corresponding price without telling us the magnitude of the relationship in specific term. Hence, elasticity moves a step further from the concept of demand which only tells the direction of relationship between price and quantity demanded to the specific numerical relationship that exists between price and

quantity demanded. From this section, we have been able to learn how to compute numerically the price, income and cross elasticity of demand respectively.

4.12   Review Questions

1. If two goods, X and Y have a negative cross elasticity of demand, then we know that they
   a. Are both inferior goods
   b. Are substitutes
   c. Each has price elasticity greater than one
   d. Are compliments
2. If two goods A and B have a positive cross elasticity of demand, then both goods are
   a. Inferior goods
   b. Substitute goods
   c. Normal goods

d. Complement goods

3. The price of pen in a certain market rises from N100 to N150 inducing a decrease in the quantity demanded per week from 60 to 40. What is the coefficient of price elasticity of demand?

    a. 0.33

    b. -0.66

    c. 0.66

    d. 0.67

4. If two goods, X and Y have a negative coefficient of cross price elasticity of demand, then they are
    a. inferior goods
    b. substitutes
    c. perfectly inelastic
    d. compliments

5. If James' demand and supply functions are given as $Q = 20 - 2P$ and $S = 10 + 3P$. What will be his equilibrium price and quantity?
    a. 12 and 6
    b. 4 and 10
    c. 8 and 12
    d. 2 and 16

Suggested answers

    1.   **B**
    2.   **D**
    3.   **D**
    4.   **B**
    5.   **D**

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THEORY OF PRODUCTION

5.0   Learning Objectives

At the end of this chapter, the students should be able to;

i.   Explain Production, its factors and production function.

ii.   Discus Law of Diminishing Return.

iii.   Explain production in the short run and long run

iv.   Highlight economies of scale and the reasons for it.

5.1   Introduction

The theory of production like the theory of consumer behaviour is basically a theory of choice among alternative ways of producing a given commodity. Here the key economic unit is the firm. A firm is a basic production unit which determines the quantity to produce of a given commodity or commodities. Where the individual consumer attempts to maximize his satisfaction given his income and the commodity prices, the firm attempts to maximize profits, given the cost outlay by the way in which it secures and combines resource inputs. Hence, the following concepts are key for an understanding of the theory of production;

Production can be defined as creation of utilities. It can also be defined as the creation of goods and services changing the forms of gifts of nature e.g., clay to blocks, planks to furniture, etc.

Consumption: Is the next aspect of economic activity that is important after production. It is the using - up of what has been produced. Economics of the last century called this "Destruction of utilities (i.e., deriving satisfaction from consuming).

Exchange: This is the way in which products produced are put into the hands of the consumers with the use of money. In the olden days, trade by Barter was the order of the day. Now, it has been replaced money.

Distribution: This is the sharing out of rewards to all the resources owners assisting in the process of production. In this case, change of ownership is involved. It also involves changing of situation or transfer

of goods and services from one place of surplus to others where they are scarce.

Basically, production can be classified into three main categories as follows:

i. **Primary Production:** This involves extraction of basic materials from land or sea. These primary activities are mostly found in agriculture, mining, quarrying, fishing and oil drilling.

ii. **Secondary Production:** This has to do with the processing of basic extraction materials into consumers and producer goods. Consumer's goods are goods which directly satisfy our wants such as food, shoes, clothes, soft drinks, and body cosmetics, stationery and so on. On the other hand, producer goods are those which do not yield satisfaction in the current period because they are needed to produce other goods; e.g., machinery and equipment. They are sometimes called capital or investment goods. Examples of secondary goods (i.e., goods produced through secondary production) are shoes from hides and skin, tyres from rubber etc.

iii. **Tertiary Production:** This refers to provision of servicessuch as banking, insurance, transport, consulting, health, legal assistance, and distributivetrade, (whole-selling and retailing) and so on. People desire some sort of satisfaction or experience improvements in their living conditions through the service offered by these professionals. It must be pointed out here that the production of goods is not complete until they reach the final consumer.

The Wholesalers and retailers serve as link between the producers and the consumers hence being called middlemen.

5.2   Factors of Production

Production certainly results from the interaction of various agents or factors. Each factor receives a share in the reward from participating in the activities of production.

Land: This includes all forms of natural resources. It is needed in all forms of production processes and has to be used in some forms of combination e.g., Cultivation of groundnut. We can see the importance of this factor because there is no suitable replacement to sow unless on the soil.

Characteristics of Land

i. It is fixed and therefore cannot be moved in nature.

ii. It generally bears fixed production costs.

iii.   It earns revenue of rent

Labour: This includes all human efforts contributing to production of goods and services.

Characteristics of Labour

i.   It is human energy / effort exerted on production process.

ii.   It earns wages or salaries.

iii.   It can be varied downward or upward in the production processes.

iv.   It bears variable cost.

Capital: Capital is the wealth set aside for the production of further wealth. This includes equipment, tools and machines used in the production process.

Characteristics of capital

i.   Capital is man-made.

ii.   They can be semi-fixed or variable to some extent.

iii.   It could be in form of money or equipment.

iv.   It earns interest or dividends.

Entrepreneur: This is the co-coordinator or organizer of other factors of production. It is a factor that bears the risk and directs the other factors.

Characteristics of Entrepreneur

The decisions about where to locate the plant, the proportion in which land, labour and capital should be employed and the extent of division of labour are taken by the entrepreneur.

5.3   Production Function

The term production function refers to the technical relationship which shows the combination of inputs used to produce a specified amount of output at any given period. This is achieved when the listed method of production process is employed based on factor - product, factor - factor, and product – product relationship that exists within the firm. A method of production factor process chosen by the firms can be technically efficient given a particular production function.

Given a traditional production function

$$Q = f(L, K)$$

Where Q= Output

L = Labour

K = Capital

If we allow labour to vary with the level of output while holding other factors constant, we are deal with the short-run and long run production function approach which is based on the law of proportions or diminishing returns. Also, if both labour and capital vary with levels of output, then the principle of laws of returns to scale holds.

5.4 Short Run Production Function with Single Variable

Under this short run, the level of output depends solely on the level of labour variability while capital level is held constant. Symbolically, it is expressed as:

$$Q = f(L, \acute{K})$$

Where Q = Output level

L = Labour (variable input)

K = Capital (fixed input)

Short Run Variations Output

The short run variations in output can only be buttressed with the basic concept of productivity as follows (i) Total product (ii) Average product and (iii) Marginal Product.

Total Product (TP)

This refers to the total output produced by the firm per unit of time. Total product varies directly with changes in variable input. Mathematically, it is expressed as the product of average product by unit of labour employed, shown as $TP_L = AP_L \times L$

Where;

TP_L = Total Product of labour employed

AP_L = Average Product of labour employed

L   = Units of labour employed

Shown graphically as:

TP

Figure 31

0

Unit of Labour (L)

TP

Average Product (AP)

It refers to total output per unit of labour employed at a specified time. Mathematically, it is the ratio of Total Product (TP) to the unit of variable inputs (workers) employed shown as:

$AP_L = TP_L / L$

Graphically as;

Figure 32

0

Unit of Labour (L)

AP

Marginal Product (MP)

This refers to an addition to total product as a result of a unit change in the variable input (workers). Mathematically, it is expressed as the ratio of a change in output to a change in labour employed and thus,

111

MP is the slope of total product.

$$MP = \Delta TP/ \Delta L = (TP_n - TP_{n-1})/ (L_n - L_{n-1})$$

Where TP_n =   Current Total Product

TP_{n-1} = Previous Total Product

L_{n-1} = Current unit of labour employed

L_n = Previous unit of labour employed

It is graphically shown below:

Figure 33

MP

5.5 Relationship between Tp, Ap & Mp

The diagram below shows some vital relationship between TP, AP and MP as follows:

i.   When TP is at peak, MP is set equals zero or intercept of the x – axis

ii.   When TP is declining, MP is negative

iii.   When all of them rise, only MP raises faster than TP and AP

iv.   All of them decline, only MP declines faster than AP and TP

v.   When AP is at maximum, MP is at decreasing rate while TP is at increasing rate.

5.6 The Three Stages of Production

An analysis of stages of production in terms of their output (productivity) enables us to examine the efficiency with which resources are employed in the production process. Three stages of production are depicted below:

Figure 34

Figure 35

STAGE I: Total and Average product are rising as factor input increases while marginal product rises to a point and starts falling. This is the stage of increasing returns to variable factors; hence the efficiency of the production is elastic because an increase in the unit of variable factor leads to a more than proportionate increase in output.

STAGE II: While total product rises and reaches a maximum in this stage average and marginal products are both declining but marginal product falls faster than the average product. This stage is known as decreasing returns to variable factor; hence the production efficiency is inelastic because an increase in the unit increases the output level insignificantly. The stage is the best stage of production as none of the output is negative. It also suggests the stage beyond which employment of factors should not exceed.

STAGE III: Under this stage, both total and average products are declining while marginal product is negative. This phase indicates negative returns to output; hence, it is negative elasticity.

5.7   The Law of Diminishing Returns

The law of diminishing returns states that as more and more variable factors of productions such as capital and labour are combined with the fixed factor of production such as land, production will increase up to a certain point after which total output will start decreasing as a result of continuous addition of variable factors while the fixed factors remain constant. The law is otherwise called the law of variable proportions. It applies to both the agricultural sector as well as the industrial sector of the economy. It was propounded by David Ricardo (1997-1823). The law with a shoe manufacturing company is given below:

Table 6

Fixed factor (Machine)	Quantity of Labour	Total Output Labour	Average Labour productivity	Marginal Labour Productivity
2	0	0	-	-
2	1	12	12	12
2	2	26	13	14
2	3	42	14	16

2	4	52	13	10
2	5	60	12	8
2	6	66	11	6
2	7	70	10	4
2	8	72	9	2
2	9	72	8	0
2	10	70	7	-2

In Table above, we illustrate how the output of pair of shoes produced varies as more workers are employed. The total output i.e., number of pair of shoes produced per week increase up to the 8th unit of labour and then starts to fall as the 10th unit is employed. This might be due to the constraints of excess of workers relative to the available number of shoe-producing machines and other tools. Here the output level 72 is both the point of diminishing average returns and the point of diminishing marginal returns. The above can be represented in form of a graph as shown below;

Practical Importance of the Law

From the above graph, we can clearly observe that initially TP_L, and AP_L was increasing up to a certain point. The TP_L curve reached its maximum at point Z when MP_L had reached zero while AP_L rises when its decline sets in.

Precisely, the law will enable a producer to take the following listed actions as they affect his costs and production.

1. Given different production stages in the above diagram, the law will enable the producer to determine the range of output over which production in economical, when to employ more workers and when to stop employing more. He will be able to know when production feasible and more profitable or otherwise.

2. The law provides an explanation to the relative low standard of living of many less developed countries where agriculture is very predominant, primitive technology is widespread and increasing number of farmers working on a fixed quantity of land. The reduction in the land holdings per unit of labour leads to declining marginal productivity which in turn leads to a fall in individual farmer's income and standard of living.

3. Finally, the law enables a producer to determine the remuneration he would offer to additional variable input employed. For instance, a profit-oriented entrepreneur would not offer a wage rate higher than the value of the marginal product to a worker.

5.8   Long Run Production Function with Two Variable Inputs

Under this long run, level of output depends largely on both inputs (capital and labour) as the variable factors. Here, supply of both inputs is supposed to be elastic such that firm can hire large quantities and even change their scale of production or operation. Thus, the changes in the scale of inputs and output operate under the Law of Returns to Scales.

5.9   The Laws of Returns to Scale

The laws of returns to scale explain the behaviour of the total output in response to change in the scale of the firms. Therefore, it describes the relationship between scale of inputs and output in the long run when all inputs are increased by some proportion. That is, a simultaneous and proportionate increase in all the inputs affects the total output at various level of output.

However, this law is premised upon the following assumptions:

1.   All factors are variables
2.   Technological changes are absent
3.   There is perfect competition
4.   Output is measured in quantities

For example, given that: $Q = f(L, K)$

Where $Q = output$

L, K = inputs of labour and capital assuming all factors are increased. However, by some proportion the resultant proportionate increase in output can result into any of the following.

i.   Law of increasing returns to scale
ii.   Law of constant return to scale
iii.   Law of decreasing returns to scale

Increasing Returns to Scale

When a certain proportionate change in all the inputs, k and L, leads to a more proportionate change in output, it exhibits increasing returns to scale. That is, the doubling of input result to more than double output. This is shown graphically below;

Figure 36

From the above diagram, the movement from point Q to M on the production line OB indicates doubling of input from 10 to 20, which leads to a more than doubled output Q1 (10 Units) to Q2 (25 units). Hence, this relationship between the inputs and output shows increasing return to scale which is attributed to economies of scale determinants.

Constant Returns to Scale

When the change in output is proportional to the change in inputs, it exhibits constant returns to scale. In other words, doubling all factors inputs from 20 to 40 leads to an equal proportionate increase in output from on M to P (Q25 to Q50) along the production line OB.

Decreasing Returns to Scale

The firms are faced with decreasing returns to scale when a certain proportionate change in inputs, (k, L) leads to a less than proportional change in output. This is demonstrated graphically in figure 5.6 where all inputs are increased by 100 percent from 20 to 40 units but output decreases by a lesser proportion from Q25 to Q10.

5.10   Concepts of Isoquants

The terms 'Iso-quant' has been derived from the Greek word 'Iso' meaning 'equal' and 'quant' meaning 'quantity' An Isoquant is a curve which shows the various combinations of two variable inputs (Labour and Capital) that a firm can employ to produce a specified amount of output. Isoquant curve is analogous to an "indifference curve" with two points of destination:

1.   An indifference curve is made for two consumer goods while an Isoquant is constructed for two producer goods (Labour and Capital).

2.   An indifference curve measures "utility" whereas an Isoquant measures output.

For example, the input of capital and labour can be combined together to get the same level of output as shown in the table below

Table 7

Combination	Units of capital	Units of labour	Total output (in units)
A	9	5	100
B	6	10	100
C	4	15	100
D	3	20	100

The above Isoquant schedule is presented graphically below:

Figure 37

From the diagram above, it deduced that Isoquant curve slopes downward from left to right like indifference curve. However, irrespective of these different combinations of units of labour and capital input employed, they yield same level of output. The points A, B, C and D are on the Isoquant curve showing for different combinations of inputs, K and L, as given, which all yield same output level of 100 units. The movement from A to D indicates decreasing quantity of K and increasing quantity of L. This implies substitution of labour for capital, while output level remains unchanged.

Types of Isoquants

Since an Isoquant is a diagrammatic representation of a production function, it follows that different production functions generate different shapes of Isoquants. The Isoquants generated by the different production functions are shown in Fig. 5.8 to Fig. 10 below:

i.   Smooth / Convex Isoquant: This type of Isoquant is generated under the Cobb-Douglas production function. The main feature is that factors like capital and labour can be combined in varying degrees to produce the same level of output.

Figure 38

ii.   Linear Isoquant: This type of Isoquant under a Linear Homogeneous production function. The

main attributes of this Isoquant are that both capital and labour can be substituted one for the other on a one-to-one basis, i.e., the substitution between the two inputs are perfect.

Figure 39

(Linear Isoquant)

iii.   Input-Output / Leontief Isoquant: This type of Isoquant is generated under Leontief production function. Such Isoquant is attributed with fixed proportion or a zero substitutability of inputs and often exists in form of right angle.

Figure 40

(Input-output Isoquant)

iv.   Kinked / Linear Programming Isoquant: This type of Isoquant is generated under Homothetic production function. It is characterized with limited substitutions. The diagram shows different production Isoquants from panels (a) to (c).

Properties of Isoquant

Isoquants have the same properties as indifference curve. They are explained below in terms of inputs and output.

1.	An Isoquant is negatively sloped. Given production function as:
2.	An Isoquant lying above and to the right of another represents a higher output level shown as:

Figure 41

3.	No two Isoquants can intersect each other just like indifference curve shown as:

Figure 42

4.	In between two Isoquants, there are un-specified numbers of Isoquants.
5.	An Isoquant is convex to the origin to fulfil the law of Marginal rate of technical substitution.

**5.11	The Principle of Marginal Rate of Technical Substitution (Mrts)**

The marginal rate of technical substitution is the slope of the Isoquant. The marginal rate of technical substitution of L for K symbolized as $MRTS_{LK}$ is the amount of capital which a firm can give up to get an extra unit of labour in order to produce the same level of output or remain on the same Isoquant. $MRTS_{LK} = MP_L / MP_K$. MRTS is well understood with the aid of the Isoquant schedule in the table below.

Table 8

Combination	Capital	Labour	MRTS$_{LK}$	Output
A	9	5	-	100
B	6	10	3:5	100
C	4	15	2:5	100
D	3	20	1:5	100

The table above indicates that maintaining output level at 100 in the B combination reduction of 3 units of capital require 5 additional units of labour, MRTS 3:5. In the combination, the loss of 3 units of capital is compensated for by 5 more units of labour and so on. The graph below can be used to calculate the MRTS from one combination to another.

Figure 43:

5.12   The Isocost Line

The Isocost is a locus of points or a line showing the different combinations of factors of productions that can be purchased from a given cost outlay or expenditure budget and the input price. The Isocost line equation

in the case of two inputs, say L and k, is expressed as $TC = P_L L + P_K K$

Where T_C = Total outlay of the firm

$\quad\quad$ P_L = Price of Labour

$\quad\quad$ L = Unit of labour

$\quad\quad$ P_k = Price of capital

$\quad\quad$ K = Unit of capital

Solving for K we have

$$K = {}^{T_C}\!/_{P_K} - {}^{P_L L}\!/_{P_K}$$

Suppose the firm spends all its total cost outlay on capital, it can only purchase T_c/P_k.

Similarly, if the firm spends all its entire total coat outlay on labour, it can only purchase ${}^{T_C}\!/_{P_L}$.

Solving for L, we have

$$L = {}^{T_C}\!/_{P_K} - {}^{P_L L}\!/_{P_K}$$

Thus, we have divided the Isocost line by preventing both points from meeting. This is shown graphically below:

Figure 44:

5.13 Determination of Least Cost Input Combination

For every firm to attain equilibrium in any competitive environment, there is need for optimal utilisation of given limited resources so as to optimize output consistent with profit maximisation.

However, the least cost input combination can be achieved from the following two perspectives.

i.   Geometrical Approach

ii.   Graphical Approach

Geometrical Approach

Through this approach, a firm maximizes its output, the total cost outlay and prices of factors, P_L and given the total cost outlay and prices of factors, P_L and P_K is attained when the slope of the Isoquant is equal to the slope of Isocost. Symbolically, expressed as

$$MP_K/MP_L = P_L/P_K \quad OR \quad MP_L/P_L = MP_K/P_K$$

Graphical Approach

The firm minimizes the cost by employing the combination of L and K where the Isoquant is tangential to the Isocost line. That is, the slope of the Isoquant and Isocost must be equal at the point of tangency shown symbolically and graphically below:

Figure 45:

Optimal output Q200 can be produced with least cost input combination represented by isocost ZR where

the isocost is tangential to the isoquant ate instead of using a higher isocost KJ to produce same level of isoquant Q200.

5.14 Economies of Scale and Problems of Growth

Economies of scale refer to the cost savings made possible as plant size (business) increases. The U-shape of the LAC reflects the law of returns to scale i.e., at first as plant size and firm output increase, average cost fall. Increasing returns result from the firm becoming large. As the plant continues to increase in size, average cost begins to rise. Economists refer to these returns and cost to increase plant size as economies and diseconomies of scale. Economies and diseconomies of scale are distinct from increasing and decreasing returns. Increasing and decreasing returns are the result of using a given size plant more or less intensively, but economies and diseconomies of scale result from changes in size of plant.

Conceptually, as a firm increases its scale of operation, it usually can employ more specialized machineries and jobs can be more specialized. Equipment can be used more efficiently. By product or the operation which might be uneconomical to recover or exploit in a small-scale plant may become significant for a large operation. A large firm is often able to obtain quantity discount and to purchase from other firms. Even political influence of economic value is more likely to be accurate to a large, rather than a small, firm. These are just few of the factors that account for the negative slope of the **LAC** curve as the scale of plant increases. Diseconomies result primarily from the fact that as an organisation becomes very large, communication and co-ordination become more difficult and time consuming, control from the top diminishes. So, when a firm has taken advantage of the gains to be achieved by going larger, managerial inefficiencies set in and the **LAC** curve turns upward with further growth, See the figure below;

Cost (₦) | Economies of Scale | Diseconomies of Scale

Figure 46:

Economies of scale can be of two categories viz: internal-economies of scale and external economics of scale.

Internal Economies and External Diseconomies

Internal economies are the advantages firm enjoyed from the expansion of its scale of production as a result of its single efforts. It is also known as the economies of large-scale production. In this case, as the size of the firm increases, there will be greater efficiency resulting in a fall in the average cost of output. These advantages can be classified into the following categories:

1.   **Technical Economies**

     A big firm can afford to use higher capital (machinery) intensive technique of production even with many workers coupled with the application of division of labour etc. All these increases output and eventually reduce the cost per unit of output. A big firm enjoys this advantage over the small firms.

2.   **Marketing Economies**

     A reasonably large firm can afford to bring its major raw materials in large quantity (bulk purchase) and enjoys reduced prices on discount basis. It can also sell in bulk and save packaging and transport

costs, have its own means of advertising on a large scale thus making it cheaper than that of small firms.

3. **Research and Development Economies**

As a result of the large size and the financial position of a big firm, it will be able to finance its own research laboratory and implement development projects. Competent and qualified specialist researchers will be employed to man it.

4. **Managerial and Financial Economies**

Obtaining loans and overdrafts from banks and financial institutions by big firms are generally not difficult which gives bigger firms an advantage over smaller firms. Sourcing for capital through public issue shares and debentures too are added advantages. Further to that, with its sound financial base, a large firm can afford to employ managerial experts in different fields more than a small firm.

5. **Other Economies**

Other advantages enjoyed by big firms are welfare economies, training economies and risk bearing economies.

Internal Diseconomies

This refers to the various problems or disadvantages which a big firm faces internally i.e., within the firm itself. The dimension of these problems can be stated as follows:

i. Impersonal relationship exists between employers and employees of a large firm than that of a small firm:

ii. Employees in large firms show negative attitude to work than their counterparts in small scale firms as a result of the difficulty embedded in controlling and supervising them.

iii. The business risk of a big firm is quite enormous than that of a small firm. For instance, in case of depression, if a big firm closes down briefly or permanently, a big loss of human, material and financial resources will be recorded.

iv. In case there is an economic and business downturn troubling a country, it is easier for a small firm to adjust to business changes than a large firm.

v.   To run a big firm on daily basis requires a lot of capital. They also need big resources to maintain its complex buildings, vehicles and equipment than a small firm.

vi.   A big firm suffers from bureaucracy and slow policy formulation and implementation.

External Economies (Advantages of Localisation) and External Diseconomies (Disadvantages of Localisation)

Localisation of Industries

Localisation of industries is the idea and practice of establishing many industries in a particular area for economic, social, geographical or political reasons. The particular area or place where these industries exist is known as Industrial estate.

Merits

Localisation brings mutual interdependence of industries on one another. Employment opportunities are created thus turning the industrial estate to be the cynosure of unemployed people. Localisation attracts subsidiary industries which help bigger ones to grow. An industrial estate automatically attracts social amenities to be provided by the industries existing there. Further to this will be research and development of efforts which will lead to improvement of quantity of goods produced. These research efforts can also lead to invention and innovation. Localisation helps to develop local labour as well as organized market like cooperative societies which can help consumers to buy goods at cheaper prices.

5.15   Specialisation (Division of Labour) and Scale of Production

Specialisation comes alive as a result of division of labour. Division of labour itself is a system of breaking down production processes into different stages so that each stage is undertaken or handled

by an individual or group of individuals. The extent of division of labour depends largely on the type and size of an industry and the type of goods and services produced. In the modern time, division of labour is more relevant and applicable in an industrial economy than in the agricultural sector. Specialisation has a broader view. It is an act of an individual or firm or even a country concentrating its resources and efforts in the production of few commodities. The advantages and disadvantages of specialisation are briefly stated as follows:

Advantages

i.   It is time saving.

ii.   It increases production.

iii.   It is less strenuous with little fatigue.

iv.   It makes the workers skilful.

v.   It makes the workers to be a specialist in their field of work.

vi.   Lot of machines is made use of.

vii.   It leads to improvement in the quality of goods.

viii.   It leads to technological and scientific innovations and inventions.

ix.   It leads to the economic use of machine and equipment.

x.   Leisure hours are invariably increased.

Disadvantages

i.   Performing the same type of work or operation every day and the time makes the work uninteresting, dull and unexciting i.e., Monotonous.

ii.   It leads to the decline of craftsmanship i.e., a situation in which Robots and machines displace human being.

iii.   It is argued too that it reduces employment opportunities.

iv.   When one becomes a specialist in an area of work, he becomes fixed and is difficult for him to move elsewhere.

v.   It makes individual and industries too dependent on one another and any problem in one area (or industry) affects the rest.

vi.   It is also argued that the method is not easily practiced in the agricultural economy. Finally, we can see that specialisation has more benefits to human kind than the demerits.

5.16   Summary

As established in this section, we have been able to see that production is the creation of utility. The theory of production like the theory of consumer behaviour is basically a theory of choice among alternative ways of producing a given commodity. A firm is a basic production unit which determines the quantity to produce of a given commodity or commodities. Where the individual consumer attempts to maximize his satisfaction given his income and the commodity prices, the firm attempts to maximize profits, given the cost outlay by the way in which it secures and combines resource inputs. The necessary factors of production were considered to give a good understanding of the input output combination.

5.17   Review Questions

Multiple Choice Questions

1. The physical and mental efforts of man used in the production of goods and services is known as

   a. Capital

   b. Entrepreneur

   c. Labour

   d. Land

2. In the long run, all factors of production are

   a. fixed

   b. Variable

   c. Marginal

   d. Minimal

3. The following services are grouped under tertiary production EXCEPT

   a. Legal services

   b. Medical services

   c. Mining

   d. Transportation services

4. Minimum wage occurs when the wage rate is fixed ………………… the equilibrium wage rate

   a. Above

   b. Below

   c. In-between

   d. None of the above

5. Dividing total variable cost by quantity of output gives

   a. Total cost (TC)

   b. Total fixed cost (TFC)

   c. Variable cost (VC)

   d. Average variable cost (AVC)

Suggested answers

1. **C**
2. **B**
3. **C**

4. **A**
5. **D**

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CHAPTER SIX

THEORY OF COST

6.1 Learning Objectives

At the end of this chapter, the students should be able to;

i.   Analyse the cost of production and costs behaviour;

ii.   Explain short run cost and long run cost;

iii.   Discuss how a firm should operate if it intends to maximize profit; and

iv.   Analyse and show how much a firm can lose by taking certain decisions.

6.2   Introduction

Every producer has to decide on what quantity of goods and services he should produce. His decision depends on its cost of production of goods and services. Therefore, for production process to take place the producer must employ factor inputs and reward them for services rendered since no output can be achieved without a corresponding input. Thus, the payments made to factors of production are costs to the producer.

6.3   Definition of Cost

Cost of production could be defined as the amount incurred by producers to hire productive factors. Cost to an economist represents an alternative sacrifice made in obtaining anything. In other words, cost is essentially an opportunity cost or sacrifice.

6.4   Classification of Cost

Explicit Cost and Implicit Costs

The term explicit cost simply means those expenses, which are actually incurred directly by the firm for acquiring the inputs for day- to- day operations. Examples include expenses paid for labour, materials, plant, building, interest on loans, transport, advertisement etc. It is also known as the direct or production costs, which are accounted for in the books of account by the firm. On the other hand, implicit costs are those cost incurred in the course of production but not accounted for or included in the books of account. Sometimes, they are known as indirect or imputed cost. For instance, the owner of the business works for a business and uses his own private car to run the business affair. Those car expenses are sometimes not accounted for in

the books of account; hence, they are known as implicit cost.

Opportunity Cost and Money Cost

The term 'opportunity cost' is known as forgone cost. That is the cost of incurring one commodity at the expense of another. Thus, opportunity cost may be defined as the expected returns from the second-best use of the resource that are forgone due to the scarcity of resources. The concept of opportunity cost is associated with the concept of economic profit. Therefore, in assessing the alternative cost or real cost, both explicit and implicit costs are taken into account and perceived by economist. By contrasts, money costs are those costs associated with the concept of actual profit. This is defined as the total monetary value incurred in the course of production of a commodity. Hence, money cost is expressed monetarily.

Out of Pocket and Book Costs

The items of expenditure that involve cash payments or cash transfers, both recurring and non-recurring, are known as out-of-pocket costs. All the explicit costs (e.g., wages, rent, interest, cost of materials and maintenance, transport expenditure, electricity and telephone expenses, etc.) fall into this category. On the contrary, there are certain actual business costs that do not involve cash payments, but a provision is made in the books of account and they are taken into account while finalizing the profit and loss accounts. Such expenses are known as book costs. In a way, these are payments made by a firm to itself. Depreciation allowances and unpaid interest on the owner's own funds are examples of book cost.

Short-Run and Long-Run Costs

These are costs at a given period of time by which at least one of the factors of production is fixed while others vary with level of output. Symbolically, it is a function of output, assuming that capital is a fixed factor and labour varies with output level, hence, it is expressed as:

$$STC = f(K_o, L)$$

Where;

STC = short-run cost

K_o = Fixed capital

L = Variable labour

On the contrary, long-run costs are those costs at a given period of time that are

associated with long run production process where all factors of production including plant sizes are variable. Symbolically, long-run cost of production is a function of output assuming that both capital and labour varies with level of output.

$$LTC = f(K_o, L)$$

Where;

LTC = Long-run cost

K_o = Variable capital

L = Variable labour

Fixed and Variable Costs

Fixed costs are those that are fixed in volume for a certain quantity of output. Fixed cost does not vary with variation in the output between zero and a certain level of output. In other words, costs that do not vary or are fixed for a certain level of output are known as fixed costs. The fixed costs include (i) costs of managerial and administrative staff, (ii) depreciation of machinery, building and other fixed assets, (iii) maintenance of land etc.

Variable costs are those which vary with the variation in the level of output. Variable costs include running cost of raw material, running cost of fixed capital, such as fuel, repairs, routine maintenance expenditure, direct labour charges associated with the level of output, and the cost of all other inputs that vary with output.

Incremental Costs and Sunk Costs

Conceptually, incremental costs are closely related to the concept of marginal cost but with a relatively wider connotation. While marginal cost refers to the cost of the marginal unit (generally one unit) of output, incremental cost refers to the total additional cost associated with the decisions to expand the output or to add a new variety of product. The concept of incremental cost is based on the fact that in the real world, it is not practicable (for lack of perfect divisibility of inputs) to employ factors for each unit of output separately.

Besides, in the long run, when firms expand their production, they hire more men, materials, machinery and equipment. The expenditures of this nature are incremental costs-not the marginal cost (as defined earlier). Incremental costs rise also owing to the change in product lines, addition or introduction of a new product, replacement of worn-out plant and machinery, replacement of old technique of production with a new one,

etc.

The sunk costs, on the other hand, are those which are made once and for all and cannot be altered, increased or decreased, by varying the rate of output, nor can they be recovered. For example, once it is decided to make incremental investment expenditure and the funds are allocated and spent, all the preceding costs are considered to be the sunk costs. The reason is, such costs are based on the prior commitment and cannot be revised or reversed or recovered when there is a change in market conditions or change in business decisions.

Historical and Replacement Costs

Historical cost refers to the cost incurred in the past, on the acquisition of productive assets, e.g. land, building, machinery, etc., whereas replacement cost refers to the outlay that has to be made for replacing an old asset. These concepts owe their significance to the unstable nature of price behaviour. Stable prices over time, other things given, keep historical and replacement costs at par with each other. Instability in asset prices makes the two costs differ from each other.

Private Costs and Social Costs

The term private costs are those costs actually incurred or paid out for by the firm during the course of production of goods and services. Ina nutshell, the private costs of a firm is the summation of both explicit and implicit costs. On the contrary, social costs refer to the total costs borne by the society as a whole due to production of a commodity by a firm i.e., both positively and negatively. Social costs include both private cost and the external cost.

Symbolically, the relationship between external costs and social costs can be expressed mathematically as:

Social cost = Private cost + External cost

Or

External Cost = Social Cost - Private Cost

For example, the operations of Oil and Gas Companies in Niger Delta of Nigeria have created both private costs and External costs. i.e., social cost to the society. The private costs are in terms of job employment creation, good standard of living and others while the external costs are the water pollution and air pollution paid for by the community, otherwise known as negative effects or externality. It should be noted that the private costs are taken into book of account while social costs are not; hence private cost is largely useful for the determination of price and output.

6.5   Cost Function

A cost function expresses the relationship between cost and output determinants. Symbolically, it shows that cost function could be expressed functionally or mathematically. The relationship between dependent variable (C) and the independent variables, such that $C = f(S, Q, PF, T)$

Where;

C= cost, f = function, S=Size of plant, Q = level of output, PF = price of factor/inputs T= Level of technology

6.6   Determinants of Cost Function

The following are the main determinants of a cost function:

1.   Size of Plant: Size of plant or the scale of operation is inversely related to cost. As the size of plant increases, costs decline and vice-versa. How much the costs will decline as a result of increase in the scale of operation depends upon the different sizes of plants.

2.   Output Level: Total output and total cost are positively related to each other. As the level of total output increases total cost also rises. This, however, does not apply to average cost and marginal cost. As the level of output increases marginal cost and average cost decline initially, and rise thereafter.

3.   Prices of Inputs: Inputs prices are again positively related to cost. Increases in the input prices brings simultaneous rise in the cost. Change in cost depends upon the relative usage of the inputs and relative changes in theory prices. For example, prices of wage goods in India have large bearing on the cost of final products.

4.   State of Technology: State and the nature of technology also influence cost. Modern technology is cost efficient and cost saving. The impact of technology on cost is generally expressed in terms of capital output ratio.

5.   Managerial and Administrative Efficiency: Managers are the controllers and monitor of the firm. Through efficient supervision, control and administration they can improve the efficiency and productivity of factor inputs and economies the cost.

6.7   Theory of Short- Run Costs

The theory of costs shows the underlying behavioural relationship between cost and its related factor inputs used in producing output at a given period of time.

Under this concept, we assume that such period of time by which some factor inputs are fixed while others vary, is known as short-run cost. Therefore, a short-run is a period of time in which output can be increased or decreased by changing only the number of variable factors such as labour, raw materials, chemicals etc. In this period, quantities of the fixed factors such as capital equipment, factory building etc. cannot be varied. Thus, in the short-run, the firm cannot build a new plant or abandon an old one. This implies that changes in output are attributed to changes in the variable input only without expansion in the capacity of its existing plant. Symbolically, the short-run cost can be expressed functionally and mathematically as $STC = f(K_o, L)$

Where; K_o = fixed factor and L = variable factor

Expressed in mathematical form, $STC = f(K_o, L)$

Therefore,

$$STC = TFC + TVC$$

WhereTFC and TVC are total fixed cost and total variable cost respectively.

Total cost of production therefore is the sum of total fixed cost and total variable cost i.e., TC = TFC + TVC

a.   Total Cost (TC)

This is defined as the total cost incurred on the employment of both fixed and variable inputs into the production of goods and services at a given period of time. Therefore, total cost is a function of output. That is total cost increases or decreases as output increases or decreases respectively.

Mathematically, it is described as the sum of both total variable costs and total fixed costs. Thus, it is expressed as STC = STFC + STVC OR STC = SATC x Q (where SATC = Short-run Average Total Cost or simply Average cost; and Q = Output level)

Graphically, it is depicted as:

Figure 47:

b.   Total Fixed Cost (TFC)

It may be defined as the total cost outlay incurred on the fixed factors of production bythe firm before production takes place at all. In other words, fixed costs are incurred by the firm regardless of the level of output. Hence, these costs remain constant irrespective of the variation in the size of its output. The total fixed cost (TFC) is defined mathematically as the difference between Total Cost and Total Variable Cost. This is expressed symbolically as

$$STFC = STC - STVC$$
$$OR\ STFC = SAFC\ x\ Q$$

Graphically, it is shown as horizontal line by nature.

Figure 48:

3.   Total Variable Cost (TVC)

This is defined as those costs which *vary* with the level of output. Hence, total variable cost is an increasing function of the level of output. Mathematically, it is obtained as the difference between total cost and total fixed cost. Thus, the total variable cost changes with changes in output in the short-run, i.e they increase or decrease when the output also rises or falls, Variable costs are also called prime costs or direct cost. It is expressed symbolically as

STVC = STC - STFC or STVC =SAVC x Q

STVC = Short-run Total variable cost

STC = Short-run Total Cost

STFC = Short-run Total Fixed Cost

SAVC = Short-run Average variable Cost

Q = Output Level

Graphically, it is depicted as

Figure 49:

Relationship among Short-Run Total Costs

Suppose a hypothetical table below shows the cost and output level of Bournvita produced by Cadbury Nigeria Plc.

Tins of Bournvita Output	Short-run (TFC)	Short-run (TVC)	Short-run (TC) = STFC + STVC
	₦	₦	₦
0	100	0	100
1	100	100	200
2	100	180	280
3	100	240	340
4	100	280	380
5	100	320	420

Table 9

In the table given above, short-run total costs are sum of total fixed costs and total variables costs. It is clear from the table that the total cost of production of tins of Bournvita increases with increase in the tins of Bournvita produced. The graphical interpretation of table above is represented by the diagram shown below

Figure 50:   Tins of Bournvita

Short-Run Average Cost

Short-run average cost can be defined as cost per unit of output. Therefore, this section focuses on the importance of short-run average cost to every manager as an aid to rational economic and managerial decisions.

The short-run average total costs consist of, (i) average fixed cost and (ii) average variable cost respectively.

 i. Average Fixed Cost (AFC): Average fixed cost is defined as cost per unit of the fixed factors of production. Mathematically, it is obtained by Total Fixed cost divided by the number of units of output produced.

It is expressed as

AFC = TFC/Q

OR

AFC = ATC – AVC

Since total fixed costs is a constant quantity, then average fixed cost falls steadily or continuously falls as output increases, therefore, average fixed cost becomes lesser and lesser, as output increases. Thus, average fixed cost curve is characterized by rectangular hyperbola on both axes; i.e., gets very nearer to but never touches either axis. Graphically, it is depicted

Figure 51:

ii. Average Variable Cost (AVC): Average variable cost is defined as the total variable per unit of output. Mathematically, it is obtained by dividing total variable costs by the number of units of output produced. Symbolically, it is expressed as SAVC = STVC/QORSAVC = SATC – SAFC

Since the average variable costs is based on the principle of variable proportions, which implies that average variable cost will initial fall as the output increases thereafter rises after the point of optimum capacity has been reached. That is, AVC will first fall, reaches a minimum and then rises. Therefore, average variable cost is characterized as a U-shaped curve.

Figure 52:

iii.   Average Total Cost (ATC): This is defined as total cost per unit of output produced. Mathematically is obtained by summing the average variable cost and the average fixed cost. Symbolically, it is expressed as: SATC = SAVC + SAFC or SATC = STC/Q

Similarly, average cost is also based on the principle of variable proportion. This give rises to average cost being a U-shaped curve; therefore, average cost at the beginning falls sharply, reaches a minimum and thereafter rises as output increases. This is depicted below as:

Figure 53:

Short-Run Marginal Cost (SMC)

The concept of marginal cost occupies an important place in economic theory. Marginal cost is defined as the rate of a change in total cost to a rate of change in number of units of output produced.

Symbolically, it is expressed as;

SMC = change in total cost/ change in output = $(TC_n – TC_{n-1}) / (Q_n – Q_{n-1})$

Where $\Delta TC = TC_n - TC_{n-1}$

$\Delta Q = Q_n – Q_{n-1}$

TC_n = current total cost

TC_{n-1} = previous total cost

Q_n = current number of units of output produced

Q_{n-1} = previous number of units of output produced

Hence, marginal cost is the addition to the total costs when output is increased from n-1 units ton number of output. It therefore implies that marginal cost is also U-shaped because it falls faster, reaches a minimum and thereafter rises as output increases. Graphically we have:

Figure 54:

SMC

SATC

0

Output

145

Q

Relationships between Short-Run Average Cost and Marginal Cost

The Table below is used to demonstrate relationship between average fixed cost, average variable cost, average total cost and marginal cost.

Table 10

Output	STFC	STVC	STC	SAFC	SAVC	SATC	SMC
Q	(N)	(N)	(N)	(N)	(N)	(N)	(N)
0	100	0	100	00	0	0	-
1	100	100	200	100	100	200	100
2	100	180	280	50	90	140	80
3	100	240	340	33.3	80	113.3	60
4	100	280	380	25	70	95	40
5	100	320	420	20	65	85	40
6	100	300	420	16.7	50	70	8
7	100	280	380	14.3	40	54.3	-40
8	100	225	325	12.5	28.13	40.6	-55
9	100	160	260	11.1	17.8	28.9	-65
10	100	100	200	10	10	20	-60

The Table above is represented graphically as shown below;

Figure 55: SAFC SAVC SATC

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Relationship between Average Cost and Marginal Cost Curves

Figure 56:

SMC

SATC

ATC
MC

0

Om

R

Output

O

An examination of the diagram above indicates that the marginal cost (MC) curve intersects the average total cost (ATC) curve from below at the minimum point. The following relationships can be deduced:

1. When MC lies below short-run average curve (ATC), the average total curve is falling. This implies that both AC and MC fall, but MC rate is greater than AC.

2. When MC lies above short-run average cost curve (ATC), the average total cost curve is rising. This implies that both AC and MC rise, but MC rises faster than AC.

3. At the point of intersection R, when MC is equal to ATC, ATC is neither rising nor falling. That is, when AC is constant, AC = MC which indicates Point of Cost Minimisation.

6.8   Why Average Cost Curve is a U-Shaped Curve

The U-shape of the AC curve is explained by the following reasons:

Behaviour of Average Fixed Cost and Average Variable Cost

AC is the sum of AFC and AVC. As the production increases, average fixed cost goes on falling. At the initial stage of production, average variable cost also goes on falling. Consequently, the aggregate of these two costs, i.e., average cost also falls as shown in the average cost diagram. In this situation the firm is making full use of its production capacity. The firm is having optimum output. If the firm produces beyond this normal capacity, no doubt, average fixed cost will continue to fall but average variable cost will begin to rise faster. Rising of average variable cost will make the average cost to rise also.

6.9   Law of Variable Proportions

The U-shape of the short-run average cost curve can also be explained in terms of the law of variable proportions. This law tells us that when the quantity of one variable factor is changed while keeping the quantities of other factors fixed, the total output increases, but after some time it starts declining. In other words, when increasing quantities of variable factors are applied on the fixed factors, the law of variable proportions operates. When the quantities of a variable factor like labour for example are increased in equal quantities, production rises till fixed factors like machines, equipment, etc; are used to their maximum capacity. In this stage, the average costs of the firm continue to fall as output increases, because it operates under increasing returns due to various internal economies. When the variable factors are increased further, the firm is able to work on that machine to their optimum. If the firm tries to raise output beyond this point by increasing the quantities of variable factors, this would lead to diseconomies of production and diminishing returns. Hence, due to the working of the law of variable proportions the short-run average cost curve is U-shaped.

6.10   Theory of Long-Run Costs

So far, we have exhausted the theory of short-run cost principles which is limited and impracticable in real sense due to the assumption of a fixed input, which resulted to a fixed cost.

The term long-run refers to a time period during which full adjustment of scale of production takes place by varying all inputs, including capital equipment and it represents a planning horizon because in it, the firm

plans its size of the plant which is appropriate to give a minimum cost level of output.

Therefore, the long-run cost is a period where all costs of production vary with the level of output, and no cost is held constant or fixed, unlike the short-run costs. The long-run cost-output relations can be demonstrated in the sub-sections with the aid of a diagram and illustration.

Long-Run Cost Output Relations: Graphical Approach

In order to draw the long-run cost output relations, we first begin with the short-run situation. Suppose that a firm having only one plant has its short-run total cost curve as given by STC1 in STC diagram, let us now suppose that the firm decide to add two more plants over time, one after the other. As a result, two more short-run total cost curves are added to STC1, in the manner shown bySTC2 and STC3. (a) The LTC can now be drawn through the minimum points of STC1, STC2 and STC3as shown by the LTC curve corresponding to each STC.

Long-Run Average Cost

Like LTC, long-run average cost curve (LAC) is derived by combining the short-run average cost curves (SACs). Note that there is one SAC associated with each STC. The curve SAC_1 in STC curve corresponds to STC1 in the diagram. Similarly, SAC_2 and SAC_3 in STC diagram (b) correspond to STC_3 in STC diagram (a), respectively. Thus, given the STC_1, STC_2, STC_3 curves in STC diagram (a), the firm has a series of corresponding SAC curves, each having a bottom point showing the minimum SAC. For instance, C_1Q_1 is minimum AC when the firm has only one plant. The AC decreases to C_2Q_2 when the second plant is added and then rises to C_3Q_3 after the addition of the third plant. The LAC curve can be drawn through the SAC_1, SAC_2 and SAC_3 the LAC curve is also known as the 'Envelope Curve' or 'Planning Curve' as it serves as a guide to the entrepreneur in his plans to expand production. Some important inferences may be drawn from the above equation. The LMC must be equal to SMC for the output at which the corresponding SAC is tangent to the LAC. At the point of tangency, LAC = SAC. Another important point to notice is that LMC intersects LAC when the latter is at its minimum; i.e. point B. there is only one short-run plant size whose minimum SAC coincides with the minimum LAC. This point is where $SAC_2 = SMC_2 = LAC = LMC$

This is represented in the diagram (Fig.57) and (Fig.58) below respectively:

Figure 57:

STC
LTC

STC₃

LTC₂

STC₂

STC₁

0   Q₁   Q₂   Q₃

Long-run Total Cost Approach

Figure 58:

SAC₃

SAC₂ LAC

STC
LTC

SAC₁

C₃

C₂

C₁

0   Q₁   Q₂   Q₃

Long-run Total Cost Approach

The above diagrams demonstrate both the long-run total cost curves and long-run average cost curve respectively. In Figure 57 above, it is revealed that just as the size of the plants increases, the short-run total costs increase from STC_1 to STC_2 and finally to STC_3. The joining of each of these short-run total costs formed the long-run cost curve, denoted as LTC in Figure 57 above. Just like LTC was derived, long-run average cost curve (LAC) is also derived by joining or combining the short-run average cost curves (SAC), from SAC_1 to SAC_2 and finally SAC_3 respectively. Therefore, the SAC_1, SAC_2, and SAC_3 curves in Figure 57 are corresponding to each of the short-run average cost of SAC_1, SAC_2 and SAC_3 curves in Figure 58 For instance, when the firm has only one plant, its average cost was C_1Q_1 at OQ_1; and when the firm increases her plant to two plants, its average cost falls to C_2Q_2 to OQ_2 and thereafter, a further change in the plants to three plants, made her average cost to rise to C_3Q_3 through an increase in output from OQ_2 to OQ_3. The above cost output relations follow the "Law of returns to scale". This implies that the expansion of a firm scale of operation from plant I and II resulted to a fall in the unit cost per output from C_1Q_1 to C_2Q_2 as well as an increase in output produced from OQ_1 to OQ_2, which is attributed to both internal and external economies of scale while the shift of plant II to III resulted to a rise in cost per unit from C_2Q_2 to C_3Q_3 and an increase in output from OQ_2 to OQ_3 shows internal and external diseconomies of scale. In a nutshell, the LAC curve derived in Figure 58 is also known as the "Envelope curve" or "planning curve" and serves as a guide to the manager on his plans to expand production to capture or economic benefit of price.

6.11 Optimum Plant Size of a Firm

The term optimum plant size of a firm exists when a firm is producing the optimum output with the optimum plant. Therefore, optimum firm can be defined as one, which produces at the minimum point of the long-run average cost curve (LAC). In Figure 58 above, it shows that the firm is at optimum size if it employs plant SAC_1 and uses it to produce OQ_1. Since the point of minimum cost of the optimum plant (SAC) coincides with the minimum point of the long-run average cost curve (LAC), i.e. SAC = LAC.

6.12 Nature and Concept of Break-Even Analysis

Profit is the most important measure of a firm's performance. Therefore, the aim of a business entrepreneur

is to earn profit. Profit is a determinant of many factors but the most important factors that determine a firm's profits are basically two factors are; costs of the manufacturer and the volume of sales. Thus, these two factors are independent because the volume of sales depends on the volume of production, which is associated with the costs of production. Therefore, the purpose of this concept is to analyse the interrelationship between cost-volume-profit, i.e. costs, revenue and profits.

Break-Even Analysis

The Cost-Volume Profit (CVP) Analysis is an important technique used to study relations among costs, revenue and profits. The analysis applies to the break-even technique of finding out the relationships between profits, costs and sales of multi product enterprise. The analytical technique used to study the behaviour of profit in response to change in volume, costs and prices is called the Cost-Volume-Profit (CVP) Analysis. Cost-Volume-Profit Analysis is a technique used to determine the usefulness of profit planning process of the firm.

Objectives of Cost-Volume-Profit Analysis

The objectives of cost-volume-profit analysis are given below:

1.   For accurate profit forecasting, it is essential to know the relationship between profits and costs on the one hand and volume on the other.

2.   Cost-volume profit analysis is useful in setting up flexible budgets which indicate costs at various levels of activity.

3.   Cost-volume-profit analysis is also useful in performance evaluation for the purpose of control.

4.   Analysis of cost-volume-profit relationship may assist in formulating price policies to suit particular circumstances by projecting the effect which different price structures have on costs and profits.

5.   Study of cost-volume relationship is necessary in order to know the amount of overhead costs which could be charged to calculate product costs at various levels of operation.

Types of Break-Even Profit Analysis

The objective of this study is to examine the relationship among total cost, total revenue as well as total profit or loss at a given level of output. Thus, economic profit of the production arises as the difference between its costs of production and the revenue earned. In economic, the profit earned by a firm is two as follows:

1.   Super Normal Profits: This profit exists when the total revenue earned from the sales of a given unit

of output exceeds its total cost (explicit and implicit cost) at a given period of time.

2.   Normal or zero Economic Profit: This type of profit arises when the total revenue earned from the sales of a given unit of output is equal to its total cost. In other words, the point at which total revenue equal the total cost is known as break-even point.

Assumptions of Break-Even Analysis

Main assumptions of Cost-Volume-Profit or Break-Even Analysis are as follows:

1. Constant fixed Costs: Break-even analysis assumes that fixed costs remain constant at each level of output.

2.   Constant Technology: Technique of production remains constant.

3.   Law of Constant Returns to a Factor: Law of constant returns applies to firm's factor of production. In other words, variable costs change at a constant rate.

4.   Identical Output and Sales: The volume of output of a firm and the volume of sales are identical.

5.   Constant Sales Price: Price of the output of the firm or sales price (AR) remains constant. Thus, change in total revenue and total output is at constant ratio.

6.   Fixed and Variable Costs: All costs can be divided between fixed and variable cost.

Break-Even Point

Break-even point is that point or level of output of the firm at which its total cost is equal to total revenue. In other words, where the firm neither earns profit nor incurs loss, because its TR = TC. It is a situation of zero economic profit. We know, total cost is the aggregate of fixed cost and variable cost i.e., Total cost = fixed cost + variable cost. Hence, break-even point refers to that level of output at which the firm neither suffers any loss nor earns economic profit. In other words, the firm incurs loss if its output is less than the level expressed by this point and it earns the economic profit if its output is more than this level. It may however be noted that by producing at the level of break-even point, a firm covers only its cost of production. Normal profit is included in the cost of production. Thus, at break-even point a firm gets only normal profit or zero economic profit.

Mathematical Illustration of Cost and Revenue Analysis

For a practical understanding of the cost and revenue analysis, we need to practice some methods of obtaining

the various variables when some other one is given.

Example 1:

Determine the total revenue, marginal revenue and profit function if average cost (AC) function is given by $-30 + 8q - 4q^2$ and the price function is $P = 40 + 10q - 5q^2$

Price function, $P = 40 + 10q - 5q^2$

$TR = PQ$

Thus, $TR = (40 + 10q - 5q^2) q = 40q + 10q^2 - 5q^3$

By differentiation of TR function above, with respect to q, you will have:

$MR = \delta TR/\delta Q = 40 + 20q - 15q^2$

Profit function $= TR - TC$

$TR = (40q + 10q^2 - 5q^3)$

if $AC = -30 + 8q - 4q^2$, then $TC = (AC)q$

Thus, $TC = -30q + 8q^2 - 4q^3$

Hence,

The profit function $40q + 10q^2 - 5q^3 - (-30q + 8q^2 - 4q^3) = 40q + 10q^2 - 5q^2 + 30q - 8q^2 - 4q^3$

Therefore, we collect the like terms and simplify to obtain $70q + 2q^2 - q^2$

Example 2

A shoe manufacturing company has run a cost analysis for its operations and determined the following. It sells every unit of its output for N10 for output up to 10,000 units; fixed costs are N30, 000 and the variables costs at N4 unit.

Using the algebraic method, what are;

a.   The firms gain or loss at the sales of 4,000 units?

b.   The gain or loss at 6,000 units?

c.   The break-even point? (Use algebraic and graphic methods)

Solution

Sale per unit P = N10

Fixed cost for output up to 1000 units = N30, 000 variable cost per unit VC = N40, 000 units.

a.   Gain or loss at sales of 4,000 units

FC = N30, 000.00

VC = (4 x 4,000) = N16, 000.00

TC = N30, 000 + N16, 000 =N46, 000

TR = (N10 x N4, 000) = N40, 000

Profit or loss = N40, 000 – N46, 000 = **-6,000** (Loss)

b.   Gain or loss at sales of 6,000 units

FC = N30, 000.00

VC = (4 x 6,000units) = N24, 000.00

TR = N10 x 6,000units

TC = N30, 000 + N24, 000 =N54, 000

Profit = TR – TC= N60, 000 – N54, 000 = **6,000**

c.   The break-even point using algebraic approach

$Q = TR = TC$

$10q = 4q + 30000$

$10q - 4q = 30000$

$6q = 30000$

$q = 30000/6 = $ **5,000** units

i.   By graphical method

Example 3

Suppose the market price of a product in a perfectly competitive industry is N60. Determine the even quantities for the TR under each of the following cost structures.

a.   Total cost (TC) = 1000 + 50Q

b.   TC = 10,000 + 30Q

c.   TC = 500 + 40Q

d.   TC = 10,000

Solution

Breakeven point occurs where TC = TR selling/market price = N60.Let quantities sold = Q

a.   TR   =   PQ

       TR   =   60Q

       TC   =   1000 + 50Q   ....by substitution

       1000 =   60Q – 50Q

       1000 =   10Q

       Q   =   **100 units**

b.   TC   =   10,000 + 30Q

       10,000 + 30Q = 60Q

       10,000 = 60Q – 30Q

       10,000 = 30Q

Q = **333.3 units**

c.　　TC = 500 + 40q

　　　500 + 40Q =60Q

　　　500 = 60Q – 40Q

　　　500 = 20Q

　　　 Q = **25 units**

d.　　TC = 10,000

　　　10,000 =60Q

　　　 Q = **67 units**

6.13　Summary

From this section, we have been able to establish that cost is an integral part of the production process. It is obvious that at some point in the production process, every producer has to decide on what quantity of goods and services he should produce. His decision depends on its cost of production of goods and services. Therefore, for production process to take place the producer must employ factor inputs and reward them for services rendered since no output can be achieved without a corresponding input. Thus, the payments made to factors of production are costs to the producer as established in this section.

Review Questions

1. If the ATC and TC of producing X units of output is N20 and N100 respectively, what is the value of X?

    A. 2

    B. 5

    C. 10

    D. 20

2. When the total variable cost of producing 3 units is N10 and the total fixed cost of producing 1 unit is N5, the total cost of producing 3 units is

    A. N15

    B. N25

    C. N30

    D. N45

3.   In the long run, all factors of production are

   A. fixed

   B.   Variable

   C.   Marginal

   D.   Minimal

4.   Economists view cost in terms of

   A. Explicit cost

   B. Marginal cost

   C. Implicit cost

   D. Money cost

5. Which of the following cost is identical to implicit cost?

   A. Real

   B. Explicit

   C. Internal

   D. All of the above

Suggested Answers

1.	**B**
2.	**A**
3.	**B**
4.	**C**
5.	**A**

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CHAPTER SEVEN

MARKET STRUCTURE

7.1 Objectives

At the end of this unit, the student should be able to;

1. explain how perfectly competitive market behave;
2. discuss what determines the firm's profit;
3. State assumptions of perfect competitive market; and
4. explain short and long-run equilibrium of a firm in perfect competition market.

7.2 Introduction

Firm's decision on what to produce and how much to produce are usually to answer the demand and supply question. Supply and demand are the two sides of the market which makes market mechanism work through the price determination. A market is anywhere buyers and sellers are in contact; consumers and producers constitute the market. However, type of available market structure usually influences firm's behaviour as regards pricing and output in order to maximise profit. The market structure is basically divided into two: the perfect (perfect competitive/competition) and the imperfect market. Both markets are looked into in details below.

7.3 Perfect Competitive Market

A perfect market can be defined as a market arrangement where numerous small economics agents deal in identical products and with freedom of resource mobility. The size of these firms is small compare to its market; therefore, it cannot influence the market price. It becomes a price-taker. In that case, what is the effect of this on the firm's profit? Every firm aims at maximising profit and this is achieved when marginal cost of the firm equals to its marginal revenue. When there is no competition, a firm can influence the market price in order to maximise its profit. However, when a firm faces competition from other firms in the industry producing the same product, the firm is forced to become a price-taker thereby, keeping its price low as determined by the market in order to survive in the competitive environment. Hence, discussions on perfect competitive market are based on assumptions that the firm is a profit maximising firm and small firms are price-taker.

7.3.1 Basic Assumption of Perfect Competition

The input and output market operate dependently so also the firms and the households. Decision of firms and households to buy and sell in the input and output markets determines the quantity of supply and demand in this market and hence the price of either input or output. Examining the operation of the whole system shows different market structure of which perfect competition is one. Classical Economists opined that assumptions underlying perfect competitive market are far away from real life scenario. They are purely theoretical; however, they agreed that these theoretical assumptions can assist in better understanding of the real-world economy. Let us examine the assumptions one after the other.

1. Large Buyers and Sellers

In perfect competition or pure competition, assumption of large buyers and sellers implies that the size of each firm in comparison to the total market is small. This is ditto for individual buyers in the market. Therefore, individual buyers and sellers only buy or sell a tiny fraction of the total exchange in the market place and by implication they have no discernible influence on the market price, in other words, they are price-takers.

2. Homogenous Products

Interaction between the demand and supply in a perfect competition market determines the price of goods and market output; hence market players have no control over price. So also, there is no comparison between the products because they are identical. Flour which is an input into bread production is identical; no buyer can differentiate whether it is from this producer or that producer.

3. Free Entry and Free Exit

In a perfect competitive market, the size of what a firm produce has no effect on the market price. Other firms are free to enter into the market while any other firm is also free to exit the market. Therefore, no firm will dominate the market or influence price thereof or drive other firm away from the market through its dominance. In essence, there is free entry and free exit into a perfect competition market.

4. Perfect Factor Mobility

Factor of production mobility in a perfect competition market is another assumption in this market. Resources such as land and labour are free to move among alternative uses. For instance, labour can move between different jobs without any constraint if that will increase its returns.

5. Perfect Knowledge of Market Condition

This assumption is the dichotomy between pure competition and perfect competition market. That is when the first four assumptions hold, such market is pure competition. However, when the fifth assumption holds, then that market is a perfect competition market. For a market to be perfectly competitive, producers and consumers must have perfect knowledge of the market condition that is, such information as price. The producer must be aware of latest price and market opportunities and adjust to the changing market conditions. Consumers must be fully aware of not only price but also market supply of the product and its quality. This is to avoid exploitation by any market player.

7.3.2   Perfect Competition and Short-Run Equilibrium

Demand and supply in the industry determine the market price, market output and firm's profit. Remember, firms are price-taker due to homogeneous products in the market. Remember also that it is absurd for a firm to sell below or above the market price. Consequently, a firm in the perfectly competitive market faces a perfectly elastic demand because if it raises its price, buyers who have perfect information of market condition will not buy its product. Also, if the firm lowers its price, it will affect its profits and market opportunities to sell at the current market price. Recall that under the discussion on demand and supply in the previous chapter we implied that 'the lower the price of a commodity, the higher the demand. As such, firms' aggregate market demand which is the industry's demand curve is downward sloping because more will be bought at lower price. Meanwhile, its supply curve is upward sloping. Therefore, short-run equilibrium under perfectly competition market is a period when there is too little time for other firms to enter into the industry. Market works efficiently because of the assumption of perfect information which gives producers and consumers full knowledge of market price, product availability and other opportunities in the market.

Having assumed that firm's objective is to maximise profit, at what level of output will a firm maximise profit? Profit which can be defined as the difference between a firm's total revenue andtotal cost.It can also be derived by taking the difference between Marginal cost and Revenue (MC and MR). This approach to Profit Maximisation in perfect competition market is achieved at an output level where the Marginal revenue is highest and Average Marginal cost is lowest. An efficient condition is that MC must intersect Demand (D), Average Cost curve from below and MC must

be equal to MR. That is, MC=MR=P. Hence, the firm in a perfectly competitive market makes supernormal profit at point at the shaded portion in the below diagram.

Supernormal Profit of a Perfect Competitive Firm

Price is not affected by the firm's output which means the firm faces a horizontal demand. Consequently, marginal revenue (MR) will be equal to price P. This is the first order condition which is a necessary condition for equilibrium that determines firm's profit maximising level of output, that is, MC=MR. However, when MR>MC, there is room for output expansion by the firm because additional or Marginal cost incur on increased unit of output is lower than additional or Marginal Revenue. Hence firm's profit can be increased.

Figure 7.2: Loss in Perfect Competition in Short-run

Area $p_1$abc represents the loss incurred by a firm in a perfectly competitive market. The sensitive question we must ask at this point is, should the firm continue to produce? If yes how long can the firm continue to survive in the market? At point $p_1$abc, what the firm is earning is less than normal profit i.e., loss. This point is known as loss minimising point. However, the firm may need to take its exit from the market at a point when the firm is unable to cover its TVC i.e., when price is below the AVC. When average revenue is lower than average variable cost and the firm is not able to pay for its fixed cost; then it is advisable for the firm to close down. It can exit the industry because it makes no economic sense to continue in business.

7.3.3   Long-Run Equilibrium and Perfect Competition

Continuation of Supernormal profit made by firms in the short run will encourage more production. Thus, they can expand their production capacity because all factors of production are variable in the long-run. This may attract new firms who may want to share from the supernormal profit in the industry. Whether the old firm increases production or the new firms come into the industry to take advantage of the excess profit, market supply curve will be affected. These actions and decisions will increase market supply, shifting the supply curve to the right. This in turn will lead to a fall in price and firms in the industry thereby forcing firms to make just normal profit because there is an optimum allocation of resources among firm's competing uses.

7.4 The Imperfect Market

Previously, we discussed about perfectly competitive market and how perfect the market is by examining the basic assumption with its benefits despite the facts that the assumptions are far from real world realities. Violation of one or two of the perfect competitive market assumptions will give birth to imperfect competition. For instance, when firms are not just making decision on output alone but also on the price i.e., they are no more price-taker. Firms can change the equilibrium price by increasing or decreasing output.

In the same vein, a monopolists firm's product has no close substitute. That is, there is only one firm in the industry, thus the firm is large enough to affect market price of its output because of its ability to enjoy economic of scale and its technological innovation that can drive growth in the long run. However, this does not mean that the firm has absolute control over the price of its product because it cannot control demand for its product. Understanding the modalities of monopolistic competition may assist us in understanding the workings of modern industrial economies. Monopoly, oligopoly and monopolistic completion are the major kinds of imperfect competition.

7.4.1   Monopoly

The word Monopoly has Greek origin 'mono' which means 'one' while 'polist' means 'seller'. Consequently, we may define monopolist as a single seller producing in its industry without any firm producing a close substitute. It is a type of imperfect competition market. A basic assumption is that a monopolist must sell all its products at the same price i.e., no price discrimination. The amount of monopolist power is determined by the substitute produced by its rival and the closeness of that substitute to its product. It then means that making excess profit is what a monopolist will appreciate especially if he can sustain such supernatural profit by creating entry barrier into the market for new firm.

The type of barrier determines the type of monopoly. Entry barrier is anything that can impede the entry of other firms into an industry such that it limits the competition faced by the existing firm in the industry. If a monopolist dominates the industry as a result of substantial economic of scale, then he becomes a pure monopolist. He determines his product price, then the market determines the quantity he can sell and vice versa. The price he fixed will determine quantity demanded so also the quantity he supply determines the price at which he can sell his output. The market demand curve is his demand curve and it is downward sloping from left to right (inelastic demand at all price level).

Short-Run Equilibrium Price and Output

As a price maker, a monopolist charges whatever price he prefers, he is constrained by his product demand curve because an increase in price will lead to a decrease in demand. Notwithstanding, monopolist strives to maximise profit at a point where marginal cost equals to marginal revenue (MC=MR). Note that the marginal revenue, average revenue and the demand curve of a monopolist are different unlike in perfect competition. When the MR is greater than MC; expansion of the output increases the monopolist revenue. In contrast when MR is less than MC; the monopolist reduces output because he will no longer enjoy increase in revenue but rather increasing cost.

Figure 59:

Supernormal profit

From the graph above, a monopolist enjoys supernormal profit at point AP_1CB. Note that unlike perfect competition market where new firms enter into the market to share the excess profit, a monopolist can enjoy this excess profit for a long time because he dominates the industry. Profit maximising output and price is the maximum profit at which consumers are ready to buy. Quantity and price maximisation add more to monopolist revenue that is MR>MC while any output beyond q_1 add more to cost than to revenue that is MR<MC. Total revenue and total cost from the above graph are Op_1CQ_1 and $OABQ_1$ respectively. However, in the long-run, monopolist will produce at the point MR=MC.

Long-Run Equilibrium of a Monopolist

There is likelihood of rival firm coming into the industry as a result of monopolist's supernormal profit. In order to distract new firms from entering the industry, a monopolist may reduce price of a unit output. This action will protect monopolist long-run profit even if that price is below short-run profit maximising price. This is called 'limit pricing'. Limit pricing occurs when a monopolist set a price limit that is below the short-run profit maximising level in order to dissuade new entries into the industry. Competing firm that wants to enter the industry will be discouraged because they will not be able to make excess profit.

Hence, despite the assumption that monopolist may enjoy excess profit in the long-run, despite the limit pricing tactic to deter new entrance into the industry; monopolist must always watch his back for potential rivals. It means monopolist is not totally protected from competitors in the long-run. Monopolist becomes inefficient when it produces lower quantity at higher price in the short-run and long-run. This is because supernatural profit is sustained in the long-run due to entry barrier. A firm under perfect competition will rather produce higher output at lower prices.

In real life, it may be difficult to determine if monopoly exists because monopoly is when there is only one firm in the industry. Monopolist create barrier to entry for new firms to keep away competitors and to enjoy supernatural profit in the short-run and long-run. Monopolist maximises profit at a point where MR=MC. However, the price of a monopolist is relatively higher at this point when compare to other firms especially under perfect competition. Supernatural profit of monopolist may be sacrificed by setting a price below short-run profit maximising price to keep new entrant away i.e., through limit pricing technique.

Sources of Monopoly Power

1. Barriers to entry through product differentiation and branding;
2. Control of key input;
3. Lower costs of production;
4. Merger and takeover;
5. Legal protection;
6. Intimidation and aggressive tactic through aggressive advertisement;
7. Price war;
8. New brand introduction and after sales services.

Perfect Competition versus Monopoly

Recall that in perfect market competition no firm is large enough to influence or control market price, firms are many in the industry hence market forces determine the market price. In contrast, the perfect market features of many firms producing and supplying the industry market demand is the opposite of monopolist feature of one firm producing the entire output of the industry. Consequently, both market structures face different demand curves. Under monopoly market structure, the quantity of output produced is restricted and a monopolist becomes inefficient because it can still increase production but will not in order to have control over market price thereby consumers are made to pay more for a monopolist's products and enjoy less of it despite the higher price. In essence, consumer surplus under monopolist is reduced considerably. This is not so under perfect competition market structure. Consumer enjoys considerable consumer surplus due to efficiency of many firms in the industry which usually eliminate supernatural profit. Monopolist safeguards his supernatural profits by reducing quantity of output produced. Looking at their graphs, monopolist charges high prices that is higher than the marginal cost i.e.>MC. Despite that consumers are ready to pay the high price which is more than what it cost to produce the output, yet, a monopolist deliberately cut production to reduce quantity supply to the market. This is referred to as allocative inefficiency.

7.4.2   Monopolistic Competition

An American Economist Edward Chamberlin developed theory of monopolistic competition in the 1930s. This theory is distinct to perfect competition in that there is product differentiation. It is also similar to perfect competition in the sense that there are many buyers and sellers; there is easy entry and exit and firms are price-makers. A classic feature of monopolistic competition is that there is only one firm in a particular location though there are many firms competing in the industry. Consequently, each firm has a certain degree of market power and hence some control over the price of his product. Monopolistic competition can be defined as a market structure where there is free entry for numerous firms selling products that are close substitutes. Some assumptions underlying this theory are:

1. There are numerous sellers with insignificant small share of the market hence his decision will most likely have no effect on his competitors. In order words, his decision has no influence on what his rival choose to do.

2. Any firm that wishes to enter into the industry is free to do so without barrier. For example, a fashion designer can join the fashion designing industry without little or no barrier. Small fashion designing shop can compete with established ones and survive the competition due to lack of economic of scale in the industry. Each firm in the industry strives to distinguish its product in the minds of their consumer since they produce slightly different product.

3. There is assumption of product differentiation, that is, each firm can produce its product in some ways different from his rivals.

4. The firm as a price-maker can raise its price to earn more profit without losing all its consumers once the firm is able to research and detect the consumer existing demands. What consumer wants and how they want them is usually reflected in variety of products available in mega and supermarkets. Only the product that is able to satisfy consumer's demand will survive the competition.

Short-run Equilibrium Price and Output

Just like we have profit maximising output at a point where MR=MC under perfect competition and monopoly so also do we have under monopolistic competition. The demand strength for a monopolistic competitive firm determines its profit in the long-run. As a result, it is possible for him to also make supernatural profit in the short run through significant differentiation of his product. The firm will choose output-price combination that maximises profit and this occur at point C. The firm will continue to increase production until marginal revenue equals marginal cost at the point touched by the arrow

Figure 60:

Short-run Equilibrium Profit of a Monopolist Competition

In the graph above the total cost equals $OABQ_1$ and the total revenue equals OP_1CQ_1 hence, the total profit is the rectangular area as represented by AP_1CB. However, a supernormal profit in the short-run is not guaranteed for a monopolistic competitive firm because market demand may be insufficient to make the firm profitable though the firm as a price-maker has some control over market price of its product. Therefore, when the demand is insufficient to earn

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profit for the firm, the firm will decrease production; charge price that is enough to cover variable costs. This is to minimise losses at an output where firm's profit will be able to cover its total fixed costs.

Long-Run Equilibrium and Monopolistic Competition

In the short run, firm earn supernormal or excess or economic profit (when MR>MC), normal profit (when MR=MC) and zero profit at loss minimising point (when MR<MC). Meanwhile, in the long run, new firm enters into the industry until firms earn normal profit or until loss minimising point is achieved. At the loss minimising point, firm will start leaving just like when entered to compete away the supernatural profit. They will exit the industry until firms in the industry start to earn normal profit again. Therefore, in the long run, free entry and exit of firms into monopolistic competition industry eliminate supernormal profits or loss. Monopolistic competition is similar in this regard to firms under perfect competition. Also, monopolistic competition is similar to monopoly in the sense that the firm's demand curve is downward sloping.

7.4.3 Oligopoly

Oligopoly is a market structure where only few firms dominate the large industry with varying degree of entry barriers based on the industry. Entry is easy in some industry and virtually impossible in others. Few firms in the industry have effect on their behaviour. Each firm is conscious of actions and decision of the other firm. Two major features of oligopoly are:

1. Industry-based entry barrier, that is, it is relatively easy to break entry barrier in some industry depending on the industry size while it is practically impossible to break entry barrier in some industry.

2. Interdependence or strategic interaction, that is, a firm business strategy depends on its competitor's business behaviour. If a firm in the industry increases its product price, the other firm must take a decision whether to also increase its own product price so as to match with the market price or to lower its product price to undercut his competitor thereby making its own product preferable. Therefore, each firm in the industry thinks of how other firms will react to its action. A firm considering change in price or product change will often consider likely reactions of its rival. This feature may make firms in the industry to collude with one another, act as if they are monopoly so as to jointly maximise the profit in the industry. If such happens it is referred to as collusive oligopoly. On the other hand, it may lead to competition such that the firm will gain a larger share of the industry's profit. In this case it is known as non-collusive oligopoly.

Competition and Collusion

Collusive oligopoly is similar to monopoly because firms in the industry cooperate with one another in taking business decision jointly, set price jointly, set output supply jointly and then divide the market among them to bring competition low in the industry. Therefore, Collusion occurs when price and quantity are explicitly fixed by the firms in the industry. Whereas tactic collusion occurs when firms fix prices and quantities implicitly. That is, without any specific agreement. This usually assists firms in the industry to quote high but identical prices that will push up the industry profit and decrease competition. When firm does this, then the oligopolist profit maximising price is very similar to that of monopolist.

Collusive Oligopoly and Industry Equilibrium

Consequently, when oligopoly colludes, they employ their mutual interdependency to maximise their profit thereby producing a monopoly output and price and in turn monopoly profit in the long run. However, collusion is illegal; explicit agreement by the firms in the industry may be breach. An explicit agreement by oligopolist is known as cartel. Cartel is a group of firms that comes together to make price and output decisions in order to maximise profit. Another form of oligopoly is the Cournot model usually referred to as duopoly. Duopoly was postulated by Augustin Cournot almost two centuries ago with these three basic assumptions:

1. There are just two firms in the industry
2. Each firm takes the output of the other firm as given
3. Both firms maximise profits.

Therefore, duopoly form of oligopoly produces output quantity that is intermediate between the expected market output in an organised competition and output set by a monopolist. However, existing duopolist seems not to anticipate how the other duopolists may react but rather react after the action of one another.

Another form of oligopoly is the Price-Leadership Oligopoly where a firm dominates the industry by setting prices for the industry's output and all smaller firms in the industry follow its pricing policy. This type of oligopoly also has three basic assumptions:

1. The industry consist of one large firm and many small competing firms

2. That dominant firm maximises profit subject to market demand constraint and smaller but competitive firms' behaviour

3. That the price-leader firm will allows smaller but competitive firms to sell all they want at the price it has set thereby the dominant firm produces and sells the different between the market demand quantity and the smaller firms supplied quantity.

In a nutshell, the smaller firms in the industry tends to constraint the dominant firm's power and a way to deal with such constraint is for the dominant firm to set temporary but artificially lower price known as predatory pricing in order to drive smaller firms out of business and then to monopolise the industry. Consequently, in a contestable market like oligopoly market, large oligopolist seems to behave like perfectly competitive market where output prices are pushed towards long-run average cost and supernatural profit discontinue.

Monopolistic competition is similar to pure competition because entry and exit are free thereby eliminating supernatural profit in the long-run. Competitive force controls the behaviours of monopolistic competitive firms. Therefore, very competitive firms survive in this market structure. In contrast, oligopoly market structure and its entry barriers prevent other input factors from responding to market profit or supernatural profit. Under perfectly competitive market structure, new firms are attracted to the industry to increase production therefore supernatural or economic profit does not persist. In consequent, monopolistic competition and oligopoly tends to prevent efficient use of resources because outputs are produced below the efficient level and pricing is usually above the marginal cost. When price is above the marginal cost, monopolistic competitor and oligopolist are making consumers to pay more for their outputs than they cost to produce. In addition, product differentiation under these two market structures produces varieties of products through innovation. However, competition may be efficient but blocks entry of new firms and this may lead to failure of market allocation mechanism.

7.5 Summary

The behaviour of firm in making decision on demand and supply has been the focus of this unit. Assumptions of perfect competition market are far from real world realities. However, some of these features have their own benefits in real life scenario. Take for example, the situation of optimal or least cost where price is equal to marginal cost, at this point there is efficient allocation of resources among competing use. Likewise, in the long-run, a firm will continue to produce at least cost for any given technology it employs. In addition, at a point when firms are making supernormal profit, more firms will come into the industry and in the long-run all inefficient firms may not be able to make even

normal profit and may be driven out of the market. That is only the fittest will survive in the market. This situation is an encouragement to efficiency by firm. Market structures are characterised with smallness or largeness of the firm in the industry and entry and exit barrier for new firm that may like to compete away positive profit earn by existing firm. Achieving the latter depends a great deal on availability of close substitute(s) to what the existing firm is producing and the degree of control of existing firms on the market price of the product in the industry.

A monopolistic competitive firm will earn short-run profit at a point where MC=MR. Its marginal revenue curve lies below its demand curve and its total cost is below the total revenue. The average cost is below the demand curve. However, in the short-run when the market demand is insufficient to cover its average cost and the average cost is above the demand curve; the firm suffers short-run losses but since the firm must earns profit, it earns profit that can only cover its total fixed costs. For that reason, in the long-run, as new firms enter the industry to compete away the profit, close substitutes come into the market and supernatural or economic profit is eliminated at a point where the demand curve tangent with the average cost curve. Under oligopoly market structure a necessary require is that a firm should be large and well established enough to gain some degree of control of the output price in the industry. All forms of oligopoly market structure laid emphasis on interdependency. Like monopolistic competition, they aimed at product differentiation in order to increase product price without losing all their consumers.

In perfect competition market structure, there are many firms in the industry with freedom of entry and exit without cost. In monopoly market structure, there is only one firm in the industry. Barrier entry is very strong so also are tactics in order to eliminate competition and to protect monopolist. New firm may have cost advantage that a monopolist has due to economic of scale. Profit maximising point for firms under perfect and monopoly market structure is the same i.e., where MC=MR. However, a monopolist will achieve this equilibrium at highest possible price relative to marginal cost than for firms in perfect competitive market.

7.6 Review Questions

1. A monopolist can not
   a. Charge different prices in different market
   b. Enjoy excess profit at all times
   c. Fixed price
   d. Fix output and price at the same time

2. In economics, a market is defined as a meeting point for

   a. buyers and sellers of any product

   2. two parties

   3. two friends

   4. buyers to argue with sellers

3. An imperfect market in which there is only on seller of a commodity is called

   a. Monopsony

   b. Monopoly

   c. Monopolistic competition

   d. Duopoly

4. Which of the following is an important feature of an imperfect market?

   a. Large number of buyers and sellers

   b. Free entry and exit

   c. Perfect mobility

   d. Heterogeneous products

5. Perfect competition operates under which of the following?

   a. Free market

   b. Duopolistic market

   c. Pure market

   d. Monopolistic market

6. The supply curve of a perfectly competitive firm is derived from its

   a. Average cost curve

   b. Average variable cost curve

   c. Total cost curve

   d. Marginal cost curve

7. Under a perfect competition, the equilibrium requires

A. MR=MC

B. MR>MC

C. MR=AC=AR

D. MR=MC=AR=AC

Suggested Answers

1. D
2. A
3. B
4. D
5. C
6. D
7. A

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CHAPTER EIGHT

MARKET FAILURE

8.1 Learning Objectives

At the end of this chapter, the students should be able to;

i.   Define the concept of market failure;

ii. Identify and explain the types of market failure; and

iii. Understand and identify the appropriate public policy measures provided by various economies of the world to solve this failure.

8.2 Introduction

Different schools of thought have advanced reasons for different agents managing an economy. These reasons are contained in the various economic systems. The understanding of the market or capitalist economy will enable one to know the basis of market failure. Keynes has, therefore, advocated government intervention as the panacea of solving the problem of market failure. It needs to be noted, however, that there is no single economic system that has the solution to all the economic problems of the world. Mixed economy has always been presented as the optimal economic system for resolving economic problems of the world.

8.3 Concept or Meaning of Market Failure

Market failure is any market performance that is judged to be less than the best possible performance. Market failure means that the best attainable outcome of the workings of a market system has not been achieved; it does not mean that nothing good has happened in the market.
It applies to the failure of the market system to achieve efficiency in the society's resources. It also refers to the failure of the market system to serve social goals other than efficiency, such as achieving some desired distribution of income or preserving our value system (Lipsey and Chrystal, 1995:418).

8.4 Causes of Market Failure

1. **Efficiency Problem:**

   It should be noted that inefficiency necessarily means that the market system is not working at best. Inefficiency includes the following:

   a. Externalities (third party or neighborhood effects): private cost/benefits versus social

cost/benefits.

b. Absence of property rights/monopoly.

c. Public (collective consumption) goods.

d. Information asymmetries.

Externalities (Third Party or Neighbourhood Effects)

Private Costs/Benefits Versus Social Costs/Benefits: Externalities means the negative or positive effects an action taken by the two 'parties' in an undertaking has on the "third" party or the neighbor that is within the environment of the transaction or undertaking. In other words, externalities are the costs or benefits of a transaction that are incurred or received by other members of the society but not taken into account by the parties to the transaction. They are also called 'third party or neighbourhood effects", because parties other than the two primary participants in the transaction (for example, the consumer and the producer) are affected (Lipsey and Chrystal, 1995).

Private costs in these externalities involve the expense made or the sacrifice or opportunity cost of the action being taken. On the other hand, the benefits obtained are the gains that are harnessed in the alternative costs of action. Also, the social costs are the negative effects such actions have on the third party or neighborhood while the social benefits are the advantages the neighbours or society derives from the decision of the private individuals.

In summary, externalities, whether harmful or beneficial causes market failure such that marginal private revenue differs from marginal social cost, causing output to diverge from its socially optimal level (Lipsey& Chrystal, 1995).

Absence of Property Rights/Monopoly: According to Lipsey and Chrystal (1955), a common property resource is a resource that is owned by no one and may be used by anyone. For example, the fish in the River Niger or River Benue in Nigeria do not belong to anyone. Everyone is free to go to either of these rivers to catch fish without the permission of the monopolist(s). But this 'freedom' is curtailed when monopoly tendency of control of who comes into either of the rivers is given to some individuals or corporate bodies to the extent that nobody can freely go to either of these rivers to catch fish without the permission of the monopolist(s).

This monopoly tendency, an integral part of market characteristics, hinders the existence of the common property right, thus creating the absence of such property right overtime. It is, thus, a case of a type of market failure.

Public (collective consumption) Goods: A public or collective consumption goods is the good for which the total cost of production does not increases as the number of consumers increases. It is the good that is not exclusive (made private) in consumption, in such a way that individuals can

consume it simultaneously. We have pure and impure public goods. The first relates to a situation in which the consumers do not pay any price on it in the course of its consumption, while the impure has an element of minimal price.

Examples of public goods include national defense (which no individual pays for), radio and television broadcasts, which the public listen to freely and without paying for it. Public goods cause market failure in that competitive atmosphere is not maintained and people can consume them without paying for them (a case of free riders), and this brings about inequality between marginal rates of substitution (MRS) and marginal rates of technical substitution (MRTS).Also, since everyone is free to consume the product without paying for it, the market system will not produce efficient amounts of the public goods, because once the good is produced, it is either inefficient or impossible to make people to pay for its use.

Information Asymmetries: Lack of information about the types, nature, quality and cost of a product makes the producer to carry out inefficient production. Information asymmetry is a violation of one of the essential assumptions of perfect market situation that there is perfect knowledge of the product. Since vital knowledge about product is, therefore, lacking to the consumer, it creates an inefficient production, since the producer dictates what type and quality of the product he brings to the market.

2.   Problem of Income Distribution

Income distribution in the market economy does not promote equity; rather it emphasizes efficiency and the importance of the job to the employer. On this note, some individuals earn better or more than others who are their counterparts within the same organisation or across organisations. Also, cases of penalties may be given to people for wrong doing to the extent that they lose their jobs, and by extension, their source of income. Their families, therefore, suffer financial lack, hunger, deprivation, etc. All these problems arise due to the working of the market system as against social and trade unions' intervention in the affairs of workers.

3.   Huge capital outlay of indivisible projects

There are some products/projects that need huge amount of capital to invest in them. If the private sector investor undertakes such projects, it will be difficult for such investor to recover his/her capital and make profit because the unit prices of the products will be too costly for individuals.

Such projects as roads network, national electricity supply, educational institutions for the poor, etc are examples here. In this type of investment, the market system cannot work efficiently; hence it fails to address the much-needed social welfare to the citizens of an economy.

8.5 public Policy and Market Failure: Modifications on the Market Failure

Government policy measures to solve the problem of the above noted market failure include the following:

i.   Effect of taxes and subsidies

ii.   Maximum and minimum price controls

iii.   Production quotas

iv.   Merit goods

v.   Public good; and

vi.   External costs and benefits

We would now take one of these measures and discuss it in order to drive home the understanding of government policy measures on the modifications of market failure as follow

Effects of Taxes and Subsidies: We will discuss this measure with the aid of the data in the table below:

Price (₦), Thousands of tons of carrot, price (₦) =value of tax

Before tax	supplied per month	after tax (₦30)
20	5.0	50
40	46.0	70
60	77.5	90
80	100	110
100	115	130
120	122.5	150

From the above table, we can:

1.   Determine the respective prices after the imposition of the N30 tax rate

2.   Demonstrate in a single diagram the cases:

   i.   Before tax

   ii.   After tax, and

3.   Identify the form of price elasticity the above information belongs/relates to.

Note: The effect of a tax on a commodity is to shift every point on the supply curve vertically upward by the amount of the tax while considering a case where the quantities of the commodities supplied remain constant.

It needs be noted, however, that what happens to price depends on demand and supply of the product. We will, therefore, show the case of existing demand and supply curves, with their equilibrium conditions, before the imposition of tax as follows:

Price of carrots S_1

D

S

S_1

S

D

Qtv

Figure 61: Price after Tax: The effect of a tax of N30 per ton on the equilibrium price and quantity of carrot.

In general case, we would state that as long as the demand curve slopes downward and the supply curve upward, the imposition of a tax will raise the price paid by producers in both cases by less than the amount of the tax; and the consumers will bear part of the tax while the producer bears the remaining part. The degree of the bearing depends on the degree of the price elasticity.

8.6 The Government Role in Different Economic Systems

The Role of Government in a Capitalist Economy

The private sector plays the dominant role in decision making in the capitalist economy. The role of the government within this system is to legislate on social matters and provide the enabling environment for the private sector to thrive. In doing this, it provides social infrastructure, security, rules and regulations for promoting the rule of law, and takes up development projects which the private sector would not have normally provided for.

Also, in such areas that we have market failure, the government comes in to rectify such. These include prevention of the provision of harmful goods like the war against substandard products

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and fake drugs in Nigeria by NAFDAC, provision of huge capital outlay products and social goods, problem of inequalities of income distribution, among others.

The Role of the Government in a Socialist Economy

The government uses the central direction and planning method in the socialist economies. By centrally planned or controlled economy, we mean the type of economy in which all the decisions about the allocation of resources are taken by the central authorities, and in which firms and households produce and consume only as they are ordered respectively. This type of economic system is sub-divided into two: the market socialist system and the pure socialist system.

The Pure Socialist System

The pure socialist system is the counterpart of the pure market system. It is found in the economies of countries like Russia and China.

The Characteristics of the Pure Socialist System

The characteristics of the pure socialist system are:

1.   Central planning of economic activity replaces the market mechanism of the capital system.

2.   The organisational structure of the system is like a pyramid. On top of the pyramid, we have the central planning commission, which is responsible for making decisions on what to produce and how it will be distributed. On the bottom, we find hundreds of thousands of individually operated but publicly owned firms whose main task is to carry out the directives and fulfill the production targets set from above.

3.   Prices are centrally determined. It is not determined by the forces of supply and demand.

4.   There is the utilisation of comprehensive planning, which can be national or regional. Such plans normally draw up production targets of the economy. In addition, the resources required to meet the targets are outlined. Resources needs and availabilities are brought into balance by central direction rather than the forces of demand and supply at play in determining such.

5.   This system has been very attractive to developing countries, because the system is reputed for high rate of economic growth and this is supported by the case of the former USSR, which became an advanced country within few decades of adopting this method.

8.7 The Market or Developed Socialist System

In the market socialist system, we have a situation in which the efficiency of the market mechanism is combined with the centralized planning of the socialist system. The system tries to combine the best of capitalist system with the predominance of the socialist system. An example of the economy with this type of system was the former Yugoslavia. In conclusion, the central planning system has been well developed (to an extent) in the advanced countries. But we will now go further to look at a system that combines the capitalist system and the socialist system, and that is the mixed economic system.

The Role of the Government in a Mixed Economy

The mixed economic system is the mixture of the capitalist system and what of socialist system at varying degrees. We shall now look at the characteristics that are associated with this system as below:

Characteristics of the Mixed Economic System

The Mixed Economic System exhibits certain characteristics, which are:

1.   Most developing countries are mixed economy, except Cuba, North Korea, etc. These countries include Nigeria, The Gambia, Brazil, Kenya, Mexico, Taiwan, South Korea, Benin, Tanzania, Zaire, India, Algeria, Libya and Egypt, among others.

2.   There is varying degree of private and public ownership of resources. There is substantial public participation in economic activities.

3.   Resources in some cases are owned jointly by public and private interest, e.g. banks and some companies.

It is difficult to place a dividing line between the socialist and capitalist systems in the real world. All the economies are mixed in one way or the other depending on the prevalence of the capitalist system or the socialist system in the economy concerned.

8.9 Summary/Conclusion

In summary, this chapter provided the basic meaning of market failures and the relationship between market failure and mixed system.

8.10 Review Questions

1. Who determines how resources are allocated in a planned economy?

    A. Consumers

    B. Managers

    C. Shareholders

    D. The government

2. Which of these is an example of a free good

    A. Dinner you did not pay for

    B. Money given to you by your parents

    C. Water in the ocean

    D. The house you inherited from your grand father

3. A system in which the means of production is held in trust for the people by government is known as

    a. Capitalist economy

    b. Mixed economy

    c. Socialist economy

    d. Substance economy

4. When a country's natural resources exceed its population, such a country is/has

    A. Under populated

    B. overpopulated

    C. Optimum population

    D. Population explosion

Suggested Answers

                         1. D

                         2. C

                         3. C

                         4. A

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CHAPTER NINE

THE THEORY OF DISTRIBUTION

9.1 Learning Objectives:

The overall aim of this chapter is to expose the students to the theory of distribution, in terms of reward to the factors of production.

At the end of the chapter, the students should be able to;

    i.   define Labour Market, explain demand for and supply of labour, and the factors affecting them;

    ii.   identify factors affecting efficiency of labour and those ones affecting geographical mobility of labour;

    iii.   define and analyse the concept of marginal productivity;

    iv.   understand how the demand for supply of the factors of production relates;

    v.   know the effects trade union activities have on the demand for and supply of factors, especially labour input of production; and

    vi.   discuss the theories of interest, economic rent, transfer earnings as respectively propounded by Pareto and Ricardo respectively.

9.2 Introduction

Labour is defined as all forms of human efforts put into or utilized in production. In other words, it refers to man's mental and physical exertions generated in the process of production. Market, on the other hand, is defined as a unit or place or any means of communication whereby the sellers and buyers can communicate with one another, to exchange goods and services at prices determined by the market forces. Labour market is defined, therefore, as a market in which buyers and sellers of labour are in close contact during which the wages and other conditions of services are determined and agreed upon. Labour is the factor of production which is usually bought and sold in the market.

9.3 The Concept of Labour Force

Labour force may be defined as the total number of persons available to supply the labour for the production of economic goods and services. In other words, it is the total number of people of working age in a country who are able and willing by law to work. It is the active or working population and it comprises of all persons

who have jobs and those who are seeking for jobs in the labour market. They are normally found between the age brackets of 18 to 65 years. Working population varies from one country to another. To be a member of the labour force, one must be of a working age (15 - 65), be able-bodied i.e., not handicapped either mentally or physically, and must be willing to work. Persons that are not members of the labour force include;

i.   Children of school age (0 -16 years)

ii.   The elderly (above 65 years)

iii.   The handicapped (either physical or mental)

iv.   Persons even though they are able-bodied but are unwilling to work.

9.4   Concept of Demand for Labour

Demand for labour may be defined as the total number of workers employers are willing and ready to employ or hire at a particular time and at a given wage rate.

The demand for labour is a derived demand, because labour is not required for its own sake but for what it can help to produce.

Factors Affecting the Demand for Labour

1. **The Size of Market:** The size of the market for goods and services produced determines the demand for labour. The larger the market, the greater the production of goods and services and the higher the demand for labour to produce the required goods and services.

2. **Number of industries:** The higher the number of industries that produces the needed goods and services, the higher the demand for labour.

3. **Wages Rate or Price of Labour:** The demand for labour by employer depends on the price at which labour is offered for sale (by workers). If workers are willing to take a low wage rate, the demand for labour will be high.

4. **Availability of other factors of production:** If other factors of production such as land and capital are available in large quantity to produce the required goods and services, there will be a corresponding high demand for labour.

5. **Efficiency of Labour:** If the efficiency of labour is high, there would be high propensity for employers to engage more labour and vice Versa.

6. **Demand for Goods and Services:** The demand for goods and services in a country can stimulate and increase the demand for labour.

7. **Nature of industries:** The nature of industries - whether it is capital- intensive or labour-intensive will determine the demand for labour. The labour- intensive industries will lead to high demand for labour.

8. **State of employment:** The state of employment determines the demand for labour. If the economy has reached full employment, there will be little of no demand for labour but if there is under-employment, there will be need to demand for more labour.

9.5   Concept of Supply of Labour

Supply of labour may be defined as the total number of people of working age offered for employment at a particular time and at a given wage rate. In other words, supply of labour can be referred to as the services of labour available in the labour market.

Factors Affecting the Supply of Labour or Size of Labour Force

1. **Size of the population of a Country:** The larger the population, the greater the number of labours to be supplied.

2. **Official School Leaving Age:** If the school leaving age is low, the proportion of labour force will be high.

3. **Retirement Age:** The age of exit in public employment will determine the labour force. The higher the retirement age, the more the supply of labour and vice versa.

4. **Pursuit of higher education:** Many people in their pursuit of higher education go beyond the official entry age into the labour force.

5. **Age Structure of the Population:** This structure of a country's population is a significant determinant of the size of the labour force. The lower the dependant people, the higher the supply of labour and vice versa. In other words, the labour force will increase in a country with a greater number of people between the ages of 15 and 65 years.

6. **Role of women in the society:** In some societies, women are usually prevented from engaging in gainful employment because of religious belief, social and cultural factors and this affects the size of labour force.

7. **Number of working hours and Working days:** The number of working hours per day and the number of working days in a week or a year also helps to determine the supply of labour.

8. **The Number of Disabled:** When the number of disabled persons is high especially within the working population, the supply for labour will be low:

9. **The number of people unwilling to work:** There are certain numbers of able-bodied people who are also between the age bracket of 18 and 65 years but are unwilling to work. If their population is high, it will affect the size of supply of labour.

10. **Migration:** The rate of migration can also affect the size of labour force. If the rate at which the working population leaves a country is higher than the rate which people come, it will lead to reduction in the supply of labour.

11. **Trade union activities:** The activities of trade union may also affect the supply of labour. For example, when a long period of training is imposed on a certain trade, this may discourage people from engaging in such trade of profession leading to a reduction in the supply of labour.

12. **Government Policies:** Certain government policies can affect the supply of labour. E.g., specific laws are made to exclude children and women from working in ministries. This can reduce the supply of labour to that area or field.

9.6   Efficiency of Labour

Efficiency of labour may be defined as the ability of labour to increase output without increasing the quantity of labour. Increase in efficiency is usually expressed in terms of increase in output of labour within a shorter period of time without any fall in the quality of goods and services produced.

Factors Affecting Efficiency of Labour

1. **Education and training:** The level of education and training received by workers will go a long way towards increasing the efficiency of labour. A well-educated or well-trained worker is in a position to increase efficiency in his work.

2. **Level of Technology:** High technology will increase the efficiency of labour.

3. **Efficient management:** When efficient management is in place in any organisation, it will go a long way towards improving efficiency of labour.

4. **Personal skill of the worker:** if a worker possesses a natural skill of doing a particular job, his word becomes efficient.

5. **Attractive wages:** When the salary or wage of worker is attractive, it will boost or promote the efficiency of the worker.

6. **Weather condition:** The physical or weather conditions in a work place can affect the efficiency of

labour. Hot weather lowers efficiency of labour, cool weather or environment increases efficiency of labour.

7. **State of health of Worker:** A healthy worker is more likely to be more efficient than a worker who is unhealthy.

8. **Efficiency of other Factors of Production:** The efficiency of other factors of production like land, capital and entrepreneur when combined with efficient labour will increase productivity.

9. **Intelligence of the Workers:** Some workers are highly intelligent, while others are not. Highly intelligent workers rarely make mistakes.

10. **Conditions of service:** An improved condition of service like the availability of transport allowance, bonuses, overtime, etc. will help boost efficiency of labour.

11. **Application of division of labour:** The application of division of labour and specialisation in any organisation can result into the efficiency of labour.

12. **Level of commitment and attitude:** The level of commitment and attitude of a worker can affect the efficiency of labour. When a worker is highly committed to his job, this will result in efficiency of labour.

13. **Security of job:** Efficiency of labour can be increased if a worker is sure that his job is secured.

14. **Promotion:** Frequent promotions of workers in any organisation can lead to increase in efficiency of labour.

9.7 Mobility of Labour

Mobility of labour may be defined as the ease with which labour can move from one geographical area to another or from one occupation to another. Labour is said to be mobile when workers find it easy to move from one geographical area to another or to change jobs.

Geographical Mobility of Labour:

Geographical mobility of labour refers to the ease with which workers or labour can move from one geographical location to another in pursuance of the same occupation or changing occupations. When a worker moves from one town to another, e.g., from Port Harcourt to Jos, without changing the job he is doing, we say that he has moved geographically. An accountant in Port Harcourt may also move to Jos to continue to work as an accountant.

Factors Affecting Geographical Mobility of Labour

1. **Cost of Transportation:** A worker may be able to move from one location to another if the cost of transportation is low, but when it is high, movement becomes difficult.
2. **Accommodation Problems:** Workers may not be able to move to new location where there are accommodation problems.
3. **Climatic conditions:** it becomes very difficult for them to move to such area.
4. **Marital Status:** People who are married with children do find it difficult to move from one place to another; considering the children's schools and other relocation inconveniences.

Occupational Mobility of Labour

Occupation mobility of labour refers to the ease with which a worker or labour moves from one occupation or job to another. When a musician becomes a footballer, he has changed his occupation.

Factors Affecting or Obstacles to Mobility of Labour

1. Cost and length of training: Some professions are costly to train in terms of time and money, e.g., the medical profession.
2. Ability or attitude: Some jobs require natural ability or talents and those that are not gifted cannot fit into such jobs e.g., musician.
3. Employment Prospect/Age: After a certain age (e.g., 45 years) employers will not engage such people. They have poor prospects for an employer as they only have short working life.
4. Trade Union/Professional association Restrictions: Some professional bodies (e.g., accounting, law) require certain qualifications before admission.
5. Personal Reasons: Personal preference for a particular job and dislike for available alternatives may discourage movements.
6. Families and Friendly Ties: Friendly ties at times make it difficult for some people to change jobs. Also, some families are known to be associated with certain profession, and it will become difficult for a family member to pull out of that profession.
7. Political instability/Religion: Whether there is political instability or religious crises; it will be very difficult for labour to move.
8. Wage rate: Labour will move if there is a wide margin in salaries but if it is low, labour may not move.
9. Condition of service: Apart from salary, the conditions of service in a working place e.g., bonuses, overtime, staff bus, car and housing loan, etc. when present, will encourage labour not to move.

10. Discrimination: There may be discrimination of sex, colour, age, religion, etc. this can affect occupational mobility of labour.

9.8   Concept of Wages

Wages may be defined as the payment made to labour for the services they render in production. In other words, wages refer to the rewards paid for the services of labour either per hours, per days or per units of goods produced. They are sometimes referred to as rewards to 'casual' workers. During the discussion of factors of production, it was stated that the reward for labour is wages. Wages are the prices of labour.

Types of Wages

l. Nominal wages: Nominal wages refer to the total amount of money paid to a labourer at a particular period of time. It is based on stipulated period of time. It is measured in monetary terms.

2. Real wages: Real wages refer to the total amount or quantity of goods and services the labour can use his money to buy. Real wages refer to the purchasing power of labour rewards.

Time rate system

The time rate system is the type in which wages paid to labour are based on the number of hours worked. Time rate wages apply to workers whose wages are paid on hourly, daily, forth nightly or monthly basis.

Situations where Time Rate System can be applied

1. Where the quantity of work done is not easy to measure.
2. Where the quantity of work done is more important than its quality
3. Where employees will require-supervision of the employer to get the full value of their wages.
4. Where certain jobs may not be done for a longer period of time due to their health implications.
5. Where incentives to workers are not necessary

Price rate system

The price rate system is concerned with the wages paid to labour based on the work done. In this system, payment to workers is related to the work done or output. The output of the worker is measured and he is accordingly rewarded.

Situations where Price Rate System is applied

1.   Where supervision may not be necessary
2.   Where output can easily be measured.
3.   Where large scale production is expected.
4.   Where incentive to workers is encouraged.

9.9 Factors Responsible for Variation in Wages

The factors responsible for the difference in wages are as follows:

1. Difference in cost of training: Professions that are costly or expensive to execute in the course of training tend to attract higher wages than those with cheaper cost of training.

2. Differences in period of training: Some professions attract longer periods of training, e.g., the medical profession, and therefore attract higher wages.

3. Skill needed at work: Some professions that require special skills during training tend to have higher wages than those that do not require any skill.

4. Activities of trade unions: Some trade unions determine what their members have to be paid, e.g., chartered accountants, HR Practitioners and this tends to make them earn high wages.

5. Forces of supply and demand: When the demand for a particular labour is higher than the supply, such labour tends to receive higher wages.

6. Level of productivity: It is assumed that in an ideal situation, the more a worker becomes productive, the higher his wages will be and viceversa.

7. Difference in hours of work: It is also assumed that in an ideal situation, the longer the number of hours worked, the higher the wages, especially when the time rate system is used.

8. Level of risk associated with a job: Certain jobs, e.g., piloting, petroleum engineering, etc. involve greater risks when in operation and-therefore are associated with higher wages.

9. Entry qualification: Certain profession which requires tough qualification and lengthy years of training, e.g., medical doctor, HR Practitioners, lawyers etc. tend to attract higher wages while those with little or no entry qualifications tend to receive lower wages.

10. Prestige associated with jobs: certain jobs attract high prestige from the society, e.g., medicine, law, engineering, personnel, management etc. and they therefore attract higher wages while those with low or no prestige receive low wages.

9.10 Determination of Wages

Wages can be determined through the following: (a) forces of demand and supply in a market economy (b) government activities and policies (c) activities of trade unions.

The Forces of Demand and Supply in a Market Economy

The wages of labour in a market economy can be determined through the forces of demand and supply. In a competitive labour market, there are so many employers and unorganized employees resulting in a situation where a single employer or employee cannot influence the wage rate either by refusing to be employed or to employ. Wage rate in a competitive labour market can be determined in the following manner:

(i) When the supply of labour exceeds the demand, the rate will fall.

(ii) When the demand for labour exceeds the supply wage rate will rise.

(iii) When the demand for labour equals the supply, wage rate will be favourable to both the employer and the employee. The determination of wages by demand and supply can be demonstrated by the graph below:

Figure 62:

Quantity of Labour Demanded and Supplied

Government Activities and Policies:

Government institutions and wage commissions set up by the government help in determining wages, especially in the public services. In fixing wages, the government agency or wage commission takes the following factors into consideration.

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i.   Cost of Living: The higher the cost of living, the higher wages are likely to be. If workers spend so much to get the essentials of life, then there is need to pay workers higher wages to enable them meet up.

ii.   Level of Productivity: The greater the level of production in the country, the higher the wage rate.

iii.   Type of occupation: The wage structure varies from one occupation to another. The wage structure for each category of labour is based on the degree of scarcity of labour, the risks involved, etc. so various salary grade levels are fixed for different categories of labour in the civil service.

9.11 Trade Unions

A trade union is an association of workers formed to enable the members to take collective, rather than individual, action against their employers in matters relating to their welfare and conditions of work. They are formed by workers who seek protection and promotion of their interests. Examples of trade unions are Academic Staff Union of Universities (ASUU), National Union of Petroleum and Natural Gas Workers (NUPENG), National Union of Road Transport Workers (NURTW), Nigerian Union of Banks, Insurance, and Financial Institution Employees (NUBIFIE) and the bigger umbrella, the Nigerian Labour Congress (NLC).

Objectives of Trade Unions

1.   To secure good wages for members.
2.   To participate in policy formulation of their respective organisations.
3.   To secure employment for those members who have no jobs.
4.   Trade unions also make it their responsibility to safeguard the interests of members.
5.   They also regulate the entry qualifications into the various professions.

9.12 Weapons that can be used by a Trade Union during Trade Dispute

Trade unions can insist on achieving their objectives during trade dispute by using the following weapons or methods.

1.   Collective bargaining: In this method representatives of the union and employers will meet to negotiate or deliberate on issues affecting the Workers.

2.   Work to rule: This involves the slowing down of the rate of work by the worker.
        They will come to work and the rate of work will be slowed down by the workers.

3. Picketing: This involves the workers staying at the entrance of the factory and refusing to work.

4. Threat to Strike: The workers' union gives ultimatum to the employer that they will embark on strike if their demands are not met on time.

5. Strike: The workers will stay away completely from work. This is the ultimate weapons.

9.13 Employers' Association

Employers' Association is formed to enable member to adopt a common policy in labour negotiations. A good example of employers' association is that of the Nigerian Employer's consultative Association (NECA) formed in 1957. While trade unions are usually interested in negotiations about wage increase and improving the working conditions of worker, employers' association are normally interested in discussing ways of increasing productivity through collective bargaining on these matters, mutual agreements are reached by both the trade union and employers' association.

Weapons that can be used by Employers' Association during a Trade Dispute

Employers' association can insist on achieving their objectives in trade dispute by using the following weapons or methods.

1. Collective bargaining
2. Strike Breakers
3. Blacklist
4. Lock-out

9.14 Factors Which Influence the Level of Wages

1. Productivity: The higher the level of production, the higher the level of wages and salaries and the lower the level of production, the lower the level of wages.

2. Inflation: Inflation can induce employees to demand for increase in the level of wages.

3. Rising income: The rising incomes in key sectors of the economy (e.g., the public sector) can lead to a general increase in wage limits. For example, the federal government raised the minimum salary of federal workers to N30, 000.00 and all other employers too had to adjust wages and salaries upwards.

4. Demand for and supply of labour: If the aggregate demand for labour is low, there is the tendency for the level of wages to fall, but if the aggregate demand for labour is high the level of wages would rise.

5.   Effectiveness of trade unions: Activities of trade unions through bargaining power can lead to increase in wage level.

6.   Technical changes: Technical changes such as improved and more effective process of production will lead to increase in productivity and ultimately higher wage rates.

7.   Quality of labour: The quality of labour in terms of skill or training determines the level of wages or salary attached. Highly educated and professional workers attract higher level of wages than unskilled workers.

8.   Condition of the economy: When the economy is buoyant, workers enjoy a high level of wages, but when the economy is in recession, wages and salary levels fall.

9.15 The Theory of Distribution

The theory of distribution deals with how factors of production attract prices in the market situation. It deals with the determination of rent and other resources, wages for labour, interest rate for capital and profits to enterprise. With these, the theory is concerned with the shares of proportion of the national income that goes to each category of factors of production. The traditional theory of distribution states that distribution is a special case of price theory. This means that the income of any factor of production depends on the price that is paid for the factor and also on the amount that is used of that very factor. The situation is very synonymous with analyzing the price of any other commodity. For example, the value of a commodity depends on the price of the commodity. In the same way, the price of any factor of production can be determined by the interaction of supply and demand of that same factor of production.

Marginal Productivity Theory of Distribution
The marginal productivity theory of distribution relates to the demand for factors of production. We now examine the demand for factors of production.

The demand for factors of production is a derived demand. This means that producers who buy the factors will not want the factors for their sake but because they can help to produce other commodities that are wanted by consumers. The demand for any factor depends on the demand for consumption goods that the factor helps to produce. For example, higher demands for a good will lead to a higher demand for factors that are used for producing it and vice versa. This is why

we say that the demand for factors is derived from the demand for the goods it is ready to make. The elasticity of demand for a factor depends on two main things: the technical condition of production and the market demand of the commodity that the factor produces. Here, the elasticity of demand for a factor of production varies directly with the elasticity of demand for the firm's product. This means that when the demand for the product is elastic, the demand for factors producing it will also be elastic, and when a product is inelastic, factors will be inelastic.

Secondly, the smaller the cost of a given factor as a proportion of the total cost of the good, the more inelastic will be the demand for the factor. This means that when the cost of a factor is only a small proportion of the final goods, then it will be very inelastic. Finally, the demand for a factor will be more elastic if it is very easy to substitute some other factors for the factor in production. Hence, the MC=MR condition can be stated alternatively that a firm will increase production up to the stage at which the last unit of the variable factors employed just add as much to revenue as to cost. We can say that all profit maximizing firms will hire units of the variable factor up to the point at which the marginal cost of the factor equals the marginal revenue produced by the factor, that is, MC=MR produced by market factor. Alternatively stated, we can say that MC of a factor is equal to the MR product of that very factor, where marginal revenue product (MRP) is simply equal to the price of output times the marginal physical product (MPP). That is MRP = P = MPP. MRP is the additional to total revenue due to hiring one unit of factor of production. If we are considering firms that buy their factors from perfect market, then the MC is simply the price of that very factor. For example, the cost of obtaining an extra man in a firm is the extra wage that must be paid for that man.

In summary, we can say that for profit maximizing firm in equilibrium that take perfect price as given operates at the point where the MC of that variable factor equals the MR of the products, and the MPP equals the price of that factor (i.e.,$MC_{factors} = MRP_{factor} = P_{factor}$).All these above stated results emanate from the marginal productivity theory of distribution, and the theory says that "in perfect competition, total product will be allocated among the factors by each factor having its marginal cost equals the marginal revenue product."

TP

MPP

TP

MPP

0

Labour

MPP

0

Labour

Figure 63: Total Product Curve

Figure 64: Marginal Physical Product Curve

Figure 63 and 64 shows the total product (TP) curve and the marginal physical product (MPP) curve respectively. The contribution of extra labour employed is highest at the maximum point of the TP curve. With the MPP curve, the fewer the labour employed, the higher each labour effort is explored, and the more labour employed, the lower the labour exertion of each labour. Hence, the downward sloping nature of the curve.

9.16 The Demand Curve for a Factor of Production

Assumptions:

(1)   The firm is unable to influence the price of the factors.

(2)   There is only one variable factor of production.

Given these two assumptions, if we have the firm's MRP curve, then we can use the equilibrium condition that P = MRP to derive the firm's demand curve.

Here, we assume a given MRP for a factor. When wage for labour is low, more labour will be hired.

P = MRP

L_1 L_2 L_3 L

Figure 65: The MRP Curve

The MRP curve shows us the MRP of factors or price and the corresponding quantities of the factors employed. Any profit maximizing firm will employ additional unit of the factor up to the point at which the MRP = P of the product.

1. **Determination of the Curve of a Factor**

To obtain the demand curve of a factor, we need to take various prices of the variable factor and the corresponding quantities of the factors hired and plot them in a graph, and we will obtain a demand curve for factors which is very similar to the MRP curve.

Such a curve relates the price of the variable factor to the quantity and hence to the demand curve for the factor. One point here is that the employer of labour (demand for labour) will be willing to employ more with lesser wage and less with higher wage, hence there is increase relationship between price of labour (wage) and demand for labour. This is reflected in downward sloping curve.

Price of variable factor

D_f =MRP

0

Demand for variable factor (labour)

Figure 66: Determination of a Factor Curve

The downward sloping curve is similar to the MPP because both are downward sloping. Also employing more labour may drop revenue (vice versa relationship) in MPP, and on the other hand,

employing more labour may have been brought about by reduced wage for labour (also an inverse relationship). Therefore, for all profit maximizing firms, the key proposition in marginal productivity theory is that the MRP curve for a factor is the demand curve for that factor.

Issues in Marginal Productivity Theory

a) It relates to the demand for factors of production.

b) The demand for factors of production is a derived demand.

c) The theory thus states that all profit maximizing firms that buy their factors in competitive market will hire its units of the variable factor until its price equals the value of marginal product of the last unit employed i.e.

$MRP = VMP = P = MPP \times P$ of the product.

In case of imperfect market, $MRP = MPP \times MR$, where $MPR = MVP$

The firm's MRP curve is its demand curve for a factor.

9.17 Criticisms of the Marginal Productivity Theory

The following criticisms have been made against the marginal productivity theory:

First, the classical economists attempt to justify the existing income distribution. However, observation of how a free enterprise economy distributes income does not in any way constitute justification or approval of that distribution. We need to note, however that if marginal productivity theory provides the best available explanation of income distribution in a free enterprise economy, all we need to do is to understand their operations whether or not we like their results.

The second criticism is that marginal productivity theory is not really a basis of income determination and distribution. The argument here is that there is no close correlation between the remuneration received by resources owners and the values of marginal product of the resources that they own. The point we will make here is that if these criticisms are correct and we can find evidence to support the assertions (exertion), then marginal productivity theory is not a useful theory. But as at today, there is no useful evidence that has been adduced for the inefficiency of the theory.

Thirdly and finally, the marginal productivity theory relates to the demand for factors of production alone, it therefore constitutes only half of the theory of distribution, and the other half is the theory of supply which asserts that factors will move between occupations in search of the highest net advantage.

9.18 Supply of Factors of Production

This has two separate aspects:

i. The supply of some factors to the economy as a whole.

ii. The supply of factors to particular uses, say to an industry or to a firm.

(1) The Supply of Some Factors to the Economy as a Whole

The important question here is whether the total supply of such factor is fixed in any meaningful sense. A general notion is that the factors are fixed and that the quality of land is fixed in the world at large. Given this, there is an upper limit to the supply of most factors. There is the upper limit to the number of workers; there is an upper limit to the number of mineral resources available, and etc. Although there appears to be absolute maximum amount in the supply of any factor, in the real world, as at present, there appears to be a fairly large amount of supply of various factors.

It is very difficult to determine what causes variation to the total supply of factors of production to the economy as a whole. The reason for this is that several factors of production are different from one another. For example, labour, in particular, is different from other factors of production.

(2) The Supply of Labour to the Economy as a Whole

By the total supply of labour, we mean the number of hours of work that the population is willing to supply. The quantity of such labour is usually called the supply of effort. The supply of effort depends on three factors:

1. The size of the population.

2. The proportion of the population that is willing to work.

3. The number of hours worked by each individual.

While some people may prefer more leisure to work, others may prefer more work to leisure. But those who work more earn more.

Supply of Land

If by supply of land, we mean the total area of dry land then the supply in any given country is fixed. The implication is that if there is a rise in earnings on land, there will be no increase in supply of land. However, a high return on land will lead to an increase in effective supply of land through various methods such as reclamation of land, irrigation, drainage, etc.

The point here is that although traditional economy assumes that the supply of land is absolutely inelastic, the supply can be expanded by irrigation, drainage and reclamation scheme, and also, it can be contracted (reduced) drastically by erosion, earthquake, tsunamis, etc.

Supply of Capital

Capital is a man-made factor of production. The supply of capital in a country consists of a stock of existing machine, plant, equipment; such capital stock is diminished or reduced by the amount of wear and tear that takes place every year. On the other hand, the stock can be increased by the production of new capital goods.

Finally, in most modern countries, the supply of capital has been observed to increase significantly over time, and it is the volume of net investment that determines the rate of increase of capital stock.

Please note that: Gross investment (GI) = Capital stock of a particular previous time (K_{t-1}) + depreciation (D) + Net (new) investment.
Net investment (NI) = Net addition to capital stock after taking care of replacement investment (RI).
In symbol, $NI = GI_t - RI_t - D$, where $NI >/< 0$.
An economy makes progress when $NI > 0$.

9.19 Supply of Factor to Particular Uses

The supply of factors to different industries is determined by one major fact. This is that if owners of this factor are mainly concerned with making plenty of money, then they will move their factor to the use(s) to which they can make as much money as possible. Such a movement will continue until the earnings of the factors in all possible uses are equalized.

Some factor owners take other things into consideration in deploying their services to various uses. For example, factor owners can take risk, convenience, firing benefits, good climate among others, into account while deploying their services to various uses.

The point here is that when factors take account of monetary and non-monetary advantages, they will move between or among uses until there is no net advantages in uses. This fact leads us to the hypothesis of equal net advantage. This hypothesis states that owners of factors will choose that use of their factor that produces the greatest net advantages to themselves. One major difficulty arises in practice. This difficulty is how to measure non-monetary advantages

Factors Mobility

This relates to the special way in which factors move between uses in response to changes on their relative price in their different uses. For a factor that is highly mobile, the supply is highly elastic. If a factor is not mobile, then the supply tends to be inelastic. One major factor that determines factor mobility is the speed with which factors will respond. Furthermore, the various barriers to mobility may vary from one factor to another.

Mobility of Land

Land is the least mobile (physically) of all factors of production, but paradoxically, in economic terms, land is very mobile. For example, an underdeveloped plot of land (without any building on it) is mobile between alternative uses. It can be used for school, factory, hotel, park or any other thing. Therefore, the building that is on it will reduce its mobility.

Mobility of Capital

Most capital equipment is immobile because a large amount of machinery is specific. However, some items of capital equipment are mobile and can be used for a number of purposes. For example, a GSM handset can be used for calls, photograph, video, music, etc. Money capital is also mobile.

Labour Mobility

Labour is seen to be a unique factor of production. This is because the supply of labour service requires the physical presence of the owner of the source of service. One important variable in labour mobility is the element of time.

In the short run, it is difficult for people to shift occupation. The major reason for this is the element

of ability and training that is involved. But over long periods, labour mobility between occupations is very high since labour would have acquired the necessary training and skills for carrying out the required job.

9.20 The Determination of Wages in a Competitive Market

Wages are determined under competitive atmosphere by the interaction of demand and supply.

This is graphically shown below.

Figure 67: Wage Determination under Competitive Market

In the graph above, DL represents the demand for labour, SL represents the supply of labour. The value of labour is determined at the point where DL and SL intersect. The corresponding equilibrium is Wc and amount of labour supplied and demanded is QL. They determine wages when labour is sold competitively but bought monopsonically. Monopsony is where there is one buyer in the market. Here, it means the demander (employer) of labour. The graph for this analysis is presented below:

Figure 68: Wage Determination under Monopsony Market

The purchasers (demanders) of labour here are not price takers in the labour market, but price setters. At equilibrium, MC and not the wage rate will be equated with the marginal revenue product of labour (or D). MC exceeds the wage rate; thus, the wage is less than MRP. Also, since the supply curve of labour is upward sloping, the volume of employment wm and qm are the corresponding values under monopsony. Since the monopsonist only wishes to employ a quantity of labour equal to qm, he needs only pay a wage of WM to call forth that quantity.

This analysis leads to the following general conclusions: Monopolistic conditions in the factor market will result in lower level of employment and a lower wage rate would rule when the factor was purchased under competitive conditions. The reason for this is that the monopolistic purchaser

is aware that, by trying to purchase more factors, he is dividing up the price against himself. He will therefore stop short of the point that is reached when the factor is purchased by many different firms, none of which can exert an influence on its price.

9.21 Rent

The Pareto Economic Rent and Transfer Earnings: The Ricardian Theory of Rent

Rent is earning or reward to land as a factor of production. One can have a look on the definition and components of land under the analysis of the factor of production in the theory of production. However, rent under the theory of distribution is more than the ordinary definition of reward to land as a factor of production. Rent under the theory of distribution, can be discussed under the following headings:

The Pareto Transfer Earnings and Economic Rent

A factor's transfer earning is the amount that a factor must earn in present use in order to prevent it from transferring to another use. Put differently, a factor's economic rent is the excess of the earning which a factor received over and above its transfer earnings. From these definitions, rent differs greatly from its everyday usage. Rent is now used in relation to any factor. Here, rent can be defined as a surplus, meaning additional income accruing to a factor which was not foreseen when the factor entered a particular line of production.

Pareto defines rent as the surplus received by any factor of production above its opportunity cost: and this means, to keep that factor in its present employment. From all the foregoing it follows those rents can therefore, be received by labour, capital or the entrepreneur, as well as by land. The analysis of rent to labour can be given as follows: if some individuals are ready to work at lower amount per day in a firm as compared with the agreed rate that each of the workers is to be paid, the difference between what they are to be paid and what they are ready to receive is rent, while what they are ready to receive is the wage.

Table 11: Rent in Wages (N per day)

Number of men (1)	Wages (2)	Rent (3)	Payment received (₦) (4)
50	30	25	55
20	35	20	55
30	40	15	55
60	45	10	55
90	50	5	55
130	55	-	55

The number of workers is shown in column (1) and the wage is shown in column (2). The actual amount each of the categories of workers was paid is N55 as shown in column (4). The difference between column (4) and (2) is the excess.

Cases of Rent being also Transfer Earnings

The more difficult it is for a factor to secure alternative employment, which is factors that are meant for specific particular uses, the less it will be necessary to pay it in order to retain its services. In this case, the entire (transfer) earnings to such a factor are considered to be rent. Professions that are job-specific in Nigeria include electrical work, iron bending/welder, medicine, etc. When their services are not rendered, they would remain unemployed. They cannot easily move their service to other uses, except for the possibility of self-employment.

Also, the amount that a factor could earn in its best-paid alternative employment is sometimes called its transfer earnings, and any excess payment over this best amount is a surplus above what is necessary to retain the factor in its best-paid employment, hence regarded as a rent. The table 11shows how much of workers remuneration is rent as shown by their transfer earnings.

Table 12: Transfer Earning and Rent

No of men (1)	Transfer earning (N) (2)	Rent (3)	Payment received (₦) (4)
80	50	5	55
180	45	10	55
90	40	15	55
30	35	20	55
380			

The highest amount that can keep each of the categories of workers in column (1) on the job (transfer earnings) is shown on column (2). However, each of the workers' categories was paid the same amount of N55 as shown in column (4). The economic rent is, therefore the difference between value in columns (4) and (2) as shown in column (3).

Ricardian Theory of Rent

Ricardo was an English economist who is best known for his theory of rent, advanced in his book '*The Principles of Political Economy and Taxation*'. He was one of the classical economists. Like the other classical economists, he thought that the value of a commodity depended on the amount of labour put into its production. However, this is not usually the case. This abnormal case is exemplified in the cost of production of farming products. The example, according to Hanson (1972), is seen in what production is where the fertility of the soil determines its cost of production and this means that wheat is being grown at much lower cost on fertile land than on land of inferior quality. It was this problem that led Ricardo to formulate his theory of rent.

Ricardo defines rent in what he called the "strict sense" (to distinguish it from the popular or ordinary sense in which Adam Smith and others use the term) as "that portion of the produce of the earth which is paid to the landlord for the use of the original and indestructible powers of soil." He further points out that rent arises in the following ways: that is, if a country has an "abundance of rich and fertile land" there will be no rent, for no one will be willing to pay for the use of land if there is greater supply of it than is required for all purposes. This means that there would be no rent if all land was of the best quality and unlimited in quantity.

It needs be noted, however, that rich and fertile land is not unlimited in quantity in any country, nor is land uniform in quality. This therefore, brings about rent. Ricardo, in this respect, puts it that "when land of the second degree is taken into cultivation, rent immediately commences on that of the first quality and the amount of that rent will depend on the difference in the quality of these two portions of land.

Ricardo also points out that land at the margin of cultivation that is, land which is only just worthwhile to cultivate, does not yield any rent. Fertile land excess yield or return minus the value of the land of the margin of cultivation equals to rent.

Some Criticisms of the Ricardian theory of rent

a) It was based on the natural variation in the productivity of different pieces of land as a result of differences in their fertility. However, land is not rated or valued on its fertility alone.

b) He did not see the mobility aspect of land.

c) Marginal land is relative and not absolute to different crops.

d) He restricted rent to land only.

9.22 Marshal's quasi-Rent

Marshal used quasi-rent to describe all rents received by factors other than land. However, nowadays, it is unusual to differentiate between land and other factors in this way. What is now obtainable is that a factor will receive rent as long as it is specific in use and its supply fall short of the demand for its services.

There is a long run effect in this case. In the long run, there is the tendency for factors to be increased in supply. This would invariably eliminate the payment of rent on the factors since at this long run situation, the amount paid for the factor is equal to the amount the factor is ready to earn. Also, if the supply of factor is perfectly elastic, supply will immediately adjust itself to changes in demand, and so no rent will arise. On the other hand, if the supply of factor is less than perfectly elastic, an increase in demand will enable it to earn a rent, at least for a time.

From the above analysis, it can be seen that a second characteristics of quasi-rents is that they tend to be temporary and they are received by the factor concerned in the short run period only, until supply catches up with demand.

Rent in Wages as a Quasi-Rent

Many kinds of labour are highly specific because of the long period of training or the special ability required. As with land, the supply of some kinds of labour may be almost perfectly inelastic. Examples here include that perfect substitutes cannot be found for particular occupation like a film star, a heavy weight boxer among others. The incomes of such people consist of rents which will persist so long as the demand for their services remains, whereas supply cannot be increased.

However, the supplies of most kinds of labour are not generally inelastic as the above examples. Usually in the long period the supply can be increased though the period of training may be of

many years' duration. If we take for example a barrister an increased demand for his labour would enable him to raise his fees (and so receive rent) but the possibility of high earnings would eventually attract more people into the profession, so that, perhaps, in four- or five-years' time supply would again equal demand with the result that rent would disappear and the level of barrister fees would fall. There might be a case of "rent of ability" which refers to a situation where close substitute to a particular labour force could not be found, hence continuously commanding high remuneration or rent.

9.23 Trade Unions

The trade union is a voluntary organisation of workers which aims to protect and promote the economic, social and political interest of its members, mainly by means of collective bargaining with employers. According to the Trade Union Decree of 1973, Trade Union is "any combination of workers or employees, whether temporary or permanent, the purpose of which is to regulate the terms and conditions of employment of workers." The Trade Union Decree of 1973 stipulates that a trade union can only carry out the business of a trade union after it has been duly registered. Violation of this rule may lead to every official of the proposed union or any member who took active part in the union activities being guilty of an offence against the decree.

Before the amendment of the decree, any five workers could come together to form a trade union, little wonder the proliferation of union activities experienced during that period. The amended decree stipulates that 50 or more members of a proposed union may, by subscribing their names to the rules of the union as specified in the Rule Book, apply to the Registrar of Trade Unions for registration. On receipt of the application, the register will publish a notice in the Federal Government Gazette specifying the intention to registrar the union and requesting objections to the registration within three months. If no objection is received, the registrar will issue a certificate of registration to the union. The certificate indicates that the union has been officially registered and therefore has legal existence.

Recognition of Trade Union

A duly registered and recognized trade union impacts positively and negatively on the employers and employees respectively. To employers, it offers the required psychological satisfaction to

employees on the job by making them to recognize that the management has accepted the need to be independently represented. Recognizing the trade union at the initial stage offers employers the opportunities to influence the kind of trade unionism they desire in their organisation. A more appropriate procedural agreement will be made between the employers and employees on issues relating to industrial relations. These include:

1. Multiplicity of Unions can be prevented.
2. Suitable environment will be created for introducing changes within the organisation.
3. Recognition improves opportunities for effective communication between the management and workers.

However, the recognition has the following disadvantages to the employers:

4. Management will have less discretion to take and act on decisions or issues that affect the workers.
5. Issues previously handled casually will now be discussed more formally in a more open and elaborate manner. This may be cost and time-consuming.
6. Management may find it necessary to make more concessions to staff than in a non- unionized situation.
7. Confrontation and industrial disputes may be experienced in a unionized organisation.

Employees on the other hand will derive the following advantages:

8. The Union is better placed and stronger than the individual and otherwise in collective bargaining agreement.
9. The protection afforded by the union against the power of employer in redundancy, and unfair exercise of discipline. This cannot be achieved by an individual. Sometimes individuals are reluctant to stand up for their own right due to their nature, membership of a union can overcome this problem.
10. Ability to cope with increasing government legislation depends on considerable knowledge and skills that come to play during negotiation. Union officials, to some extent, have this quality.
11. Social benefits i.e., benefits of cooperative societies may be derived by individuals such as loans, subsidized purchases etc.
12. Educational benefits can also be obtained through seminars, conferences and workshops organized by the union.

13. Unions can assist members in achieving the need for love, affection and a sense of belonging.

Disadvantages to Individuals

1. There is loss of individual freedom in negotiation. The negotiating systems resulting from recognition of unions may become more personal and standardized. Thus, the interest of individual members may not be fully satisfied.

2. Reward for initiative will be less efficient since the pay system will have been standardized.

3. Individual employees may find it difficult to execute personal decisions which may be in conflict with the group decisions of the union.

Problems of trade union in Nigeria

The development of trade unions in Nigeria has been hindered by some problems which remain unsolved. These problems include:

   c. Leadership: Nigerian unions generally lack efficient and committed leaders. Most union leaders' thirst/crave for power but hardly achieve results with that power. This makes them to be autocratic. In addition, most leaders are not honest and dedicated.

   d. Management Problem: trade unions in Nigeria are unfortunate to have leaders who are good managers. Most unions find it difficult to use modern management techniques in solving their problems.

   e. Lack of proper education on labour issues such as industrial relations and labour laws makes it difficult for the unions to cope with the changing legal environment.

   f. Unions require funds to carry out their primary functions. In most cases, they depend on contributions of members which are grossly inadequate.

   g. Lack of commitment on the part of the members particularly in providing joint support and financing for the union.

   h. Lack of integration, the quest for leadership, and selfishness of the so-called union leaders have made it difficult for cooperative efforts among the unions. This, to a large extent, affects the stability and growth of the unions.

   i. Widespread corruption, fraud, misappropriation, embezzlement of funds and other unprogressive attitude of trade union members also hinder the development of Trade Unionism in Nigeria.

   j. Tribalism, ethnicity, nepotism and other social problems have crept into the activities of trade unions or trade unionism in Nigeria and have retarded its development.

In conclusion, it must be stressed that trade unionism in Nigeria has not been encouraging due to the problems identified above. However, the future is still bright if these problems could be solved. In short, the survival and success of trade union movement in Nigeria depends on the following:

1. Availability of committed and dedicated leadership.

2. Training and development of members on modern management techniques.

3. Education and orientation of members to elicit their support and commitment.

2. Proper funding of trade unions.

3. Effective financial control to minimize fraudulent practices.

4. Ensuring the integration of different unions into a main body to strengthen the bargaining power of trade unions.

Weapons of the Unions

Trade unions have certain strategies and tactics used to extract greater concessions from employers. These strategies include:

Strike: Is a concerted and temporary withholding of employee services from the employer for the purpose of exacting greater concessions in their employment terms.

Picketing: Is a form of union power in which large posters, placards or signs are carried by the union members. The picketing may be informational; to inform the public about unfair practices of the employers.

Primary boycott: Refers to economic pressure in which the union attempts to influence people not to buy from a given firm.

Secondary boycott: Is a situation where economic pressure is placed on another firm to prevent it from doing business with a firm that is being picketed.

Weapons of the Management

The following are the weapons used by management to prevent the union from demanding too much concession.

Lockout: The employer closes its doors to union members to prevent them from working and collecting their wages.

Injunction: A court order that refrains the union from engaging in some activities such as strike,

boycott, picketing,etc.

Blacklisting: This has been classified as unlawful in labour management relations. The blacklist is simply list of undesirable employees who have engaged in organizing activities for the union. The list is circulated to other employers to reduce the chance of blacklisted workers getting employment in other firms.

Yellow dog contract: Is an agreement signed by workers usually as a condition of service whereby they promise not to join a union while working for their employer.

Collective Bargaining Agreement

Collective bargaining is intended to be a mutual give and take between representatives of two organisations for mutual benefits of both. In collective bargaining, negotiations are about the working conditions and terms of employment between an employer or one or more employer associations or organisations on the one hand and one or more representatives of workers' organisations on the other hand.

Types of Bargaining Relationships

One of the most important factors determining the relationship between union and management is the attitude of management towards unions. The attitude affects the strategic approach used by management to deal with the unions. Management-union relationship in collective bargaining can follow one of several patterns ranging from conflict to collusion. On the left side of the continuum, management and union see each other as enemies. On the right end of the continuum, the two entities join together illegally. In between these relationships are Armed Truce, Power Bargaining, and Accommodation and Cooperation.

In conflict, management takes uncompressing view.

Armed Truce does consider conflict as appropriate but recognizes that the union is not likely to disappear.

Accommodation: Involves learning to adjust to each other and attempting to minimize conflict. This encourages conciliation and tolerance.

Power Bargaining: Management recognizes the union's power and increases its power and uses it whenever possible to offset the power of the union.

Cooperation: Management gives full acceptance of the union as active partner in a formal plan.

Collusion: Rarely found in history, it involves the coming together of union and management to

fix prices of labour to inflate wages and profits at the expense of the public.

Process of Collective Bargaining

Collective bargaining is composed of a number of stages which include:

Preparation: Representatives of labour and management will spend time preparing for negotiations. Employers collect industry data about wages, benefits, working conditions, management and union rights productivity and absenteeism. With union education, the union officials have learnt to substantiate their demands with facts and figures. The unions now gather cost of living indices and particular company's balance sheet. Personnel managers do the ground work by assembling data for the company such as wage survey and working conditions of comparable firms.

Selection of Negotiation: Although negotiation is the responsibility of the personnel manager, however it should not be regarded as the sole responsibility of the personnel manager. Sometimes, circumstances may create the need for selection of managers who are close to the workers to form the management team that negotiates with the union. The team should be led by the personnel manager. On the other hand, the union representatives/officials will represent the interest of the workers in the collective bargaining agreement.

Bargaining Demands: This consists of two aspects namely: initial demand and continuing negotiations. A characteristic of bargaining demands is the large initial demand which the unions may be aware of the impossibility of achieving it. All that the Management needs is patience to bring down the demand to a reasonable and acceptable level by means of negotiation.

Contract Agreement and Settlements: After an initial agreement, the two sides usually return to their respective constituencies to determine if what they have formally agreed on is acceptable at this stage, the agreement is presented to the union members for a vote. If approved the agreement is formalized into a contract which is enforceable in law.

Bargaining Impasses: Not all bargaining will lead to a contract. In some cases, the bargaining may hit the rock and subsequently may lead to strikes by the unions and lockouts by the management. This situation requires a re-negotiation resulting into final settlement and contract.

Wage rate

DL   SL
  Wu   X   Z

  WcK

       0   q_a   q_e   q_u

Figure 69: Labour Demand Competitively

The Effect on Wages and Employment of the Entry of a Union into a Competitive Labour Market

From the above diagram Wu is the union wages. This creates a perfectly elastic supply of labour up to the quantity qu. The implication of this is that the union has succeeded in raising wage rate more than the equilibrium level but has reduced the amount demanded by labour from qu to q while there exists surplus supply of labour from X to Z.

The unemployed workers, in this case, would be ready to work for a wage less than Wu until there might be equilibrium again at Wcqu combination. The conclusion here is that unions can be successful in perfectly competitive industries only when they are able to strictly enforce the union wage on workers and employers and to resist wage-cutting pressure from workers who cannot get work at the union rate and also resist the retrenchment of workers.

9.24 Theories of Interest: Interest as a Capital

Interest as a price refers to the incomes that accrue to capital as a factor of production. Even though the definition above exists with respect to interest as an earning to capital, as a factor of production, it needs be noted that, as it were with rent, as well as profit, interest is not easily assigned to particular factors of production.

Interest and profit are often difficult to distinguish from one another in practice. Interest may be seen as a payment for the use of capital and profit as the reward of the entrepreneur for his service. Put differently, interest may be regarded as income from money capital, and profit as income from real capital. Interest as profit is often inextricably mixed.

In time preference of interest, it is expected that the longer the time, the more interest that would be paid on capital with particular reference to money capital and the lender would prefer this rather than the borrower.

Determination of the Rate of Interest

There are different schools of thought here, which can be examined as follows:

Supply and Demand Approach

The rate of interest, being the price of loan, is determined by the demand for loan also called the supply of loanable funds so that the equilibrium rate (or natural rate, as Wicksell calls it) is the rate at which supply equates demand. This is seen under general equilibrium analysis as shown in the below diagram.

Figure 11.11: Interest Rate Determination

From the diagram above, r_e is the equilibrium interest rate and Ye is the equilibrium income. r_e is the interest rate of which the amount demanded is also made available by the financial institutions. The compensation amount here is Ye which is the amount demanded and supplied by investors and financial institutions respectively. Any interest rate outside re-creates either excess demand for loan or excess supply of loan.

Time Preference Approach

Time preference theory, including that of Bohm-Bawerk, stress the idea that the supply of loan depends on the fact that most people prefer to have a certain sum of money now than at some

future date. Thus, they will be ready to pay existing interest rate in the financial market at that time. On the other hand, the lenders (financial institutions) will charge arbitrary interest on those financial products for which the borrower have inelastic demand at the current time. Here, lending and borrowing are possible only because the satisfaction of immediate wants occupies a higher place on the borrower's scale than on the lender's scale of preference.

Productive Capital Approach

Investors demand for loan because capital is productive. Usually, greater output is achieved if a more capitalistic method of production is adopted. However, the more capitalist, the method of production, the longer the time interval between the taking of decision to produce and the beginning of the outflow of goods.

In all, due to the greater gain the entrepreneur will have by borrowing in the future, he would be ready to pay the rate of interest that is chargeable on the loan in the short run period. In this case, interest can be seen or defined as the reward of waiting for longer time for price of loan to fall or as a higher price payment for not waiting till the rate is low.

Marginal Productivity of Capital (Marginal Efficiency of Capital)

The marginal efficiency of capital (MEC) is the rate of return on the last unit of capital employed in an economy in the use of a nation's capital stock. Also, Hanson (1972) defines (MEC) as the relationship between the prospective yields of one more unit of capital and the cost of producing it. Society's stock of capital goods is made up of diverse bundle of factories, machines, bridges, roads and other man-made aids to further production. It is assumed that all of these can be reduced to some common unit and summed to obtain a measure of the society's physical stock of capital.

There is a schedule that relates the return on each additional unit of capital stock to the size of the capital stock: and this is the marginal-efficiency of capital (MEC). The following assumptions are made in the course of constructing the MEC schedule;

a) The production is fixed.
b) There is a given level of technology.

These assumptions allow us to focus on the effect of changes in the quantity of capital, other things remaining constant. As more capitals are accumulated with a given technical knowledge and a constant population, the ratio of the capital to labour increases. This is called Capital Deepening.

Again, increasing the quantity of capital without changing the proportions of factors used is called Capital Widening. As long as capital deepening is productive, the MEC will be positive.

However, it is usual that capital is assumed to be subject to the law of diminishing returns just as are all other factors of production. As more and more capital is employed the output per units of capital will fall because each unit of capital is combined with fewer and fewer units of labour. As more and more capital-intensive methods are used, marginal product declines, and thus any MEC schedule when plotted graphically is downward sloping. The diagram below shows the MEC:

Figure 70: Marginal Productivity of Capital

With the existing capital stock at K1, the marginal efficiency is at M1. If the current rate of interest is M2, it will pay everyone to borrow money and invest it in capital equipment. This brings about a state of disequilibrium. Equilibrium can exist by:

1) Raising the capital stock K2 while holding the rate of interest constant atM2.
2) Raising the rate of interest to M1 while holding the capital stock constant at K1, or
3) Any combination of increase in the interest rate and the capital stock which equates the MEC and the rate of interest. It needs be noted that the extent to which interest rates tend to be fixed within close range, there tends to be a theory of the determination of the stock of the capital and on the other hand the extent to which the stock of the capital tends to change only slowly, we observe a theory of the determination of interest rates. These occurrences boil down to the two phenomena (interest rate and stock of capital) having reinforcing influences on each other.

Also, one implication of this theory that has played an important role in economic debate is that in a world of static analysis or knowledge, the return on capital and the rate of interest is predicted to fall steadily as more capital is accumulated and society moves down its MEC schedule. In any

case, this implication does not exist in a capitalist economy, because the assumption of static knowledge does not exist.

Profit

Profit has been seen earlier on as the income to entrepreneur. It has also been seen as the income from real capital. This real capital can be seen as the capital employed. Also, lenders look into profit before they can undertake lending. Hence, profitability is one of the major considerations of the banks before giving out loans and for private individuals before investing into businesses. In different measurements of profit, three different elements can be distinguished: Wages of management, interest on capital and pure profit.

The interest on capital and pure profit are components of the distributed profit. Pure profit is an earning for taking risk. People would be willing to provide capital for business enterprises if there was no possibility of a greater return than could be obtained from "safe" investments such as government stock.

Also, profit is seen as the surplus remaining after all the expenses of production, including wages of management, have been met.

Gross Profit = TR-TC (Total Revenue - Total cost)
Net Profit = Gross Profit - (tax + interest)

Risk, Uncertainty and Profit
The main function of the entrepreneur is risk bearing in an uncertain business world. So it is the profit incentive he has that makes him to undertake such risk in the uncertain business world, hence there is a relationship that exists among risk, uncertainty and profit. Usually, in risk and uncertain conditions, the entrepreneur earns pure profit. The followings are some of the influences liable to produce uncertainty.

        i. Changes in population, size and composition.
    i. Changes in fashion, hence changes in demand.
   ii. A rise or fall in total money income or a change in the distribution of income or a change in the distribution of income among consumers.
  iii. The introduction of new forms of capital with consequent changes in the technique of production.
  iv. Ignorance of the price and output policy of rival firms.

If any of these changes takes place, uncertainty will arise, and entrepreneur may earn pure profit. If uncertainty declines, then pure profit will also decline.

Function of Profit in a Capitalist Economy
The main function of profit in a capitalist economy is to provide a forum for more entrants of producers or sellers into the production or distribution of a particular product or service that has been seen to give good or high yield or proceed far above the cost of production.
If monopolistic tendency is prevented from the sole ownership of such product, or service, then the elasticity of supply and demand will increase and there is the tendency for normal profit to

exist. However, since the economy is dynamic, abnormal (Pure) profit would always arise in a capitalist economy.

9.25 Conclusion

The chapter provided the distribution theory that helps policymakers to determine the competitive rewards on factor input which guarantees optimum productivity in a country. In this chapter, the perfect competitive factor market is extensively discussed.

9.26 Review Questions

1. Which of the following is not exogenously determined in the theory of income distribution?
   a. Government expenditure
   b. Output
   c. Investment expenditure
   d. Consumption expenditure

2. Which of these may shift the labour supply curve to the right?
   a. Higher retirement age
   b. Lower wage rate
   c. Higher years of schooling
   d. Stricter immigration policy

3. Division of labour is less advantageous if
   A. it increases output
   B. reduces costs
   C. it is limited by market
   D. it does not increase employment

4. The most important determinant of them and for labour is the
   A. wage rate
   B. output price
   C. capital stock
   D. technological stock

5. In the absence of proper monitoring of efforts, the labour supply curve is
   A. downward sloping
   B. upward sloping
   C. horizontal
   D. backward bending

6. The two key components of human capital are?
   A. Technology and motivation
   B. Goods and services
   C. Education and Health

D. Capital accumulation and investment

Suggested Answers

9.21.1 B

9.21.2 C

9.21.3 D

9.21.4 A

9.21.5 D

9.21.6 C

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CHAPTER TEN

THE NATIONAL INCOME ACCOUNTING

10.1 Learning Objectives

After studying this chapter, the students should be able to;

1. Define and compute Gross Domestic Product, Gross National Product, Net National Product, National Income, and other allied concepts and show how they are related;

2. Distinguish between real GNP and nominal GNP;

3. Describe the three main methods of measuring National Income i.e., Product, Income and Expenditure methods.;

4. Explain why measurement of National Income is necessary and its limitations; and

5. Explain why the levels of National Income vary from one country to another.

10.2 Introduction

The concept of National Income was first discussed by J. M. Keynes in his book "The General theory of Employment, Interest and Money" which was written after the Great Depression of 1930s. He defines National Income as the aggregate factor income (i.e., the earning of labour and property) which arises from the current production of goods and services by the nation's economy.

10.3 Component of Circular Flow of Income

National Income has three interpretations; it represents a total receipt; a total expenditure and it arises out of the fact that every expenditure is at the same time a receipt by another; and if goods or services bought are valued at sales price, the value received equals the value paid which also equals goods and services given in exchange.

Circular Flow of Income

We can illustrate this through the circular flow of income

Money Payment to Firms for Goods & Services
(Consumption Expenditure)
Resources Services

| HOUSEHOLD | | FIRMS |

Good and Services
Money Income Payment to House Holds
(Factor Payments)

Figure 71:

From the diagram above, the household supplies the factor services (INPUT) to the business sector with which goods and services are produced (OUTPUT). This is the output approach component of measuring national income. The goods and services are bought by the household i.e., the expenditure approach. The business sector uses the proceeds to pay for the factor services provided by the household. This is the income approach to the measurement of national income.

10.4   Approaches to National Income Measurements

National Income can be measured from three perspectives or approaches namely:

i.   Expenditure Approach

ii.   Income Approach

iii.   Output Approach

Expenditure Approach

This method measures the total monetary value expended on goods and services during the year to obtain total domestic expenditure or GDP at market prices. That is, the sum of household expenditures, investment expenditure by firms and government purchases on final goods and services. To avoid double-counting, only expenditures on final goods and services are included while all expenditures on intermediate goods are excluded.

This can be symbolically expressed as GNP = C + I + G + (X - M)

$Y = C + I + G + (X - M)$

It is shown in the accounting approach as:

National Income Account by Expenditure Method

	#	#
Consumption expenditure		XX
Government expenditure		XX
Investment expenditure / Gross Capital formation	XX	
Export		<u>XX</u>
Total Domestic Product (a) mkt. prices		XX
Less Import		<u>(XX)</u>
Gross Domestic Product (a) mkt. prices		XX
Plus/Less Net Income from abroad		<u>XX</u>
Gross National Product (a) mkt. prices		XX
Less: Consumption of fixed capital/capital Allowance		<u>(XX)</u>
Net National Product (a) mkt. prices		XX
Less: Net Indirect business taxes (-) Indirect taxes (if any)		
(+) Subsidies (if any)		<u>XX</u>
Net National Income (a) Factor cost		<u>XX</u>

Income Approach

The income or factor incomes approach arises if national income measured on the principle of money flow on input employed into production of goods and services. This is the summation of all returns on factors of production: Labour, Land, Capital and Entrepreneur. This is expressed symbolically as:

$GNI = Y_R + Y_w + Y_i + Y_e$

$$Y = Y_w + Y_r + Y_i + Y_p$$

Where: Y = GNI or GNP at factor cost.

Y_r = Income from Rents on land employed.

Y_w = Income from Wages and Salaries on Labour employed

Y_i = Income from Interest on Capital employed.

Y_p = Income to Entrepreneur (Profit).

It is shown in the Accounting Approach as:

National Income Account Using Income / Factor-Cost Approach

		₦
Income from employment	XX	
Income from self-employment		XX
Rents		XX
Dividends		XX
Undistributed profits	XX	
Interest	XX	
Returns on Investment		XX
Other Incomes	XX	
Gross Domestic Product (a) factor cost	XX	
Less / Add Net Income from abroad	XX	
Gross National Product (a) factor cost	XX	
Less Consumption of fixed Capital / Capital Allowance	XX	
Net National Product (a) factor cost	XX	
Add Indirect taxes (if any)	XX	
Less Subsidies (if any)		XX
Net National Product (a) current market prices	XX	

Output Approach

This method is otherwise called Net output or value-added method. It is defined as the total monetary value of all sectors of the economy. The sum of these values added gives GDP at factor cost which after a similar adjustment to include net income from abroad gives GNP.

Hence, the National Income Account using Output Approach is shown as:

	₦	₦
Agriculture, forestry and fishing	XX	
Mining and Quarrying	XX	
Manufacturing	XX	
Transport and Communication		XX
Building and Construction	XX	
Govt. Services (health, education, defence, etc)	XX	
Other Services	<u>XX</u>	
GDP @ Current Factor Cost	XX	
Net Income from abroad	<u>XX</u>	
GNP @ Current Factor Cost	XX	
Less Consumption of fixed Capital	<u>(XX)</u>	
NNP @ Current factor cost	XX	
Less Subsidies (if any)		(XX)
Add Indirect taxes (if any)	XX	
NNP @ Current Market Prices		<u>XX</u>

Example 1:

Given the following national income data:

	₦ billion
Private Consumption expenditure	350
Private Investment expenditure	200
Government expenditure on goods and services	400
Net exports of goods and non-factor services	(25)
Net factor payments to abroad	75
Depreciation	100
Net Indirect Business taxes	50
Population	125 million

Compute (a) GNP (b) NNP (c) National Income (d) Per Capita GNP.

Solution

i.   GNP [expenditure approach] = C + 1 + G + (X – M)

                                                                                       N

Private Consumption expenditure	350
Private Investment expenditure	200
Government expenditure	400
Net export of goods and non-factor	(25)
GDP (a) market prices	**925**

ii.   NNP [expenditure approach] = GNP – Depreciation:

                                                                                       N

GDP (a) market prices	925
Add Net factor payments to abroad	75
GNP (a) market prices	1,000
Less Depreciation	(100)
NNP (a) market current prices	**900**

iii.   NI (Income approach) = NI – Indirect tax + Subsidies

                                NI – Net Indirect Business Taxes

                                                                       N

NNP (a) market prices	900
Less Net Indirect Business Taxes	(50)
NI (a) factor cost	**850**

iv.   Per Capita GNP = nominal GNP/population

       Where: Nominal GNP = GNP (a) current market prices = 1,000

Per Capita GNP = 1000/125 = **N8 per person**

10.5   Uses of National Income Statistics

There are several important uses ascribed to national income statistics and therefore, there is great need for its preparation regularly by every nation.

The following are some of its uses:

i. National Income reveals the overall production performance of the economy as it seeks to measure the level of production every year. From it, we obtain the Per Capita Income derivative which gives us an idea about the average standard of living of the people which is also an indication of the level of economic welfare of the people.

ii. With the use of national comparison from year to year we can know whether the economy is growing or not. For instance, when national income remains unchanged, it indicates the economy is stagnant; when it increases, the economy is growing while when it decreases thus, the economy is also declining.

iii. From time to time, it shows the contribution each sector made to the economy e.g., agriculture, industry, trade etc.

iv. National income throws light on the distribution of national income such as wages, profits, rent and interest which depend largely on the extent of working classes (wages) and property owners (i.e., rents, profits and interest).

v. It shows the figures of consumption, savings and investment in the country, which are indispensable for the study of economic growth and planning.

vi. With the help of national income estimates of various countries of the world, we can compare their standard of living and economic welfare.

vii. Finally, national income estimates act as a valuable guide to economic policy especially for development planning and active government intervention when a sector needs stimulus of regulation.

10.6   Difficulties of Measuring National Income

There are some conceptual problems that crop up when calculating the national income of a country. They are:

i. The treatment of non-monetized transactions such as the services of housewives or pension paid to retired people constitutes a problem or anomalies.

ii. The second difficulty is the treatment of government's administrative functions. The likes of justice, defence and security protection should be treated as giving rise to final consumption of such services by community as whole.

iii. Another issue is with regard to the treatment of income arising out of activities of foreign firms in a country. Should their income form part of the national income of the country in which they are located or should it belong to the country owning the firms? The IMF's view point on this is that

production and income from such enterprises should be ascribed to the territory in which production takes place. However, profits earned are to be credited to the parent company concerned.

10.7   Components of National Income

We can explain below the main important concepts of national income.

1. **Gross Domestic Product (GDP):** Gross domestic product is the total money value of all final goods and services produced in a country during a specified period of time usually a year. Here we consider goods and services produced within a country but are sold to other countries in form of exports and exclude those purchased from other countries in form of imports, since GDP is not a measure of all production performance of an economy because it excludes goods and services of a country abroad, it is said to be defective.

2. **Gross National Product (GNP):** This is the basic social accounting measure of the total output or aggregate supply of goods and services. One, it measures the market value of annual output in monetary values of their prices. Two, to calculate GNP accurately, all goods and services produced in any given year must be counted only once using the market value of the FINAL GOODS and ignoring the transaction involving intermediate goods e.g., Pulp wood refines/process stage - ordinary plank - paper products. Only the stationery stage price (final goods) will be considered. Three, when calculating GNP, non-productive transactions should be excluded e.g.,old age pensions, unemployment allowance, which are merely grants or gifts. GNP = GDP+ Net factors income from abroad.

3. **Net National Product (NNP):** In the production of the gross national product of a year we consume or use up some capital equipment, machinery, etc. The capital goods like machinery and equipment wear out or depreciate in value as a result of its consumption or use in the production process. This is DEPRECIATION. When charges for depreciation are deducted from the Gross National Product, we get Net National Product; it means the market value of all final goods and services after providing for depreciation. Thus NNP = GNP - Depreciation or National income (NI) at market price.

4. **Personal Income (PI):** This is defined as the total income received by individuals from all sources during the course of the year. Pl = Nl - income earn but not received (IENR) + income received but not earned (IRNE).

    It is shown mathematically as:

    P. I= NI - IENR + IRNE

    Where: IENR includes undistributed profits, profit on tax, social security tax (provident fund).

IRNE includes subsidies, Bursary, Pension and other transfer payments final income is the total incomes actually received by household payment of personal income tax.

5. **Disposable Income:** This is the amount available to the household for spending and saving after taxes have been paid. Personal disposable income is designed to measure the potential purchasing power of households. It is obtainable mathematically as

$$PDI = PI - T$$

$$Y_d = Y - T$$

Where: $PDI = Y_d$

T = Taxes/Personal Income taxes.

10.8 Relationship between GDP, GNP, NNP at Market Prices and National Income at Factors Cost: Mathematical Expression

GDP measures the value of output currently produced within the country at the prevailing market prices while GNP measures the value of output currently produced in the country plus the net factor income from abroad.

Thus, whenever GNP exceed GDP, it indicates that the residents of the country are earning more abroad than foreigners earning in the country, hence, the economy has been sufficiently indigenized while when GDP exceed GNP, it shows that the foreigners earning in the country is more than the resident of the country's earning abroad, hence, the economy has not been sufficiently indigenized.

Therefore, the mathematical relationship between GNP @ market prices, GNP at factor cost and Net National Product are as follows:

GNP@ Market prices = GDP @ market prices + net income from abroad

NNP @market prices = GNP @ market prices - Depreciation

Note: The term Net National Product is synonymous with National Income but, NNP is used to express National Income under flow of product or expenditure method while National Income (NI) is used to express money flow, hence uses factor-income method.

GNP at factor cost = GNP at market prices + indirect taxes - subsidies.

NNP or NI at factor cost = NNP at market prices - indirect taxes + subsidies.

Hence, NNP at market prices = NI at factor cost + indirect taxes – subsidies.

10.9   Distinction between Nominal GNP and Real GNP

The Gross National Product of a nation can be measured either in current naira (nominal) or in constant naira (real). The nominal valuation uses prices of goods or factors of production prevailing in the current period to value the current periods output or expenditure. Hence, it has not been adjusted for inflation / price changes.

It is defined as the value of final goods and services for a given year in the market prices prevailing in that year. It is sometimes called Money GNP or GNP at current market prices or Nominal GNP.

On the other hand, the real GNP is measured by using the prices of goods or factors of production which prevailed in a base period to value the current periods output or expenditure. Hence, it has been adjusted for inflation / price changes.

Real GNP is defined as the value of final goods and services for a given year in the market prices prevailing in base year. Sometimes it is called the constant market prices, that is, Real GNP is often referred to as GNP at market prices.

In conclusion, Real GNP is a more reliable and widely used estimate, it measures the human welfare because it considers that the changes in Nominal GNP is not a true measure for human welfare, it could increase due to increases in the market prices and current year and not increase in physical output of goods and services. Therefore, Real GNP is attainable as the ratio of Nominal GNP to the price Index; expressed as

Real GDP $= \frac{nominal\ GDP}{price\ index}$

Where price index $= P_n = \frac{current\ market\ price}{based\ market\ price}$

However, in order to measure the real changes in Nominal GNP and real GNP, the GNP deflator or GNP price index is attainable as the ratio of the nominal GNP to real GNP expressed in percentage. Hence, it measures the rate of inflationary trend or general price increases in the named period. It is expressed as GNP deflator $= \frac{Nominal\ GNP}{real\ GNP}$ x 100. It is sometimes called the implicit GNP deflator because it is the important way of measuring inflation from the period of the base year to the current period.

10.10   Distinction between GNP Per Capita and Real GNP Per Capita

The GNP Per Capita measures the well-being of the citizens at current market prices by comparing the ratio

of the Nominal GNP to the population size of the country and assuming a constant or no changes in prices level. It is derived as GNP per capita $=\frac{\text{Nominal GNP}}{\text{Population}}$. On the other hand, Real GNP Per capita measures the well-being or human welfare at a constant price level by considering the inflationary trend or general price changes of the current price to the base year. This is the most widely and appropriate criteria to measure the good welfare of the citizens as to the ability of average citizens to meet his/her desire at a constant price. It is derived as Real GNP per Capita $=\frac{\text{Real GNP}}{\text{Population}}$.

10.11   Cost of Living versus Standard of Living

Cost of living can be defined as the amount of money an individual spends to obtain the goods and services which will sustain him at a particular time. It is thus the money cost of basic things of life like food, shelter, clothing, medical services etc, which individuals consume.

The cost of living depends largely on the prices of goods and services. If prices are high, the cost of living will be high since the individuals will have to spend more money to obtain goods and services. But if the prices are low less money will be spent, hence cost of living will be low.

The standard of living may be defined as the level of economic well-being or welfare attained by individuals in a country at a particular time. The level of welfare is determined by the quantity and quality of goods and services consumed within a period of time. The higher the quantity and quality of goods and services consumed, the higher the standard of living and vice versa. The income per head and the distribution of income are used in measuring the standard of living. On a final note, the rise in the cost of living reduces the standard of living, while reduction in the cost of living increases the standard of living. It is actually the cost of living that determines the standard of living.

10.12 National Income Determination

10.12.1 Consumption

This is the aggregate consumption and can be determined by subtracting aggregate savings from national income. The aggregate consumption of any economy depends on a number of factors. These include:

1. Government fiscal policy: A reduction in tax rate will increase disposable income and consequently the consumption of the people.

2. Expected future change in income: If the income level is expected to be higher in the future relative to the present income level, then people will tend to consume more out of their present income.

3. Credit facilities: This is the act of enjoying a particular commodity which are not out rightly or fully paid for but whose full payment can be made at a future time. The more readily available these facilities are, the higher will be the consumption level of the household.

4. Inherited wealth: The higher the environmentally inherited wealth by the community or society, the wealthier it becomes and the higher will be their level of consumption all things being equal.

5. Population distribution with respect to age: The aged and the infants are prone to consuming more than the active and productive age of the population. Hence, the higher the population of the aged and the infants of any society, the higher will be their propensity to consume from their income.

6. Societal attitudes towards present savings and investment, the lower will be the consumption level.

From the above stated factors determining consumption, it implies that consumption is dependent on disposable income and that consumption has a positive correlation with income levels (that is, the higher the disposable income the higher will be the consumption level, all other things being equal). Thus, consumption is the dependent variable, and disposable income is the independent variable.

The consumption function can be written as $C = f(Yd)$

$$C = b_o + b_1 Yd$$

$b_o > 0$

$b_1 > 0$

Where: f = Function

Yd = Disposable income

b_o = Autonomous Consumption

b_1 = Marginal Propensity to Consume (MPC)

b_0 and b_1 have values greater than zero.

The consumption function can be graphically illustrated as follows:

Figure 72:

(graph with C on vertical axis, Income (Y) on horizontal axis, line labeled $C = b_0 + b_1\, Yd$ starting at b_0)

10.12.2 Savings

This is income not spent on goods and services for current consumption. It is the act of abstaining from consumption. Savings can be done by keeping your money income in the bank (financial investment) or by the spending money income to acquire stocks (real investment). Aggregate savings can be defined as the summation of household savings (S_h) and firms' savings (S_f) or undistributed profits of the firms (π_u). Symbolically written as:

$$S = S_h + S_f$$

OR

$$S = S_h + \pi_u$$

Determination of Savings function

Given national income as $Y = C + S$

And Consumption function as $C = b_0 + b_1 Y$

Therefore, $S = Y - (b_0 + b_1 Y)$

$$S = Y - b_0 - b_1 Y$$

$$S = -b_0 + (1 - b_1)Y$$

$$S = -b_0 + b_1 Y$$

$b_0 < 0$ and $b > 0$

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Where: $-b_0 =$ Autonomous savings; b_1 The Marginal Propensity to Save (MPS)

Figure 73:

$$S = -b_0 + b_1Y$$

(Saving S on vertical axis, Income (Y) on horizontal axis; line starting at $-b_0$ below origin, rising through positive region.)

Determinants of Savings

1. **Income level:** The higher the levels of income, the higher will be the amount of savings, all things being equal.

2. **Interest rate:** The higher the interest rates the more people will be willing and attracted to save. This factor is a very strong determinant to the interest paid on money saved. It is the opportunity cost of the money spent.

3. **Government fiscal policy**: The fiscal policy of the government affects the disposable income of the people. If, for example, there is an increase in taxation, it will lead to a decrease in people's disposable income and consequently, lead to a reduction in the level of savings (people will be constrained from saving because of the smaller income at their disposal).

4. **Habits and environmental factors:** Some people save out of habit cultivated in saving towards certain ceremonies or occurrence like burial ceremonies or children's school fees. The efficiency of the banking institutions can equally encourage savings. Savings and income are positively correlated, that is

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S = -a + bY (where b > 0).

Component of Consumption and Savings

Average Prosperity to Consume

$0 < APC < 1$ (Provided $0 < C < Y$) $= \frac{C}{Y}$

APC = 1 (If C = Y),

APC < 1 (If C < Y)

Under normal circumstances, the Average Propensity to consume ranges between zero and unity.

Average Propensity to Save (APC)

This is proportion of a given income saved by the populace. It can be defined as the ratio of savings to income level. That is:

$APS = \frac{S}{Y}$

$0 < APS < 1$ (provided $0 < S < Y$)

APS = 1 (if S = Y)

APS = 0 (if S = 0) – zero savings

Thus: APC + APS = 1

APS = 1 – APC

Marginal Propensity to Consume (MPC)

Marginal Propensity to consume is defined as the ratio of the change in consumption to the change in income that necessitated it. That is,

$MPC = \Delta C / \Delta Y$

Where: ΔC = Change in consumption

ΔY = Change in income

0<MPC<1 (Marginal Propensity to consume ranges between zero and unity)

Marginal propensity to save is the ratio of the change in savings to the change in income that necessitated it. It is the fraction of an increase in income that is saved.

$MPS = \Delta S / \Delta Y$

Where: ΔS = Change in savings

ΔY = Change in income

0<MPS<1 (MPS between zero and unity)

MPS + MPC = 1

MPS = 1 − MPC

10.12.3 Investment

Investment in economics can be defined as the act of producing capital goods which are not for immediate consumption. It may be defined as net additions to stocks.

Types of Investment

Autonomous Investment: This is an exogenously determined investment that is not dependent on the rate of investment.

$I = I_0$

Induced Investment: This is an endogenously determined investment, that is

$I = I_0 + vY$ (defining investment as a function of income)

Net Investment: Defined as the gross investment that occurs in an economy less capital consumption allowance (depreciation).

Determinants of Investment

1. Level of national income: Income and investments are positively related

2. Cost of funds (lending rate or interest rate): The higher the cost of funds (interest rate), the lower the volume of investment in an economy.

3. Technical progress (technological changes): The high the rate of technological progress, the more profitable it becomes to undertake more investment in order to produce new types of goods by using new and more economical production techniques.

4. Government fiscal policies in respect of minimum wages and salaries and taxes. The volume of new investment undertaken in an economy will be determined by the policy of the government regarding these costs.

5. Business climate: In view of the business investors, if the climate is perceived hostile no matter how low the lending rate (cost of funds) investment level may not appreciate.

   Where: MEI = Marginal Efficiency of Investment

   The MEI is the Investment demand function that shows the relationship between interest rate

and investment decision.

Figure 74:

Investment Demand (MEI) and Interest Rate

Figure 75:

That is, MEI < 0. This means that as interest rate falls, the demand for investment increase and vice versa, ceteris paribus.

10.13 Equilibrium Income Determination

In this section, we shall discuss equilibrium Income determination from two economic systems, namely Closed Economy and Open Economy System respectively.

Equilibrium Income Determination under Closed Economy

A closed Economy is an economy where there is no trading links with the rest of the world. That is, there is absence of exports and imports.

In this economic system, it is sub-divided into two parts, depending on the nature of the Closed Economy adopted, where there is Pure Capitalist economy or Government intervention economy. Therefore, there are two sub-systems namely:

i.   Determination of Income in two-sector economy

ii.   Determination of Income in three-sector economy.

Income Determination in a Two-Sector Economy

In the two sector Closed Economy System, these exist only two sectors, namely the Household sector and the Business Sector.

The National Income is determined through two methods:

i.   Aggregate DD Approach.

ii.   Withdrawal and Injection Approach.

Aggregate Demand Approach

Under this approach, the equilibrium level of national Income can be determined through the equality of aggregate supply and aggregate demand.

AS = AD .. …….... (i)

Where AS = Y…….   …….. (ii)

AD = C + I ……....   (iii)

Substitute equation (ii) and equation (iii) into equation (i)

Y = C + I ……………...   (iv)

Where $C = b_0 + b_1Y$ …………. (v)

$I = I_0$ …………………. (vi)

Substitute equation (v) and equation (vi) into equation (iv)

$Y = b_0 + b_1Y + I_0$

$Y - b_1Y = b_0 + I_0$

$Y (1 - b_1) = b_0 + I_0$

$Y = (b_0 + I_0) / (1 - b_1)$ ………. (vii)

Withdrawal and Injection Approach (W- J)

Under this approach, the equilibrium level of National income is determined through the equality of all withdrawal components and injection components respectively.

W = J

Where: Withdrawals are all leakages in the economic system. Injections are all income in the economic system.

Thus, S = I............ (i)

Where S = f (Y)   .... (ii)

S = Y - C .... (iii)

$I = I_0$……………. (iv)

$C = b_0 - b_1Y$….. (v)

Re-state:

S = I

$Y - C = I_0$

$Y - (b_0 + b_1Y) = I_0$

$Y - b_0 + b_1Y = I_0$

$Y - b_1 Y - b_0 = I_0$

$Y(1 - b_1) - b_0 = I_0$

$Y = (I_0 + b_0) / (1 - b_1)$

Example 1: Given the Consumption and Investment function as:

$C = 20 + 0.75Y$, and

$I = N25$ million

Required: Determine the Equilibrium level of National Income, using:

i.   AD = AS Approach

ii.   W – J Approach

Solution:

i.   AD - AS Approach

$Y = C + I$

$Y = 20 + 0.75Y + 25$

$Y - 0.75Y = 45$

$Y(1 - 0.75) = 45$

$Yeq = 45/0.25$

Yeq = **N180 million**

ii.   **W – J Approach:**

$S = I$

Where

$S = Y - C$

$= Y - (20 + 0.75Y)$

$S = Y - 20 - 0.75Y$

$S = -20 + 0.25Y$

$$S = I$$

$$-20 + 0.257Y = 25$$

$$0.25Y = 25 + 20$$

$$0.25Y = 45$$

Yeq=45/0.25

Yeq= **N180 million.**

Income Determination in a Three Sector Economy

In this three-sector closed Economy, there is intervention of Government in the economy as well as existence of both household and business sector respectively.

Hence, it is determined through two methods:

i.   Aggregate Demand Approach;

ii.   Withdrawal and Injection Approach.

Aggregate Demand Approach:

In this approach, the equilibrium level of national income is determined through the equality of aggregate supply and aggregate demand. The presence of Government results into the introduction of tax, subsidy and Government expenditure, in the aggregate demand components.

AS = AD ....(i)

Where AS = Y ....   (ii)

AD = C + I + G ....   (iii)

Where $C = b_0 + b_1 Y^d$ ....(iv)

$Y^d = Y - T$ ....   (v)

$T = t_0 + t_1 y$ ....   (vi)

$G = G_0$ ....   (vii)

Substitute eq (iv) to (vii) depending in each purpose into eq (iii) and solve for Y

Withdrawal and Injection Approach

In this approach, the equilibrium level of income is determined through the equality of total withdrawal and total injection into the equation.

It is expressed as:

W=J

Where W = Total withdrawal / leakages = C + T + S

J = Total Injection, such as C + G + I

W = J …………. (i)

C + T + S = C + G + I ………. (ii)

T + S = G + I .... (iii)

Where;

G = G$_0$ ....(iv)

I = I$_0$ ……….. (v)

S = Y - C ....(vi)

T = t$_0$ + t$_1$Y .... (vii)

Substitute each eq (vii) into (vi) for each purpose.

Example 2:

If C = 20+0.8Yd, I = 100, G = 100 and T = 25 + 0.17Y

a.   Determine the equilibrium Y.

b.   Is this income level inflationary or deflationary if the economy achieves full employment at #1,000

c.   If the Government intends to change G$_0$ and T$_0$ by equal amount, by how much are these changes in order to achieve the full employment or price stability objective?

Solution:

a.   Y = C + I + G (1)......... (1)

Where C = 20 + 0.8Yd …… (2)

I = 100 ………………….. (3)

G = 100 .... … (4)

T= 25 + 0.17Y ……….…. (5)

Substitute equations (2), (3), (4), (5) into equation (1)

$Y = 20 + 0.8Yd + 100 + 100$

$Y = 20 + 0.8(Y-T) + 200$

$Y = 20 + 0.8(Y - [25 + 0.17Y]) + 200$

$Y = 220 + 0.8(Y - 25 - 0.17Y)$

$Y = 220 + 0.8Y - 20 - 0.136Y$

$Y - 0.8Y + 0.136Y = 200$

$Y(1 - 0.8 + 0.136) = 200$

$Yq = 1/(1-0.8+0.136) \times 200$

$Yq = (1/0.336) \times 200$

$Yq = (2.98)(200) = ₦596$

10.14   Balanced - Budget Multiplier

This is a multiplier used by the government. This exists when an increase in government spending equals an increase in Taxation (Autonomous), hence, equals to unity (one).

This is shown symbolically as $(\Delta G/\Delta Y) + (\Delta T/\Delta Y) = 1$

It implies that change in Government spending equals change in Autonomous tax, equals to one because marginal propensity to consume (b_1) must be always less than one.

Income Determination in an Open Economy

In an open economy, it is assured that there is trading links with the rest of the world. Hence, there is presence of Exports and Imports.

The Equilibrium level of income can be determined through the two methods or approaches;

i.   Aggregate Demand Approach; and

ii.   Withdrawal and Injection Approach.

Aggregate Demand Approach

$Y = C + I + G + (X - M)$ (1)

Where $C = b_0 + b_1 Yd$ (2)

$Yd = Y - T + R$ (3)

$T = T_0 + tY$ (4)

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$I = I_0$ (5)

$G = G_0$ (6)

$X = X_0$ (7)

$M = M_0 + mtY$ (8)

Substitute eq (2) - (8) into eq (1)

$Y = b_0 + b_1Yd + I_0 + G_0 X_0 - [M_0 + M_1Y]$

$Y = b_0 + b_1(Y - T + R) + I_0 + G_0 + X_0 - M_0 - M_1Y$

$Y = b_0 + b_1 [Y - [T_0 + tY] + R] + I_0 + G_0 + X_0 - M_0 - M_1Y$

$Y = b_0 + b_1 [Y - T_0 + tY + R] + I_0G_0 + X_0 - M_0 - M_1Y$

$Y = b_0 + b_1Y - b_1T - b_1 tY + b_1R + I_0 + G_0 + X_0 - M_0 - M_1Y$

$Y - b_1Y + b_1tY + M_1Y = b_0 - b_1T_0 + b_1R + I_0 + G_0 + X_0 - M_0$

$Y(1 - b_1 + b_1t + M_1) = b_0 - b_1T_0 + b_1R + I_0 + G_0 + X_0 - M_0$

$Yeq = (b_0 - b_1T_0 + b_1R + I_0 + G_0 + X_0 - M_0)/(1 - b_1 + b_1t + M_1) = \frac{(b0 - b1T0 + b1R + I0 + G0 + X0 - M0)}{1 - b1 + b1t + M1}$ .... (9)

From eq (a), an increase in import will result to a change in income as:

$\Delta Y = 1/ 1 - b_1 + b_1t + M_1 [AM_0]$

Graphical Illustration of an Open Economy and Income Determination

I

Figure 76

The diagram demonstrates that inclusion of each Aggregate component results to a change in national income respectively. But a change in national income from Y_4 to Y_5 indicates that open economy with net export is less than open economy with exports only.

Injection-Withdrawal (J – W) Approach of Income Determination

In this approach, we believe that aggregate demand must be equal to aggregate supply. Hence, a planned expenditure in a four-sector model is expressed as:

$$AD = C + I + G + X \qquad (1)$$

$$E = C + I + G + X \qquad (2)$$

Also, Aggregate supply otherwise known as the withdrawal in the four-ector model as

$$AS = C + S + T + M \qquad (3)$$

$$E = C + S + T + M \qquad (4)$$

Hence, Equilibrium of income and output exist when Aggregate dd equal Aggregate ss, hence equation (2) and equation (4) is equated

$$Y = E \qquad (5)$$

$$C + S + T + M = C + I + G + X \qquad (6)$$

$$S + T + M = 1 + G + X \qquad (7)$$

Where the left-hand side items are leakages (withdrawal), the right-hand side (RI + S) items are injections.

Assume

$$S = Y - C \qquad (8)$$

$$C = b_0 + b_1 Yd \qquad (9)$$

$Y^d = Y - T + R$ (10)

$T = T_0 + ty$ (11)

$M = M_0 + M_1 Y$ (12)

$I = I_0$ (13)

$G = G_0$ (14)

$X = X_0$ (15)

Substitute equation (8) - (15) into equation (7)

$Y - C + T_0 + ty + M_0 + M_1 Y = I_0 + G_0 + X_0$

$Y - (b_0 + b_1 Y) + M_0 - M_0 Y = I_0 + G_0 + X_0$

$Y - b_0 + b_1 y$

$Y - C + T + M_0 + M_1 Y = I_0 + G_0 + X_0$

$Y - [b_0 + b_1 Y^d] + M_0 + M_1 Y = I_0 + G_0 = X_0$

$Y - [b_0 + b_1 [Y - T] + M_0 + M_1 Y = I_0 + G_0 = X_0$

$Y - [b_0 + b_1 [Y - (T_0 + tY)] + M_0 + M_1 Y = I_0 + G_0 + X_0$

$Y - [[b_0 + b_1 Y - b_1 T_0 - b_1 TY] + M_0 + M_1 Y = I_0 + G_0 + X_0$

$Y - b_0 - b_1 Y + b_1 Y + b_1 T_0 + b_1 tY + M_0 + M_1 Y = I_0 + G_0 + X_0$

$Y = b_1 Y + b_1 tY + M_1 Y + I_0 + G_0 + X_0 - M_0 - b_1 T_0 + b_0$

$Y = (1 - b_1 + b_1 t + M_1) = b_0 - b_1 T_0 + I_0 + G_0 + X_0 - M_0$

$Yeq = \dfrac{1}{1 - b1 + b1t + M1} (b_0 - b_1 T_0 + I_0 + G_0 + X_0 - M_0)$ (16)

Thus, irrespective of the approaches employed towards income determination, it must yield same result, just as comparison of equation (16) with equation (9) of Aggregate demand approach being same (equal).

Example 3: Given that $C = 500 + 0.6Y$, $I = \#35m$, $G = \#20$ $X = \#35$ and $M = \#25m$.

Required:

a. Determine the MPS

b. The equilibrium level of income

c. With a rise in M to #55m, what will be the new equilibrium income?

d. Explain the effect of this rise in M on the economy.

Solution:

$Y = C + I + G + (X - M)$ open economy

Where $Y + 500 + 0.6Y + 20 + 35 - 25$

$Y - 0.6Y = 500 + 20 + 35 - 25$

$Y(1 - 0.6) = 530$

$Yeq = 1/1\text{-}0.6 \,(530) = \frac{1}{1-0.6}(530)$

$Yeq = \frac{1}{0.4}(530)$

$Yeq = \#1,325$.

a.   The marginal propensity to save (MPS) = 1 - MPC

Where MPC = 0.6

MPS = 1 - 0.6 = **0.4**.

b.   A rise in Import from #25 to #55, result to change in income as:

$\Delta M = 55$

$\Delta Y = \frac{1}{1-0.6}(55)$

$\Delta Y = \#137.5$

However, the new equilibrium income will be:

$Yeq_{New} - Yeq_{old} = \Delta Y$

$Yeq_{New} = \#1325 - 137.5$

$Yeq_{New} = \#1187.5$

10.15 Business Cycle

Business cycle in any economy breeds uncertainty about future income and employment opportunities. Therefore, it is imperative for new age manager to understand the types of business cycle, consequences and how to harness the benefits as well as minimize the losses within an economy and across nations. The term business cycle, otherwise known as trade cycle or economic cycle, can be defined as recurring alternation of expansion and contraction in aggregate economic activity over a given period of time. In

other words, it is described as the irregular fluctuations or changes in the economic activities of an economy. In summary, they are the "ups" and "downs" occurring at fairly regular intervals. Therefore, the periodical fluctuations in aggregate economic activity such as employment, income, output and price, are known as business cycle or trade cycle or economic cycle.

10.15.1 Features of Business Cycle

The followings are the salient attributes of business cycles.

(i) Business cycles occur periodically, implying that they do not show same regularity.

(ii) Business cycles are synchronic, which means changes in any sector will lead to changes in other or all sectors of the economy. For instance, recession in one sector passes on to another sector and continues till the whole economy is in the grip of recession.

(iii) Business cycles are also cumulative, that is, expansion in one sector or sectors which further generates same direction, until its direction is reversed by external forces.

(iv) Business cycles are internationally infectious in nature, that is, they start in one country, and spread to other countries through trade relations between them.

(v) Business cycles are recurrent, that is, characterized by alternation of expansion and contraction in economic activity. They are also known as being repetitive, that is, period of prosperity is followed by depression and followed by prosperity and soon.

10.15.2 Types of Business Cycle

Dynamic forces operating in a capitalist economy create various kinds of economic fluctuations. These fluctuations can be classified as follows: -

1. **Short-Time Cycle:** This trade cycle occurs for a short period of time. It is also known as minor cycle. It lasts for about 3-4years.

2. **Secular Trends:** This trade cycle occurs for a long period of time and is known as long-term cycle. It lasts for about 4-8 years or more. It is also known as major cycle.

3. **Seasonal Fluctuations:** This refers to trade cycles, which take place as a result of seasonal changes in the economy. For example, failure of monsoon can cause a downtrend in the economy which may be followed by a good monsoon and an uptrend.

4. **Irregular or Random Fluctuations:** These trade cycles are unpredictable and occur during a period of strikes, war, etc. They cause a shock to the economic system.

5. **Cyclic Fluctuation:** These fluctuations are wave-like changes in economic activity caused by recurring phases of expansion and contraction. There is an upswing from a trough (low point) to peak and downswing from the peak to trough caused by economic changes in demand, or supply or various other factors.

10.15.3 Phases of Business Cycle

Business cycles are broadly classified into four phases namely:
i.   Trough (Slump/lower turning point)
ii.   Expansion (Recovery)
iii.   Peak (Boom point), and
iv.   Contraction (Downswing, Recession or Depression)

Trough (Slump) Phase

This phase of business cycle is the lowest level of the economic activity. It is also known as the lower turning point. It is commonly called slump phase of the business cycle. This phase is associated with high unemployment, low aggregate demand-low consumption, investment and net export and eventually a low output. However, the slump period can be resuscitated through increased government spending and low interest rate to encourage investors which would reduce unemployment drastically and increase output, all things being equal.

Expansion (Recovery) Phase

This phase commences with the revival of the economic activity and moves to the expansion phase. It is also known as the prosperity or upswing or recovery phase of the business cycles. That is, increase economic variables such as government spending, consumption, investment and others, the output will also increase in greater proportion.

Peak (Boom) Phase

This phase is known as the upper or maximum turning point. It is the point at which the expansion phase reaches the climax or peak. Also, it is called boom phase of the business or economic phase in an economy. This boom phase exists when the actual output is equal or very close to potential output of the economy. However, the boom phase is associated with high inflation, increase aggregate demand and output respectively.

Contraction (Recession) Phase

This is also known as the recession or downswing phase. It simply refers to a situation whereby the economic activity continues to fall or deplete as time progresses, until it reduces the trough (the lowest economic activity). A recession phase describes a persistent decline in output or GDP of a country for three consecutive quarters in a year. Such phase is also characterized with high unemployment, high interest rate and low aggregate demand variables, including country's currency depreciation. The figure below discusses the business cycle curve.

From the diagram above, an economic activity starts from a slump (lower point), often called depression phase and thereafter, resuscitates through various economic and other reforms, called recovery phase.

Following a positive consistent reform, the economic activity reaches the boom phase (upper turning point) and prosperity. However, the economic activity not improved upon results in the declining phase, called the recession phase. Again, the business cycle continues similarly with ups and downs.

10.16 Theories of Business Cycle

The various theories of business cycle developed by different scholars from time to time are stated below.

(i) Sunspot Theory

(ii) Monetary Theory

(iii) Under-Consumption or Over-Saving Theory

(iv) Keynes Theory

10.17 Causes of Business Cycle

1. **Interest rates:** Changes in the interest rate affect consumer spending and economic growth. For example, cutting the interest rate increases spending level and therefore increases business activities. Therefore, a positive relationship exists between the higher spending and economic growth.

2. **Consumer and business confidence:** Economic growth encourages consumers to borrow and banks to lend. This causes higher economic growth. Confidence is an important factor causing the business cycle.

3. **Multiplier effect:** The multiplier effect states that a fall in injections may cause a bigger final fall in real GDP. If government cut public investment for instance, there would be fall in aggregate demand and a rise in unemployment. Alternatively, an injection could have a positive multiplier effect.

4. **Accelerator effect:** This states that investment depends on the rate of changes of economic growth. If the growth rate falls, firms reduce investment because they do not expect output to raise as quickly

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10.18 Implications of Business Cycles in an Economy

The implications of business cycle in an economy depend on the type of business cycles encountered by different country but the general factors are:

a) Reduction in aggregate demand
b) High unemployment
c) Reduction in government spending
d) Depreciation of the country's currency
e) Low output or GDP level
f) High debt value
g) High social vices such as crime rate, vulnerability, destitute and others

10.19 Control of Business Cycles in the Economy

Monetary Policy

Monetary policy as a method of controlling business fluctuations is operated by the central bank of a country. The central bank adopts a number of methods to control the quantity and quality of credit. To control the expansion of money supply during a Boom, it raises its bank rate, sells securities in the open market, raises the reserve ratio and adopts a number of selective credit control measures such as raising margin requirements and regulating consumer credit. Thus, the central bank adopts a tightening money policy. Borrowing by business and trade becomes dearer, difficult and selective. Efforts are made to control excess money supply in the economy.

To control a recession or depression, the central bank follows an easy or cheap monetary policy by increasing the reserves of commercial banks. It reduces the bank rate and interest rates of banks. It buys securities in the open market. It lowers margin requirements on loans and encourages banks to lend more to consumers, business people, traders etc.

Fiscal Policy

Monetary policy alone is not capable of controlling business cycles. It should therefore, be supplemented by compensatory fiscal policy. Fiscal measures are highly effective for controlling excessive government expenditure, personal consumption expenditure and private and public investment during boom. On the other hand, they help in increasing government expenditure, personal consumption expenditure and private and public investment during a depression.

Policy during Boom:

The following measures are adopted during a boom. During a boom, the government tries to reduce unnecessary expenditure on non-development activities in order to reduce its demand for goods and services. These development activities reduce demand for goods and services. This also puts a check on private expenditure, which is dependent on the government demand for goods and services. However, it is difficult to cut government expenditure. Moreover, it is not possible to distinguish between essential and non-essential government expenditure. Therefore, this measure is supplemented by taxation. To cut personal expenditure, the government raises the rate of physical, corporate and commodity taxes. The government also follows the policy of having surplus budget when the government revenues exceed expenditures. This is done by increasing the tax rates or reducing government expenditure or both. This tends to reduce income and aggregate demand through the reverse operation of the multiplier.

Another fiscal measure that is usually adopted is to borrow more from the public. This effect reduces the money supply with the public. Furthermore, the repayment of public debt should be stopped and postponed to some future date when the economy stabilizes. The government increases public expenditure, reduces taxes and adopts a budget deficit policy. These measures tend to raise aggregate demand, output, income, employment and prices. An increase in public expenditure increases the aggregate demand for goods and services and leads to increase in income via the multiplier. The public expenditure are made on such public works as roads, canals, dams, parks, schools, hospitals and other construction works. The government also increases its expenditure on such relief measures as unemployment insurance, and other social security measures in order to stimulate the demand for consumer goods industries. Borrowing by the government to finance budget deficits utilizes idle money lying with the banks and financial institutions for investment purposes.

Direct Controls

The aim of direct controls is to ensure proper allocation of resources for the purpose of price stability. They are meant to affect strategic points of the economy. They affect particular consumers and producers. They are in the form of rationing, licensing, price and wage controls. Export duties, exchange controls, quotas, monopoly control etc are more effective in overcoming bottlenecks but the shortages arising is inflationary pressures. Their success depends on the existence of an efficient and honest administration. Otherwise, they lead to back marketing, corruption, long queues, speculation, etc. Therefore, they should be resorted to only in emergencies like war, crop failures and hyper-inflation.

10.20 Summary

National Income is the aggregate factor income (i.e., earning from labour and property) which arises from the current production of goods and services by the nation's economy. The major concepts of National Income accounting are the Gross Domestic Products, Gross National Product, Net National Product and National Income. Others are Personal Income, Personal Disposable Income and Per Capital Income. The three methods for computing National Income are the Income methods, product method and Expenditure method. National Income statistics are used to show overall standard of living country to compare living standard between two or more countries. It is used to determine the effectiveness of government planning policies and also to reveal the overall performance of an economy among uses. The challenges faced in the measurement of National Income accounts are the problems of double counting, the treatment of non-monetized services like that of the housewives and how to determine net income from abroad along with the treatment of income of foreign firms in a country.

Review Questions

1. Which of the following items is **not** included in calculating the gross domestic product (GDP)?
   a. Income from employment
   b. Royalties from companies
   c. Rents on properties
   d. Earnings from abroad

5. The multiplier equation is expressed as $k = \frac{1}{1-MPC}$, if the MPS = 0.25, what is the value of K
   a. 25
   b. 4
   c. 2.5
   d. 2

6. The difference between gross national product and net national product is
   a. Depreciation
   b. Net investment

c. Net exports

d. Capital stock

7. Which of the following is **not** a component of aggregate expenditure?

   a. Investment

   b. Government purchases on goods and services

   c. Net exports

   d. Personal income taxes paid

8. Shifts in the consumption curve are caused by all of the following **except** changes in

   a. Interest rate

   b. Income

   c. Price level expectations

   d. Availability of credit facilities

9. Autonomous consumption refers to

   a. Marginal propensity to consume that is less than one

   b. Marginal propensity to consume that is greater than one

   c. Consumption that is independent of the level of income

   d. All consumption

10. A monthly stipend of a boarding school student spent on toiletries is an example of

    a. Personal consumption

    b. Daily consumption

    c. Autonomous consumption

    d. Induced consumption

11. During the business cycle, an economic expansion occurs

    a. At the peak of the business cycle

    b. At the trough of a business cycle

    c. In between the peak and through

    d. In between the trough and peak

9. Which of these should be included in the national income accounting?

    a. The services of a housewife

    b. Intermediate goods

    c. Appreciation in stock prices

d.   The value of second-hand goods

Suggested Answers

a.	**D**
b.	**B**
c.	**A**
d.	**D**
e.	**A**
f.	**C**
g.	**C**
h.	**A**
i.	**A**

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CHAPTER ELEVEN

INTRODUCTION TO PUBLIC FINANCE

11.1 Learning Objectives

At the end of this chapter, the students should be able to;

i.   Explain the economic functions of government.

ii.   Discuss the sources of government revenue as well as the government expenditure.

iii. Discuss types /classification of taxes and their uses.

iv.   Distinguish among the three types of government budgets viz: surplus budget, deficit budget and balanced budget.

v.   Explain fiscal policy instruments, like taxation, financing and how they can be used to regulate the economy in terms of inflation, money supply, unemployment and economic development.

11.2   Introduction

Public finance is concerned with the financial operations of the government. It tells us how government through its spending and revenue-raising activities influences creation and distribution of wealth.

11.3   Economic Functions of Government

The main economic functions of the Federal/State governments are as follows:

1.   Providing the legal framework and a social environment conducive to the effective operations of the price system.

2.   Creation and maintenance of social and economic infrastructures.

3.   Redistribution of income through various programmes like price control.

4.   Promotion of macroeconomic objectives designed to assist the economy to achieve full employment of resources, a stable price level and a satisfactory balance of payments.

11.4   Federal Government Finances in Nigeria

This involves both resources of government revenue and how they spend the revenue (expenditure).

11.4.1 Sources of Government Revenue

There are two major sources of government revenue in Nigeria. They are the oil and non-oil revenue. The oil revenue consists of petroleum profit tax, royalties and on the other hand, the major sources of non-oil revenue are personal and Income taxes, import duties and excise duties. A newly introduced one is VAT (value added tax) which is generally levied on goods and services.

11.4.2 Categories of Government Expenditure

Government spending can be classified into two: Recurrent Expenditure and Capital Expenditure.

Recurrent Expenditure: Are the expenditures that the government makes on an on-going basis. That is, in the course of running the government such as salaries of civil servants, pensions and gratuities.

Capital Expenditure: Refers to government spending on capital goods such as the construction and maintenance of roads, bridges, dams, schools and hospitals.

11.5 Definition of Taxation

Taxation has been said to be the most important sources of government incomes from different perspectives. A tax is a compulsory levy on individuals and business organisations with the object of financing government expenditure. Those who are levied tax are to pay taxes irrespective of any corresponding return of services or goods by the government. Dalton defined tax as a compulsory contribution imposed by a public authority, irrespective of the exact amount of services rendered to the taxpayer in return. According professor Seligman, a tax is a compulsory contribution from a person to the government to defray the expenses incurred in the common interest of all, without reference to special benefits conferred. In the words of professor Tausig, "The essence of tax is the absence of a direct quid pro quo between the taxpayer and the public authority". That is, it implies that the taxpayer cannot claim something equivalent to the tax paid (quid pro quo) from the government. According to Bhatia (1976), a tax is defined as a liability on which the tax is levied. The most commonly used tax bases are classified into three categories of income consumption and wealth.

Uses of Taxation

1. To finance government expenditure
2. To redistribute income and wealth among the populace
3. To manage the economy like granting tax concessions and incentives as means of stimulating private industries in the domestic economy
4. To protects infant industries by increasing tariffs on imported goods.
5. To correct balance of payments deficit. A tax on imports, ceteris paribus, will reduce import and reduce deficit on current accounts.
6. To discourage the consumption of certain goods like beer or cigarette, government can impose high taxes on them.

Basic Terms in Taxation

The following are the basic terms used in taxation:

1. **Tax Rate Structure:** It describes the relationship between tax collected over a given accounting period and the tax base. Tax rate are calculated on the basis of the tax base.

Tax rate structure can be divided into three forms:

Progressive tax rate structure, Regressive tax rate, and Proportional tax rate

It also shows the relationship between Average Tax Rate (ATR) and Marginal Rate (MTR) under different tax structure.

ATR = amount paid on tax/ tax base

MTR = Δ amount paid in tax/ Δtax base

Table 11.1

Tax Base	Tax Paid A	Tax Paid B	Tax Paid C	ATR A	ATR B	ATR C	MTR A	MTR B	MTR C
10,000	1,000	1,000	1,000	0.1	0.1	0.1	XX	XXXX	
20,000	1,000	3,000	800	0.05	0.15	0.04	0.00	0.2	-
25,000	1,000	5,000	600	0.04	0.2	0.024	0.020.00	0.4-0.04	

2. **Tax Evasion:** Is non - compliance with the tax laws by failing to honour tax obligations. It is deliberate attempts by a tax payer not pay tax.

3. **Tax Avoidance:** Is a change in behaviour to reduce tax liability. Attempt to manipulate or exploit the loopholes of the tax system by the tax payer.

4. **Tax Shifting:** This refers to mechanism of adjustment and fastening of the burden from one economic unit to another. It could be done in backward or forward.

5. **Tax Buoyancy:** This is a term used to describe increase in tax revenue overtime due the growth of tax base.

Cannons of Taxation

1. **Cannon of Equity:** This cannon implies equality of sacrifice or the ability to pay in proportion to the income of tax payers. It also means every tax payer should pay the tax that is proportion to his income. The rich pays more than the poor.

2. **Cannon of Convenience:** It implies that both time manner of tax payment should be convenient to the payer. According to Smith, "Every tax ought to be levied in a manner which is most likely to be convenient for the tax payer to pay.

3. **Canon of Economy:** Taxes states should be economical for the state to collect. Tax revenue should be greater than the collection cost.

4. **Canon of certainty:** There should be no corruption. Thus, the time of payment and manners of payment and the amount to be paid should be clear and plain

Aims of Taxation

i.   Allocation of revenue

ii.   Distribution of resources

iii.   Stabilisation of economy

Classification of Taxes

Generally, there are two main forms of taxes. These are (a) Direct and indirect taxes

Direct Taxes

These are taxes levied directly on individual and business firms whereas an indirect tax is levied on goods and services. Some people had argued that direct taxes are taxes whose incidence cannot be shifted while indirect taxes are those which can be shifted.

It should be noted that taxes are direct as long as their incidence cannot be transferred. In Nigeria, direct taxes include:

1.   Personal income tax
2.   Company tax
3.   Petroleum profit tax
4.   Capital gain tax
5.   Capital transfer tax

Personal Income Tax: - In developed countries, personal income tax account for a substantial portion of government revenue. In Nigeria and many other West African countries, the proportion of revenue that comes from personal income tax is very low. The reason for this situation is that too many transfer earnings occur as a result of the extended family system and a substantial number of eligible tax payers evade tax because of poor monitoring system.

Company Tax: - Company tax also known as corporate tax, is a levy imposed on the profit of business organisation. It is relatively easier to collect in Nigeria as a result of insistence on the submission of tax certificate with respect to any official obligations from government.

Petroleum Profit Tax: - This is a special type of tax which was introduced into Nigeria in 1959. This has become an important source of government revenue because of the special position which petroleum occupies in the Nigerian economy. Only oil companies who engage in oil exploration are expected to pay this tax.

Capital Gains Tax: This is a tax resulting from sale of capital assets.

Capital Transfer Tax: - This is a tax which is usually imposed on deceased person's property. E.g., the government may impose a tax on a direct person's estate which could be taken over by relatives or those whose property has been willed.

Indirect Tax

An indirect tax is a tax which is imposed on goods and services. It could be specific or an ad-valorem. By specific, it means a fixed amount is levied on a commodity per unit while ad-valorem is when the tax imposed is a percentage of the cost of the commodity. The main forms of indirect taxes are as follows:

1.   **Import Duties:** This is sometime called tariffs. They are taxes levied on goods imported into a country. An import duty has the effect of increasing the prices of such commodities in the importing country.

2.   **Excise Duties:** These are taxes imposed on specific goods produced in a country

3.   **EXPORT DUTIES**: This form of tax is levied on goods produced for exports. Such tax is called an export duty, and it tends to raise the price of such exported goods. This type of tax yields revenue to the government but may lead to loss of foreign exchange earnings as a result of reduction in demand following the higher price which the tax has created.

Forms of Taxes

1.   **Proportional Tax Rates**: A schedule of proportional tax is the one in which the rates of taxation remain constant as the tax base changes. The amount of tax payable is calculated by multiplying the tax base with the tax rate. In this case, the tax multiplier remains constant with the change in multiplicand (income).

Table 13

Tax Base	Tax Rate (%)	Amount of Tax
N10, 000	10%	N1, 000
N20, 0000	10%	N2, 000
N30, 000	10%	N3, 000
N40, 000	10%	N4, 000

2.   **Progressive Tax:** This is the tax rate in which the rate of taxation increases as the tax base increases. The amount of tax payable is calculated by multiplying the tax base with the tax rate. The multiplier increases as the multiplicand (income) increases.

Table 14

Tax Base (N)	Tax Rate (%)	Amount of Tax
N10, 000	10%	N1, 000
N20, 0000	15%	N3, 200
N30, 000	25%	N7, 500
N40, 000	40%	N16, 000

2. **Regressive Tax Rates:** A schedule of regressive tax rate is one in which the rate of taxation decreases as the tax base increases. The amount of tax payable is calculated by multiplying the tax base with the tax rate. In this case of regressive tax, the multiplier (tax rate) decreases as the multiplicand (income) increases. For example:

Table 15

Tax Base (N)	Tax Rate (%)	Amount of Tax
N10, 000	10%	N1, 000
N20, 0000	7%	N1, 400
N30, 000	5%	N1, 500
N40, 000	4%	N1, 600

It is thus clear that in case of Proportional Tax Rate, tax rates do not change with increase in income, though the total amount of tax paid by the tax payer increases, as the income rise. In the case of Progressive Tax Rate, the tax rate increases at a faster rate as the income increases. The total amount of money paid in taxation also increases rapidly.

Conceptual Analysis of Tax System: The Incidence of Taxation

Incidence can be described as the burden of a particular tax i.e., the bearing of the money burden of a tax. The question now is who bears the burden of a particular tax? There are certain concepts to be considered.

Purpose of Studying Tax Incidence

1.   It helps in determining the location of the economic burden of a tax.

2.   To determine whether or not a tax is truly progressive, regressive or proportional.

3.   To examine the general fairness of a particular tax or the entire tax system

4.   It helps to appraise the distribution of the burden as a whole.

5.   It enables us to analyse the economic and social effects of a given tax or of the total tax burden.

6.   It provides guides in shaping the tax laws for the future.

Therefore, these are the major purposes for studying tax incidence.

Types of Tax Incidence

1. **Comparative Static Tax Incidence:** This refers to the general effects of tax at a particular point in time. Usually when a tax is imposed, it has a general effect on the economy as a whole, both from the supply and demand sides e.g., the imposition of a tax could lead to reactions on the part of the producer. For instance, a business firm faces higher cost in the event of the imposition of taxes on its product which will lead to lower profit. The producer can react to the situations in many ways:

a.   It will reduce supply so as to increase the price; it thus maintains the previous margin.

b.   It can increase efficiency by lowering its cost and this will absorb the without reducing its profit. If the producer is unable to shift the tax, the producer may accept lower profit and at the same time curtail its investment plans. This may lead to a reduction in output and lead to a reduction in supply of goods and services. On the demand side, as a result of the imposition of tax on goods and services the consumer will shift their purchase of the particular taxes product to other products or commodities i.e., the consumers will change their buying habits. This will automatically trigger-off the effect of a reduction in demand for some goods and increase the demand for other. These changes in demand as a result of imposition of tax will lead to change in the demand for capital goods all of which may lead to a composition of National income. All the above analysis on the supply is referred to as the comparative static taxincidence. It is static because the changes are as a result of the tax change at a particular point in time.

2.   **Dynamic Tax Incidence**: Dynamic Tax Incidence described the changes brought about by the tax in the context of economic growth. Therefore, the Dynamic Tax incidence focus its attention on the changes brought by the effect of tax in the content of a growing National Income from the point of view of individual incomes shares such as Rent, wages, interest and profit. All these sums up to be the national income. So, there are two important characteristics of a particular tax, from the point of

view of whether it is progressive or regressive.

11.6 Government Budget

A budget can be defined as a document containing statements of intended expenditure and expected revenue of the government during a particular period usually a year. It always contains the review of the preceding budget, statements of objectives of the present budget, revenue estimates of recurrent and capital as well as macro-economic policy measures to be adopted to promote the realisation of the stated objectives of the budget. In Nigeria, budget period starts from January 1st and ends December 31.

Types of Budgets
There are three types of budgets:
i.   Surplus Budget: This occurs when the government revenue is planned to exceed the proposed government expenditure.
ii.   Deficit Budget: This arises when the government estimated revenue is less than the proposed government expenditure.
iii.   Balanced Budget: This is when the total revenue estimates are equal to the proposed government expenditure.

Budget deficit can be financed by:
a.   Curtailing the growth of government expenditure
b.   Lowering tariffs on essential inputs as a means of checking imported inflation
c.   Increasing tariffs on non-essential goods and goods that can be produced locally.
d.   Give tax concessions to local entrepreneurs in order to promote export.
e.   Increase government expenditure which will have a multiplier effect on the country's national income.
However, experience has shown that a combination of fiscal, monetary and other policies measured will help greatly in finding solutions to most macroeconomics problems.

11.7 Fiscal Policy

During the Great Depression of 1930s, monetary policy not only lost its glory but its inherent weakness as a macroeconomic policy was fully exposed. Monetary policy was looked upon as ineffective and the affection shifted on to fiscal policy. The Budgetary instruments of government policy are known as fiscal policy. This policy relates to mainly changes in government expenditure and tax payments. Fiscal policy influences income, output and employment mainly through taxation, government spending and borrowing. We define fiscal policy to encompass any decision to change the level of composition, timing of government expenditure or to vary the burden, structure of frequency of the tax payment.

Instruments of Fiscal Policy

The main instruments of fiscal policy are: (i) Taxation (ii) Government Expenditure (iii) Deficit Financing and (iv) Budget.

An efficient management of national budget can go a long way in achieving economic stability with growth. The fiscal instruments are used to influence economic stability with growth. They are also used to influence private expenditure on consumption or investment. The instruments include government expenditure, capital expenditures on public works programmes, subsidies, transfer payments, social security benefits and so on. While some fiscal measures are income generating, others are income depressing. The following are the major instruments of fiscal policy.

1.   Taxation

Taxation is an important fiscal instrument for raising revenue, curtailing expenditure and giving incentive or disincentive. According to Lewis, if the marginal rate of taxation exceeds the average rate, the tax receipt would grow faster than the national income and thus the government will obtain more resources for economic development. An appropriate tax policy can be very helpful in achieving the growth and stability objectives of fiscal policy. However, when in underdeveloped countries almost all the sources of financing development are limited, taxation offers some possibilities. Taxation should aim at raising maximum revenue, reducing conspicuous consumption and unproductive investment. The efficacy of fiscal policy in collecting taxes depends on the type, kind and extent of taxation and on the taxation capacity of the people. A proper study of the possible effects of taxation on different aspects is very necessary and efficient tax collecting machinery is a must in under-developed countries, tax system is regressive in nature. Personal income tax may be increased to some extent. But it must not discourage saving and investment. Personal and business income taxes require, among other things, suitable administrative machinery and honest payees. A high- income

recipient who indulges in conspicuous consumption may be taxed at a high rate but the high-income recipients who undertake saving investment should not be taxed at least not rigorously. Some economists believe that personal income tax will destroy saving incentives and hence, taxation should not be on income, according to them but on expenditure through indirect taxes. On this account, a case can be made for property taxes in the underdeveloped countries. A capital gain tax may be used to combat speculative activities.

Taxes on company profits must be received with caution since it discourages incentive and risk taking. Tax on profits of the foreign enterprise is however, to raise revenue through a system of more broad-based indirect tax structure e.g., sales tax, excise tax and a number of other new taxes may be introduced. Agricultural income tax may be progressive and can become an important source of fund for economic development as in China and Japan. Apart from these, a number of other taxes such as undistributed profit tax, partial-outlay tax, wealth tax, expenditure and gift tax etc. can also be introduced for raising revenue and for achieving social objective.

2.   Public Borrowing

Public borrowing is an important means of mobilizing private savings. The government may borrow from the public by selling securities. But this requires a broader and better organized government securities market and a stable form of government. Management of public debt also has become recently an important instrument of fiscal economics. The Government can borrow funds from market to finance the excess expenditure. However, it is very essential that this step should not reduce the funds available to the private sector otherwise private investment will be reduced or restricted.

3.   Public Expenditure

A direct instrument that can affect the level of economic activity is the public expenditure which is income generating in nature. It includes various types of spending such as relief payments, civil and military spending, building of infrastructures (SOC) and so on. This increase in public expenditure and consumption presses heavily against the limited supply of goods and services available in the market. To counteract this increased private spending, the government should at such a time reduce its own expenditure to the minimum extent possible to help limit the aggregate demand.

4.   Deficit Financing

When public spending falls short of public revenue, the gap can be bridged up by deficit financing (creation of new money) which has become an important fiscal instrument in less developed countries. But deficit

financing must be used within safe limit so that it does not lead to inflation.

Fiscal Policy: Objectives And Achievements

Fiscal policy in any country has the following objectives:

1.   Economic stabilisation, i.e., to check inflation and depression.

2.   External economic stability.

3.   Economic growths.

4.   Social justice, i.e., equal distribution of income and wealth.

1. **Fiscal Policy for Stabilisation**

Keynes has strongly recommended fiscal policy for maintaining economic stability in a country. Fiscal policy may be used to control deflation and inflation in the economy. We shall examine in details how fiscal and its various instruments can be used to achieve these two objectives.

Fiscal Policy and Deflation/Depression

Deflation is that phase of a business cycle in which economic activity is measured in terms of aggregate employment in the economy, when costs and prices are falling and value of money is rising. Deflation is a very serious economic problem. It results to mass unemployment in the economy and rapid decline in the level of income and hence reduces standard of living. It leads to social and political instability. In sum, deflation is worse than inflation. Hence, the solution to the problems of deflation, thus, lies in raising the levels of aggregate demand in the economy. Now let us see how this may be achieved through the various instruments of fiscal policy:

1. Reduction in Tax Rates
2. Increase in public expenditure
3. Public borrowing
4. Deficit financing

All these factors will increase aggregate demand in the economy and solve the problem of deflation.

Fiscal Policy and Inflation:

Inflation which has been regarded as the major economic problem is a process which all the countries of the world have faced since Second World War. Inflation is a process which results in sustained rise in prices and

fall in the value of money. Inflation has many harmful economic, social, political and moral effects. On economic front, it discourages savings. It hampers the process of economic growth. It encourages speculative investment, hoarding and black marketing. It redistributes income and wealth in favour of the rich causing social tensions and social instability. Many countries of the world have faced riots because of continuous rise in the prices of essential goods and services. It has led to change of government in many countries. Moreover, inflation has very harmful effects on public moral and ethical standards. The reason for inflation is excessive demand in relation to supply. The solution to the problem of inflation lies in controlling demand in the economy. Now let us study how this may be achieved through the various instruments of monetary policy.

i.   Reduction in Government Expenditure

ii.   Imposing New Taxes and Increasing the Existing Taxes

iii.   Public Borrowing

iv.   Surplus Budget

All these fiscal measures will check the level of demand in the economy and will prove useful in controlling inflation.

2. **Fiscal Policy for External Economic Stability**

Because of fluctuations in demand for goods of a nation in an international market, there emerges a situation of external economic instability. Under-developed countries normally export agricultural goods with less elastic demand and import capital goods with price inelastic demand. Terms of trade become unfavourable because of cheaper exportable. It results in shortage of foreign exchange and ultimately adverse effects on an economy. These nations do not get any benefit from a fall in prices in international market because they cannot increase production and thus exports due to their less power. An increase in income due to a rise in prices of exportable does not mobilize into the productive channel but assumes the form of imports of luxuries from foreign countries or gold-silver, ornaments, speculation. It leads to rising tendency in prices. External instability which emerges because of international fluctuations can be removed with the help of the use of fiscal measures. Import and Export Duties can be levied for this purpose.

3.   **Fiscal Policy for Economic Development**

In under-developed countries like Nigeria, the major objective of fiscal policy is to increase the rate of economic development. Economic development is defined as a process which results in rise in gross

national product and per capita in a country. Fiscal policy helps in the process of economic development in the following ways:

i.   Promoting savings through various compulsory deposit schemes or through voluntary savings induced by tax reliefs.

ii.   Encouraging investments through various structures and tax reliefs.

iii.   Mobilizing resources through deficit financing, public borrowing and surpluses of public undertakings.

vi.   Promoting the rate of capital formation in the economy.

vii.   Optimum allocation of scarce resources through appropriate taxation and expenditure policies.

viii. Maintaining   internal   and   external   economic   stability.

4.   **Fiscal Policy and Social Justice**

Normally, there exists unequal distribution of income and wealth in all the nations. It results in social injustice. Because of economic inequalities between the rich and the poor, the country is divided into two categories and this situation can lead to a revolution. Income of the affluent class can be reduced with the imposition of progressively direct taxes and the revenue so obtained can be used to provide social services like free education, medical facilities etc. to the poor class. Heavy taxes can be imposed on luxuries and prices of necessities can be kept at low level. Government can improve economic condition of the people by incurring public expenditure and thereby providing employment opportunities. Government can prepare atmosphere for social justice and for reduction in income and wealth inequalities by adopting proper public expenditure and taxation policies.

FISCAL POLICY AND DEVELOPING COUNTRY

The role of fiscal policy in a developed economy is different from that in a developing economy. The problem of a developed economy is to stabilize the rate of economic growth by maintaining effective demand at a high level. For this purpose, the fiscal policy aims at reducing savings and raising the propensity to consume. The underdeveloped countries, on the contrary, suffer from deficiency of capital, and thus the role of fiscal policy is to accelerate the rate of capital formation by reducing consumption and encouraging propensity to save. In a developing economy, the fiscal policy has to play a more difficult and a more dynamic role of achieving the objective of growth with stability. Hence, the Keynesian analysis of fiscal policy, which is applicable in developed countries, has little relevance.

11.8 Summary

Public finance is concerned with the financial operations of the government. Government performs some economic functions like creation and maintenance of social and economic infrastructures, redistribution of income through taxation and promotion of macroeconomic instruments that can assist in economic development. Government finances consist of sources of revenue or income from oil and non-revenues and public expenditure in terms of recurrent and capital expenditures. Taxes collected by government are of tremendous use to the government as well as the entire citizenry. It is generally based on the principles of equality, convenience and economy. Taxes can be direct and indirect. The direct ones are levied on the incomes of individuals and business firms while the indirect ones are levied on goods and services. Government budgets can generally be of three types. It can be surplus, deficit or balanced in nature. The various instruments of fiscal policy of a government are public borrowing, taxation, public expenditure and deficit financing.

Review Questions

1. A budget is balanced when expected total revenue is
    a. Greater than expected expenditure
    b. Less than total expenditure
    c. Equal to expected expenditure
    d. Equal to previous year's total revenue
2. The fiscal authority in charge of managing inflation in Nigeria is
    a. Ministry of finance
    b. Federal executive council
    c. National bureau of statistics
    d. Central bank of Nigeria
3. Quota is a good example of
    a   Fiscal policy
    b   Physical policy
    c   Monetary policy
    d   Trade policy
4. Assuming the total output consists of 4 apples and 6 oranges, and that apples cost N1 each and oranges cost N0.50 each. In this case, the value of GDP is:
    a   N8
    b   N7
    c   N10
    d   N2
5. If nominal GDP grew by 5 per cent and real GDP by 3 per cent, then the GDP deflator grew by approximately--------------per cent
    a   8
    b   2
    c   3
    d   5

6. Real GDP means the value of goods and services is measured in ------------- prices
    a   Current
    b   Constant
    c   Actual

d   Average

7. A severe recession is called a/an …………………..

    a   Depression

    b   Market-clearing assumption

    c   Deflation

    d   Exogenous event

Suggested Answers

1.	C
2.	A
3.	D
4.	B
5.	B
6.	B
7.	A

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CHAPTER TWELVE

INTRODUCTION TO THE FINANCIAL SYSTEM

12.1   Learning Objectives

At the end of this chapter, the Students should be able to;

i.   Define and explain commercial and central banks as well as their functions.

ii.   Explain what merchants, development and mortgage banks are and their functions.

iii.   Distinguish between a money market and capital market as well as the functions of the Nigerian Stock Exchange.

iv.   Identify the financial institutions involved in money or capital market respectively.

12.2 Introduction

In any modern economy, the commercial banks are not alone in the mobilisation and channelling of funds to promote efficient resource utilisation and effective economic transactions, rather the entire financial system of the economy is involved. The Nigerian financial system comprises the central bank of Nigeria (CBN), the banking sector and non-bank financial institutions. The CBN is the apex regulatory authority of the Nigerian financial system.

12.3 Banking

A bank is an institution set up purposely for safekeeping of money, valuable goods and documents like wills and others. The existence of banks has been a boost to business activities thereby oiling economic activities by making money available. There are different types of banks and these include the central Bank and the commercial bank/Deposit money banks.

12.3.1 Origin of Banking

The English Banking System originated from Britain through the activities of the Goldsmith. Bank and Money therefore *have* common origin and ancestor goldsmith. As the name indicates, the goldsmith deals with gold; which is very valuable and rare commodity. Because of this, the goldsmith had a place called "Strong Room" where gold and other valuables were kept in safe custody. In this Way the goldsmith started receiving commodities from people for safe keeping. Receipts were then issued to those who deposited their valuables as evidence and they paid the goldsmith for his services. He then later started lending these forms of money out to other people on short-term basis on interest rate. This continued until it was modernized and named bank. This is exactly how the English Banking System originated. The banking system was copied in

Nigeria and other countries under the British Colonies.

12.4 Central Bank and its Functions

The Central Bank may be defined as the only financial institution established and charged with the day-to-day management and control of the nation's monetary affairs as well as the supervision and coordination of banking and financial activities of the country. Every country has only one central bank, whose motive is not to make profit but to carry out the major financial operations of the central government of the country.

Features of Central Bank

1. They are established by an Act of Parliament.
2. Has the feature of being only one in the country with branches in state capitals of the country.
3. Has no profit-making aim.
4. It is the highest financial authority (or Apex Bank) in the banking industry.
5. It is the only authority by law mandated to issue currencies in the country.

Functions of The Central Bank of Nigeria

1. It acts as the Nigerian Government's Banker.
2. it's the Banker's Bank
3. Agent to the Federal Government and advices the government from time to time.
4. Issuing of country's currency i.e., Naira and Kobo.
5. Lender of the last resort.
6. It controls foreign exchange market and manages the country's foreign reserves.
8. It maintains close contacts with other international financial institutions.
9. It controls the activities of the commercial banks in Nigeria through the following means or instruments.
    a. Open Market Operation: This refers to sale and purchase of securities in the money market by the central bank. It is the buying and selling of government bonds, treasury bills and other securities in the open market.
    b. Special Deposit: This is one of the modern methods of monetary control designed to supplement the traditional techniques. It is supposed to operate like the reserve ratio in controlling credit level of banks.

c. Bank Rate: The bank rate arises from the services of the central bank as a lender of last resort. It is the rate at which the central bank lends money to banks, discount houses and other financial institutions and since this lending is usually through re-discounting of bills, the bank rate is also called re-discount rate which in recent time is tagged the minimum policy rate (MPR) in Nigeria. Bank rate simply means the rate of interest at which the central bank lends money to commercial or merchant banks while the rate of interest at which banks lend money to the public is known as the lending rate.

d. Special Directives: Apart from the control that aim at regulating credit creation and controlling money stock, the central bank can also monitor the economy by giving directives to banks on priorities to be observed in virtually all areas of their operations.

e. Reserve Requirements (Cash Ratio and Liquidity ratio): The legal reserve ratio is the traditional mechanisms through which the central bank exercises considerable control over the cash or other reserves of banking institutions. Traditionally, the aim of this instrument was to ensure that banks have sufficient cash or suitable liquid asset to meet daily demand for currency and reduce dependence on the services of the central bank as a lender of last resort.

f. Moral Suasion: This is the most passive of all the monetary tools and it is for this reason that people sometimes ignore it as if it not really a regulatory instrument.

12.5 Commercial Banking

A commercial Bank may be defined as a financial institution set up for keeping and lending money to people. It can be owned by private individuals, organisations or government for the purpose of making profits. Commercial Banks in Nigeria are mostly limited liability companies established to deal in money and valuables to make profits and are subjected to direct and indirect controls of the Central Bank.

Functions of Commercial Banks

Their functions include the following:

1. They accept deposits from members of the public for safe keeping through savings, current and fixed deposit accounts.

2. They accept valuables like Gold, wills, deeds etc.; for safe keeping.

3. They lend money to industrialists, businessmen and other members of the public in form of loans and overdraft.

4. They perform the function of agents of payments by the use of cheques to owners of current accounts.

They also do this through standing orders, which are in form of request given to them by their customers to pay certain amount.

5. They sell traveller's cheques and foreign exchange to their customers who have money in any country they may want to go or to transact business in foreign countries.

6. They sell and buy bonds, securities and also discount bills.

7. They also render transfer services to their customers.

8. They act as Referees to their customers and give financial and investment advice to them when the need arises. In this way they can act as guarantors on hire purchases and deferred payment; as a result of these functions, they promote economic development in the country.

9. They lease equipment to customers.

Problems of Commercial Banks in Nigeria

1. Urban concentration: Majority of the commercial banks, are located in urban centres thereby denying the rural areas of banking services

2. Low Savings: Many Nigerians still don't patronize the banks. They prefer to keep their money in liquid form.

3. Corruption: There is a high level of corruption in the banking industry as some bank managers and officials embezzle money and give unauthorized loans to friends and relatives because of their selfish interests

4. High Level of illiteracy: High level of illiteracy among the people makes banking operations and services very difficult.

5. Government's Frequent Interventions: Government frequent interventions in the operation of banks sometimes make it very difficult for commercial banks to operate smoothly and efficiently.

6. Low Patronage: Commercial Banks are not patronized as it should be as a result of ignorance, poverty and illiteracy.

7. High Interest rates: The high interest rate charged by banks makes it difficult for prospective customers to take loans from the banks.

8. Lack of innovative banking practices: Most commercial banks are not innovative in their banking practices as customers are not given the prompt attention they desire.

9. Capital shortage: Most of the commercial banks have low capital base and this makes it impossible to grant loans to prospective Customers.

10. Non-repayment of loans: some customers that took loans sometimes fail to repay the loans and this

has led to the collapse or failure of some commercial banks.

12.6   Bank Clearing House

Bank clearing house is an institution established by member banks to simplify exchanging and obtaining of payments for the cheques that are paid into bank branches throughout the country. The clearing system is used among banks to settle cheques drawn on them. Indebtedness between banks as a result of the difference between the daily totals of cheques exchanged is set off against each other. Final settlement is affected through the banks' accounts.

12.7 Development Banks

Development banks are specialized financial institutions which provide long- term credit or loan to other enterprises for capital projects. They provide loans for projects in the area of agriculture, commerce and industry. Examples of development banks in Nigeria include Bank of Industry (BOI), Bank of Agriculture (BOA). Nigeria Export and Import Bank (NEXIM), Federal Mortgage Bank of Nigeria (FMBN), National Economic Reconstruction Fund (NERFUND) and the Infrastructural Bank

12.8 Merchant Banks

Merchant Banks started with Philip Hill (Nig.) Ltd and Nigeria Acceptance Ltd (NAL) in 1960.Thereafter, UTD Bank (Nig.) Ltd was established in August 1973. By Dec. 1993, we were having54 Merchants Banks in Nigeria and their total assets gone up to ₦6.9 billion. Now, since December 2005, many Banks have merged and they *have* all recapitalized according to the Central Bank reform programme.

Functions

1. They act as issuing houses in the capital market - issuing or floating new securities for private and public companies and governments (Brokerage).
2. They accept Deposits - Large deposits are accepted from corporate bodies and wealthy individuals. Withdrawals are done with certificate of deposits;
3. They grant loans and advances to traders and manufacturers for short/ long schemes. They undertake loan syndication.
4. They are into project financing construction, industrial and agricultural projects. They provide statutory services like joint venture, merger and acquisition, debt financing and company's

restructuring.

5.   They are also involved in equipment leasing - they do it more than the commercial banks.

6.   Finally, they provide Forex services, opening letters of credit and handling of remittances for both import and exports.

12.9 The Component of the Nigerian Stock Exchange

The primary aim of the Nigerian capital market is to mobilize long-term funds. The Nigerian stock Exchange (NSE) is the centre-point, which commenced business in 1961. Following Government's adoption of the recommendation of the Financial System Review Committee of 1976, the Nigerian Stock Exchange was setup in 1977. It provided a mechanism for mobilizing private and public savings and making such funds available for productive purposes. The exchange also provides a means for trading in existing securities. To encourage small as well as large scale enterprises to gain access to public listing, the NSE operates the main exchange for relatively where listing requirements are less stringent for small and medium-scale enterprises and the Second-tier market (SSM).

Primary Market: (How securities are issued within the market). The Mode of offer of security trading in this market includes offer for subscription, rights issues, debenture, preference shares, state bonds and unit trusts. The prices of newly issued securities are determined by the Securities and Exchange Commission (SEC). Although there are plans to deregulate the pricing function of SEC. At the end of December 1991, a total of 129 new issues involving 1, 536.3 million securities worth ₦1.9 billion had been raised through the primary market.

12.10   Traditional Financial Institutions

The traditional financial institutions came into existence several years before the establishment of modern banking system in many countries in the West African sub-region. It involves the coming together of a group of people with common interest in the same place of work or community who mutually agreed to pool their resources   together   in   order   to   save,   lend   and   manage   money. These traditional financial institutions usually take the form of co-operative society known as credit and thrift co-operative societies, which are given different names in different places e.g., "Esusu" in Yoruba, or "etio-Utu" in Igbo. It takes the form of association of people in the village, office market, etc. who have mutually accepted to pool their resources together so as to save, manage and lend such money to its members when the need arises.

Functions of Traditional Financial Institutions

1. It encourages savings: Members, through the pooling of their resources together are encouraged to save.

2. Assist members to borrow: Members who are in need· of money for whatever reasons are permitted to borrow.

3. It ensures proper management of funds: Savings and lending of funds to members assist the institution to manage their funds properly.

4. Promotion of Investment: Traditional financial institutions may decide to invest in variable business that could yield profit to the organisation.

5. Assisting members in times of need: These institutions can assist their members when they are in financial difficulties.

12.11   Money Market

Definition: Money market can be defined as a market for short term loan. The market consists of institutions or individuals who either have money to lend or wish to borrow on a short-term basis. Instruments traded in money market include:

1. Treasury bills: These are normally issued by the central bank of the country which assists the government to borrow money from the money market on short term basis.

2. Bill of exchange: Bill of exchange refers to a promissory note which shows the acknowledgment of indebtedness by a debtor to his creditor and his intention to pay the debt on demand or at an agreed time in future.

3. Call money funds: The call money fund or market is a special arrangement in which the participating institution invest surplus money for their immediate requirement on an overnight basis with the interest and withdrawal on demand. Call money has an advantage of early return and at the same time are withdrawable on demand. It provides solution to the immediate stock of liquidity pressures in the money market.

Institutions Involved in the Money Market include:

i.   The Central Bank

ii.   Commercial Banks

iii.   Finance House

iv.   Discount Houses

v.   Insurance Companies

vi.   Acceptance houses

Advantages of Money Market

1.   Provision of finance: Money Market enables entrepreneurs and investors to raise enough finance through borrowing to run their business.

2.   Creation of economic income: The money invested in money market is capable of yielding extra income in form of interest.

3.   Promotion of economic development: Economic growth and development is enhanced through borrowing from money market

4.   Ability to recall invested funds: Funds invested in the money market are very easy to recall.

5.   It enhances savings: Money Market provides opportunity for those having surplus fund to invest thereby enhancing savings.

12.12   Capital Market

Definition: Capital market is a market for medium-term and long-term loans. The capital market serves the needs of industry and the commercial sector. It comprises of all the institutions which are concerned with either the supply of or demand for long-term capital.

Instruments Used in Capital Market

Instruments used in capital market are mainly stocks and shares. Stocks and share are securities purchased by individuals, which is evidence of contributing part of the total capital used in running an existing industry. At the end of a normal business year, stock and shareholders receive dividend as a reward for contributing the money in running the business.

Institutions Involved in Capital Market

Institutions involved in capital market include:

i.   Issuing houses

ii.   Insurance companies

iii.   Development banks

iv.   Stock Exchange

 Advantages of Capital Market

1.   Provision of long-term loans: Capital market provides long-term loans to the private and public sectors for investments.

2.   Mobilisation of savings: Savings are mobilized in the capital market

3.   Growth of merchant banks: The existence of capital market helps the growth and development of merchant banks.

4.   General running of the economy: The existence of capital market encourages the general public to participate in the running of the economy of the country.

12.13 E-banking

E-banking is also known as electronic banking. It is defined as the automated delivery of new and traditional banking products and services directly to customers through electronic, interactive communication channels. The advent of electronic banking has contributed significantly to the growth and development of economic activities in Nigeria. To this effect, the share of e-commerce to GDP rose from 8.4 percent in 2014 to 8.7 percent in 2015, which accounted for a 3.6 percent growth between 2014 and 2015. This definition includes delivery services and products such as:

1.   Account information

2.   Access to funds, and

3.   Business transactions and transfer through a public or private network

These activities are carried out using various types of intelligent interactive devices such as:

4.   Personal computers

5.   Personal digit assistant

6.   Automated Teller Machines (ATM)

7.   Touch tone telephones

In other words, electronic banking also known as electronic fund transfer (EFT), is simply the use of electronic means to transfer funds directly from one account to another rather than by cheque or cash.

Forms of E-banking

The following are the various forms of e-banking:

(i)   Internet banking

(ii)   Automated Teller Machine (ATM)

(iii)   Smart Card/Plastic Card

(iv)   Debit Card

(v)   Credit Card

(vi)   E-Cheque

(vii)   Electronic Bill Payment

i.   Internet Banking

This is a method by which banking transactions are done through personal computer. These banking transactions include checking account balance, fund transfer between accounts, and paying bills electronically.

ii.   Automated Teller Machine (ATM)

This is another form of e-banking, whereby bank customers perform cash withdrawals and other banking services through electronic machine connected to data system and related equipment in a public place. It is otherwise known as automated teller machine or money machine or cash machine. It is defined as an electronic computerized telecommunications device that allows a financial institution's customers to directly use a secure method of communication to access their bank accounts, order or make cash withdrawals (or cash advances using a credit card) and check their account balances without the need for a human bank teller (or cashier in the Nigerian banks). Recently, many ATMs also allow people to deposit cash or cheques, transfer money between their bank accounts, top up their mobile phones' pre-paid accounts.

iii.   Smartcard

It is a plastic card with a magnetic stripe or with a chip that contains a customer account number. A bank customer uses the smart card by entering a Pass Code, often referred to as a PIN (Personal

Identification Number) of four or more digits and upon successful entry of the PIN, the customer performs the bank transaction immediately.

iv.   Debit Card

Debit cards are also known as check cards. This card works like credit card or ATM cards. Debit card is a way to "pay now". The use of debit card enables a customer to deduct money quickly from his/her savings account.

v.   Credit Card

This is a card that is used to "pay later". That is, when transactions are made, payment is not quickly deducted but done at a later date.

vi.   E-Cheque

This is another form of e-banking, which is an electronic representation of paper cheque. It is used in place of paper cheques to do any and all remote transactions.

vii.   Electronic Bill Payment

This form of e-banking is also used to pay all bills electronically without physical presence. The payment is deducted directly from the bank accounts immediately through the use of debit card on any POS machine or otherwise.

Advantages of E-Banking

E-banking serves both banks and customers but the two benefit differently from the service. Nonetheless, the advantages of e-banking stated below are for both parties:

(i)   E-banking reduces operational cost of banks.

(ii)   It enhances banks' efficiency by increasing service delivery.

(iii)   It promotes bank customers' satisfaction.

(iv)   It also helps banks to maximize profits.

(iv)   It helps to increase bank deposit among Deposit Money Banks (DMBs).

Disadvantages of E-Banking

In spite of the tremendous benefits to both banks and customers, there are still some short comings which had reduced the successful implementation of E-banking, especially in developing nations. It:

(i)   Discourages savings for investment, but rather increases spending culture.

(ii)   Encourages bank theft through technology advances or obsolete in the banking environment.

(iii)   Insufficient manpower and number of ATM had eroded the banks efficiency economies.

(iv)   Epileptic power supply also reduces the efficiency of the e-banking system.

(v)   Finally, unstable regulatory policies on e-banking operations had reduced the hallmark success of the system.

12.14 Summary

A Bank is a business organisation or institution set up purposely for money safe keeping along with other valuable things like wills and gold. It originated from Britain through the effort of the old goldsmith. The Central Bank is the apex bank charged with the responsibility of managing the nation's monetary affairs and the supervision and control of the banking and financial activities in the country. The commercial Banks create credit through acceptance of deposits from people and then go ahead to lend these monies collected to business people on interest rate. The banks operate with the use of cheques which is an order written by the drawer to a bank to pay on demand a specified sum of money to a named person as payee on the cheque. Some types of cheques are order cheque, bearer cheque, open cheque and crossed cheque. Cheques can be dishonoured on the ground of irregular signature, no date, bankruptcy and several other reasons. To clear cheques going from one bank to another and vice versa, the Central Bank has set up a clearing house. Other financial institutions prominent in Nigeria are the development banks as well the merchants Banks. We also have the Nigerian stock Exchange and the Nigerian Securities and Exchange Commission. They all play prominent roles in our financial system.

12.15 Review Questions

1. The Central Bank of Nigeria

    a.   Regulates the countries money supply

    b.   Manage foreign reserves of the country

c. Produces fiscal policy guidelines

d. a and b only

2. Which of these is a cause of an expansionary monetary policy by the central bank of Nigeria

a. An Increased reserve ratio

b. A reduced discount rates

c. An increased taxation

d. Buying of securities from the central bank

3. Expansionary monetary policy increases the real output by

a. Increasing the demand for money

b. Increasing the currency ratio

c. Reducing the rate of interest

d. Reducing the level of money stock

4. Open market operations are the process by which

a. The central bank purchase and sell securities

b. Commercial bank purchase and sell securities

c. Business firms buy raw materials freely

d. all of the above

5. Which of these is an example of expansionary monetary policy by the central bank of Nigeria

a. Increase the reserve ratio

b. Reduce the discount rate

c. Increase in taxation

d. Buying of securities from the central bank

Suggested Answers

1.	D
2.	D
3.	A
4.	A

5.   B

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CHAPTER THIRTEEN

INFLATION

13.1   Learning Objectives

At the end of this chapter, the students should be able to;

i.   Define Inflation and stagflation;

ii.   Explain inflation and stagflation using appropriate diagram(s);

iii.   Discuss the theories of inflation; and

iv.   Explain the various effects of inflation on every major sector and income groups in the society.

13.2   Introduction

Inflation in simple words means rising prices of goods and services. It is a continuous rise in prices over a period of time. This situation arises when the demand for goods and services exceeds their supply. It is a situation when too much money is chasing too few goods. It is sometimes said that inflation means rise in prices. But all rises in prices may not be inflationary. Rise in prices may occur when the average cost of production increases thus this cannot be termed to be inflation. According to Crowther, he defined inflation as the state in which the value of money is falling. Keynes relates inflation to a rise in prices which comes into existence after the stage of full employment. Keynes stated that the initial rise in prices up to the stage of full employment is good for the country because there will be an increase in profit, leading to more capital formation and more investment which will lead to further increase in income and employment thus Keynes calls this semi-inflation. According to him, true inflation sets in after full employment has been reached.

13.3   Distinction between Inflation and Rate of Inflation

Inflation simply means a rise in the general price level while rate of inflation is the rate of change in the general price level. It is measured by a simple formula as follows:

Rate of inflation $= P_t - P_{t-1} / P_{t-1}$ X 100

Where P_t is the price level in year t, P_{t-1} is the price level in year t - 1, the base year. If there is a rise in the rate of inflation, such a situation is called the state of Inflation but if there is a decline in the rate of inflation, such a situation is called Deflation.

13.4   Measures of Inflation

There are two common measures of inflation namely:

i.   Percentage change in Price Index Numbers (PIN); and

ii.   Change in GNP Deflator.

Measuring Inflation through PIN

The above formula is used in measuring the rate of inflation through the change in price index numbers

Rate of Inflation $= P_t - P_{t-1}/ P_{t-1}$ X 100

The two widely used Price Index Numbers are Wholesale Price Index (WPI) also called Producer Price Index (PPI) and Consumer Price Index (CPI). WPI is used to measure the general rate of inflation and CPI is used to measure the rise in the cost of living.

Illustration I: Given the Price Index for all Nigerians for a given period are as shown below

Year	Price Index 'Million naira
1990 – 1991	182.7
1991 – 1992	207.8

Required: Compute the rate of inflation between 1990 - 1991 and 1991 – 92, using WPI

Solution:

Rate of Inflation (WPI) $= P_t - P_{t-1}/ P_{t-1}$ X 100= 13.74%

Measuring Inflation by GNP Deflator

Under this method, inflation rate is determined through the ratio of National GNP to the real GNP of the same year. It is also expressed as follows:

GNP Deflator = nominal GNP/real GNP

Where Nominal GNP is the GNP at current market prices and real GNP is the GNP at constant market prices. Therefore, the change in GNP deflator for a given year measures the inflation rate for that period.

Illustration II: Given the time series of Nigeria's GNP Deflator and Inflation for the period of 2000 - 2004

Year	Normal GNP ₦	Real GNP ₦	GNP Deflator (Percentage)	Rate of Inflation (Percentage)
2000	470269	208, 481	225, 569	-
2001	542691	209, 621	258, 892	14.77
2002	618969	220, 489	280, 725	8.43
2003	719548	233, 803	307, 755	9.63
2004	843294	249, 903	337, 448	9.65

The percentage change in GNP Deflator between any two years gives a measure of inflation. For example, the rate of inflation between 2000 and 2001 can be obtained as follows:

Rate of Inflation$= \frac{258892 - 225569}{225569} \ X \ 100 = 14.77\%$

It is important to note that since GNP takes into account all the goods, then, GNP Deflator measures the inflationary rate of all goods, as against CPI and WPI because they measure the inflationary rate of consumer goods only as well as wholesale goods. Therefore, economists consider GNP deflators as a better measure of inflation than CPI and WPI.

13.5 Forms of Inflation

Inflation can be classified on various basis of its rate, causes and consequences on the economy.

1. **Open Inflation and Suppressed Inflation:** In a free market economy, prices go up freely due to supply-demand imbalances leading to Open Inflation. It is not checked by Government. Since market is allowed to function without interference, it is called Open Inflation. The hyper Inflation in Germany after 1st world war is an example of Open Inflation. On the other hand, suppressed inflation occurs in a controlled economy where the upward pressure on prices is not allowed to influence the quoted or managed prices. According to **Milton Friedman,** suppressed inflation is dangerous than open inflation as suppressed inflation through rationing and price controls gives birth to evils like black

market, corruption and inequitable distribution of resources.

2. **Creeping, Walking, Running, Galloping or Hyper Inflation:** These four categories of inflation are recognized on the basis of severity of inflation, as measured in terms of rate of rise in prices.

    a) *Creeping Inflation* is moderate rise in prices of 2-3 per cent per annum. It is generally considered good for a growing economy. Mildly rising prices result in faster growth of output as they raise the profit margins of firms and encourage them to produce more. Creeping inflation does not severely distort relative prices nor does it destabilize price expectations.

    b) *Walking inflation* arises when the rate of increase in prices is more pronounced as compared to the rate of their rise during creeping inflation. When, roughly, the prices increase over a decade between 30 and 40 percent, or say at the rate of about 3.4 percent per annum, the system is assumed to be passing through this phase of inflation. The walking inflation is a warning signal, since it may be the prelude to a more vicious and faster increase in prices.

    c) *Running Inflation* involves more accelerated movements in prices than in the case of either creeping or walking inflation. Roughly, when the prices are rising at the rate of about 10 percent per annum or about 100 percent in a decade, it may be treated as a state of running inflation.

    d) **Galloping or Hyperinflation arises when** prices rise at double- or triple-digit rates per annum. It tends to distort relative prices and results in disquieting changes in the distribution of purchasing power of different groups of income earners. There is often a flight of capital from the country since people tend to send their investment funds abroad and domestic investment withers away. Hyperinflation thus is an extreme form of Inflation. It seriously cripples the economy. Prices and money supply rise alarmingly. Nigeria experienced hyperinflation during 1967- 70. It is generally as a result of war, political revolution or some other catastrophic events.

13.6 Theories of Inflation

There are two main important theories of inflation. They are

i.   Demand - pull inflation theory.

ii.   Cost - push inflation theory.

l.   Demand Pull Inflation

In demand pull inflation, a scenario where too much money is chasing too few goods is the main cause of inflation. The excess in purchasing power result in price increase. Too much money is being spent in comparison with the limited supply of goods that can be produced at full employment and these result in bidding up of prices.

2.   Cost-push Inflation

Cost push inflation is called sellers inflation. Under it a country may experience stagflation i.e. rising prices with stagnation of growth and employment with some unemployment seen in the economy.

Furthermore, inflation can be classified into the following types.

i.   Wage induced cost push inflation

ii.   Profit induced inflation or Cost-push inflation

iii.   Deficit induced inflation

iv.   Wartime, Post war & peace time inflation

v.   Bottleneck and true inflation

vi.   National &. International inflation

vii.   Taxation inflation

viii.   Budgetary inflation

ix.   Currency inflation

x.   Credit Inflation

xi.   Over-investment Inflation; and

xii.   Creeping, walking, running and jumping inflation.

13.7   New Theories of Inflation: A Developing Economy Perspective

As mentioned above, inflation theories worked out in the background of the developed countries but do not offer a reasonable explanation to inflation in the Less Developed Countries (LDCs). It should be noted that the measures that emerge from these theories cannot be effectively applied to control inflation in the developing economies. Economists like Myrdal and Streeton argue strongly against straightway application of the so-called modern theories of inflation to LDCs. Their effort to find an appropriate explanation to inflation in LDCs has led to the emergence of a new school of economists called structuralists, a new class of inflation theories known as structuralist theories of inflation. Some significant contributors of this school of thought are Myrdal, Streeton, and several Latin American economists.

According to the structuralist view, inflation in LDCs is an unavoidable result of their ambitious development programmes and is caused mainly by the structural imbalances in such economies. The structural imbalances in LDCs are:

i.   Food scarcity: the imbalances between demand for and supply of food,

ii.   Input imbalance: shortage of capital and surplus labour, shortage of fuel and oil,

iii.   Foreign exchange bottleneck: imbalance between exports and imports and balance of payments deficits,

iv.   Infrastructural bottlenecks: inadequate supply of electricity, transport and communication, and telecommunication and

v.   Social and political constraints.

In LDCs inflation is caused by a mixture of factors including 'the latent factors' built up in the early years of planning, increase in money supply, international factors, 'dislocation of infrastructural facilities such as power, transport and port facilities', continued deficit financing, 'accretion of foreign exchange reserves', droughts and floods causing poor performance of the agricultural sector, heavy indirect taxation, administered prices, etc. This, however, should not mean that demand-pull and cost-push factors do not apply at all to LDCs.

13.8   Stagflation

Stagflation is a new kind of situation that is found in developed economies of the world. Major industrial countries of the world are experiencing simultaneous growth of inflation and unemployment. The combination of high and accelerating inflation and high unemployment is known as stagflation. In the words of Samuelson, Stagflation involves inflationary rise in prices and wages at the same time that people are unable to find jobs and firms are unable to find customers for what their plants can produce. Stagflation is quite detrimental. Stagflation is contrary to the prediction of Philips curve that there exists an inverse relationship between inflation and unemployment. Diagrammatically the phenomenon of stagflation leads to an upward shift in the Philips curve showing that a given level of unemployment is associated with higher rate of inflation. Stagflation thus disproves the Philips curve philosophy.

Causes of Stagflation

Different economists have explained the phenomenon of stagflation differently.

Three views are discussed below:

1.   **Keynesian View**: Keynes explains the phenomenon of stagflation in terms of upward shift in Philips curve. This upward shift in the Philips curve is caused mainly by various cost-push factors, such as (i) increase in the world prices of crude oil; (ii) wage increase due to strong trade unions; (iii) wage increase due to higher cost of living during inflationary periods; (iv) changes in the composition of demand for labour in the dynamic conditions, causing an upward shift in wages; etc.

Figure 77

In the diagram above, if unemployment is reduced by 1 % i.e., from 6% to 5%, the rate of inflation jumps up by 3%. It is to be noted carefully that if an effort is made to reduce one of them there is an increase in the other. Thus, there are some trade-offs between inflation and unemployment. The closer the economy comes to full employment (that is, the point of origin 0), the faster the prices will rise in order to reduce unemployment. This is the implication and the importance of the shape of the Phillips curve and this is called Stagflation.

2. **Supply- side View.** Supply-side economists hold the view that various governmental actions and regulations, which raise cost of production and restrict aggregate supply of goods and services, are all responsible for stagflation. Higher tax rates, minimum wage legislation, social security measures are some of such actions. All these will reduce work effort, saving and investment, which, in turn, reduce output and employment, and increase prices.

3. **Monetarist View.** According to the monetarists, the phenomenon of stagflation is the result of changes in inflationary expectations. The monetarist view has been explained in the Friedman Phelps model. This Friedman-Phelps model states that an expansionary monetary policy can increase employment at the cost of inflation only if the workers do not correctly anticipate the inflation rate. Thus, in the long period, the expansionary monetary policy will lead to an increase in both the price level and the unemployment rate.

13.9 Effects or Consequences of Inflation

1. **Debtors &Creditors:** During inflation the debtors gain and creditors lose. That is, inflation transfers wealth from the creditors to the debtors. When prices rise, money buys less goods, though the debtors return the same amount of money, they return less in terms of goods because the real purchasing power of money has fallen.

2. **Entrepreneurs:** These may be manufacturers, traders, speculators and businessmen. They all gain from inflation because they buy their goods at old and lower prices and sell when prices rise higher. Those who engage in farming activities however suffer differently. Poor and small farmers do not gain much in inflation as the big /rich farmers.

3. **Investors: -** There are two types of investors. The first type is those who make investment in shares, bonds and securities. These people don't gain from inflation. The second types of investors are those who invest in real assets like land, building etc. these investors gain a lot from inflation.

4. **Workers:** Wage earners generally lose during inflation because their limited incomes will lose their purchasing power. If the workers are well organized into trade unions, they will not suffer so much during inflation but if they are not organized like the agricultural workers in Nigeria, they will suffer more. People who earn fixed income like the pensioners and those who live on past savings also suffer.

5. **Tax Payers:** During inflation, tax payers gain though they may pay slightly higher taxes but they hand over less real amount in terms of goods than before.

6. **Government:** The State can be put in the position of fixed income earners and as such it losses when prices rise. Inflation also increases government expenditure.

7. **Effects on Distribution of Income and Wealth**

   Inflation has both favourable and unfavourable effects on distribution of income and wealth. The rich get richer and the poor get poorer during inflation.

8. **Effects on Capital Formation:**

   Inflation reduces the will and power to save and invest by the workers of middle level cadre. But it increases the profits of the producers and traders which lead to more capital investment and more income and employment.

9. **Effects on Employment:**

   Mild inflation has favourable effect on employment while hyperinflation has adverse effect on employment.

10. **Social Effects:**

    Inflation disturbs the social life. Workers agitate for more wages, due to rise in cost of living. Generally, people become dissatisfied because their cost of living is rising. The society is divided into two conflicting groups - the rich and the poor. It increases the gap between the rich and the poor.

11. **Moral Effects:**

    Inflation leads to political instability and political revolution. The people become fed-up of the ruling government thus, they want a change in the government. Inflation is thus economically unsound, morally undesirable, socially unjustified and politically dangerous.

13.10 Measures to Control Inflation

Monetary Measures

Monetary measures aim at reducing money incomes as follows.

a.	Credit Control. One of the important monetary measures is credit control. The central bank of the country adopts a number of methods to control the quantity and quality of credit. For this purpose, it raises the bank rates, sells securities in the open market, raises the reserve ratio, and adopts a number of selective credit control measures, such as raising margin requirements and regulating consumer credit.

Monetary policy may not be effective in controlling inflation, if inflation is due to cost-push factors. Monetary policy can only be helpful in controlling inflation due to demand-pull factors.

b.	Demonetisation of Currency. However, one of the monetary measures is to demonetize currency of higher denominations. Such a measure is usually adopted when there is abundance of black market in the country.

c.	Issue of New Currency. The most extreme monetary measure is the issue of new currency in place of the old currency. Under this system, one new note is exchanged for a number of notes of the old currency. The value of bank deposits is also fixed accordingly. Such a measure is adopted when there is an excessive issue of notes and there is hyper -inflation in the country. It is a very effective measure. But inequitable for its hurts the small depositors the most.

Fiscal Measures

Monetary policy alone is incapable of controlling inflation. It should therefore be supplemented by fiscal measures. Fiscal measures are highly effective for controlling government expenditure, personal consumption expenditure and private and public investment.

The principal fiscal measures are as follows:

a.	**Reduction is unnecessary expenditure**. The government should reduce unnecessary expenditure on non-development activities in order to curb inflation. This will also put a check on private expenditure which is dependent upon government demand for goods and services. But it is not easy to cut government expenditure. Though economic measures are always welcome, it becomes difficult to distinguish between essential and non-essential expenditures. Therefore, these measures should be supplemented by taxation.

b. **Increase in Taxes.** To cut personal consumption expenditure, the rates of personal, corporate and commodity taxes should be raised and even new taxes should be levied. But the rates of taxes should not be so high as to discourage saving, investment and production. Rather, the tax system should provide larger incentives to those who save, invest and produce more. Furthermore, to bring more revenue into the tax-net, the government should penalize the tax evaders by imposing heavy fines. Such measures are bound to be effective in controlling inflation. To increase the supply of goods within the country, the government should reduce import duties and increase export duties.

c. **Increase in Savings.** Another measure is to increase savings on the part of the people. This will tend to reduce disposable income with the people and hence personal consumption expenditure. But due to the rising cost of living, people are not in a position to save much voluntarily. Keynes, therefore, advocates compulsory savings or what he called 'deferred payment' where the saver gets his money back after some years. For this purpose, the government should float public loans carrying high rates of interest, start saving schemes with prize money, or lottery for long periods, etc. It should also introduce compulsory provident fund-cum-pension schemes, etc. All such measures to increase savings are likely to be effective in controlling inflation.

d. **Surplus Budgets**. An important measure is to adopt anti-inflationary budgetary policy. For this purpose, the government should give up deficit financing and instead have surplus budgets. It means collecting more in revenues and spending less.

e. **Public Debt**. At the same time, it should stop repayment of public debt and postpone it to some future date till inflationary pressures are controlled within the economy. Instead, the government should borrow more to reduce money supply with the public.

Like the monetary measures, fiscal measures alone cannot help in controlling inflation. They should be supplemented by monetary, non- monetary and non-fiscal measures.

Other Measures

The other types of measures are those which aim at increasing aggregate supply and reducing aggregate demand directly.

a. **To Increase Production.** The following measures should be adopted to increase production: (i) One of the foremost measures to control inflation is to increase the production of essential consumer goods like food, clothing, kerosene, oil, sugar, vegetable oils, etc. (ii) if there is need, raw materials for such products may be imported on preferential basis to increase the production of essential commodities. (iii) Efforts should also be made to increase productivity. For this purpose, industrial peace should be

maintained through agreements with trade unions, binding them not to resort to strikes for some time. (iv)The policy of rationalisation of industries should be adopted as a long-term measure. Rationalisation increases productivity and production of the form of latest technology, raw materials, financial help, subsidies, etc. should be provided to different consumer goods sectors to increase production.

b.   **Rational Wage Policy.** Another important measure is to adopt a rational wage and income policy. Under hyper-inflation, there is a wage price spiral. To control this, the government should freeze wages, incomes, profits, dividends, bonus, etc. but such a drastic measure can only be adopted for a short period. Therefore, the best course is to link increase in wages to increase in productivity. This will have a dual effect. It will control wages and the same time increases productivity, and hence production of goods in the economy.

c.   **Price Control**. Price control and rationing is another measure of direct control to check inflation. Price control means fixing an upper limit for the prices of essential consumer goods. They are the maximum prices fixed by law and anybody charging more than these prices is punished by law. But it is difficult to administer price control

d.   **Rationing.** Rationing aims at distributing consumption of scarce goods so as to make them available to a large number of consumers. It is applied to essential consumer goods such as wheat, rice, sugar, kerosene oil, etc. It is meant to stabilize the prices of necessaries and assure distributive justice. But it is very inconvenient for consumers because it leads to queues, artificial shortages, corruption and black marketing. Keynes did not favour rationing for it involves a great deal of waste, both of resources and of employment.

The monetary, fiscal and other measures discussed above reveal clearly that to control inflation, the government should adopt all measures simultaneously. Inflation is like a hydra-headed monster which should be fought by using all the weapons at the command of the government.

13.11   The Inflationary Gap

According to Lipsey, inflationary gap is the amount by which aggregate expenditure would exceed aggregate output at the full employment level of income. The classical economists explained inflation as mainly due to increase in the quantity of money, given the level of full employment. Keynes, on the other hand, ascribed it to the excess of expenditure over income at the full employment level. The larger the aggregate expenditure over income at the full employment level, the larger the gap and the more rapid the inflation. Given a constant average propensity to save, rising money incomes at full employment level would lead to an excess of demand over supply and to a consequent inflationary gap. Thus, Keynes used the concept of the inflationary gap to show the main determinants that cause an inflationary rise in prices.

13.12 How Can the Inflationary Gap Wiped Out

The inflationary gap can be wiped out by increasing savings so that the aggregate demand is reduced. But this may lead to deflationary tendencies. Another solution is to raise the value of available output to match the disposal income. As aggregate demand increases, businessmen at the current money wage, offer higher money wages to induce more workers to work for them. As there is already full employment, the increase in money wages leads to scarcity because factors are already fully employed. So, the inflationary gap can be closed by increasing taxes and reducing expenditure. Monetary policy can also be used to decrease the money stock. But Keynes was not in favour of monetary measures to control inflationary pressures within the economy.

13.3 Summary

Inflation is an excess demand for goods and services over the supply those goods and services while inflationary gap is the excess anticipated expenditure over the available output at base prices. Stagflation is characterized by inflation and unemployment. It implies that if unemployment must be reduced by certain percentage, then there will be an increase in the level of inflation. The main theories of inflation are the demand-pull inflation and the cost push inflation. In the demand-pull inflation, we have a situation of too much money chasing too few goods while under the cost-push theory; it is regarded as a seller's inflation. Inflation can also be induced by profit, tax, wages, war, investment, budget, and expenditure and credit level in the economy. Inflation has effects on different people in the society especially the farmers, creditors, borrowers, investors, workers etc. and on different economic variables like budget, unemployment, capital formation and the political ruling party in the country.

13.4 Review Questions

1. The high rate of inflation in Nigeria can be attributed to which of the following?

   a. Increasing cost of production
   b. The appreciation of the naira
   c. Decreasing cost of production
   d. High-capacity utilisation

3. The agency in charge of computing the inflation figures in Nigeria is the

   a. NBS
   b. CBN
   c. FIRS
   d. NCS

4. Which is NOT a cause of inflation?

   a. increase in minimum wage
   b. increase in tax rate
   c. increase in government spending
   d. decrease in interest rate

5. A decrease in the inflation rate is called

   A. Deflation

   B. Reflation

   C. Hyperinflation

   D. Disinflation

6. If over a period of time there is more money in the economy than the available goods and services, the economy will experience

   a. Devaluation
   b. Inflation
   c. Deflation
   d. Over-valuation

7. Assuming that between January 2017 and January 2018, the rate of inflation in Nigeria fell from 25% to 10%. What can be concluded from this information?

A.   Increase in the internal purchasing power of Nigeria's naira

B.   Increase in the cost of living in Nigeria

C.   Fall in Nigeria's consumer price index

D.   Decline in the cost of production

8.   A term that explains a situation where economic growth could result in a country being worse off than before the growth is termed

A. Immiserising growth

B. Stagnant growth

C. Developing growth

D. Poor growth

9. The fiscal authority in charge of managing inflation in Nigeria is

A.   Ministry of finance

B.   Federal executive council

C.   National bureau of statistics

D.   Central bank of Nigeria

10.   Devaluation of naira will make

 A. Export cheaper

 B. Import dearer

 C. Dumping rampant

D. All of the above.

Suggested Answers

1.   A   6.   B

2.	A	7.	C
3.	A	8.	A
4.	B	9.	A
5.	A	10.	A

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CHAPTER FOURTEEN

UNEMPLOYMENT

14.0 Learning Objectives;

At the end of the study of this topic, the students should be able to;

(i)   Define the concept of Phillips Curve;

(ii)   Understand the conflicts existing among the macroeconomic objectives;

(i)   comprehend government efforts in settling the conflicts;

(ii)   Describe the divergent views of the Neo-Classical and Keynesians on Phillips curve

(iii)   Explain the concept NAIRU; and

(iv)   Appreciate the role of policy coordination and the priority of the government in resolving conflicts in macroeconomic objectives.

14.1 Introduction

Prior to the imperfect market, the classical economists assumed that an economy is at full-employment, implying that there is no existence of unemployment because aggregate demand is always equals to aggregate supply. However, present economies reflect economy equilibrium (actual output) less than the full-employment (potential output), thus, either unemployment of human resource or unemployment of non-human resources exist in the economy. Therefore, the human unemployment is considered in this chapter.

14.2 Definition of Unemployment

The term unemployment is defined as a situation in which persons of working age, able and willing to work are unable to find paid employment at a particular period of time. In other words, unemployment refers to a situation in which people that are capable of working and who are qualified by age to work cannot get a befitting employment over a given period of time. Unemployment rate is denoted by the symbol 'U' and is represented by a formula below

$$U = \frac{number\ of\ unemployed\ persons}{working\ population\ or\ labour\ force} \ X \ \frac{100}{1}$$

Example:

A country has a working population or labour force of 4.8 million of which 3.6 million people are

employed, calculate the unemployment rate of the country.

Solution

Labour force = 4.8 million No

of employed = 3.6million

No of unemployed = 4.8m – 3.6m = 1.2m

Therefore,

$$U = \frac{Number\ of\ unemployed\ persons}{Working\ population\ or\ Labour\ force} \times 100\%$$

$$= \frac{1.2\ m}{4.8\ m} \times 100\%$$

$$U = \mathbf{25\%}$$

Types of Unemployment

1. **Structural Unemployment:** this is the type of unemployment which arise as a result of changes in the pattern of demand for certain commodity. If the demand is low, it could lead to industries reducing their workforce and this eventually results in structural unemployment.

2. **Seasonal Unemployment:** this is the type of unemployment which takes place in industries whose production is subject to seasonal variations.

3. **Mass Unemployment:** Mass unemployment is the type of unemployment which affects many occupations and industries at the same time. It is caused as a result of decrease or fall in the quantity of goods demanded. The industries so affected will embark on retrenchment of workers leading to unemployment. Mass unemployment is also known as cyclical or deficient unemployment.

4. **Under Employment:** Underemployment occurs when a worker is not working in his full capacity.

5. **Frictional Unemployment:** This is the type is unemployment which occurs as a result of changes in the techniques of production.

6. **Voluntary Unemployment:** Voluntary unemployment occurs when a worker deliberately refuses to take up paid employment even though employment opportunities are available, they may be receiving employment benefits from government, the available jobs may not be attractive, etc.

7. **Residual Unemployment:** This is the type of unemployment that arises as a result of physical or mental disabilities.

8. **Casual Unemployment:** This is the type of unemployment which involves jobs that are not permanent is common with the unskilled type of labour, e.g., part time jobs.

14.2.1 Causes of Unemployment

i. Inadequate educational system

ii. Lack of industrial growth

iii. Over-population

iv. Lack of social amenities

v. Geographical mobility of labour

vi. High cost of education

vii. Use of automated machines

viii. Deficiency in demand

ix. Poor development plan.

14.2.2 Consequences of Unemployment

1. Increase in crime rate.
2. Threat to peace and stability
3. Reduction in investment
4. Migration
5. Waste of human resources
6. High rate of dependency

14.2.3 Solutions to Problems of Unemployment

a. Industrialisation
b. Population control
c. Encouraging geographical mobility of labour
d. Re-designing educational system to be in line with self-employment prospect.

e. Proper development plans

f. Provision of social amenities

g. Incentives to potential investors

14.3 The Phillips Curve: The Inflation-Unemployment Trade-Off

The Phillip's curve is a diagram or curve showing the relationship between the rate of change of money wage rate and the level of unemployment. This stated relationship developed into a relationship between inflation rate and the rate of unemployment. The theory was developed by Phillips A. W., hence, named after him.

In his study of inflation rate and unemployment rate for a fifty-two (52) year period, from 1861 - 1913, and other periods adding up to 100 years, he detected an inverse relationship between inflation rate and unemployment rate in a linear curve order.

He carried out his study by drawing a curve of best fit through the scatter diagram of observed combinations of unemployment and money wage rate for the United Kingdom; and his finding was that the curve exhibited a negative shape much like a demand curve as shown below:

Figure 78: Phillips Inflation Rate and Unemployment Curve

Wage rate %

Phillips curve

Unemployment rate (u) (%)

From the graph above, it can be deduced that in the period of boom, in the trade cycle, there will be increases in the demand for labour, resulting in excess demand for labour; hence the unemployment rate decreases towards, but will never reach zero. It will not reach zero because there will always be some frictional and structural unemployment. Frictional unemployment is caused by movement of people among jobs, and structural unemployment is caused by a mismatch between the characteristics of the demand for labour and the characteristics of its supply.

At this time of boom, the growing excess demand for labour will be bidding up wage rates more and more rapidly; hence the Phillips curve gets very steep and lies far above the horizontal axis at its left-hand end. The further the curve above the axis the faster the wages are rising.

The conclusions from the above analysis are that:
1. The steepness of the curve in the range of low unemployment shows that wage inflation is very responsive to changes in unemployment in that range.
2. Secondly, the flatness of the Phillips curve in the range of high unemployment shows that the rate of wage inflation is relatively unresponsive to changes in unemployment over that range.
3. A third conclusion, though not reflected in the curve, is that if the curve fell below the axis, the money wages would actually be falling over some range of high unemployment.

14.3.1 Monetarists' Challenge to the Phillips Curve: Long Run Phillips Curve (The Natural Rate Hypothesis)

The Monetarists' challenge to the Phillips curve started with the observed contradiction of the tradeoff postulate underlying the curve with the empirical evidence soon after the relationship was isolated. Deterioration of the tradeoff manifested as a rightward drift of the Phillips curve overtime. However, although these observations were initially attributed to such factors as changes in the composition of the labour force consequent upon demographic changes in the random economic shocks as for example currency devaluation, unanticipated and astronomic increase in crude oil prices, economists' persuasion argued that the explanation for the observed behaviour of the latter-day Phillips curve was more fundamental than could be attributable to these factors alone.

The concept of NAIRU (Non-Accelerating Inflation Rate of Unemployment)
The thrust of Friedman's position was the absence of a long run tradeoff between inflation and unemployment. Hence, he asserts that any observed trade off was at best a short run phenomenon.

Friedman notes that there must be some level of unemployment that is consistent with a cleared labour market (full employment situation). This level of unemployment which he calls the natural rate of unemployment is characterized by an equilibrium real wages rate. This natural rate, also known as non-accelerating inflation rate of unemployment (NAIRU) was the result of imperfections in the labour market, resulting for example, from imperfect flow of knowledge between job seekers and job givers about job openings bringing about frictional unemployment. Natural rate of unemployment was also attributable to structural factors, bringing about unemployment of the structural variety.

Friedman noted that the NAIRU was an irreducible minimum, which was consistent with full employment. Consequently, the reduction of unemployment below this rate via the tools of monetary and fiscal policies he argued would at best be a temporary phenomenon, otherwise an ever-accelerating inflation would be the result should policy makers attempt to make it a permanent phenomenon. Thus, supposing the prevailing natural rate of unemployment is deemed too high and therefore unacceptable to policy maker, they would attempt to lower it by enacting and implementing expansionary fiscal and/or monetary policies. Whatever tool is employed will trigger off an expansion in aggregate demand, bringing about a rise in the price level. Unless there is a concomitant rise in money wage rate, the rise in price level will serve to depress the real wages rate, a phenomenon that will result in a fall in the unemployment rate wage rate via the hiring of more workers by employers endangered by it. Within this short run period characterized by sticky real wages the hypothesized relationship between inflation and unemployment will hold as increased prices resulting from monetary and/or fiscal expansion results in lowered unemployment via a fallen real wage level.

Thus, we can assert from the foregoing analysis that the monetarist challenge to the Phillips curve inflation- unemployment trade off was to deny its existence at least in the long run; conceding that whatever is true of it is at best a short phenomenon. This position is aptly summarized in Friedman's words that "there is always a temporary tradeoff between inflation and unemployment; there is no permanent tradeoff".

14.3.2 Policy Implications of Phillips Curve

The basic point under policy implication in the Phillips curve is that the government has to choose between making decision to solve the problem of inflation rate or that of unemployment in the course of macroeconomic management. This means that the tendency to achieve high level rate of employment

(i.e., low rate or level of unemployment) will bring about high rate of inflation. Conversely, government intension to achieving low rates of inflation (stable prices) could result in high unemployment rate as a cost to the economy in achieving it.

This is a case of a trade-off between inflation rate and unemployment rate; and this has been related to what is called "the twin evil of macroeconomics". The government is expected to optimize the trade-off relationship between inflation rate and unemployment rate by selecting the inflation-unemployment combination that maximizes social benefit (or minimizes social cost).The assignment of weight by the government to each of the variables in the light of their subjective assessment of the harm (or benefit) suffered (or enjoyed) by the society from the existence of one as against the other is required.

Hence, Phillips curve is a very potent tool in the analysis of the conflict that exists in macroeconomic objectives, and the efforts that the government in power has to put on in ensuring adequate and appropriate policy coordination in resolving the conflicts.

14.4 Summary/Conclusion

The unemployment theory discussed above provides an insight to the definition of unemployment, causes, types, and the underlying principle of the Phillips theory vis-à-vis the monetarists' argument on tradeoff between inflation rate and unemployment rate. Finally, the implications of Phillips curve were discussed in relations to the developed and developing countries.

14.5 Review Questions

1. In a country, the number of employed people is 52m; unemployed people are 18m; and working populationis100m.What is the unemployment rate?

     A.32.9%

     B.33.3%

     C.25.7%

     D.18.3%

7. The unemployment that occurs when there is a time lag between when workers leave jobs until they get another one is called

     A. Seasonal unemployment

     B. Cyclical unemployment

     C. Structural unemployment

     D. Frictional unemployment

8. Which of these groups of workers will reduce the actual unemployment rate?

     A. Discouraged workers

     B. Low-wageworkers

     C. Part-time workers

     D. marginally attached workers

9. The bargaining power of trade union is limited by their ability to

     A. recruit new members

     B. go on industrial strikes

     C. implement closed shop practices

     D. prevailing high unemployment rate

10. One major argument against them in minimum wage is that, it may lead to

     A. lower output

     B. higher unemployment

     C. higher corruption

D. higher wages

6. The type of unemployment that occurs when an individual cannot find job as a result of obsolete skill is

    A.   Frictional unemployment

    B.   Structural unemployment

    C.   Cyclical unemployment

    D.   Seasonal unemployment

7. If the estimated labour force in Ikeja local government is 20million, and the total number of the unemployed is 5million, then the unemployment rate is

    A.   20%

    B.   25%

    C.   15%

    D.   4%

Suggested Answers

1. D   6.   B

2. D   7.   B

3. C

4. D

5. B

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CHAPTER FIFTEEN

INTRODUCTION TO ECONOMIC GROWTH AND DEVELOPMENT

15.1   Learning Objectives

After studying this chapter, the students should be able to;

i.Define and explain Economic Growth and Economic Development and distinguish between these economic concepts;

ii.Identify the determination of economic development;

iii.Explain how economic development can be measured; and

iv.Identify the basic characteristics of developing countries.

15.2   Introduction

Economic growth is said to occur when increases in an economic productive capacity are sustained over a reasonable time period, which leads to a greater output of goods and services in the economy as a whole to the extent that there are more goods and services available per person on the average. It is also defined as a sustained increase in a country's GDP and per capita GNP and the best way to measure a country's annual rate of economic growth is to take the average percentage increase in real GNP over a period of say one, five or ten years.

15.3   Meaning of Economic Growth

Economic growth has been defined differently by different authors. However, all of them emphasize the same thing. According to Olajide (2004), economic growth simply refers to increase in output. Simon Kuznets as quoted by Ogundipe (1998) described economic growth as a long - term rise in capacity to supply increasingly diverse economic goods to its population. This growth capacity is based on advancing technology and the institution and ideological adjustments that it demands.

Ogundipe (1998) opines that Kuznets definition of economic growth can be divided into three parts;

a.   The economic growth of a nation is identified by the sustained increase in the supply of goods.

b.   An advancing technology is seen as the important factor in economic growth which determines the magnitude of the supply to teaming population.

c.   An efficient and wide use of technology can only be made possible if institutional and ideological adjustments made innovations possible.

15.4   Characteristics of Modern Economic Growth

Kuznets identified six characteristics of modern economic growth. These characteristics could be divided into three groups vis-à-vis;

Those that are quantitative relating to national product and population growth include:

i.   High rates of growth of per capita product and population.

Modern economic growth as shown by the experience of the developed countries is mostly characterized by high rate of increase in per capita output accompanied by substantial rate of population growth. In other words, an economic growth presupposes that all sectors of an economy increase their output. When this occurs, there are high rates of increase in their output and high rates of increase in per capita product accompanying by substantial rates of population growth.

ii.   High rates of total productivity in quantity and quality.

Modern growth is characterized by high rate of output per unit of all inputs. This is due to improved quality of input which is a product of technological progress and upgrading of existing physical and human resources. This factor efficiency now makes the man-hour per capita to be very low in most of the developed economies.

iii.   High rate of structural transformation of the economy.

The structural transformation in an economic system involves a shift of enterprise to corporate legal entities (Ogundipe, 1998). This implies a shift in the reliance of the economy on agriculture to non-agriculture production and from manufacturing to services etc. Developed economies have witnessed high rate of structural transformation of their economy.

iv. **High rate of sector - political and ideological transformation.**

In modern economic growth, Olajide (2004) observed that developed nations are well urbanized because of the growth in their industrial sector. People have left the rural areas for destinations with employment and other social facilities like education, health etc. This has reshaped their old way of doing things to embracing new ideas, attitudes, thinking and ways of acting which eventually reflected in the new ways of producing, distributing and consuming in the society. It has now led to improved way of production, which gives room for specialisation, and realisation of economies of large - scale production. More equality in status, opportunities, wealth, income and standard of living were promoted.

v. **High rate of international economic outreach.**

Modern economies because of their economic viability and improved technological development especially in the area of transport and communication were able to reach out to the rest of the world especially the developing nations to source for primary products as well ascheap labour and raw materials for their industries and at the same time market for their finished products. This has led to the opening up of some hitherto forgotten areas and thereby bringing the whole world into a common or unit foray. Economic inter-dependence among nations is thus promoted and nations of the world began to improve in their development especially in the developed nations. However, this modern economic growth failed to get to the less developed countries. Ogundipe (1998) observed that the modern economic growth failed to get to the LDCS due to these three reasons:

a. There was the absence of a stable and flexible political and economic framework conductive to the spread of development.

b. The policies of the colonial masters limited political and economic freedom in LDCS. As a result, the LDCS failed to benefit from the spread of modern economic growth and;

c. There was the absence of the bourgeoisie's class which could make economic growth possible.

15.5 Key Factors in Economic Development

1. **Life Sustenance:** The ability of a person to meet the basic needs of himself and that of this family e.g., house, food, clothing, healthcare etc. All the needs mentioned must be put in place to meet your daily sustenance.

2.   **Self Esteem:** Everyone wants to be valued. Self-esteem affects labour productivity directly and indirectly e.g., a woman molested by her husband will not put her best capacity on job assigned to her. Therefore, there is a direct connection between self-esteem and economic development.

3.   **Population Growth:** If population is growing faster than national income of a nation, then the country is not experiencing economic development but if National income increases faster than population, then the country will experience economic development.

4.   **Brain Drain:** This has a negative effect on the development of the economy. This is when the unskilled labour travelled to a developed country, and become useless and unproductive at the expense of the country's development, vis-a-vis when a skilled labour also goes out of the country for greener pastures without returning back at stated period or even forever.

5.   **Income Distribution:** How to measure the income of the citizen is very necessary. If there is no even distribution, then the economy is not developing. There should be "FAIR DISTRIBUTION". There is nothing like "Equal distribution" of income anywhere in the world. Distribution must be reasonable.

6.   **Imbalance in Multi-Sectorial Development:** There must be balance development in all the sectors of the economy. There is no reason for a country to so much depend or focus on one sector of the economy. That is a mono-culture or mono-sector. The economy should put together the entire sectors to achieve the development objectives e.g., infrastructure thereby aiding the process of industrialisation. Nigeria focuses much on petroleum industry which is not helping or aiding the development of the country.

7.   **Environmental Degradation:** It has a long-term negative impact on the development of economy e.g., oil (Niger Delta).

8.   **Moral, Social and Intellectual Concern (MSI):** The MSI issues and that of socialisation can promote or demote the process of development. In developed countries, money gotten from corrupted leaders is used to develop the economy, but it is the other way round in developing countries like Nigeria.

15.6   Indexes of Measuring Economic Development

According to Olajide (2004), the index of measuring Economic development can be narrowed into four approaches namely:

i.   Real GNP

ii.   Real GNP per capita / Real per capita income

iii.   Welfare method

iv.   Social indicators method

Real GNP

This is one of the indices in measuring economic development through a deflated GNP. That is Relative price level over a long period of time.

DEFECTS: - The Real GNP is criticized on the following grounds:

1.   It fails to consider the population growth rate; hence if the growth of GNP is less than the growth of population, hence, such nation cannot experience Economic Development.

2.   It tells nothing about the welfare of the society derived from the goods and services.

3.   It fails in terms of change in price level; rises in price level will automatically decrease the Real GNP.

4.   It also failed to tell us about how income is distributed among the poor and the rich.

5   The GNP figures do not reflect population growth and standard of livings.

Real GNP Capita / Real Per Capita Income

This is another index of measuring economic development in terms of ratio of

Real GNP by the Population level.

Real GNP per Capita = Real GNP/ Population

Defects: This method is faulty on the following grounds:

1.   Growth in GNP per capita may not reflect improvement in the welfare / life of the masses because the increase in income may not be to the general members of the society but concentrated in the hands of the few rich in the society. This is likened to Nigerian experience.

2.   The population estimate and GNP figures are very unrealistic.

3.   It considers not changes in the price level which reduces the Real GNP hence the standard of living.

4.   It tells nothing about changes in population which invariably reduces the standard of living despite an increase in Real GNP. In summary, real GNP per capita is the most widely used measure of Economic Development.

Welfare Method

This is another index for measuring the economic development through the assessment of the welfare of the societies.

Social Indices / Indicators

This aspect also serves as an index or criterion of measuring the economic development of a nation. This social index relates to how people meet their basic needs such as health, food, shelter, education, nutrition and others. On their account, there are various scholars that embarked on research in designing ways of measuring social performance. They include:

1.   Physical Quality of Life Index (PQLI)
2.   Human Development Index (HDl) by UNDP

Physical Quality of Life Index (PQLI)

This index was propounded by Morris (1979) as a means of measuring the social performance of the people in meeting their basic needs. He came up with three simple composite indicators such as infant mortality, life expectancy and literacy. He measured the social performance from the range of 0to 100. The 0indicates worse performance while 100 indicates best performance. The social performance has the followings merits:

His research helped to redirect attention from growth but towards human development.

1.   He uses social performance as a yardstick rather than GNP per capita in terms of the three indicators.

2.   It is used for international comparison

Demerits

1.   He was criticized for using an arbitrary equal weight for all three indicators.

2.   He admits that PQLI has a limited indicator and ignored other indicators like employment, housing, security and other.

3.   It does not even measure economic development.

4.   It measures neither economic nor social measure

5.   The PQLI treats economic and social measures or indicators separately rather than combining them in a composite index.

Human Development Index (HDI)

This composite index was developed and written by the UNDP in 1990. This index is used to measure a country's human development index. It is made of three indicators namely: Longevity, Education Attainment and GNP per Capita/standard of living respectively. Thus, these index assign value of 0to 1. Fora country that falls below 0.5 indicates a low HDI, a value of 0.5 to 0.8 indicates a medium HDI while a value of 0.8 is high HDI.

15.7   The Characteristics and Causes of Underdevelopment

The characteristics of under - development according to Umo (1996) are as follows:

i.   Low per capita income
ii.   High rate of population growth
iii.   Low capital formation
iv.   Low human capital formation and underutilisation
v.   External dependence
vi.   Low literacy rates
vii.   Income inequalities

In addition to these, Ogundipe (1998) identifies the following as the characteristics of economic underdevelopment:

i.   Lack of entrepreneurial ability
ii.   A dualistic economy
iii.   Technological backwardness
iv.   Economic backwardness

All these shall be briefly explained.

Low Per Capita Income

Per capita income is generally used as one of the methods to measure economic development. This is so because it indicates not only the growth of the economy in output terms but how an average people are likely to benefit from such growth in terms of purchasing power. It is noteworthy that economic underdevelopment is characterized by low purchasing ability. In order words, economic underdevelopment is characterized by low capita income.

High Rate of Population Growth

Economic underdevelopment is usually characterized by high rate of population growth. In other words, the rate at which population increases in this modern time is very rapid and this tends to characterize underdevelopment. This high rate of population growth is caused by the widespread use of modern and high fertility culture which drastically increases birth rate and reduce death rate in most countries of the world. Big increase in population constitutes a problem for economic development because pressure on land tends to undermine the regenerative power of the land, reducing food production. Also, a high population growth rate eats up the gains in increased output since welfare provision have to be made for a dependent population comprised of old people and children below the legal working age.

Low Human Capital Formation and Under Utilisation

Low human capital formation and underutilisation characterizes economic underdevelopment. In other words, skilled workforce shortage characterizes economic underdevelopment. The underdeveloped countries which require skilled personnel in carrying out various form of economic development tasks lack it most. Related to this issue of shortages of personnel is the problem of underutilisation of the existing workforce. In most cases, jobs and placement of people are based on nepotism. This amounts to misallocation of labour and tends to reduce the productivity of workers who in jobs or position via influence instead of qualification.

External Dependence

Since basic development ingredients are lacking in economic underdeveloped countries their economies tend to be open and terribly dependent countries on external forces. This dependence means that these economies become easy victims of any external economic disturbances.

Low Literacy Rates

Most of the economic underdeveloped countries are characterized by low literacy rates. This means that they are characterized by people or population who cannot read or write. According to Umo (N.D) African countries having a very low literacy rate include Burkina Faso (3%), Niger (8%), Malawi (25%), Mali (10%), Cote Ivoire (20%) and Nigeria (30%).

Distributional (income) Inequalities

Inequality of income is a characteristic of income underdeveloped countries. The pattern of income distribution is highly in favour of the few rich while the masses remain living in poverty. The fact is that this gap between the rich and the poor that constitutes majority is widening daily.

15.8 Causes of Economic Underdevelopment

There are so many factors inhibiting economic development. Some of them could be classified as non - economic factor while others could be regarded as economic· factors. Amongst the non - economic factors are attributed to education, religion, political instability and nature of relationship. All these could be considered as socio - cultural constraints. The economic constraints include vicious cycle of poverty, low capital formation, high population growth rate, inadequate entrepreneurial class and more capital utilisation. Therefore, the following are the causes of economic underdevelopment:

1. Social Cultural Constraints: Socio - cultural constraints simply refers to the way of the people in the economic underdeveloped countries with respect to customs and beliefs Olajide (2004) identifies the following as socio cultural causes of economic underdevelopment.

i.   **Attitude on Education**
       The craziness for certificates in most parts of the world especially the developing countries causes certificates not knowledge results in the production of functional illiterates.

ii.   **Religions**
       Over sentimentality in the religious practices causes economic underdevelopment. For instance, some states in the Northern part of Nigeria forbid women from doing one thing or the other. Women in these states cannot freely move close to their men counterparts and this brings an artificial polarisation of thoughts. This makes the cross fertilisation of ideas to be impossible or

difficult. And for economic development to manifest, ideas have to be cross - fertilized. This is the situation in some states in United Arab Emirates, Saudi - Arabia etc.

iii. **Political Instability**

Political instability is a product of political underdevelopment. Political democratisation, promotion of rule of law, honesty, and good leadership could be described as non-existent in underdeveloped economies except for India. The absence of this causes economic underdevelopment.

2 **Vicious Cycle of Poverty:** Poverty is the first and most outstanding economic factor causing economic underdevelopment in countries that are caught up in the web of poverty. This is because there is low per capita income which leads to low demand and low saving. Low saving leads to low investment which, in turn, leads to low capital formation which leads to low productivity and the resultant effect of low productivity is low per capita income and this runs continuously in this way.

3 **Low Capital Formation:** This is another economic factor causing economic underdevelopment. Due to low income in some parts of the world, there is low capital formation. The majority of the working forces are poorly skilled and the equipment they work with is obsolete.

4 **High Population Growth Rate:** High population growth rate which is overridden by land system, obsolete equipment uses and low growth in capital formation is an impediment to economic development. Improved technological method is difficult to adapt to the fragmented land holdings. In this same vein, the population growth rate goes in multiple while capital formation is very low or insignificant growth in rate meaning that more mouth now depends on the working population. These would cause economic underdevelopment.

5 **Shortage of Entrepreneurial Class:** If there is a shortage of entrepreneurial class i.e., industrial class, there is a tendency for the economy to be underdeveloped. This is because this class of people plays a key role in the development of a country or economy. It is believed that for an economy to develop there must be high-risk takers that could invest in industries that will actually have direct impact on the growth of the economy and not on activities that will only multiply your wealth in short period without actually registering its effect on the growth of the economy. Therefore, in an economy where an only person engages in buying, selling, exporting and importing, such an economy would remain underdeveloped.

6 **More Capital Utilisation:** In an economy where there is labour surplus but development approach is geared towards more capital utilisation rather than the usage of labour that is more readily available,

more capital utilisation can seriously cause economic underdevelopment.

15.9 Influence of Economic Developments on Workforce Engagement

The development of the economy and the labor market are interconnected, with economic developments influencing workforce engagement. A strong economy and steady job growth lead to increased employee engagement, job satisfaction, and motivation. For instance, higher wages and improved benefits directly benefit employees, leading them to work harder and be more productive. As the economy improves, employees are likely to face fewer economic pressures, which can reduce fear and stress at work, leading to more positive work attitudes. On the other hand, a weak economy can lead to reduced workforce engagement. For instance, struggling businesses often have to reduce costs by cutting bonuses or cutting employee benefits. This can lead to increased distrust among employees and reduced job satisfaction. As the job situation deteriorates, people may feel less secure in their positions, leading to increased anxiety and reduced motivation. In conclusion, economic developments have a direct impact on employee engagement and job satisfaction. In a strong economy, employees may feel increased job satisfaction and greater motivation, while a struggling economy may lead to reduced worker engagement. As such, it is important to consider the impact of economic developments on employees when managing workforce engagement and job satisfaction.

15.10 Summary

Economic growth is said to occur if an increase in economic productive activities and capacity sustained over a reasonable time period leads to a greater output of goods and services and more of these goods and services are available per person on the average. Economic development is determined by non-economic factors (e.g., political stability) economic factors (e.g. availability of natural resources) and international factors (e.g. Foreign &International Cooperation). Economic development can be increased in terms of total output of goods and services available to the people, growth in real per capita income, level of economic welfare of the citizens, better political behaviour and transformed social and religious beliefs as well as advanced level of technology. The basic characteristics of developing countries are low standard of living, high rate of population growth, predominance of agricultural sector, rising levels of unemployment and wide spread of income inequality as well as external dependence.

15.11 Review Questions

1. The most important determinant of economic growth is
   a. Land and Natural resources
   b. Human capital
   c. Capital good
   d. Increased GDP

2. If consumption spending increases from N358 to N367 billion when disposable income increased from N412 to N427 billion, it can be concluded that the marginal propensity to consume is?
   a. 0.4
   b. 0.6
   c. 0.8
   d. 0.9

3. Which of the following is a benefit of real economic growth in a society
   a. The standard of living increases
   b. The burden of scarcity increases
   c. Everyone enjoys a greater nominal income
   d. The society is less able to satisfy new wants.

4. Economic growth that is translated to higher standard of living is know
   a. Economic development
   b. Economic integration
   c. Economic standardisation
   d. Economic translation

5. A major factor contributing to productivity is
   A. The labour force
   B. The rate of GDP per year
   C. The baby boom of generation
   D. Immigration of young workers

Suggested Answers

1. B

2. B

3. A

4. A

5. A

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CHAPTER SIXTEEN

INTERNATIONAL TRADE

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16.1 Learning Objectives

After studying this chapter, the students should be able to;

i.   Explain the theory of International Economics as well as need for international Trade;

ii.   Explain the various theories of international Trade and their shortcomings; and

iii.   Explain the role of international trade in the development of nations.

16.2 Introduction

International economics can be defined as an investigation of the ever-changing facts and events of international trade. It is also the study of economic transactions between countries as an extension of those that take place within a country. Moreover, it is an aspect of economics that applies to the trade and financial relationships among nations. The importance of international economics cannot be overemphasized. According to lIesanmi (2000), it has a very wide scope on countries standard of living and daily lives because resources endowment is not the same in every nation of the world. For this reason, goods and services produced in one part of the country can be enjoyed through exchange of international differences in the availability of raw materials, technology, and entrepreneurial ability etc. This led to difference in production cost and helps to facilitate trade among nations.

Such exchange and specialisation lead to making goods and services available to satisfy wants and needs of individual. Sodersten and Reed (1994) said that international economics is necessary because there is need to study the interdependence transactions among nations no matter how self-sufficient a nation maybe. International economics focuses on the following:

i.   Economic integration

ii.   Reasons why nations trade with themselves

iii.   International currencies

iv.   The role of money and world exchange rate

v.   International monetary system etc.

16.3   Concept of International Trade

It is the exchange of goods and services that take place across international boundaries. This is a trade among nations to promote the welfare of their citizenry. More importantly international trade is the act of buying and selling of goods and services between one country and the other. This type of trade takes place between two or more countries e.g., between Ghana and Britain as well as between Nigeria and Germany, Japan, France, China etc.

The classical economists referred to international trade as the sale and purchase of goods and services between two or more countries. They also referred to it as a trade of tangible commodities such as cars, cocoa, steel etc. and intangible form of trade such as services such as insurance, shipping services, the services of skilled workers etc.

Difference between International Trade and Domestic Trade

Trades takes place between regions within a country (Lagos State and Yobe state) i.e., people are engaged in selling and buying of goods and services within the same country. Such trade is referred to as internal trade or home trade or domestic trade or regional trade. Equally, trade takes place between countries or among countries. Such trade involved crossing the boundaries of countries involved. Such trade is referred to as international trade or external trade.

16.4 Factors that Bring About International Trade

1**.**   **Differences in Natural Resources:** Different countries are endowed with different types of natural resources. Hence, they tend to specialize in the production of those commodities in which they are richly endowed and trade them with others where such resources are scarce. In Australia, land is abundant but labour and capital are relatively scarce. On the contrary, capital is relatively abundant and cheap in England while land is scarce and dear there. Thus, commodities requiring more capital such as manufactures, can be produced in England while such commodities as mutton, wheat etc. requiring more land can be produced in Australia.

2.   Geographical and Climatic Differences: Every country cannot produce all commodities due to geographical and climatic conditions, except at possibly prohibitive costs. For example, Brazil has favourable climate and geographical conditions for the production of coffee, Bangladesh for jute, Nigeria for Crude oil etc.

3.   Different Markets: International Markets are separated by differences in language usage, habit, taste etc. Even the systems of weights and measures and patterns and style in machinery and equipment differ from country to country. For instance, Britain railway engines and freight cars are basically different from those in France or U.S.A. Thus, goods which may be traded within regions may not be sold in other countries.

4.   Different Political Groups: A significant distinction between interregional and international trade is that all regions within a country belong to one political unit while different countries have different political units. There may be differences among people from the same country in terms of caste, creeds, religions, tastes and customs but they still have the sense of belonging to one nation and their loyalty to the region is secondary. But in international trade, there is no cohesion among nations and every country trade with other countries in its own interests and often to the detriments of others.

5.   Different National Policies: Another difference between interregional and international trade arises from the fact that policies relating to commerce, trade, taxation etc. are the same within a country. But in international trade there are artificial barriers in the forms of quotas, import duties, tariffs, exchange controls etc. on the movement of goods and services from one country to another. Sometimes, restrictions are subtler. They take the form of elaborate customs procedures, packing, recruitments etc. Such restrictions are not found in interregional trade but impede the flow of goods between countries.

16.5   Monetary Factors of International Trade

Different Currencies: The principal differences between interregional and international trade lies in the use of different currencies in foreign trade but the same currency in domestic trade. Rupee is accepted throughout India. But if we cross over to Pakistan, we must convert rupee into Palestine currencies to buy goods and services there. Coupled with difference in currencies is change in their relative values. Currencies of some countries like the American dollar, the British pound, the German mark and the Japanese yen, are widely used in international transaction while others are almost inconvertible. Such tendencies tend to create more economic problems at the international plane. Moreover, different countries follow different monetary and foreign policies, which affect the supply of exports or the demand for imports. It is the difference in policies rather than the existence of difference in national moneys which distinguish foreign from domestic trade.

Problem of Balance of Payments: This is another important point, which distinguishes international trade from interregional trade. The problem of balance of payments is perpetual in international trade while regions within a country have no such problem. The reason is because there is greater mobility of capital within regions than between countries. Further, the policies which a country chooses to correct its disequilibrium in the balance of payments may give rise to a

number of other problems. If it adopts deflation or devaluation or restriction on imports or the movement of currency, they create further problems. But such problems do not arise in the case of domestic trade.

Transport Costs: Trade between countries involves higher transport costs because of geographical distances as against inter-regionally or domestic trade. However, some distance within a country may be farther than that of international distance. However, no payment is made across the border of one state or another within a country.

16.6   Theory of Comparative Advantages

The classical theory of international trade known as theory of comparative costs was first formulated by Ricardo and later improved upon by Stuart Mill, Cairness and Bastable. The principle of comparative costs is based on the difference in production costs of similar commodities in different countries. Costs of production differ from one country to another. There are differences in climate, natural resources, geographical situation and efficiency of labour. Country will specialize in the production of those commodities in which it has greater comparative advantage or least comparative disadvantage. Thus, a country will export those commodities in which its comparative advantage is the greatest and import those commodities in which its comparative disadvantage is more. The Richardian doctrine of comparative advantage is based on the following assumptions: -

1.   There are only two countries A and B

2.   They produce the same two commodities X and Y.

3.   Tastes are similar in both countries

4.   Labour is the only factor of production

5.   All labour units are homogenous

6.   The supply of labour is unchanged

7.   Prices of the two commodities are determined by labour, i.e. the number of labour employed to produce each commodity.

8.   Commodities are produced under the law of constant costs of returns.

9.   Trade between the two countries take place on the bases of the barter system.

10.   Technological knowledge is unchanged,

16.7   Costs Difference

Given the above assumptions, the theory of comparative; explained by taking 3 types of differences in costs: - absolute, equal and comparative.

Absolute Differences in Cost

There may be absolute differences in costs when one country produces a commodity at an absolute lower cost of production than the other. Suppose country A can produce 10X or 5Y and country B can produce 5X or 10Y. In this case country A has an absolute advantage in the production of X (for 10X is greater than 5X), and country B has an absolute advantage in the production of Y (for 10Y is greater than 5Y)

Equal differences in costs

This arises when two commodities are produced in both countries at the same cost's differences. Suppose country A can produce 10X or 5Y and B produce 8X and 4Y. In this case, with one unit of labour country A can produce either 10X or 5Y and the cost ratio between X and Y is 2: I. In country B, one unit of labour can produce either 8X or 4Y, and the cost ratio between the two commodities is 2:1. Thus cost of producing X in terms of Y is the same in both countries i.e.

(10X of A)/(8X of B) $\times$ (5Y of A)/(4Y of B)=1

When cost differences are equal, no country stands to gain from trade. Hence international trade is not possible.

Comparative differences in cost

Comparative differences in cost occur when one country has absolute advantage in the production of both commodities but a comparative advantage in the production of one commodity than the other. Suppose country A can produce 10X or l0Y and B produce 6X or 8Y. Country A therefore, has an absolute advantage in the production of both X and Y. Country B is at an absolute disadvantage in the production of both commodities but its comparatively less disadvantage in the production of Y because before trade the domestic ration of X and Y in country A is 10:10 (I: I) while in country B, it is 6:8 or (3:4) if they enter into trade, country A's advantage over country B in the production of commodity X is. (10X of A)/ (6X of B) or 5/3. In the case of production of Y, it is 10/8 or 5/4, since 5/3 is greater than 5/4, A's advantage is greater in the production of commodity X. It finds it cheaper to import commodity Y from B in exchange for its X. Similarly, we can know the comparative disadvantages of country B in the production of both commodities. In the case of commodity X country B's position is (6X of B)/(10X of A) or 3/5, In the same case of commodity Y, it is (8Y of B)/(10Y of A) or 4/5 Since 4/5 > 3/5, B has least comparative disadvantages in the production of Y. It will trade its Y for X of country A. In other words,

country A has comparative advantage in the production of commodity X and B has least comparative disadvantage in the production of Y. Hence, trade is beneficial for both countries.

16.8   Criticisms of the Theory

Ohlin and Frank Graham did not free comparative advantage from criticism in spite of its elegantly logical structure.

1. Unrealistic assumption of labour costs; the most severe criticism of this theory is that it is based on the labour theory of value. In calculating production costs, it takes only labour' costs and neglect non-labour costs involved in the production of commodities. This is highly unrealistic because it is money costs and not labour costs that are the basis of national and international transaction of goods. Furthermore, the assumption of homogenous labour is unrealistic because labour is heterogeneous; they are in different kinds and grades.

2.   Unrealistic Assumption of Full Employment; the assumption of full employment makes the theory static. Full employment is dynamic from time to time.

3. Neglect of the role of technology: The theory neglects the role of technology in international trade. This is unrealistic as technological changes help in increasing the supply of goods not only for the domestic market but also for the international market

4. one-side theory: The Ricardian theory is one-sided because it considered the supply side of international trade and neglects demand side.

16.9 The Concept of Balance of Payments

The Balance of Payments (BOP) accounts are integral part of the national income accounts for an open economy. They record (in principle) all transactions between, residents of a given country and those of other countries. Residents mean, individuals, businesses governments, and their agencies. International organisations are regarded as "foreign residents" for this purpose. The state of the BOP/or some subset of it, plays an essential role in providing information to governments, private individuals and firms.

In an accounting sense, the BOP account always balances. An accounting balance is however not synonymous with equilibrium. A BOP however records flow between countries over a specified period of time usually a year. Some BOP items are readily identified as flows e.g., exports, but others are flows arising from changes in stock. Traditionally, there are

three basic elements in a BOP accounts. These are the current account, the capital account and changes in official reserves. The current account is usually subdivided into:

i.   Visible Trade

ii.   Invisible Trade

iii.   Unrequited Transfer

The capital account is subdivided into:

i.   Direct Investment

ii.   Portfolio Investment

iii.   Short term capital movement

The changes in official reserves form the third major segment. One essential difference between the current and capital account transactions is that capital account transactions necessarily involve domestic residents either acquiring or surrendering claims on foreign residents. In practice there is another element, the 'balancing item' or Errors and Omissions which reflects our inability to record all international transactions accurately.

The Current Account

The current account records exports and imports of goods and services as well as unilateral transfers. Exports whether of goods or of services are recorded as positive items calculated F.O.B (free on board) and imports as negative items calculated C.I.F. (cost, insurance, freight) i.e., costs, transportation, insurance etc. are included. The balance of exports and imports of goods is known as the balance of visible trade, or balance of merchandise trade or simply balance of trade. The net balance of exports and imports of services is known as the balance of invisible trade.

Invisible trade is a much more heterogeneous category than visible trade. It is often useful to distinguish between factor and non-factor services. Trade in non-factor services are mainly trade in shipping, banking and insurance services, as well as payments by residents as tourists abroad. Factor service consists of interests, profits and dividends which are mainly payments for inputs and as such they depend largely on the accumulated stock of past investment in foreign countries and borrowing from foreign residents. The net value of the balance of visible trade, invisible trade and unilateral transfers defines the balance on the Current Account.

The Capital Accounts

The capital account records all international transactions that involve a resident of a given country changing either his assets with or his liabilities with a resident of another country. Transactions in the capital account reflect a change in a stock (either of assets or of liability).

There are three (3) main elements on the capital account transactions; these are:

i. Direct Investment

ii. Portfolio Investment

iii. Short-term Capital Movement

Direct Investment: This is the act of purchasing an asset and at the same time acquiring control of it (control other than the ability to re-sell it). The acquisition of a firm resident in one country by a firm resident in another is an example e.g. a multinational firm acquiring a subsidiary in a foreign country outside its "parent" country.

Portfolio Investment: Is the acquisition of an asset that does not give the purchaser control e.g., purchase of shares in a foreign company or of bonds issued by a foreign government, loans made to foreign firms or governments come into this category. Such portfolio investment is often also distinguished by the period of the loan (short-medium or long). Portfolio investment is also distinguished as either private or official according to the sector from which they originate. Note that capital outflows are recorded as negative items and inflows as positive items on the BOP.

Short-Term Capital Movement involves payments into foreign bank accounts for imports for instance. The net value of the balance on the direct and portfolio investments and short-term capital movements defines the balance on the capital account. Errors and omissions reflect transactions that have not been recorded for various reasons and so cannot be entered under a standard heading. Errors and omissions reflect the difficulties involved in recording accurately if at all, a wide variety of transactions that occur within a given period.

i.   First, there could be such a large number of transactions that a sample is taken rather than recording each transaction with the inevitable errors that occur when samples are used.

ii.   Second, when by the nature of the contract one or the other of the parts of a transaction takes more than one year.

iii.   Dishonesty - e.g., smuggling; petroleum bunkering,

   a.   In which case the merchandise side of the transaction is unreported although payment would have been made somehow which will be reflected somewhere in the accounts.

b. Desire to avoid taxes may lead to taxable under declaration of some items in order to reduce tax liabilities.

iv. Illegality of the Transaction; as in (iii) above, when transactions are illegal then the records will not be complete e.g., in petroleum bunkering, there will be no record of exports though the money will flow in somehow the same applies also to changes in reserves. They are recorded also in the BOP account. Reserves are usually held in three forms:

a. in foreign currency, usually dollars

b. in gold

c. in Standard Drawing Rights (SDR).

The changes in the country's reserves must reflect the net value of all the other recorded items in the BOP. It is the discrepancy between the changes in reserves and the net value of the other recorded items that allows us to identify the errors and omissions.

16.10 Balance of Payments Analysis

A BOP is designed to summarize a nation's financial transactions with the outside world which is divided principally into three major components and expressed in schematic form

	N
Exports of goods and services	A
Imports of goods and services	B
Investment Income	C
Debt-service Payments	D
Net Remittances and Transfers	E
Total Current A/C Balance (A-B+C-D+E)	F
Direct Private Investment	G

Foreign Loans (public and Private) minus amortisation	H
Increase In Foreign Assets of Domestic Banking System	I
Resident Capital Outflow	J
Total Capital Account Balance (G+H-I-J)	K
Increase (or decrease) in Cash Reserve Account	L
[Errors and Omissions (L-F-K)]	M

The current account focuses on the export and import of goods and services, investment income, debt-service payments and private and public remittances and transfers. Specifically, it subtracts the value of imports from exports (merchandise trade balance) and then adds flows of investment income received from abroad (e.g., differences between interest and dividend payments, foreign stocks, bonds and bank deposits owned by the nationals in the domestic country and brought into the country (as opposed to being left overseas) and those securities if any, of the domestic country owned by foreigners, plus repatriated profits.

From this total (A-B+C), the BOP subtracts item D debt-service payments which represents a major component of current account deficits in Nigeria, and adds item E net private and public remittances and transfer such as money sent home by domestic nationals working abroad. The final result A+B+C+D+E yields the current account balance. A positive balance is termed a surplus and a negative balance a deficit.

16.11 Ways of Correcting Balance of Payments Problems

When a nation experiences an unfavourable balance of payments, there are a number of ways by which this could be corrected depending on which of the sub accounts that is responsible for the deficit. A country can adopt a number of measures to correct any deficit that may occur in its balance of payments position. The following measures are recommended:

1. A disequilibrium condition in a country's balance of payments can be corrected through appropriate changes in the exchange rate and changes in the level of domestic income.

2. The deficit country can also employ the devaluation of its national currency thereby making export cheaper and its import dearer.

3. Countries can correct disequilibrium by embarking on aggressive export promotion policy and incentive such as export subsidies.

16.12 Uses of Balance of Payments

The balance of payments is useful in view of the following considerations.

i.   The current account of the balance of payments, which is the sum of merchandise, service exports and imports shows how competitive a nation exports are over time and across space.

ii.   Balance of payments is also a matter of great interest and concern to economic policy makers especially when the balance of trade is in deficit.

iii.   When capital account is presented in greater detail, it portrays significantly how much capital is transferred abroad and the form in which they are transferred.

iv.   Balance of payments reflects changes in the foreign reserves of a country, which are components of the official transaction account, which in turn is a function of the nation's monetary base. The central bank, which is the manager of a country's monetary system, is therefore concerned with changes in national reserves because it affects money supply.

16.13 Exchange Rate

International trade finance requires the acquisition of medium of exchange known as the foreign exchange. The foreign exchange is obtained in the foreign exchange market. However, the amount of foreign exchange that can be obtained depends on the foreign exchange rate. In this section, we illustrate the meanings of international monetary concepts of foreign exchange market, foreign exchange and the exchange rate. We also provide explanations on the determination of foreign exchange rate and the causes and effects of changes in exchange rate. Hence, in making a distinction between internal trade and international trade, earlier in chapter thirteen, we identified the fact that internal trade is carried out in local currencies in different countries. For example, the Nigerian traders wishing to purchase goods and services from the U.S must enter the foreign exchange market to sell their own domestic currency (naira) in exchange for the American dollars. Similarly, the U.S residents who wish to buy goods and services from Nigeria will enter the foreign exchange market to convert the dollars to naira. The foreign exchange market is an established arrangement by which currencies are bought and sold. In the bilateral export – import trade between U.S and Nigeria,

dollar is a foreign exchange to the Nigerian traders, while naira is a foreign exchange to the U.S residents. Foreign exchange is the national currency of another country that is required to carry out international transactions. Foreign exchange in Nigeria and in other developing economies is essentially made up of convertible currencies that are generally accepted in the finance of international trade and for the settlement of other external obligations. Such currencies include those of Unites States dollar, British pound sterling, European Union Countries euro, Japanese yen, French, Italian lira and Canadian dollar. The foreign exchange rate or simply the exchange rate is the price of one currency in terms of another. Supposing the rate of exchange rate between naira and the U.S dollar is $1 = N500. It means that the Nigerian importer having N2million will be able to import American goods worth of $4000 only. In other words, the exchange rate is the means whereby foreign currency prices can be converted into domestic price. Hence, if the dollar price of an American product is denoted P_{us} and E stands for the exchange rate, the naira price of the product P_{Nig} can be expressed as:

$$P_{Nig} = P_{US} \times E$$

Conversely, the dollar price of a Nigerian product can be found by dividing the Nigerian price by the exchange rate i.e., making P_{us} the subject of the formula in the equation above.

$$P_{us} = P_{nig}/E$$

From the relationship expressed in the equation above, it is clear that the naira price of foreign goods and services will be determined by two factors:

(1) The price of such goods expressed in their native currency and

(2) The exchange rate between naira and the foreign currency concerned.

Hence, there will be an increase in the naira price of our imports if foreign currency price of the imported goods rises abroad, even if the exchange rate remains unchanged. Or if the there is an increase in the exchange rate i.e. (a fall in the value of naira), when the price abroad expressed in foreign currency remain stable. The increase in the naira price of foreign good will be more if there is a simultaneous rise in both the price abroad and the exchange rate. On the other hand, a decrease in the naira price of an imported product will occur under opposite conditions.

16.14 Determination of Exchange Rate in the Foreign Exchange Market

In a free market, the equilibrium of price of one currency in terms of another (the exchange rate) is

determined by the interplay of the forces of demand and supply the same way equilibrium price of a commodity is determined. However, the desirable as, as a starting point, to explain what demand and supply of foreign exchange means. To make our discussion simple and straight forward we shall continue to assume the case of a bilateral trade between Nigeria and the U.S., taking the U.S and the rest of the world'. This means that there are only two currencies naira and dollar. In other words, demand and supply of dollar represents demand and supply of foreign exchange.

The Foreign Exchange Market

Figure 79

The above diagram illustrates the determination of the exchange rate between Nigeria's naira and the U.S dollar. The Nigerian demand for dollar represented by the demand curve (D_{uss}) shows the Nigerian demands for goods and services produced in the U.S (Nigeria's import volume), while the supply of dollars represented by the supply curve S_{uss} shows the demand of residents of the U.S for goods and services produced in Nigeria (Nigeria's export volume). At the exchange rate of $1 = N500, the demand and supply of dollars in Nigeria is equal. In other words, this is the exchange rate that enables the country to record a trade balance, no deficit or surplus because export volume equals import volume. A rise in the exchange rate

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of naira to $1 = N1000 means that naira has depreciated as a result of which goods and services produced in Nigeria become cheaper to the U.S residents when the exchange rate was $1 = N500. For example, if a Nigerian product cost N1000 at home, it will cost $1 to the U.S residents when exchange rate is $1 = N1000. But the same good will cost more to the U.S resident at the lower exchange rate of $1 = N100. This will stimulate demand of U.S residents for made in Nigeria goods resulting in an increased supply of Nigerian goods and services, which also means more supply of dollars. In general, at $1 = N1000, naira is undervalued while dollar is overvalued and Nigeria's balance of payments will be in surplus by excess supply of dollars on the foreign exchange market. The excess supply of dollars will continue to drive down the price of dollars in terms of naira (the exchange rate) until the disparity between the demand and supply of dollars is completely eliminated at the equilibrium exchange rate $1 = N500.

A currency is said to depreciate if there is a fall in its market price due to market forces. As a result, the currency will buy less foreign exchange in the foreign exchange market. In the above example, the price of $1 = N1000 and N24000 will buy $24. But at $1 = N100, the price of N1 has increased and N24, 000 will cost $240. This shows appreciation of the naira against American dollars in line with our definition. Let us also consider a situation whereby the naira price of dollar lies below the equilibrium price. At $1 = N100, the demand for dollars exceeds the supply and the movement of dollar. Goods and services produced in Nigeria become more expensive to the U.S residents. This is because the Nigerian goods which cost N500 at home and $1 to the U.S residents at the exchange rate of $1 = N100, now costs $5 at $1 = N100 - the market clearing rate that maintains an equilibrium Nigeria's exports and imports.

However, it should be noted that at $1 = N1000, Nigeria will be in deficit with the U.S on goods and services account because out payment of foreign exchange on imports will exceed foreign earnings on exports. This explains the advert consequence of an overvalued exchange. A currency is said to appreciate if there is a rise in its market price due to forces. As a result, the currency will buy more foreign exchange in the foreign exchange market.

The Causes of a Change in the Exchange Rate

The main factors that are responsible for changes in the exchange rate are the factors that cause changes in

the demand and supply of foreign exchange. These are:

1. Changes in the level of national income;

2. Inflation rates movement in different countries

3. Investment activities

4. Foreign exchange speculation

5. External debt services obligations.

Changes in Demand for Foreign Exchange When Supply Remains Stable

An increase in demand for foreign exchange maybe caused by the following factors:

1   Increase in the domestic national income which stimulates demand for foreign goods and services.

2   A fall in inflation rates abroad, e.g., a fall in the dollar prices of a range of American goods in the U.S that makes the goods more attractive to the Nigerian residents.

3   If Nigerian investors are making more investment (direct and portfolio) abroad than foreign investors are making in Nigeria. The result will be a net outflow of foreign exchange.

4   Increase in foreign speculative activities by the Nigerian foreign exchange speculators. Foreign exchange speculators refer to the purchase and holding of some amount of a higher price in future, and thereby making a profit.

5   Increase in external debts service obligations especially on loans contracted from international capital market.

16.15 Exchange Rate System

The exchange rate system refers to different ways by which exchange rate among different currencies are determined. Basically, there are two types of exchange rates (i) Fixed exchange rate (ii) Flexible exchange rate. Let us make a distinction between these two types exchange rate.

(i) The Fixed exchange rate system.

In this system the exchange rate between countries currency and all other currencies are fixed by the government acting through its monetary authority. The fixed exchange rate system evolved from the gold standard which governed the financing of international trade until the Great Depression in the 1930's. Under the gold standard, prices of currencies were fixed in terms of a common commodity, gold. This implies that the prices of currencies were fixed in terms of each other. For example, if 10g of gold is worth £1 in United

Kingdom, the same quantity of gold is worth $2 in the United States, it follows that in the exchange rate between British pound sterling is £1 = $2. There was widespread of use of gold as a means of payment in international transactions. The main argument in support of this system is that it stabilises international prices of goods and services and thus encourage international trade.

(ii) The flexible or floating exchange rate.

Under this system, exchange rates are determined by the forces of demand and supply. Some economists argued that the system is characterised by automatic adjustment mechanism which allows the balance of payments to always adjust the equilibrium whenever imbalances occur, granting that demand exports and imports are not elastic. Because of the problem of liquidity associated with a completely fixed exchange rate system, specifically the gold standard due to scarcity of gold and the problems of instability and uncertainty of completely flexible exchange rate, most modern governments are now opting for another kind of exchange rate system, variously described as managed floating or managed flexible or dirty floating. A managed floating exchange rate system is an exchange rate system in which exchange rates between currencies are usually determined by the market forces of demand and supply but in which monetary authorities intervene at times to sustain the rates or to achieve other specific economic goals.

16.16 Summary

From the foregoing, it is evident that international trade is a necessary topic as even the theory of production. It is the study of commercial interrelation between nations. It is also the study of economic transactions between countries as an extension of those that take place within a country. Moreover, it is an aspect of economics that applies to the trade and financial relationships among nations. As observed from the section, the importance of international trade cannot be overemphasized. It has a very wide influence on countries standard of living and daily lives because resources endowment is not the same in every nation of the world. For this reason, goods and services produced in one part of the country can be enjoyed through the platform of international trade.

16.17 Review Questions

1. Terms of trade is the same as

a. The ratio of export prices to that of import prices

b. The difference between export prices and import prices

c. The sum of export prices and import prices

d. Balance of trade

2. If exchange rate floats freely, the exchange rate for the currency is determined by

    a. The demand for it

    b. The supply of it

    c. Both the demand and supply

    d. The central bank

3. Exchange rate determined by the market forces is referred to as:

a. Fixed exchange rate

b. Managed exchange rate

c. Floating exchange rate

d. Pegged exchange rate

4. A rise in the naira per dollar exchange from say N570/$1 to N1000/$1 in a flexible exchange rate regime means?

A.   Naira has depreciated

B.   Naira has appreciated

C.   Naira has devaluated

D.   Dollar has depreciated

5. A …… in the price of the domestic currency in terms of a foreign currency is referred to as currency ….

A.   Decrease, depreciation

B.   Decrease, appreciation

C.   Increase, de-appreciation

D.   Increase, consolidation.

6. The theory of………. was propounded by……….

A.   Absolute advantage; David Ricardo

B.   Absolute advantage; Adam Smith

C.   Comparative advantage; Adam Smith

D.   Comparative advantage; Mercantilists.

7. If the average price of import in Nigeria in 1985 was N150, and the average price of export was N120 in that same year, the terms of trade for Nigeria would be

A. 100

B. 125

C. 80

D. 30

8. The ratio of index of export prices to index of import prices expressed in percentage is the

A. Terms of trade

B. Balance of trade

C. Balance of payment

D. Balance of payment deficit

Suggested Answers

1. A
2. C
3. C
4. A
5. B
6. B
7. C
8. A

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THEORIES OF DEVELOPMENT PLANNING

17.1 Learning Objectives

At the end of this chapter, students will be able to:

   i.   Define the term development plan and features of a good development planning
   ii.   Understand the main differences between development planning and fiscal planning;
   iii.   Provide the problems of development plans in Nigeria.

17.2 Introduction

Prior to the colonial era, development planning was viewed as a major strategy for achieving economic development for any developing nations. These led to adaptation of various theories of development with little or no attention to development planning. Therefore, this chapter shall explain the term development plan and problems of development plans that hinder the attainment of economic development in the country such as Nigeria.

17.3 Definition of Development Plan

The term development plan is defined as a deliberate and conscious government attempt to coordinate economic decision making over the long-run and to influence, direct or control the level and growth of some principal economic variables/indicators of a country in order to move an economy from a given state to a more desired state. In other words, development planning is a complex process that involves the collection of substantial information, evaluation of past development records, projections of future trends, and setting out of targets.

17.4 Development Planning versus Fiscal Planning

Often times these two terms, development planning and fiscal planning are mis-conceptualized and used interchangeable. Although both are similar in objectives but differ in scope. The term development planning is also known as substantive planning. This planning involves the planning of societal goals and objectives and the mobilisation of natural, human, and financial resources needed for their achievement. In scope, development planning is broader than fiscal planning. On the other hand, fiscal

planning is simply a subset of development planning as well as one of the instruments of substantive planning. It involves planning future budget decisions, the implications for financing, and the methods of obtaining the necessary resources and allocating them in accordance with overall national goals as stated in the development plan of the country (Obadan, 2003).

17.5 Terms of Development Plan

The terms of development plan are classified into three:

    a. Short-term Development Plan
    b. Medium-term Development Plan
    c. Long-term Development Plan

Short-term Development Plan

This type of development plan exists when the periods of planning is between one to three years.

Medium-term Development Plan

This exists when the period of development plan is between three to five years.

Long-term Development Plans

In this development plan, the period of development plan ranges from 5 years and above like 20 years, or 30 years and even more.

17.6 Features of Development Plan

Every good development plan must possess the fundamental attributes, among which are as follows:

    i. A development plan must be comprehensive to include all tiers of government as well as private sector and the household.

    ii. Another feature of development plan is the critical review of past performance of the economy with motive to identify the most serious current problems and draw problems preference due to limited resources.

    iii. Also, it must prioritize the desired economic objectives.

iv. A good development plan must state the strategy for achieving prioritizes objectives and targets.

v. A good development plan must have detailed spending structure both capital and recurrent to achieve the stated objectives within the timeframe.

vi. Finally, a good development plans must forecast for shocks, erratic behaviour and other unexpected condition over the plan period to reduce variance between actual and expected output.

17.7 Problems of Development Plans in Nigeria

The following are the constraints, hindrances and problems affecting development plans in Nigeria:

i. **Political Instability:** Frequent and sudden changes of government have weakened the capacity to execute development plan: For instance, the civil war of 1966 affected implementation first national development plan (1962-1968). In the same vein, the annulment of June 12 presidential Election also affected the execution of national rolling plan of1991-93.

ii. **Manpower Shortages:** As at the time Nigeria began a development plan in 1914, there were not enough experts to execute her development plan as the manpower need of Nigeria was supplied by Britain.

iii. **Finance:** Financial availability by the Nigerian government hinders the development plans and implementation as a result of overreliance only on oil sector as major source of revenue since early1970s.

iv. **Non-availability of Data:** The economic value of a development plan depends to a great extent on the quality and reliability of the statistical data upon which meaningful plan can be executed. When the data are weak, unreliable, or simply nonexistent, as exhibited in many poor countries, the accuracy to wide quantitative plans are greatly diminished. And when these unreliable data are compounded by an inadequate supply of qualified economists, statisticians, and other planning personnel, then, attempt to formulate and carry out a comprehensive and detailed development plan is likely to be frustrated at all levels.

v. **Corruption, Undue fFvoritism, Red-tapism and Mismanagement of Resources:** These have also been identified recently as principal factors affecting development plan and implementation in Nigeria. For instance, it was discovered recently that Abacha's families embezzled over $55 billion while up till now, the surplus of $15 proceed realized in Babangida's administration during

the early 90's Gulf Oil War is yet to be properly accounted for. Now, the present administration of President Buhari on development plans has also suffered another defeat with treasury empty and whooping

vi. Lack of political will for economic development by successive ruler.

vii. Lack of clear and focus planning.

viii. Fiscal indiscipline by the government.

ix. Transparency gap to generate public enthusiasm(interest)

x. War also affected the implementation of national development plan. A good example was the case of Nigerian civil war.

17.8 National Economic Policies

In the course of achieving the national economic objectives and targets, the following national economic policies had been implemented in Nigeria since independence as follows:

   i. Agro-Sector development

  ii. Mining

 iii. Structural Adjustment Programme(SAP)

  iv. Privatisation and Commercialisation

   v. National Economic Empowerment and Development Strategy(NEEDS)

  vi. Millennium Development Goals(MDGs)

 vii. Bank Recapitalisation Policy

viii. Export Promotion Strategy

  ix. Import Substitution Strategy

   x. Deregulation Policy

17.9 Summary/Conclusion

This chapter discussed the meaning and distinction between fiscal and development planning, features, types and enlists various national economic policies implemented in Nigeria.

17.10 Review Questions

1. Economic growth means which of the following?

    a. The growth of opportunities to satisfy economic wants

    b. The growth of challenges to satisfy economic wants

    c. The growth of opportunities to satisfy non-economic challenges

    d. The growth of opportunities to satisfy economic needs

2. Given that CountryX'sGDPin2012is$1.55bnand$1. 72bnin2013.AndcountryY's GDP is$5.2bnand$5.81bnin2012and 2013 respectively. What can be concluded from this?

    A. XgrowsfasterthanYin2012

    B.XgrowsfasterthanYin2013

    C.YgrowsfasterthanXin2012

    D.YgrowsfasterthanXin2013

3. Using Malthusian population theory, many developing countries are found to have low incomes per capita because

    A. Population is increasing exponentially

    B. Output is dominated by agricultural activities

    C. There are high checks on the population growth

    D. There is great level of technological progress

4. Which is correct about Nigeria's manufacturing sector?

    A. It is the biggest source of revenue for government

    B. Its contribution to GDP is higher than agriculture's

    C. It is the largest contributor to Nigeria's GDP

    D. It involves conversion of raw materials into finished goods

5. Overallpopulationaveragedeathrateislowerinthedevelopingnationsthaninthe developed counterparts because

    A. Population in the developing nations is more ageing

    B. Population in the developing nations is more youthful

    C. Population in the developed nations is more educated

    D. Population in the developing nations is healthier

6. Standard of living of country is given by

    A. The size of GDP

    B. Real GNI per capita

    C. Human development index

    D. GNI deflator

Suggested Answers

1. A
2. D
3. A
4. D
5. B
6. C

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CHAPTER EIGHTEEN

STRUCTURE OF THE NIGERIAN ECONOMY

18.1 Learning Objectives

At the end of this chapter, the students should be able to;

    i.   Define the term Structure of Nigerian economy;

    ii.   Understand the importance of structure of Nigerian economy;

    iii.   Understand the classifications of sectors in the Nigerian economy; and

    iv.   Appreciate the different sectoral contributions to Nigeria's GDP.

18.2 Introduction

Nigeria is the largest geographical unit in West Africa. It occupies a land area of 923,768 square kilometers and lies entirely within the tropics with two main vegetation zones: the rain forest and savannah zones, reflecting the amount of rainfall and its spatial distribution.

18.3 Definition of Structure of the Economy

This is defined as a system whereby the organisational framework is interrelated, logically connected through which the activities of economy are coordinated or aligned (Sheidu, 2004).

18.4 Importance of the Structure of the Economy

The following are the importance of the structure of the economy:

    i.   It assists in formulating policies to minimize or prevent deviation from the accepted developmental or structural norm. That is, ensuring a structurally balanced economy.

    ii.   To provide adequate information on form; conduct and performance of the economy.

    iii.   To identify obstacle in the economic structure that impend economic growth of a nation.

    iv.   To access the trends of economic structure and changes over time as a means to proffer

solutions.

v.   Finally, it is useful for comparative analysis both within the economy and between economies of the world as well as to identify weakness and strength indicators or sectoral units.

18.5   Classification of Sectors in Nigerian Economy

Structurally, the Nigerian economy can be classified into three major sectors:

i.   Primary/Agricultural and Natural resources sectors

ii.   Secondary/Processing and Manufacturing Sectors, and

iii.   Tertiary/Services sectors

Further, it is broadly classified into two: Agricultural (Non-industrial sectors) and Industrial sectors of the economy. In addition, the Nigerian economy is characterized as structural dualism, implying a mixture of subsistence (small scale) and mechanized (large scale enterprises).

18.6 Sectoral Contributions to Nigerian GDP

In Nigeria, the activity sector comprises of six sectors. Each sector is divided into sub-units. These six sectors that made up entire activity of Nigerian economy are: Agriculture sector, Industry sector, manufacturing sector, Building & Construction sector; Wholesale & Retail trade, and Services sector. A cursory look at figure18.1 shows the average sectoral contributions to the Nigerian GDP. It reveals that the contributions of the main sectors to total GDP.

Figure 80: Sectoral Contributions to Nigerian GDP

NIGERIA'S ECONOMY BY SECTOR

- 40.2% AGRICULTURE
- 19.3% WHOLESALE & RETAIL TRADE
- 14.7% OIL & GAS
- 5.7% TELECOMS
- 4.1% MANUFACTURING
- 3.4% FINANCE
- 2.0% CONSTRUCTION
- 10.6% OTHERS

NIGERIAN INFOPEDIA

From the above diagram, the Nigerian agricultural sector contributes about 40.2% to GDP while the wholesale and retail trade sub-sector contributes about 19.3% to the Nigerian GDP. The oil and gas sub-sector of the Nigerian economic contributes about 14.7% to the Nigerian GDP while the telecom sub-sector contributes about 5.7% to the Nigerian GDP. Furthermore, the manufacturing sub-sector, the finance sub-sector and the construction sub-sector contributes 4.1%, 3.4% and 2.0% respectively to the Nigerian GDP. Other sub-sectors of the Nigerian economy contribute about 10.6% to the Nigerian GDP.

18.7 Summary/Conclusion

This chapter discussed the meaning and brief analysis of the structure of the Nigerian economy. In addition, the study identified the main problems of development plans in Nigeria, providing an insight to why Nigeria is a mono-economy.

18.8 Review Questions

1. Which is INCORRECT about Nigeria's oil sector?

    A. It is the greatest source of revenue

    B. It is the least contributor to the GDP

    C. It is a major contributor to exports earnings

    D. It is the greatest source of foreign exchange

2. ThemainstayoftheNigerianeconomyinitsfirstdecadeofindependenceisthe

    A. agriculture sector

    B. oil sector

    C. trade sector

    D. services sector

3. The size of the economy is determined by the size of the

    A. GDP

    B. land mass

    C. population

    D. natural resource

4. The largest economy in Africa is

    A. South Africa

    B. Nigeria

    C. Egypt

    D. Ghana

5. AgriculturalcontributiontoNigeria'sGDPisabout25%comparedto1%toGDPofthe United States. This implies

    A. Nigeria is more dependent on agriculture sector than the US

    B. Nigeria is more of dual economy than the US

    C. Nigeria is composed of more primary sector than the US

    D. Nigeria is composed of more informal sector than the US

Suggested Answers

1. **D**
2. **A**
3. **A**
4. **B**
5. **C**

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CHAPTER NINETEEN

INTERNATIONAL MONETARY SYSTEM AND ECONOMIC ORGANISATION

19.1 Learning Objectives

At the end of the chapter, the students should be able to;

i. Define the International financial system;

ii. State the objectives of the international financial system;

iii. Analyse the functions of international financial system;

iv. List the achievements of the international financial system; and

v. Discuss the problems facing the international financial system.

19.2 Introduction

The international financial institutions play a vital role in facilitating international transactions and maintaining economic prosperity of nations in terms of international trade deficits and other economic infrastructure deficiency in the countries of the world.

19.3 Background to International Monetary Fund

Following the breakdown of the international gold standard in the thirties of 20th century, countries embarked on policies aimed at increasing their exports and reducing their imports, such as currency depreciation, foreign exchange and trade controls, currency devaluation, thus generating retaliatory action from other countries, which led to total international money disorder, in short. The acute commercial rivalry resulted in straining of political relations with one another, which was one of the remote causes of the Second World War. After the Second World War, there was therefore the need for reconstruction and development, thus an international institution was needed for the orderly international monetary cooperation as well as reconstruction. Therefore, in July 1944 some leading nations of the world met at a conference in Bretton Woods New Hampshire in the U.S.A. and decided

to form the twin institutions namely:

1) International Monetary Fund (IMF).
2) The International Bank for Reconstruction and Development (IBRD) or World Bank.

International Monetary Fund (IMF)

The United Nations Monetary and Financial Conference held at Bretton Woods in U.S.A in July 1944 decided to establish the international Monetary Fund to help the countries to tide their temporary difficulties in their balance of payments and maintain their rates of exchange fairly at stable level. The Articles of Agreement were signed in December 27, 1945 by 44 countries, and its currency operations in March 1947.

Objectives of the International Monetary Fund

The following are the objectives of international monetary fund (IMF):

i. To promote international monetary cooperation among member countries, through the establishment of a permanent institution,

ii. To pursue with vigor, the expansion and balance growth of world trade so as to improve the standard of living of mankind.

iii. To provide means of international payments (i.e., promotion of multilateral methods of payments),

iv. To assist in the promotion of exchange stability of the effective maintenance of orderly exchange relations among member countries and to avoid competitive devaluations that characterized the pre-Bretton Woods era,

v. To provide financial resources to member countries in order to enable them clear their fundamental dis-equilibrium evident in the balance of payments.

vi. To promote investment of capital in backward and underdeveloped countries by means of exporting capital from the richer too the poorer countries so that the latter could develop their economic resources of achieving higher living standard.

Membership

Every member of the UN is free to become a member of the IMF. It should be noted that

the defunct USSR, although played a major role in the establishment of the institutions, is not a member. As at September 1981, the fund had 141 members subscribing to its shares. China became a member of the IMF only in April 1980.Among the Central Banks appointed by IMF as its gold depositories for members to deposits gold are Federal Reserve Bank of New York; the Bank of England, Bank of France and Reserve Bank of India.

Organisation and Management of the Fund

The IMF is run by two bodies. These bodies are:

1. **Board of Governors**

It is the highest of the authority of the fund, consisting of one person from each member country normally appointed for a term of 5 years. Each participant has 250 votes plus one vote for every$100.000 of capital completely controls the fund and majority of the votes cast in most cases decides an issue.

2. **Board of Directors**

There are 21 members in the Board of directors. Seven of them are permanent members appointed by the seven member nations with the highest quota holdings while 14 are elected from among the remaining members. One of the directors is designated as the Managing Director of the fund. He is the chief executive of IMF and controls the day-to-day affairs of the fund.

Criticisms/Shortcomings of IMF

i. The fund has been unable to fixed exchange rate because the fund can object or oppose changes in the par value of currencies but it cannot prevent a member country from change par values of its currency for political, social or economic circumstances.

ii. It has not been able to prevent competitive exchange depreciation and devaluation, which is common among its members.

iii. The IMF has also been accused of discriminations against African and Asian member countries. In actual fact, it has been observed that the fund is working under the political consideration of both Europe and USA.

iv. The fund has power to correct any dis-equilibrium in the balance of payments of the member country if it is caused by wrong economic policy embarked upon by the member

country.

v. It has a limited scope; in that it deals with foreign exchange problem pertaining to current transactions only. The problems of war debts, import and export of capital, etc. are beyond its scope.

vi. The quotas allotted to member countries do not appear to be quite reasonable, as they are allotted bearing in mind the economic and political interests of both the USA and UK, the two countries that have been dominating the fund since its origin.

Other Criticisms against the Fund:

1) Inability to remove exchange controls.
2) Non-provision for automatic revaluation of currency.
3) Incomplete solution to international liquidity problem.
4) Failure to recycle surpluses of the oil producing countries.

19.4 The International Bank for Reconstruction and Development (IBRD)

The International Bank for Reconstruction and Development (IBRD) otherwise known as the World Bank was established at a conference in Bretton Woods in 1944 along with the International Monetary Fund (IMF). The international financial organisation, which maintains a close relationship with the United Nations (UN), started operations in June 1946 and its headquarters is in Washington D.C. in the United States of America. They are expected to complement one another.

The need for international finance at the end of the Second World War for reconstruction of infrastructures destroyed during the war and to enhance and increase productivity and living standard of living of the underdeveloped areas of the world was in the minds of the participants of the Bretton Woods Conference as they felt that private capital alone could not cope with these problems. The World Bank came into existence in 1945 when its articles were signed by 44 countries, and it started its currency operations in 1947 together with IMF.

Sources of Funds

The bank obtains funds for its operations through the following sources:

i. **Capital Subscription by Member-Countries:** Initially, member countries of the International Monetary Fund (IMF) who are also members of the World Bank were required to contribute 2% of their total quotas in gold and 18% in their respective national currencies. The member countries were also required to retain 80% of their quota contributions. This amount was, however, to be made available to the Bank at call.

ii. **Sale of Securities:** The bank also raises funds through the sale of bonds in the world market to finance its activities.

iii. **Net Earnings from Operations:** This is represented by returns on the bank's investment and interest received from loans.

19.5 Operations of the World Bank

Generally, the World Bank funds projects related to agriculture, education, industry, electricity, communications, transportation, urbanisation, pollution and water supply. It draws on the expertise of world bodies like WHO, UNIDO and UNESCO to help member-countries technically. The projects funded by the World Bank have to be approved by the Bank's experts who consider the capital outlay, the plan of execution and possible expansion of such projects. That is, the projects must be viable, and those which will help to improve the economic well-being of the countries in which they are sited. Moreover, such projects must be self-paying. World Bank loans have maturities of up to 30 years and carry interest rates comparable to those in the international market.

Aims and Objectives

The primary aim of the bank is to guide international investment into productive channels. Among the various objectives of the Bank are:

(i) To assist the member countries in the reconstruction and development of their economies through facilitation of capital for productive purposes. Since the Bank provides such capital for the restoration of the destroyed economies during the Second World War, it is called Bank for reconstruction and since it also provides finance for the development of developing countries, it is also called Bank for Development.

(ii) To promote private foreign investment by means of guarantees or direct participations in loans in less developed countries either from its capital or borrowed funds.

(iii) To promote long range balanced growth of international trade and consequently indirect maintenance of balance of payments equilibrium through deliberate encouragement of international investments for the development of the productive resources of nations.

(iv) To provide technical assistance to the less developed countries which in most cases have fewer experts available in the field of investment projects.

Procedures for Lending

There are four stages involved in the granting of loan by the bank. These are: -

(i) **Exploratory Discussions and Preliminary Investigations**: Under this stage, discussions between the bank and the intending borrowers are held, basically on the latter's ability to repay. In the case of a first-time borrower, experts are sent to make a detailed study of its economy and its ability for repayment.

(ii) **Investigation of the Specific Project**: Based on the satisfactory recommendation of the bank under the first stage, the bank then proceeds to investigate the specific projects in all its aspects, technical, financial and administrative.

(iii) **Negotiation of the terms of the Loan**: If the second phase is successful, the bank proceeds further to determine the amount of loan, the interest rate, the period of the loan and securing assurances and guarantees for safe guarding the bank's interest.

(iv) **Administration of Loan**: This is the final phase. The bank's representatives at this stage continuetovisittheborrowingcountrytocheckwhetherthefundisbeingusedasagreedupon. Regular progress reports are also demanded by the bank to keep abreast and monitor the project.

Shortcomings of the Bank's Operations

The bank has been criticized on the following grounds

   i. The Bank's resources have been inadequate when compared to the needs of the member nations.

   ii. The Bank has also been accused of discriminating against both its African and Asian members who as a matter of fact have large population, vast areas and un-exploited resources.

   iii. The Bank charges high rate of interest on its loan from member countries, attempting to justify the high rate of interest to the cost of borrowing of the loan by the Bank.

   iv. The huge sum of loan required by the underdeveloped countries for their development programme is not met in required quantity.

   v. Private enterprises in underdeveloped countries have been finding it difficult to secure loans from the Bank due to lack of guarantee by their various governments.

   vi. Repayments of loan granted to underdeveloped countries were always difficult for them to repay in hard currencies in which the loans were taken not to talk of gold.

In conclusion, however, in spite of these criticisms, the bank has contributed considerably to the economic progress of many member nations by encouraging private people to invest in foreign countries and in other cases supplement this private capital and if the need arises, finance it directly from its own resources.

19.6 The International Finance Corporation (IFC)

The International Finance Corporation was formed to provide equity capital to underdeveloped countries without government guarantee which the World Bank refuses on the ground that there is no guarantee from the government. The body came into existence in July 1956 as an affiliate of the World Bank.

Aim and objectives are:

(i) To encourage the growth of productive private enterprises in developing countries.

(ii) To further economic development if it less developed member countries by investing directly in private enterprises.

The IFC capital when established in 1956 was $100 million subscribed in gold or US Dollars

by member countries. This figure has increased over the years. However, half of the total resources of the IFC were subscribed by the USA and Great Britain. The IFC is managed by the Board of governors and the Board of Executive Directors of the World Bank itself except that their action is independent of the World Bank.

Unlike the World Bank, it does not require government guarantee before granting loan to private enterprises of member nations. Its grant does not exceed half of the total asset of firm seeking the grant. It invests on those private enterprises that are predominantly industrial. And it does not engage itself in the management of the borrowing concern. It has assisted Nigeria through its investment in the Nigerian Industrial Development Bank, Arewa Textile Mills, Cotton Seed Crushing Plant in Funma, and among others.

19.7 International Development Association (IDA)

The need to provide development finance on more lenient terms and bearing less heavily on the balance of payments of developing countries than the World Bank's loans gave birth to the International Development Association in September 1960. It is worthy to note that borrowing countries were allowed longer period of repayment say 50 years or there about with 10 years of grace, and loans can be repaid in borrower's currencies instead of gold or US Dollars as the case with the World Bank. Based on this, IDA is often regarded as the "Soft Loan Window" of the World Bank.

Objectives of the IDA

1. The main objective of the IDA is to extend loans to the poorer member nations on terms which are more favourable to them.
2. To extend credit facility to the private sectors and firms and also on projects. This is aimed at developing the economies of the member countries.

Thus, the IDA can extend its credit facility to both governments and private firms. Private firms do not require official guarantee while credit for government is specifically meant for capital projects rather than financing budget deficits. Its membership is opened to all members of the World Bank.

Organisation and Management

Although the IDA is legally as well as financially different from the World Bank, it has a

Board of governors, Board of Executive Directors and President, all of whom are holders of these positions in the World Bank serving as ex-officio in the IDA. The subscriptions to the capital of the IDA are roughly proportionate to subscription to the Bank's capital. Its initial capital was $10 billion.

19.8 African Development Bank (AFDB)

Prior to the establishment of the international financial institutions by the advanced nations to primarily meet member countries and mostly, the European countries development, African countries has not significantly benefited from these institutions. Surprisingly, the African continent with about 1,464,687,334 million population (UN estimates, 2023) covers almost one quarter of the earth's land mass and vast natural resources had been largely denied of financial assistance for development mainly due to lack of capital and shortage of technicians and identifiable projects.

As a result of this situation, Africans resolve to create an effective instrument which would help to speed up development of its vast resources. It was decided that the best instrument for this purpose would be a financial institution common to all African countries. This idea originated in Tunis (Tunisia) in 1960 during the All-People's Conference. Thus, the adoption of resolution 27/11/ on February 16, 1961 by the United Nations Economic Commission for Africa (UNECA) at its meeting was the genesis of the AfDB.

A nine-nation committee made up of Nigeria, Ghana, Cameroon, Liberia, Mali, Sudan, Tanzania, Ethiopia and Tunisia made far reaching recommendations which were the basis of the agreement for its establishment. On August 4, 1963. The Agreement that established AfDB was signed in Khartoum, Sudan by 30 independent African countries. In November 1964, 25 member countries participated in the inaugural meeting of the board of governors held in Lagos. Election of the President, Vice-President and Board of Directors took place, and Abidjan in Ivory Coast (now Cote d'Ivoire) was chosen as the site for its headquarters. It commenced business in July 1966 with representative officers in London and Nairobi, and its authorized capital was-initially fixed at 250 million units of account. (One unit of account is equivalent to US $ I.15060)

Membership of the Bank is restricted to independent African nations. However, in May 1978, the board of governors passed a resolution to admit non-African nations as members with the provision that the President of the Bank should always be an African, and its loans confined to Africa.

The Main Objectives of the AfDB

a) Financing of investment projects with potential for social and economic development of member (African) states.

b) Preparing, studying and identify projects for development of member states.

c) Mobilisation of resources for financing of development of selected projects inside and outside Africa.

d) Providing technical assistance for project preparation, study and execution.

As a regional bank, AfDB funds are intended to have far-reaching impact on the economies of the beneficiaries. Projects that have the prospects of benefiting from supplementary sources of funds are funded by it to maintain the much-needed development.

19.9 Conclusion

This chapter explained the genesis, meaning, objectives and types of international financial system as well as their implication to the development of developing economies.

19.10 Review Questions

1. The foreign direct investment is majorly influenced by the

A. Interest of multinational corporations

B. Availability of domestic demand

C. Availability of domestic labour

D. Lack of products in host countries

2. Which of these regions adopts the same currency?

A. ECOWAS

B.IMF

C.EU

D. AU

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