ATSWA

ACCOUNTING TECHNICIANS SCHEME WEST AFRICA

STUDY TEXT

ECONOMICS

PUBLICATION OF ASSOCIATION OF ACCOUNTANCY BODIES IN WEST AFRICA (ABWA)

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ACCOUNTING TECHNICIANS SCHEME

WEST AFRICA (ATSWA)

STUDY TEXT FOR

ECONOMICS

FOURTH EDITION

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DISCLAIMER

This book is published by ABWA; however, the views are entirely those of the writers.

PREFACE

INTRODUCTION

The Council of the Association of Accountancy Bodies in West Africa (ABWA) recognised the difficulty of students when preparing for the Accounting Technicians Scheme West Africa examinations. One of the major difficulties has been the non-availability of study materials purposely written for the scheme. Consequently, students relied on text books written in economic and socio-cultural environments quite different from the West African environment.

AIM OF THE STUDY TEXT

In view of the above, the quest for good study materials for the subjects of the examinations and the commitment of the ABWA Council to bridge the gap in technical accounting training in West Africa, led to the production of this Study Text.

The Study Text assumes a minimum prior knowledge and every chapter reappraises basic methods and ideas in line with the syllabus.

READERSHIP

The Study Text is primarily intended to provide comprehensive study materials for students preparing to write the ATSWA examinations.

Other beneficiaries of the Study Text include candidates of other Professional Institutes, students of Universities and Polytechnics pursuing undergraduate and post graduate studies in Accounting, advanced degrees in Accounting as well as Professional Accountants who may use the Study Text as reference material.

APPROACH

The Study Text has been designed for independent study by students and as such concepts have been developed methodically or as a text to be used in conjunction with tuition at schools and colleges. The Study Text can be effectively used as a course text and for revision. It is recommended that readers have their own copies.

FORWORD

The ABWA Council, in order to actualize its desire and ensure the success of students at the examinations of the Accounting Technicians Scheme West Africa (ATSWA), put in place a Harmonisation Committee, to among other things, facilitate the production of Study Texts for students. Hitherto, the major obstacle faced by students was the dearth of Study Texts which they needed to prepare for the examinations.

The Committee took up the challenge and commenced the task in earnest. To start off the process, the existing syllabus in use by some member Institutes were harmonized and reviewed. Renowned professionals in private and public sectors, the academia, as well as eminent scholars who had previously written books on the relevant subjects and distinguished themselves in the profession, were commissioned to produce Study Texts for the twelve subjects of the examination.

A minimum of two Writers and a Reviewer were tasked with the preparation of Study Text for each subject. Their output was subjected to a comprehensive review by experienced imprimaturs. The Study Texts cover the following subjects:

PART I

1. Basic Accounting Processes and Systems
2. Economics
3. Business Law
4. Communication Skills

PART II

1. Principles and Practice of Financial Accounting
2. Public Sector Accounting
3. Quantitative Analysis
4. Information Technology

PART III

1. Principles of Auditing
2. Cost Accounting
3. Preparation of Tax Computation and Returns
4. Management

Although, these Study Texts have been specially designed to assist candidates preparing for the technicians examinations of ABWA, they should be used in conjunction with other materials listed in the bibliography and recommended text.

PRESIDENT, ABWA

STRUCTURE OF THE STUDY TEXT

The layout of the chapters has been standardized so as to present information in a simple form that is easy to assimilate.

The Study Text is organised into chapters. Each chapter deals with a particular area of the subject, starting with a summary of sections and learning objectives contained therein.

The introduction also gives specific guidance to the reader based on the contents of the current syllabus and the current trends in examinations. The main body of the chapter is subdivided into sections to make for easy and coherent reading. However, in some chapters, the emphasis is on the principles or applications while others emphasise method and procedures.

At the end of each chapter is found the following:

- Summary;
- Points to note (these are used for purposes of emphasis or clarification);
- Examination type questions; and
- Suggested answers.

HOW TO USE THE STUDY TEXT

Students are advised to read the Study Text, attempt the questions before checking the suggested answers.

ACKNOWLEDGMENTS

The ATSWA Harmonisation and Implementation Committee, on the occasion of the publication of the first edition of the ATSWA Study Texts acknowledges the contributions of the following groups of people. The ABWA Council, for their inspiration which gave birth to the whole idea of having a West African Technicians Programme. Their support and encouragement as well as financial support cannot be overemphasized. We are eternally grateful.

To The Councils of the Institute of Chartered Accountants of Nigeria (ICAN), and the Institute of Chartered Accountants, Ghana (ICAG), and the Liberia Institute of Certified Public Accountants (LICPA) for their financial commitment and the release of staff at various points to work on the programme and for hosting the several meetings of the Committee, we say kudos.

We are grateful to the following copyright holders for permission to use their intellectual properties:

- The Institute of Chartered Accountants of Nigeria (ICAN) for the use of the Institute's examination materials;
- International Federation of Accountants (IFAC) for the use of her various publications;
- International Accounting Standards Board (IASB) for the use of International Accounting Standards and International Financial Reporting Standards;
- Owners of Trademarks and Trade names referred to or mentioned in this Study Text.

We have made every effort to obtain permission for use of intellectual materials in this Study Text from the appropriate sources.

We wish to acknowledge the immense contributions of the writers and reviewers of this manual.

Our sincere appreciation also goes to various imprimaturs and workshop facilitators. Without their input, we would not have had these Study Texts. We salute them.

Chairman
ATSWA Harmonization & Implementation Committee

A new syllabus for the ATSWA Examinations has been approved by ABWA Council and the various PAOs. Following the approval of the new syllabus which becomes effective from the

September 2017 diet a team was constitutes to undertake a comprehensive review of the Study Texts in line with the syllabus under the supervision of an editorial board.

The Reviewers and Editorial Board members are:

REVIEWERS

This Study text was reviewed by:

- Professor J. A Fabayo	Obafemi Awolowo University, Ile -Ife
- Professor T.A Akinbobola	Obafemi Awolowo University, Ile -Ife
- Mr. S.A Adebayo	Federal Polytechnic, Ilaro

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SYLLABUS AND EXAMINATION QUEST

COURSE TITLE: ECONOMICS

AIM

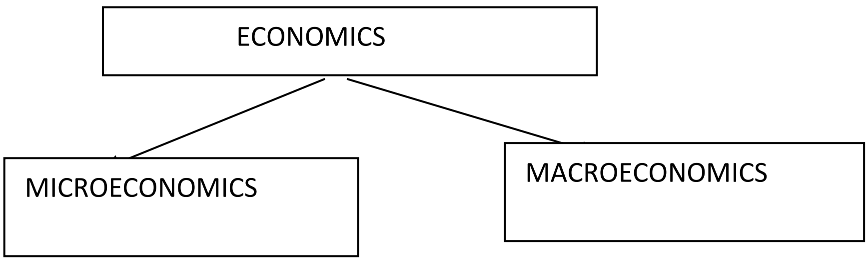
To develop knowledge and understanding of basic principles and practice of economics required of an Accounting technician to function efficiently and effectively as a member of an organization in a dynamic and competitive global economy.

OBJECTIVES

At the end of this course, candidates should be able to know and understand:

a. Basic economic concepts and principles in the analysis of economic issues.
b. The features of the general economic environment in which economic agents (e.g individuals, firms and government) operate
c. The basis for rational economic decisions by economic agents
d. The activities of regional and international organizations and their impact on the domestic economy of member countries
e. The increasing inter-connections among nations of the world and their economic implications.

GENERAL RELATIONSHIP DIAGRAM



STRUCTURE OF THE PAPER

The paper will be a three-hour paper divided into three sections

Section A (50 Marks):This shall consist of 50 compulsory questions made up of 30 multiple-choice questions (MCQ) and 20 short Answer Questions (SAQs) covering the entire syllabus.

Section B Microeconomics (25 marks): This shall consist of three questions, out of which candidates are expected to attempt any Two, each attracting $12^1/_2$ marks

Section C: Macroeconomics (25 marks): This shall consist of three questions, out of which candidates are expected to attempt any Two, each attracting $12^1/_2$ marks

CONTENTS

SECTION A: MICRO ECONOMICS 45%

1. **The Nature and Scope of Economics and the Economy** 5%
    - a. Definition and scope of Economics
    - b. Basic economic concepts: economy, scarcity, choice, scale of preference, opportunity cost and production possibilities curve (PPC).
    - c. Microeconomics versus Macroeconomics
    - d. Basic economic problems of society
    - e. Types, features and functions of an Economic System
    - f. The Methodology of Economics

2. **Theory of Value** 10%
    - a. The concepts of demand and supply
    - b. Determinants of demand and supply, and the concepts of demand and supply functions
    - c. Determination of equilibrium price
    - d. Determination of consumer's and producer's surplus (using demand and supply diagrams)
    - e. Distinction between change in quantity demanded/supplied and changes in demand/supply
    - f. The effects of changes in demand and supply on the market situation.
    - g. Exceptions to the laws of demand and supply
    - h. Elasticity of demand and supply (determination , numerical evaluation and interpretation):
        - i. Price elasticity of demand
        - ii. Price elasticity of supply
        - iii. Income elasticity of demand
        - iv. Cross-price elasticity of demand
    - i. Application of price elasticity of demand to incidence of tax
    - j. Applications of demand-supply diagrams to:
        - i. Price control
        - ii. Minimum wage legislation

3. **Theory of Consumer Behaviour** 5%
    - a. The marginal utility theory
        - i. Utility concepts: total, marginal
        - ii. Law of diminishing marginal utility
        - iii. Proof of the law of demand

    - b. The indifference curve theory
        - i. Concepts of : indifference curve, indifference map, budget line
        - ii. Prove of the law of demand

4. **Theory of Production** 15%

a. Meaning and types of production
b. Factors of production and their rewards
c. Basic concepts in production analysis:
   i. Production function
   ii. Total product, average product, marginal product
   iii. Economic rent, quasi rent and transfer earnings
   iv. Short run and Long run
d. Law of diminishing returns
e. Law of returns to scale
f. Economies of scale and Diseconomies of scale
g. Cost concepts-total cost, average cost, marginal cost- their meaning, behaviours and relationships
h. Revenue Concepts – total revenue, average revenue, marginal revenue-their meanings, behavours and relationships
i. Division of labour - Meaning, advantages, disadvantages and limitations
j. Location of Industry - meaning, location factors
k. Localisation of industries - meaning, advantages and disadvantages.
l. Forms of business organization –Sole proprietorship, partnership, private limited companies, public limited companies and public corporation.
m. Concepts of privatization, commercialization, nationalization and deregulations.

5. **Market Structures** 10%

a. The concept of market
b. Meaning and features of perfect competition, monopoly, duopoly, oligopoly, monopolistic competition and monopsony.
c. Price and output determination in the short run and long run under the conditions of perfect competition, monopoly and monopolistic competition.
d. Product differentiation and price discrimination
e. Sources and control of monopoly power
f. Merger and acquisitions – meaning, advantages and disadvantages

SECTION B **MACROECONOMICS** 55%

6. **National Income** 10%

a. Basic National income accounting concepts: (i) Gross domestic Product (GDP), (ii) Gross National Product GNP) (iii) Net National Product (NNP), (iv) Personal disposable Income (PDI)
b. Methods of computing national income. (i) Output/ Product method, (ii) Income method, and (iii) Expenditure method.

c. The concept of circular flow of income
d. Problems of measuring national income
e. Uses and limitations of national income statistics
f. Factors determining the size of national income
g. The concepts of consumption, savings and investment within the Keynesian's macroeconomic framework
h. Determination of equilibrium national income and the multiplier
i. The concepts of full employment national income, inflationary gap and deflationary gap.

7. **Money and Banking** 10%

a. Money - definition, functions, characteristics, types and nature
b. Demand for and supply of money
c. The quantity theory of money
d. The Financial System: Commercial, Merchant and Universal Banks, the central bank' and development banks
e. Money market, Capital market and their instruments
f. Monetary policy: meaning, instruments and targets

8. **Fundamentals of Public Finance** 10%

a. The concept of public finance: government revenue and government expenditure
b. Sources of government revenue and pattern of government expenditure
c. Taxation
   i. elements, principles, classification and uses
   ii. Government expenditure – Classification and determinants
d. National budget – types and role in the economy
e. Public debts- meaning, types and sources of finance
f. Fiscal policy- meaning, instruments and targets.

9. **Inflation and Unemployment** 5%

a. Inflation – concepts, types, causes, effects and control
b. Unemployment: concepts, types, causes, effects and control.
c. Inflation and unemployment problems in West Africa and efforts to control them.

10. **International Trade and Finance** **10%**

a. Distinction between internal and international trade
b. Reasons for international trade
c. Theory of comparative cost advantage
d. Advantages and disadvantages of international trade
e. Terms of trade, balance of trade and balance of payments
f. Trade barriers and the case for and against trade protection

g. The concepts of foreign exchange, foreign exchange rate, foreign exchange market and foreign exchange systems. (fixed and floating)

h. Currency devaluation, revaluation depreciation, appreciation and their implications for the economy

i. Globalisation and developing countries

11. **International and Regional Organisations** 5%

a. Bank Group and their objectives

i. The world Bank Group

ii. The African Development Bank Group (AFDB)

b. International Monetary Fund (IMF)

c. Economic Integration – meaning and levels

d. The Economic Community of West African States (ECOWAS)

e. Organization of Petroleum Exporting countries (OPEC)

f. United Nations Conference on Trade and Development (UNCTAD)

g. General Agreement on Trade and Tariff (GATT)

h. World Trade Organization (WTO)

12. **Economic Growth and Development** **5%**

a. Economic growth: Meaning and determinants

b. The concept of Economic development

c. Common characteristics of developing countries

d. Development planning: meaning, objectives, types and problems

RECOMMENDED TEXTS

1. ATSWA Study Text on Economics
2. Adebayo Ademola (2014 Reprint): Economics: A Simplified Approach: African International Publishing Ltd. Volume 1 & 2
3. Nkoom J.C: money Economics in Ghana

CHAPTER ONE

AN INTRODUCTION TO ECONOMICS AND THE ECONOMY

LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- Understand the nature, scope and methodology of economics
- Have good grasp of the fundamental economic problems facing all societies and how the problems are solved in different economic systems.

1.1 DEFINITION AND SCOPE OF ECONOMICS

A simple and most widely quoted definition of economics is that given by the British Economist, Lionel Charles Robbins (1898 – 1984):

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

In the above definition, the word **'ends'** refers to human wants usually classified as goods and services. The word **'means'** refers to productive resources otherwise called factors of production. In every society, the productive resources are combined in different ways to produce different types of goods and services.

Economics is described as a science subject based on the way economists study and explain human behaviour concerning how best to allocate scarce resources among competing alternative uses. The economists adopt scientific method in which theories of human behaviour are developed and tested against the facts in a way similar to the practice in the pure sciences like Chemistry and Physics. However, economics is more appropriately placed within the social sciences because its subject matter, human behaviour in the production, distribution and consumption of goods and services can neither be controlled in the laboratory nor be predicted with absolute accuracy.

1.2 BASIC ECONOMIC CONCEPTS

A number of basic concepts or terms lie at the heart of economic science. The most important ones are explained in this section.

1.2.1 Economy

The word is used to refer to a particular system of organisation of economic activities i.e. production, distribution, exchange and consumption of all things required to satisfy human wants. In this sense, we often speak of the Nigerian economy or the Ghanaian economy, developed or developing economy, capitalist, socialist or mixed economy.

1.2.2 Goods and Services

In economics, the term **goods** refers to material or physical things which can be seen or touched and used to satisfy human wants. Examples include food items, cars, shoes, wristwatch, industrial equipment and machineries, etc. Goods are classified in different ways. One classification is **economic goods** and **non-economic goods**. **Economic goods** are those goods which have prices and their production requires scarce resources that have competing uses. On the other hand, the term **non-economic goods** refers to things that are unlimited in supply and can be obtained free-without paying a price. Examples of non-economic goods are stream water, gutter sand, sunshine, air, bush trees, etc.

Economic activities other than manufacturing or primary goods production are referred to as **services**. Examples are banking, shipping, legal, insurance, tourism, medical care, etc. But it is also common in economics to use the term goods to refer to both material goods and services which, in this case, is regarded as **non-material goods**.

1.2.3 Resources

These are things which are combined in numerous ways to produce goods and services required for the satisfaction of human wants. Such things are alternatively referred to as **factors of production**, and can be classified as:

(i) **Natural resources**: There are free gifts of nature such as arable land, water, minerals (such as limestone, good etc), fishing ground, forests, hydroelectricity and solar energy potentials etc. Natural resources are collectively referred to as **land** in economics.

(ii) **Human resources**: Human efforts in the production process which consist of various mental and physical abilities and skills. The term **labour** is used for human resources.

(iii) **Capital**: Man-made resources such as roads, dams, buildings, equipments and machines which help in the production of other goods that satisfy human wants directly or indirectly.

(iv) **Entrepreneurship**: The person (in case of one-man business) or the business owners/managers who co-ordinate the other factors of production to produce and market goods and services and possibly invent and innovate.

1.2.4 Utility

This is the economist's term for the satisfaction and need fulfilment that people derive from the consumption/use of material goods and services.

1.2.5 Stock and Flow

The term stock refers to a variable which has no time dimension e.g. 1,000 bags of cement stored in a warehouse pending sales, which can occur anytime. On the other hand, if a variable has time dimension, it is called a flow. In other words, the term **flow** refers to the quantity of an economic variable measured over a particular period of time. It follows that 1,000 bags of cement produced or supplied per day by a cement company is a flow.

1.2.6 Ceteris Paribus

This is a Latin phrase meaning "all other things being equal". The ceteris paribus assumption is more commonly used in economic theory to isolate the effect of a change in one variable or influencing factor. This implies that "all other variables or determining factors are held constant". Economic theories are simplified and their validity enhanced with explicit or implicit use of ceteris paribus.

1.2.7 Rational Behaviour

As used in economics, behaviour in which economic agents (i.e. individuals, firms and government) do the best they can under given circumstances. For example, the assumption of consumer rationality implies that the average consumer in his purchasing decision will always prefer more to less, or the basket of goods that will give him the maximum utility given his money income and the unit prices of the goods. The assumption of rationality permits us to explain and predict how people will act under specific conditions.

1.3 MICROECONOMICS AND MACROECONOMICS

Traditionally, economics is divided into two main branches: microeconomics and macroeconomics.

1.3.1 Microeconomics

Microeconomics is concerned with specific segments of the economy, particularly the behaviour of individual consumer, firm and of groups of firms, in the industry. As a branch of economics, it examines how resources are organised, controlled and rewarded in various economic activities, as well as how relative prices of goods and services are determined. The main topics falling within microeconomics include the theory of price and wage determination, the theory of consumer behaviour, the theory of production, and welfare economics.

1.3.2 Macroeconomics

Macroeconomic is the study of the economy as a whole. In macroeconomics; emphasis is on aggregate economic variables such as the economy's level of employment, total output and income, total money supply, overall government spending, the levels of taxes, investments and saving, and so on. It follows that macroeconomics explores the problems of unemployment, inflation, external disequilibrium, sluggish economic growth, general poverty, and inequality in the macro economy.

1.4 BASIC ECONOMIC PROBLEMS

The fundamental economic problems facing every society are discussed in this section.

1.4.1 Scarcity

Economic scarcity means that people do not have as much as they desire. The problem of scarcity arises as a result of the fact that, at any point in time, the productive resources available in any society are limited, whereas human wants are unlimited. It follows that the amount of goods and services that can be produced are limited and inadequate to meet human wants.

Therefore, every society must resolve four fundamental economic questions.

(i) **What is to be produced**? Every society must determine in some manner what goods and services and how much of each to produce during any given period of time.

(ii) **How is the output to be produced**? Each firm must decide how to utilise the inputs to achieve optimal resources allocation i.e. the manner of combination of factors of production in order to produce maximum output quantum of goods and services possible.

(iii) **For whom to produce?** That is, for which category of consumers are the goods being produced? Is it for the young, the old or for both categories?

(iv) **How to facilitate future growth**? The resources must be utilized at a rate that would enhance future production possibilities.

Scarcity is the most fundamental economic problem facing every society. If resources are not scarce, goods and services would not be scarce and there would be no need to economise. Consequently, there would be no need to study economics.

1.4.2 Choice

Choices become necessary as a result of scarcity. Making a choice implies giving up something in order to get something else. The concept of choice relates to all the three main economic agents in the economy.

- An individual consumer must choose among types of goods and services, between present and future consumption because of his limited money income.
- The firm must choose what to produce and how to produce within constraint imposed by its limited resources.
- The government must decide what public goods and services to provide for the people given its limited revenue as projected in the budget documents.

1.4.3 Scale of Preference

It is described as a list of all wants to be satisfied arranged in order of priority or importance. The concept of *Scale of Preference* underscores the basic assumption in economics that every economic agent exhibits rational behaviour in the process of making a choice.

1.4.4 Opportunity Cost

Economists used the term *opportunity cost* to mean the next best alternative forgone in the process of making a choice. To an individual consumer, the opportunity cost of a commodity bought is the next most desirable commodity he could have bought instead. For example, a housewife desires a tin of rice and a tin of beans each selling for N200. But since she had only N200, she decided to buy a tin of rice. The opportunity cost of a tin of rice bought is a tin of beans forgone.

The concept of opportunity cost is central to the study of economics because it guides the individual, the firm, and the government to make rational decision on the use of scarce resources. Opportunity cost is alternatively referred to as *real cost or economic cost.*

Note that the accountant's view of cost (i.e. accounting cost) is quite different from the economist's view of cost (i.e. opportunity cost).

To the accountants, the cost of a commodity purchased by the consumer or a factor of production purchased by the firm is the amount of money paid to have that commodity or productive resources. This is called *money cost* or *accounting cost*.

1.4.5 Production Possibilities Curve

A production possibilities curve (PPC) shows the various combinations of two goods that can be produced in a country when all available resources are fully and efficiently utilized.

Table 11: Production Possibilities Schedule

Product Combination	Rice (Bags)	Butter (Tins)	Opportunity cost of an additional bags of rice
A	0	80	-
B	1	76	- 4
C	2	70	- 6
D	3	60	- 10
E	4	40	- 20
F	5	0	- 40

The production possibilities schedule presented in Table 1.1 is shown graphically as production possibilities curve in Figure 1.1

The PPC in Figure 1.1 is drawn under the assumption that the society is using all its resources to produce only two goods – rice and butter. Fig 1.1 illustrates points (i – iv) below fig 1.2 illustrates point (v), while Figure 1.3 illustrates point (vi).

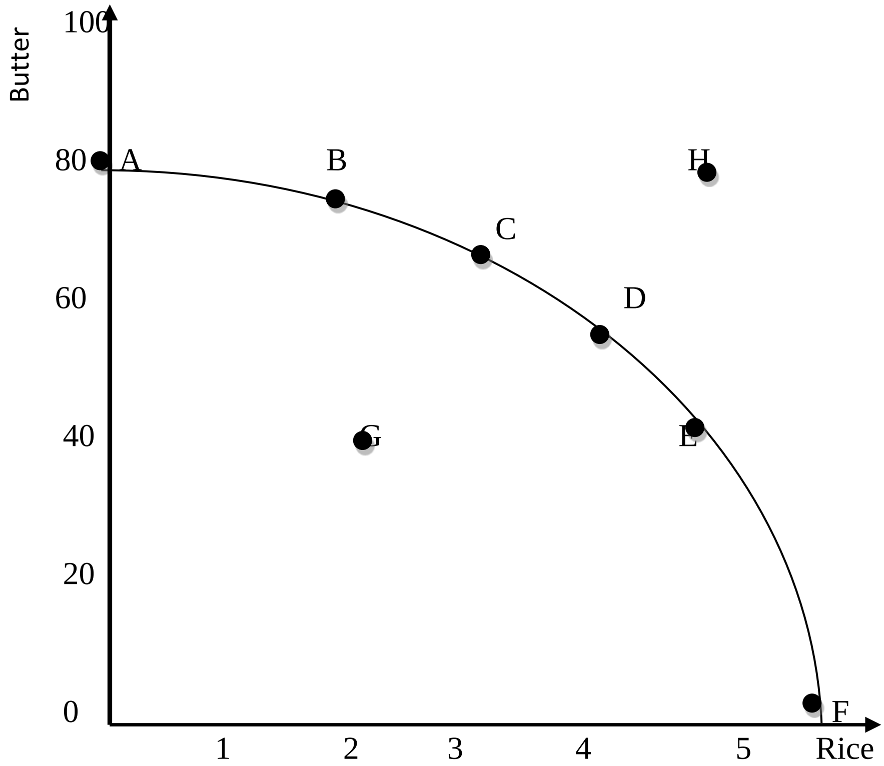


Figure 1.1 Production Possibilities Curve (PPC)

(i) **Scarcity**. The boundary formed by the curve joining points A and F indicates that there is a limit to the amount of both rice and butter that the country can produce at any point in time.

(ii) **Full – employment**. Any point on the PPC (such as A to F) shows the combinations of the two goods that the economy can produce given that all available resources are fully and efficiently utilized.

(iii) **Unemployment or underemployment**. Any point inside the PPC, such as G, shows that some resources are either left completely idle (unemployed) or are not efficiently utilized (underemployed).

(iv) **Unattainable output level**. Any point outside the curve, such as H, shows the output level that cannot be achieved by the country.

(v) **Opportunity cost**. The slope of the PPC usually referred to as **marginal rate** of transformation (MRT) measures the opportunity cost of a unit more or less of a commodity.

(vi) **Economic growth**. It can be defined as a sustained increase in the production capacity of an economy which leads to a greater output of goods and services. This is represented by an outward shift in the production possibilities curve from PPC $_1$ to PPC_2 in Figure 1.3.

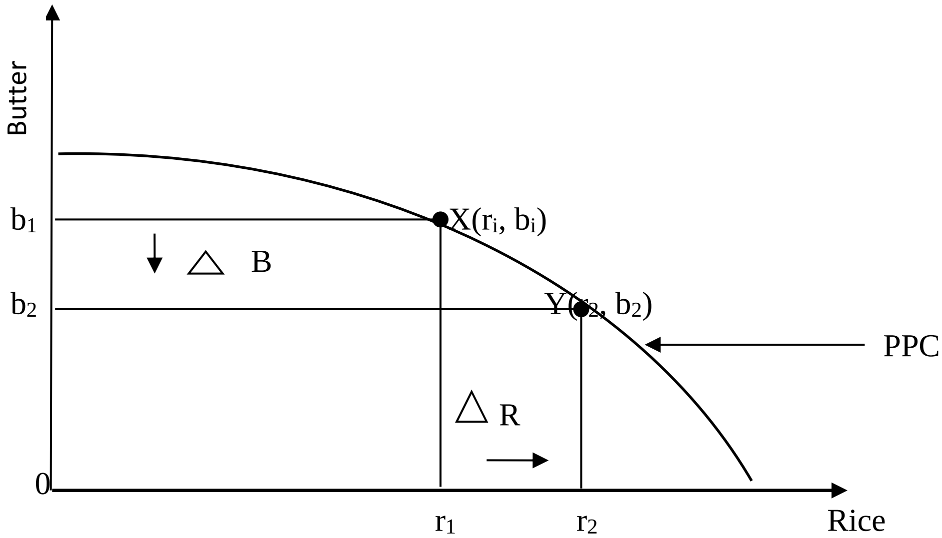


Figure 1.2 The PPC'S Illustration of Opportunity Cost

Figure 1.2, the opportunity cost of moving from output X (r_1, b_1) to output Y (r_2, b_2) is obtained as

$$MRT_{br} = \frac{\Delta B}{\Delta R} < 0$$

$$= \frac{b2-b1}{r2-r1} < 0$$

If $r_2 - r_1 = 1$, the opportunity cost of moving from X to Y is $b_2 - b_1$ tins of butter forgone.

Applying this approach to Table 1.1, the opportunity cost of producing the 3rd unit of rice is 10 tins of butter forgone.

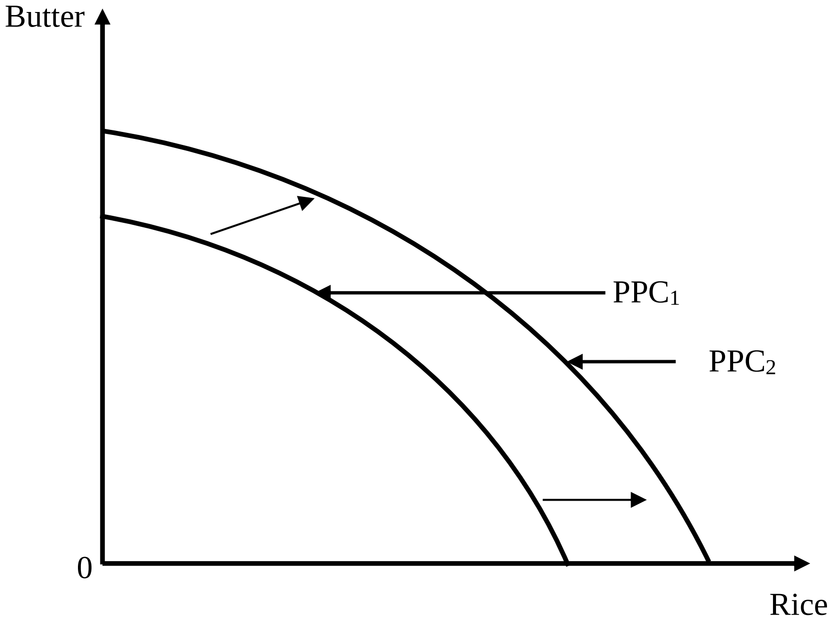


Figure 1.3 *The PPC'S Illustration of Economic Growth*

1.5 ECONOMIC SYSTEMS

An economic system describes the mechanism by which scarce resources are allocated in society, the nature of the relationship between the individual and society and the role of government in the allocation of resources and the direction of economic activity (Donnelly, 1991).

1.5.1 Types of Economic System

The three main types of economic system, which are: capitalist economic system, socialist economic system and mixed economy, are explained in this section.

1 .5.1.1 The Capitalist Economic System

This type of economic system, otherwise called *free market, free enterprise* or *laissez – faire economy* is based on private ownership and the freedom of individuals and firms to conduct their economic activities without interference from the government.

(a) Features

The main features of a capitalism economy are:

(i) **Private ownership**: Private individuals and firms own the means of production and goods in the economy.

(ii) **Freedom of choice**: Individuals as consumers are free to spend their money income on those goods they consider desirable to satisfy their wants. This idea is called *consumer sovereignty* and it influences what the producers will produce at any point in time. Hence the statement, "in the market – economy, consumer is the king". Similarly, the firms are also free to produce any good they want and which they are capable of producing.

(iii) **Limited role for government**: The functions of the government are limited to provision of enabling environment, rules and regulations for private economic activities to thrive.

(iv) **Competition**: Individuals and firms freely compete for goods and resources.

Therefore, in the pure capitalist economy, the fundamental questions of what to produce, how to produce and for whom to produce are resolved by price – mechanism i.e. the interplay of the forces of demand and supply.

(b) Advantages

(i) **Optimal allocation of resources**: Producers engage their resources only on those goods which appear to yield maximum profits.

(ii) **Greater output and higher income**: There is increase in production and productivity leading to increase in income, saving and investment.

(iii) **Increase in efficiency**: The presence of competition leads to a better use of resources to obtain cost – saving advantage.

(iv) **Progress and Prosperity**: Intense competition promotes invention and innovation thereby bringing economic growth and prosperity.

(c) Disadvantages

(i) **Emergence of Monopoly**: Cut – throat competition may force small firms who could not cope to shut down while the big firms may merge and monopolise the market and charge exorbitant prices.

(ii) **Inequality problem is worsened**: The rich who own resources and control production are favoured while the poor become more impoverished.

(iii) **Inefficient production**: More resources are allocated to the production of frivolous goods that are desired by the rich who have the means while the basic necessities required by the poor are in short supply.

(iv) **Economic depression and unemployment**: Excessive competition and unplanned production leads to excess supply, low price level and cut in the number of workers employed.

1.5.1.2 The Socialist Economic System

It is otherwise referred to as the *command* or *centrally planned economy*. The economies of former Soviet Union, Cuba, and a number of Eastern European countries are often cited as examples of socialist economies.

(a) Features

The main features are:

i. **Public Ownership**: Means of production are owned entirely by the central government.

ii. **Public Allocation and Distribution**: Prices of goods and services are fixed by the agencies of government. In order words, the fundamental economic questions of what to produce, how to produce and for whom to produce are solved by the government.

(b) Advantages

i. **Greater economic efficiency**: The government ensures that resources are allocated to those sectors where they can be used most productively. Therefore, production efficiency is greater than under capitalist Economic System.

ii. **Absence of Wasteful Competition**: Duplication of goods and services or use of resources on extensive advertisement campaign is avoided.

iii. **Less Inequality of Income**: Every member of the society is taken care of within the limits of their relative capabilities and the overall resources of the state.

iv. **Absence of Exploitation of Private Monopoly:** State monopoly exists only to promote overall economic well being of the people.

(c) Disadvantages

i. **Misallocation of Resources**: Resources allocation is based on trial and error and selfish interest of the ruling class leading to underproduction of goods required by the poor majority.

ii. **Loss of Consumers' Sovereignty**: Consumers are restricted to only the goods and services dictated for production by the state.

iii. **No Freedom of Enterprise**: Every person is employed by the government and there is tendency for underemployment misallocation of human resources.

iv. **Waste of Resources**: Central Planning requires large bureaucratic structures which result in waste resources.

v. **Poor Quality Product**: The absence of competition weakens the drive for producers to improve on products' quality.

1.5.1.3 Mixed Economy

It is an economic system which combines features of both the capitalist and socialist economic systems. In a mixed economy therefore, there exist private and public ownership of productive resources. In those areas where the private individuals and firms are dominant, allocation and distribution of resources is done by price – mechanism. But in those activities reserved for the government, central planning and administrative fiat decisions are used to solve fundamental questions on allocation and distribution of resources, goods and services.

The state intervention, however, is considered necessary to remedy the defects of the market economy earlier identified.

In the real – world, all economies are mixed, but the extent to which one mixed economy differs from another depends largely on how the government interprets its role in the economy.

Advantages

i. **Best allocation of resources**. A mixed economy combines the good features of both the capitalist and socialist economic systems. Therefore, the resources of the economy are utilized in a way that ensures the adequacy of all types of goods and services with production efficiency.

ii. **General Balance**. The competition and cooperation between the public sector and the private sector favours the realization of a high rate of capital accumulation and economic growth.

iii. **Welfare State**. In a mixed economy, there is no exploitation either by the capitalists or by the state. Government agencies are established to protect consumers' interest, while legislative measures are adopted to reduce poverty and inequalities of income and wealth.

Disadvantages

i. **Non-cooperation between the private and the public sector**. In real – life, public – private sector partnership (PPP) to promote economic progress is hardly found. Most often, the private sector is subjected to heavy taxes and restrictions that impact negatively on its performance, while the public sector is given subsidies and preferences.

ii. **Inefficient public sector.** The public sector of a mixed economy works inefficiently due to bureaucratic control, over-staffing of the personnel, corruption and nepotism. As a result, resources are misutilised and the level of production is low.

iii. **Economic fluctuations**. Periods of economic prosperity and hardship alternating which are characteristic features of a capitalist economy are equally experienced in a mixed economy. This is a result of the improper mixture of the features of capitalism and socialism.

1.5.2 Functions of an Economic System

Every economic system performs the following functions:

(i) **Allocation of Resources:** Every economy has to decide what, and how much good and services to produce at any given time.

(ii) **Organisation of Production**: Every economic system must decide what alternative techniques of production are more suitable to its circumstances.

(iii) **Distribution of Goods and Services**: How the goods are shared among people is determined in every economic system.

(iv) **Economic Growth and Development**: The mechanisms to grow the economy and raise average living standard is determined in each economy.

(v) **Economic Stability**: Every economic system has the mechanism designed to control fluctuations in the level of economic activity e.g. using fiscal and monetary policies.

1.6 THE METHODOLOGY OF ECONOMICS

This section addresses how economists organize their studies to make economic science a worthwhile field of human endeavour.

1.6.1 The Scientific Method

Economists adopt scientific method in their investigations of economic problems and economic relationships. In this method, problems are identified and defined, information relevant to the problem are collected, organized and analysed leading to the establishment of an economic theory.

1.6.2 An Economic Theory

An economic theory otherwise referred to as economic law, economic principle or economic model helps to explain human economic behaviours especially production, distribution, exchange and consumption, as well as to predict the likely course of future events. An economic theory is developed around one or more assumptions. The usefulness of any theory to a particular problem situation depends on how realistic the given assumptions are.

1.6.3 Words, Graphs and Equations

In economic discussions, three types of language are used – verbal, graphic and mathematical.

(a) **Verbal Statement**: The use of words is often the easiest way to presentation. It has the advantage of making discussions in economics available to a wide audience.

(b) **Graphs**: Because of their visual appeal, graphs are used as a further aid to understanding economic discussions. Moreover, graphs provide a clear picture of the relationship between two economic variables.

(c) **Equations**: Complex relationships, especially three or more dimensional relations are expressed in mathematical language – algebraic statement or functional relationship. However, for ease of presentation, variables are often reduced to two so that they can be shown on graphs.

1.6.4 Limitation of Scientific Method in Economics

The nature of the subject matter of economics i.e. human behaviour imposes limitations in the use of scientific method in economics. Measurements and controlled experiments, which are vital in the physical sciences, are rarely applicable in economics because people cannot be expected to behave as predictably as inanimate matter, which can be subject of controlled laboratory experiment.

1.6.5 Positive and Normative Economics

Economics analysis can be divided into two – positive economics and normative.

- **Positive economics:** This is concerned with describing and analyzing the way things are or things will be if certain conditions exist. For instance, the statement, an increase in demand for a commodity will cause its price to increase when other factors influencing demand and supply condition remain unchanged is a statement in positive economics. In other words, positive economics is an objective science, which provides explanations of the working of the economic system.
- **Normative economics:** This is concerned with what ought or to be or should be, particularly how economic problems should be solved. It is a subjective science which deals with those areas of human economic behaviour in which personal value judgements are made. Normative economics gives rise to statements such as 'money supply should be reduced to lower inflation rate in the economy'.

1.7 SUMMARY

This chapter identified economic scarcity as the basic economic problem facing all societies. The fundamental problems of what to produce, how to produce and for whom to produce, as well as how those problems are resolved differ from one economic society to another depending on the economic system adopted. The economists organize the study of their subject using scientific method, hence economics is classified as a social science. A good grasp of the discussions in this chapter is critical to the understanding of all areas of economic science.

1.8 REVISION QUESTIONS

1.8.1 Multiple Choice Questions (MCQ)

1. Economics can best be defined as the study of:

   A. How society resolves the problem of scarcity
   B. Why productive resources are scarce?
   C. How to interpret economic theories
   D. The features of different types of economic system
   E. How the consumers maximize their utility

2. The fundamental economic problems facing all societies arise because of:

   A. Availability of unlimited resources
   B. The insatiable wants of man
   C. Resources being scarce in relation to human want
   D. Government's passive role in the economy
   E. Large bureaucratic structures of governments

3. Pure capitalism is an economic system characterized by:

   I. Private ownership of productive resources
   II Freedom of choice and enterprise
   III Competition
      A. I only
      B. II only
      C. I and II only
      D. III only
      E. I, II and III

4. Which of the following is a statement in positive economics?

   A. The pump litre price of petrol should be increased
   B. The government ought to provide more hospitals
   C. Anti-corruption agency is desirable in all developing countries
   D. There is high rate of inflation in most West-African countries
   E. Government should tax the rich more

5. The production possibilities curve CAN NOT be usefully employed to illustrate
   A. Opportunity Cost
   B. Economic Scarcity
   C. Economic Growth

D. Unemployment
E. Scale of preference

6. The work time and work effort that people devote to producing goods and services are called
   A. Land
   B. Labour
   C. Product
   D. Capital
   E. Entrepreneurship

7 The widely acknowledged founder of modern economics is

   A. Adam Smith
   B. Alfred Marshall
   C. Joan Robinson
   D. David Ricardo
   E. Thomas Malthus

8 In a Capitalist system, the consumer is the king. This implies that

   A. The King on the throne is a consumer.
   B. The producers respond to the wishes of the consumers.
   C. Producers have freedom to produce what they want.
   D. There is competition between producers and consumers
   E. Consumers always reject the products of the producers

9. What do economists means by the concept of "scarcity"?

   A. When there is a shortage of a particular goods and its price rises
   B. The society's desire exceed the want satisfying capability of the resources available
   C. There are fewer consumable goods now than in the past
   D. When there is more money chasing fewer goods
   E. When there is no money in the economy

10. Most West African economies can be classified as

   A. Socialist economies
   B. Capitalist economies
   C. Centrally Planned economies
   D. Mixed economies
   E. Free-market economies

1.8.2 Short Answer Questions (SAQ)

1. Goods that have prices and their production requires scarce resources which have alternative uses are referred to as …………………..

2. The study of aggregate economic variables is the primary concern of……………….

3. The economic system characterized by private ownership of resources is……………

4. The economist who defined Economics as the social science which studies human behaviour as a relationship between ends and scarce means which have alternative uses is ………………..

5. The economic term for the satisfaction and fulfilment that people derive from the consumption of goods and services is referred to as ………………

Solution to Multiple Choice Questions (MCQs)

1. A
2. C
3. E
4. D
5. E
6. B
7. C
8. B
9. B
10. D

Solution to Short Answers Questions

1. Economic goods
2. Macroeconomics
3. Capitalism
4. Lionel Charles Robbins
5. Utility

Question 1.1

(a) Identify and explain briefly the four fundamental economic questions that every society must resolve, and why.

(b) Distinguish between the two main branches of economics – microeconomics and macroeconomics.

Solution

(a) Every economic society must resolve the following fundamental economic questions:

(i) What is to be produced? Every society must determine in some manner what goods and services and how much of each to produce during any given period of time

(ii) How is the output to be produced? Each firm must decide how to combine the inputs to achieve optimal resources allocation. That is, what method of production (e.g. labour intensive or capital – intensive) to adopt to realize the firm's profit-maximization objective.

(iii) For whom to produce? This is based on demand for products such that resources are directed towards producing goods that are being demanded.

(iv) How to facilitate future growth? Each society must decide at what rate it will use up its resources to enhance future production possibilities.

The above questions arise because all economies are faced with the problem of economic scarcity – that is, human wants exceed the amounts of production that is possible with the limited resources that are available`. Therefore, making choices between what to have and what to forgo become necessary and unavoidable.

(b) The study of economics is generally separated into two major areas-microeconomics and macroeconomics

Microeconomics is concerned with the behaviour of individual consumers and firms. Specifically it examines how relative prices are determined, how resources are allocated to the production of particular goods and services, how the goods and services are distributed among people, and how efficient resources are used. Discussions in microeconomics are based on the assumptions of utility-maximization goal for the individual consumer, and profit-maximization goal for the firm.

Macroeconomics, on the other hand, is the study of the economy as a whole. It deals with aggregate variables such as national income, employment, volume of money and the general price level, aggregate demand, total expenditure, savings and investment, total exports and imports, and so on. Moreover, it explores the causes and suggests possible solutions to such economic problems as inflation, unemployment, balance of payments deficits, sluggish economic growth, income inequality, and poverty.

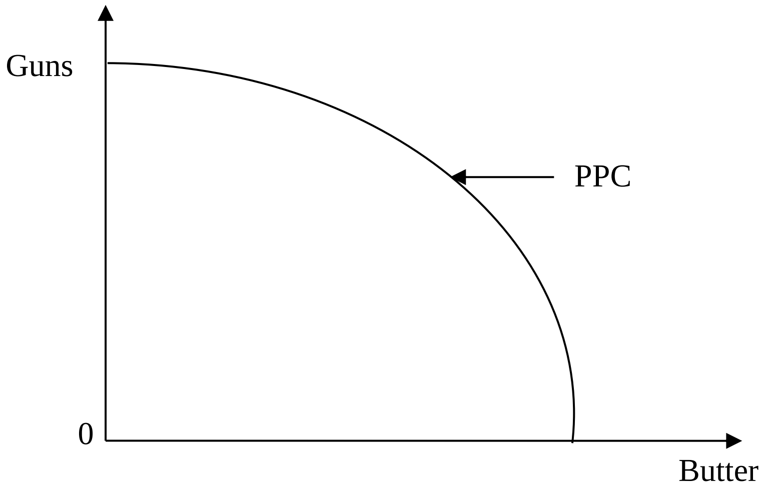
Question 1.2

a) Explain what you understand by a production possibilities curve (PPC)

b) Explain and illustrate the concepts of full employment, unemployment, and economic growth using separate production possibilities curves

Solution

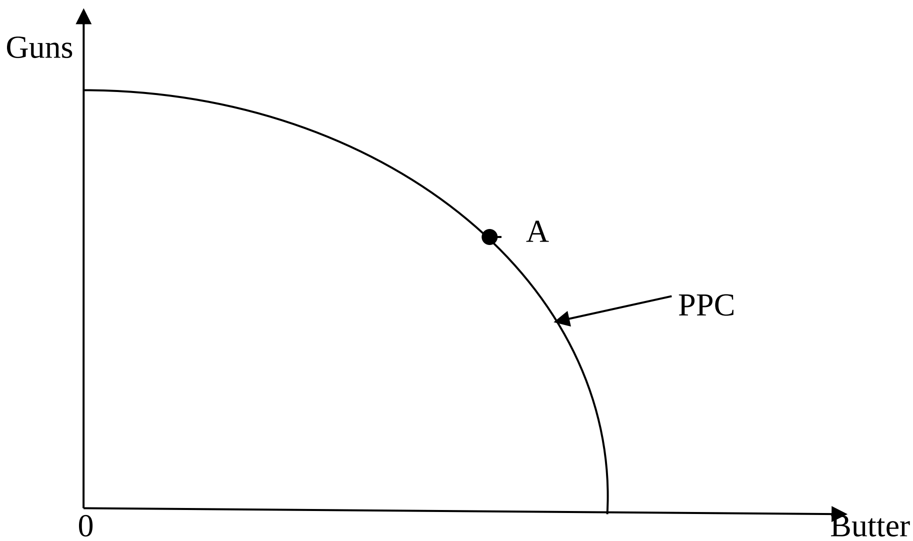
a) The production possibilities curve shows possible maximum combinations of two goods that an economy can produce with full and efficient use of the available resources.



The above diagram shows the production possibilities curve for an economy producing butter and guns. The slope of the PPC is called marginal rate of substitution, while its shape, which is concave to the origin, implies that resources are not equally productive in all production points

b. (i) Production Possibility Curve and Full-employment.

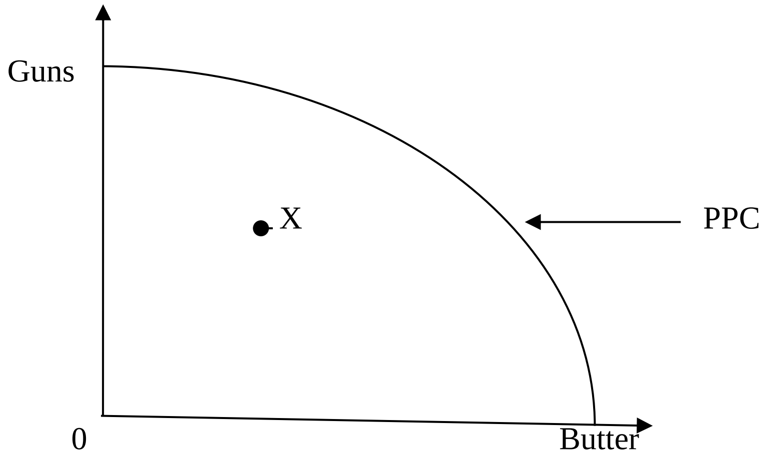
Any point on the PPC illustrates full employment of resources.



At the production point indicated as A in the above diagram, the economy is generating the maximum output given the current quantity and quality of resources and the state of technology.

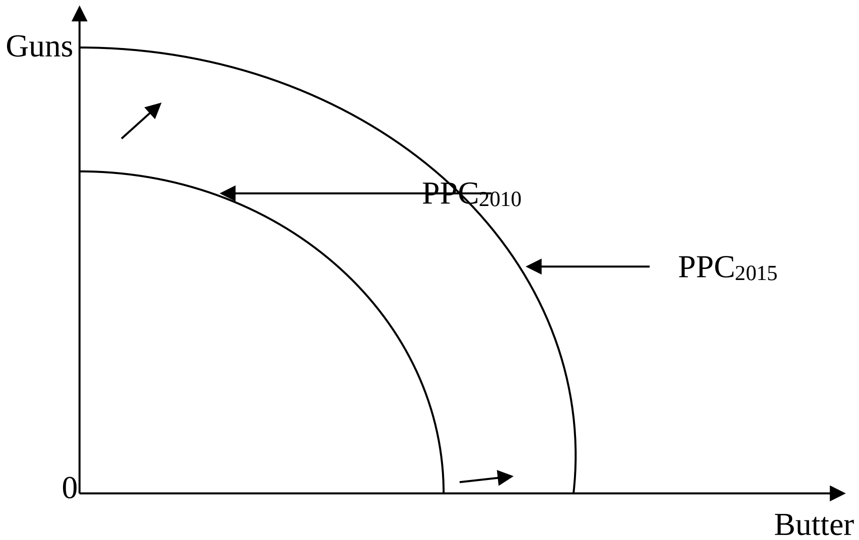
(ii) Production Possibilities Curve and Unemployment

Any point inside the production possibilities curve such as point X in the diagram below illustrates the concept of unemployment. This implies that some resources in the economy are lying idle, as a result of which the economy is producing less amounts of goods (butter and guns) than it is capable of producing.



(iii) Production Possibilities Curve and Economic Growth

Economic growth simply refers to a sustained increase in the production capacity of an economy resulting in a greater output of goods and services during a given interval period of time.



In the above diagram. Economic growth is illustrated as a complete outward shift of the production possibilities curve from PPC_{2010} to PPC_{2015}. Factors in economic growth include increase in the level of investment, increase in the size and quality of the working population and technological progress.

Question 1.3

(a) Explain any FOUR essential features of a capitalist economic system.

(b) Discuss briefly the view that there is no pure capitalist or socialist economy in the real-world.

Answer

(a) The essential features of a capitalist economic system include the following:

i. Private property: The capitalist economic system is characterised by private ownership of resources and production outfits. The institution of private property encourages its owners to work hard, to organise his business efficiently and strive for greater output at every opportunity. The government's role is restricted to the protection of the institution of private property using the existing laws.

ii. Price mechanism: The forces of demand and supply, which is called price machismo, determine what to produce, how to produce, and for whom to produce. There is not government intervention.

iii. Profit motive: Decisions and activities of producers are guided by profit motive. It is this desire for personal gain that lies behind individual initiative and enterprise.

iv. Consumer sovereignty: In a capitalist system, the consumer is the king. That is, the buy and what to avoid. Thus, producers respond to the demands of the consumers concerning what goods to produce and services to provide.

v. Freedom of enterprise: There is also freedom of production whereby producers produce variety of goods and services subject to their abilities and training, legal restrictions and existing market conditions. In other words, there is free choice of occupation for an entrepreneur.

vi. Competition: The existence of large number of buyers and sellers in the market makes competition one of the core features of the capitalist system. Buyers and sellers are motivated by self-interest, but cannot influence market situation by their individual actions, It is competition among buyers and sellers that determines allocation of resources and distribution and consumption of goods and services.

(b) The view that there is no pure capitalist or socialist economic system in the real-world implies that there is no economy without both the private and the public sectors. In other words, in the real-word every economy is a mixed economy. What obtains is that countries in which economic activities are dominated by the private sector such as United States of America (USA), Britain, France and Germany are classified as capitalist economic. Similarly, countries like Cuba, North Korea, as well as the former Soviet Union in which the government (central planning), more than the market, allocates resources are classified as the *socialist economy*.

Practice Questions

1. (a) Explain what you understand by the concepts of scarcity and choice?

   (b) Identify and explain FOUR fundamental questions that must be resolved in every society due to the problem of economic scarcity.

2. (a) What is a production possibilities curve (PPC)?

   (b) Suppose the production possibilities schedule for an economy is as follows:

Possibility	Lorries	Cars
	(Units/day)	(Units/day)
A	0	15
B	1	14
C	2	12
D	3	9
E	4	5
F	5	0

You are required to:

(i) Draw the graph of the schedule to obtain the production possibilities curve for the economy. (Hint: Let the horizontal axis represents lorries, while the vertical axis represents cars).

(ii) Explain why the economy cannot produce 9 cars and 4 lorries, locating the production point of this combination on the same graph as in (i) above.

(iii) Determine the opportunity cost of moving from the production point C and D on the production possibilities curve.

3. (a) What do you understand by a ‘mixed economy’?

(b) Explain, with particular reference to any TWO sectors, while the economy of a typical West African country is described as a mixed economy.

(c) Highlight any TWO advantages of a mixed economic system.

4. (a) How would you describe an economic system?

(b) Explain any FOUR principal functions of an economic system?

5. (a) Explain why economics is regarded as a social science.

(b) Make a clear distinction between positive economics and normative economics.

CHAPTER TWO

THE PRICE SYSTEM

LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- Explain the concept of demand
- Explain the concept of supply
- Obtain the equilibrium price/quantity in the market.
- Determine the effects of shift in the demand/supply curve on equilibrium price/quantity.
- Explain application of demand-supply diagram to issues of price control and minimum wage legislation.

2.1 INTRODUCTION

Price is the monetary value of a commodity or service. It is the amount of money one exchanges for a commodity. In the free market system, the price of a commodity is determined by the interaction of the forces of market demand (the collective actions of buyers) and market supply (the collective actions of sellers). The process by which the market forces of demand and supply interact to fix the price of a commodity is referred to as the *price mechanism.* The market mechanism is the process by which the market forces of demand and supply interact to fix *price* and the *quantity* of a commodity. We will take the market forces of demand and supply one by one and explain them and further show how they interact to fix the price of a commodity.

THE CONCEPT OF DEMAND

As human beings, we satisfy our wants by purchasing and consuming goods and services. In ordinary terms, demand simply means a ***desire,* a *wish***, *or* a ***want.*** In economics, demand goes beyond the expression of mere desire, wish or want. It is the desire, wish or want, backed by the *ability to pay.* If what you desire, wish or want is backed by ability to pay, it is called **effective demand**

2.2.1 Definition of Demand

Demand is the quantity of goods or services that consumers are willing and are able to buy at a given price within a specified period of time when all other demand factors remain unchanged.

The Law of Demand

The way consumers react to a change in the price of a commodity is so typical that economists state it as a rule or law. This law states that the quantity demanded of a good or service is inversely related to its price, when we hold constant other factors that influence consumer's demand for a commodity or service. An inverse relationship between quantity demanded and price means that quantity demanded will increase if price falls and quantity demanded will decline if price rises, all other things being equal.

The Demand Schedule

It is a ***table*** showing a ***list*** of various prices of a commodity and the corresponding quantities that would be purchased at a particular time period, when all other demand factors remain constant. In other words, the demand schedule for an individual specifies the units of a good or service that the individual is willing and able to purchase at alternative prices during a given period of time. A market demand schedule specifies the units of a good or service all individuals in the market are willing and able to purchase. The market demand schedule reflects the collective wants of people in a market area and is the sum of the quantities demanded by these individuals at alternative prices. For example, Table 2.1 shows the Demand Schedule for a commodity called Amala which is sold in bags. Column 2.1 Table 1 shows a set of prices for Amala and column 2 shows the quantities of Amala that consumers are willing and able to buy at each price.

Note: As the price of Amala rises from ₦1,000 through to ₦7,000, quantity demand declines from 120 units to 0 units depicting the law of demand.

Table 2.1: Demand Schedule for Amala

Price (₦'000)	Quantity Demanded (bags)
1	120
2	100
3	80
4	60
5	40
6	20
7	0

(a) The Demand Curve/Graph

When the demand schedule is graphed, we obtain a demand curve. The demand curve is ***a graph (or a locus of points) showing the various quantities that will be bought at given prices of a commodity for a given time period, when all other demand factors remain unchanged.*** A typical demand curve for a normal commodity has a negative slope. That is, it slopes downward from left to right depicting the law of demand which states that the higher the price of a commodity is, the lower the quantity of it demanded as depicted in fig 2.1..

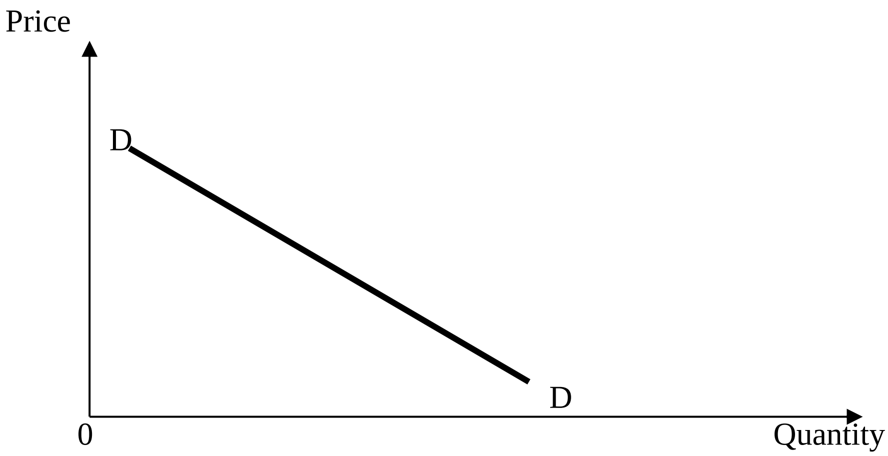


Fig 2.1: The demand curve for a normal good.

In Figure 2.1, the demand curve (DD) is plotted with **price** on the vertical axis and **quantity demanded** on the horizontal axis. The demand curve (DD) is obtained is plotted from the demand schedule in Table 2.1.

(b) The Demand Function/Equation

In defining demand, we said it is the quantity of goods or services that consumers are willing and are able to buy at a given price within a specified period of time when all other demand factors remain unchanged. The **other factors** that influence demand are expected to remain unchanged such as consumer income (Y), prices of related goods and services (P_R), consumer taste and preference (T) and advertisement (A). Thus the demand function or demand equation is a mathematical expression that relates the quantity demanded of goods and services to all demand factors including the own price of the good or service.

Mathematically, the demand function for a commodity/service is generally stated as follows:

$$\mathbf{Q_x = f\,(P_x, P_r, Y, T, A)}$$

where $\mathbf{Q_x}$ = quantity demanded of X;

Px = the own price of X;

$\mathbf{P_r}$ **=** Prices of related commodities or services;

T = consumers' taste;

Y = consumer's income;

A = advertisement expenditure on good and service

This function or equation is read as, "Quantity demanded is a function of (or depends on) the commodity's own price, consumer income, prices pf other related commodities, taste of the consumer and the advertisement expenditure. The mathematical notation ***"f (…)"*** is read as **"** ***function of"*** and tells us what factors the quantity demanded of a commodity is dependent on. When the other demand factors apart from the commodity's own price are held constant, the general demand function reduces to:

$$\mathbf{Q_x} = \boldsymbol{f}\,(\mathbf{P_x})$$

Illustration

The demand function for Amala is given as:

$\mathbf{Q_d} = 140 – 0.02P$,

where P is the price and $\mathbf{Q_d}$, the quantity demanded of the product.

Find the quantity that will be consumed when price is:

(a) ₦1,000 (b) ₦1,500

Solution

Given the demand function:

$\mathbf{Q_d} = 140 – 0.02\ P$

(a) If price is ₦1,000, the quantity demanded will be:

$\mathbf{Q_d} = 140 – 0.02\ (1{,}000) = 140 – 20 = 120$

i.e. consumers will buy 120 bags of Amala if the price is fixed at ₦1,000.

(b) If price is ₦1,500, the quantity demanded will be:

$\mathbf{Q_d} = 140 – 0.02\ (1{,}500) = 140 – 30 = 110$

i.e. consumers will buy 110 bags of Amala if the price is fixed at ₦1,500

2.2.4 Determinants of Demand

In economics, the determinants of demand refer to the factors that affect the quantities demanded of a commodity or service. As stated earlier and in addition to commodity own price, these factors include: consumer's income, prices of related goods/ services, consumers taste, consumer expectation, population , marketing strategies, weather, availability of credit, cost of borrowing, and so on.

(a) Consumer Income

A change in consumer income may bring about a change in the demand for a good or service. However, the direction of change in demand will depend on the type of commodity in question.

i. For a ***normal good,*** demand might increase when consumer income increases and demand might fall as consumer income falls, ceteris paribus.
ii. For an ***inferior good,*** demand might decrease when consumer income increases ceteris paribus. Therefore, inferior goods are those goods that we consume more when we are worse off financially and less when we are better off(e.g "second hand" goods).
iii. For a ***necessity,*** a change in consumer income may not affect demand.

(b) Prices of Related Goods

Goods relate to each other in two ways. Goods are either *complements or substitutes*

i. *Complementary* goods are goods with *joint demand.* They are needed jointly before a want could be satisfied, e.g., camera and film, pen and ink etc.. With complementary goods, a rise in the price of one will lead not only to a fall in its demand but also a decrease in demand for the other good. A fall in the price of one good would lead to an increase in the demand of the other.

ii. *Substitute goods* are goods that satisfy the same need or want of the consumer (e.g pen and biro). For substitutes, a fall in the price of one leads to a decrease in demand for the other while an increase in the price of one leads to an increase in the demand for the other, *ceteris paribus*. For example, margarine and butter could be considered as examples of substitute goods. A sharp increase in the price of margarine will let people consume more butter if the price of butter does not change.

(c) Consumer Taste/Preference

Any change in consumer taste or preference causes demand to change. Increased taste or preference for a particular good causes demand to increase whilst declining taste or preference causes demand to fall, *ceteris paribus*. Taste or preference for goods and services are influenced by advertisement, fashion and sales promotions.

(d) Consumer Expectations

The decision to buy commodity today is influenced by the expected future price of the commodity and expected change in consumer income. If a consumer anticipates the price of a commodity to increase in future, today's demand for the commodity will increase but if the consumer anticipates a fall in future price, then today's demand for the commodity will fall. Similarly, an expected consumer income increase may cause current demand for a normal commodity to increase and vice versa.

(e) Population of Consumers

Population and population changes may affect demand for a commodity. Areas of high population may demand more of certain commodities than areas of low populations. For example, Nigeria may demand more of certain goods and services than Ghana because Nigeria's population is higher than that of Ghana. And even as the population of a country increases, the demand for goods and services will increase. Also if the composition or structure of population changes the demand of certain goods and services may also change.

(f) Marketing Strategies

Marketing strategies such as advertising, publicity and sales promotions (e.g. raffles) are means used to get consumers to increase their purchases of commodity. They are intended to inform and persuade existing consumers as well as new ones to buy more of the commodity. Effective marketing strategy will lead to an increase in demand for the commodity, all other things being equal.

(g) Natural Factors

Seasonal variations may affect the demand for a commodity at certain times of the year. For example, during the raining season, demand for jackets, raincoats and umbrellas will increase while during the dry season, demand for commodities such as fans and air conditioners will rise.

(h) Availability of credit

When consumers are given credit facilities in the form of credit purchases, hire purchases and the use of credit cards and cheques, they are encouraged to buy more goods. Granting of credit facilities will increase demand for goods covered by these facilities, all things being equal.

(i) Cost of borrowing (Interest rate)

If the cost of borrowing is low (lower interest rates) then people can borrow and consume more of normal goods and services. If cost of borrowing is high then people can borrow less and the investment reduces.

Types of demand

(a) **Joint/Complementary Demand**

Goods are said to be in joint/complementary demand when they produce more consumer satisfaction when consumed together than when consumed separately. Examples include bread and butter, camera and film, automobile and gasoline, and cassette player and cassette.

(b) **Competitive Demand**

Goods are said to be in competitive demand when they all compete for the same consumer's income. Such goods are substitutes – i.e. goods that are alternative to one another in consumption. Examples are peak milk and ideal milk; pork, beef and chicken, pork meat and cow meat, and so on.

(c) **Derived Demand**

This is where the demand for a final product leads to the demand for a second product which is used to produce this final product – i.e. if the demand of a product is not for its own sake, but for the manufacturing of another product which is in demand. For example, the demand for furniture derives the demand for wood, the demand for petrol derives the demand for crude oil. Generally, demand for any factor of product is a derived demand.

(d) **Composite Demand**

A commodity is said to have a composite demand when it is demanded for alternative uses. For example, wood has composite demand because it is demanded for several alternative uses such as the making of table, chairs, windows, doors, body of vehicles, leather for making shoes, belt, briefcase and so on.

Distinction between movement along the demand curve and shift of the demand curve.

Demand always changes; it is not a fixed phenomenon. The change can either reflect a movement along a demand curve or a shift of the curve.

A situation when the change in demand is due to a rise or fall in the price of a commodity/service describes a movement along the demand curve for the commodity/service as illustrated in fig 2.2 below.

In figure 2.2(a), when the price rises from OP_1 to OP_2, demand contracts from OQ_1 to OQ_2. The movement on the demand curve DD is to the left, from A to B. On the other hand, a fall in the price from OP_1 to OP_2 in fig 2.2(b) brings an extension /increase in demand from $0Q_1$ to OQ_2. The movement on the demand curve DD is to the right from A to B.

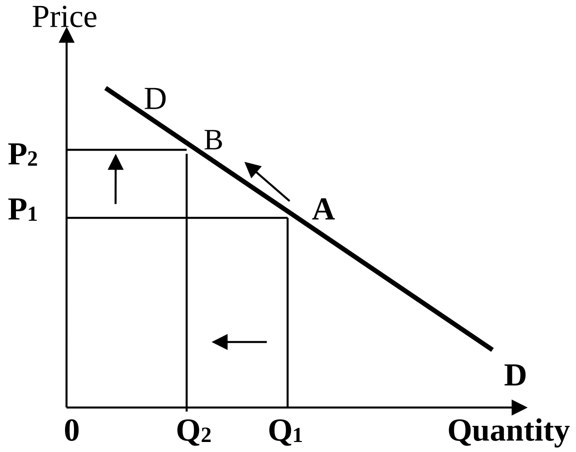
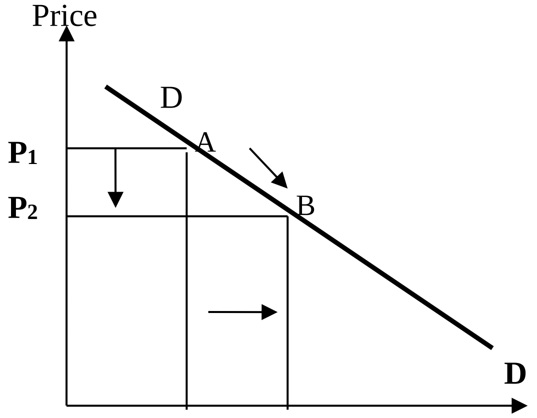


Fig 2(a): Movement induced by an increase in commodity's own price



0 Q_1 Q_2 Quantity

Fig 2.2(b): Movement due to a decrease in commodity own price

On the other hand, a situation when the change in demand is due to variation in any determinant of demand other than commodity/service own price is described as a shift in the demand curve. Such changes in demand are shown by drawing a demand curve to the right (D_2D_2) or left (D_1D_1) of the original demand curve (DD) as shown in Fig 2.3 below:

The demand curve will shift from DD to D_2D_2 when there are improvements in any of the other determinants of demand and from DD to D_1D_1 when there are deteriorations in any of such other determinants.

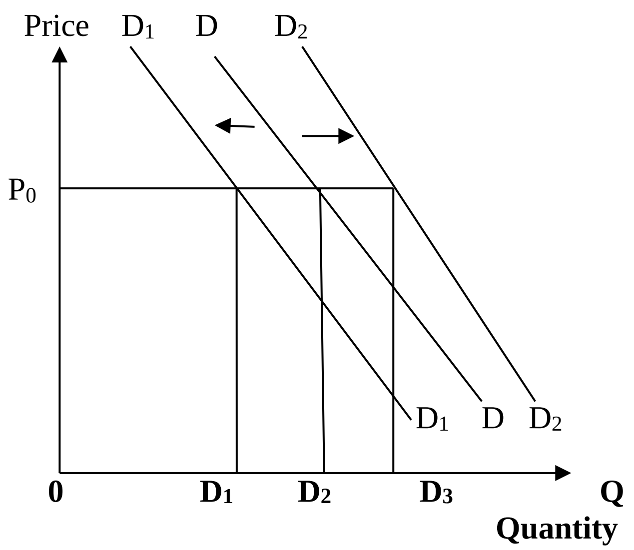


Fig 2.3(b): Shift of demand curve

Individual Demand and Market Demand

When we say the demand for a commodity it means the “market demand” for that commodity. Since individuals consume the commodity, we may talk of individual demands too.

The Individual demand for a commodity is the quantities that would be purchased by an individual consumer of the commodity at a given set of prices of the commodity, when all other factors influencing demand remain unchanged. For a given set of prices for the commodity, individuals make their purchases, the set of prices and the corresponding quantities purchased by this individual consumer represents his/her individual demand.

The market demand for a commodity on the other hand is the total quantities that would be purchased by all individual consumers of a commodity at the same given set of prices, when all other factors remain unchanged. Market demand reflects the total demand of all individuals consuming the commodity. A market demand is a horizontal summation of all individual demands for a commodity.

Illustration:

Let us assume that there are only two consumers, John and Rose, for Amala with demand schedules as follows:

Price (₦)	John's Quantity Demanded (QJ)	Rose's Quantity Demanded (QR)	**Market Quantity Demanded Q = (QJ) + (QR)**
1,000	80	40	**120**
2,000	70	30	**100**
3,000	60	20	**80**
4,000	45	15	**60**
5,000	30	10	**40**
6,000	15	5	**20**
7,000	0	0	**0**

Table 2.2: Individual and Market Demands for Amala

From Table 2.2, when we consider the prices (₦1,000 to ₦ 7,000) and what John will consume at each price (ranging from 80 to 0 bags of Amala) when all other things remain the same, that is John's individual demand for Amala. Similarly, the same set of prices and the corresponding set of purchases (ranging from 40 to 0 bags of Amala) by Rose constitutes Rose's individual demand for Amala. The market demand for Amala is obtained by summing horizontally, all the individual's purchases at the given price (as depicted by the last column of Table 2.2). The market demand schedule will be the set of prices and market quantities demanded.

Exceptions to the Law of Demand

For a normal goods, as discussed earlier, demand curve slopes downward from the left to the right. However, there are some instances when demand curves will slope upward from the left as shown in figure 2.4.

Such a demand curve that violates the law of demand is called an exceptional demand curve.

An exceptional demand curve would occur in each of the following cases:

(i) ***Giffen Goods:*** These are goods whose demand falls with only a fall in their prices.

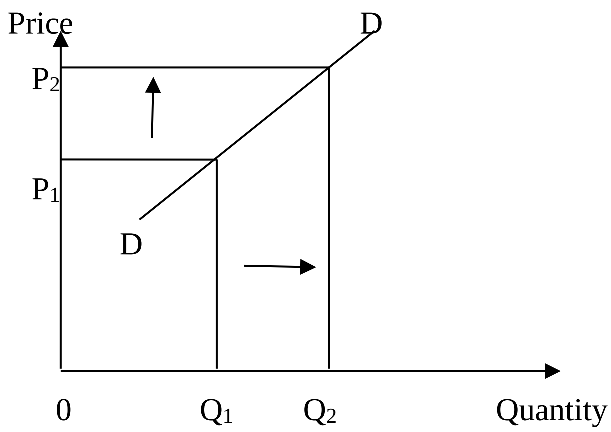


Fig 2.4: Exceptional Demand Curve

(ii) ***Goods of ostentations***: These are goods that are generally perceived as symbols of affluence. Typical examples are luxuries like expensive cars, jewellery, expensive cloth materials which are in greater demand at high prices than at low prices.

(iii) ***Fear of Future rise in price:*** Rising expectation of future price will increase demand for a commodity if a shortage is feared in the near future. For example, if the conditions for rising inflation are getting worse in a country, people may continue to buy more of essential items even when their prices are rising.

(iv) ***Consumer ignorance:*** Consumers may buy more of a good when price rises due to ignorance.

A consumer may be deceived by branding, advertisement and other sales promotional strategies in this regard.

Consumer Surplus

It is the difference between what the consumers are willing to pay for a commodity or service and what they actually pay as illustrated in fig 2.5 below.

The demand curve shows the quantity of the commodity that consumers plan to buy at each price and the consumer surplus on each unit of the commodity. For each unit of the commodity, consumers are willing to pay higher prices than $0P_1$. However, since the consumers pay $0P_1$ for each of the $0Q_1$ units, the shaded area of the triangle (P_1RP_2) illustrates consumer surplus. Given this example, the total amount of consumer surplus can be obtained as:

Consumer surplus = Area of $\triangle P_1RP_2$

$= \frac{1}{2}$(base x height)

$= \frac{1}{2} (OQ_1)(OP_2 - OP_2)$

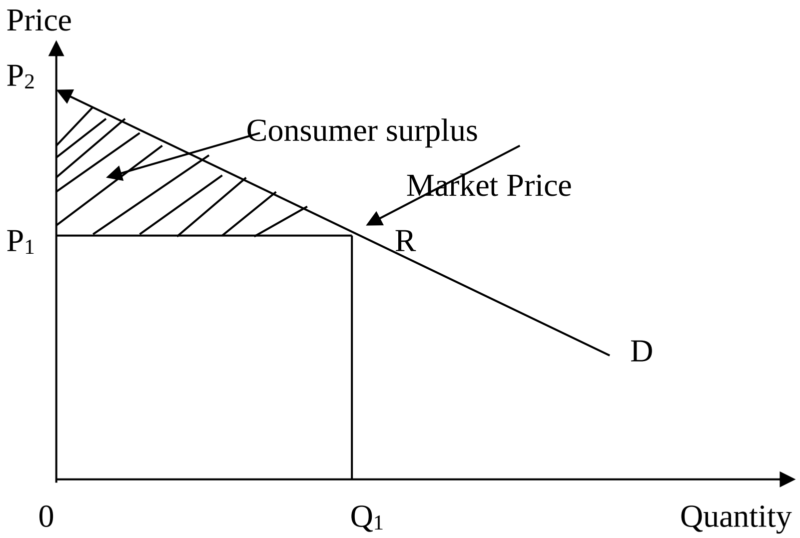


Figure 2.5 Illustrates consumer surplus.

Note that the height is obtained as the difference between the highest price possible (OP_2) and the market price (OP_1)

2.3 SUPPLY

Firms/producers/sellers/enterprises make decisions about the quantities of goods and services to supply to the market. They make their decisions with respect to some set goals or objectives; the key one of which is earning as much profit as possible (profit maximization).

2.3.1 Definition of Supply

Supply is the maximum quantity of a commodity that firms will offer for sale at a given market price within a specified time period when all other supply factors other than the commodity's price remain unchanged. Simply put, it is a set of prices with a corresponding set of quantities that firm would offer for sale at a given time and when all other supply factors remain unchanged.

2.3.2 The Law of Supply

The law states that suppliers will willingly increase the quantity of a commodity/service supplied when the price of the commodity/service rises and decrease the quantity supplied when the price falls, all other things remaining unchanged. A higher price gives producers incentive to increase production and vice versa.

2.3.3 The Supply Schedule

This is a table or a list showing a set of market prices for a commodity and the corresponding set of quantities that would be offered for sale by a firm, other things remaining the same. Table 2.3 below represents a supply schedule for Amala:

Price (₦)	Quantity Supplied (Bags)
1,000	0
2,000	10
3,000	20
4,000	30
5,000	40
6,000	50
7,000	60

Table 2.3:The Supply Schedule for Amala

From the supply schedule for Amala in Table 2.3, it is evident that as the price of it rises, the suppliers are willing to offer more for sale. For example, if the price of Amala rises from ₦4,000 to ₦5,000, suppliers are willing to increase the quantity supplied from 30 to 40 bags.

(b) ***The supply curve***

It is a graph (and more technically, a *locus of points*) that shows the relationship between quantity supplied of a commodity and the market price when all the other factors are held constant. The normal supply curve has a positive slope or slopes upward from left to right showing that more is willingly supplied by firms at higher prices than lower prices. The supply curve is the graphical representation of the information in the supply schedule (i.e. plotting prices against corresponding quantities supplied). The supply curve, SS, in Figure 2.4 is drawn from the supply schedule of Amala on Table 2.3

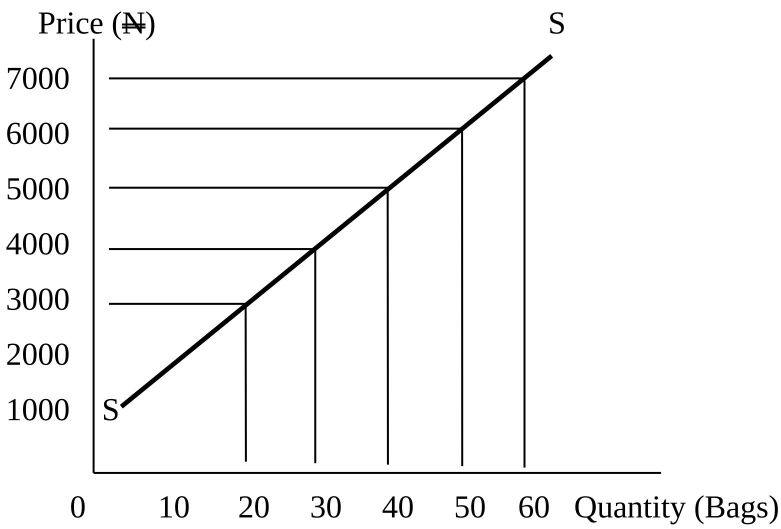


Figure 2.6: The Supply Curve for Amala

(c) ***The Supply Function/Equation***

The supply function or equation is a mathematical expression showing a relationship between the quantity supplied of a commodity and the factors determining that supply. If all the other supply factors are held constant and we allow quantity supplied to depend only on the market price of the commodity, then we have:

$$Qs = f(P)$$

where Qs is the quantity supplied and P, the market price

Illustration

Suppose the supply function for Amala is given as:

$$Qs = -10 + 0.01P$$

where P is the price and Qs, the quantity supplied. Find the quantity that will be supplied when the market price of Amala is :

(i) ₦1,000 (ii) ₦1,500

Solution:

From the supply function:

$Q = -10 + 0.01P$

(i) If price is ₦1,000, the quantity supplied will be:

Qs = - 10 + 0.01(1,000) = -10 + 10 = **0**

i.e. Suppliers of Amala will not supply the product if the market price is ₦1,000

(ii) If price is ₦1,500, the quantity supplied will be:

Qs = -10 + 0.01 (1,500) = -10 + 15 = 5.

i.e. Suppliers of Amala will supply 5 bags if the market price is ₦1,500

2.3.4 Determinants of Supply

The main determinants of market supply of a commodity or service are:

(i) Commodity's own price

(ii) Prices of other goods /services

(iii) Prices of factor inputs

(iv) The state of technology

(v) Government fiscal policies (taxes & subsidies)

(vi) Weather and other natural phenomena

(vii) Supplier's expectations

(a) Commodity's own price

Ceteris Paribus, the higher the price of a commodity, the more profitable it is to engage in its production, hence the greater will be the quantity supplied

(b) Prices of other products/outputs

(i) ***Competitive supply products****:* Firms are not permanently committed to the production of particular products. Because firms have the objective of maximising profits, rising prices for other products could cause firms to switch to the production of these products. For example, if the price of soft drinks were to rise sharply, breweries might switch form beer production to soft drink bottling. Such products are said to be in *competitive supply.* The same resources may be used to produce them.

(ii) ***Joint-supply products:*** These are products that are always produced together. One is seen as the by-products of the other. Examples are beef and hide. An increase in the price of say beef, which increases the quantity of beef supplied to the market, will automatically increase the supply of hides, from which leather products are made.

(c) Prices of Inputs

These are the prices firms pay to obtain factors of production or inputs. Firms pay wages and salaries for hiring labour, rent for the use of land and interest for borrowing capital. Increase in input prices in turn increases cost of production thereby causing supply to decrease. A decline in input prices lowers costs of production and increases supply.

(d) Technology

The kind of technology a firm uses to produce its products determines the type and quantity of inputs necessary to produce a given quantity of a product. When a firm uses the best technology available, it can produce a unit of a good at the lowest possible cost (economic efficiency). An advancement or improvement in technology is the development of new means of producing a good using a smaller quantity of inputs than was previously possible (technical efficiency). Technological innovation also results in the development of new products that are less costly to produce than the products they replace. Thus, technological change lowers production costs, which in turn leads to increase in profits and, therefore, increases supply.

(e) Government Fiscal Policy (Taxes and Subsidies)

Taxes increase cost of supplying a product and anything that causes the cost of supplying a product to increase in turn causes a decrease in supply of the product whiles subsidies decrease the cost of supplying a product and hence cause an increase in supply.

(f) Weather and other Natural Phenomena

Changes in weather affect the supply of certain commodities especially agricultural products. A favourable weather condition such as good rainfall will increase the supply of agricultural products whiles an unfavourable weather such as drought will cause a decrease in the supply of agricultural products. Other natural phenomena such as, floods, bush fire, pests and so on also affect the supply of agricultural products. Other natural phenomena such as floods, bush fire, pests and so on also affect the supply of agricultural products.

(g) Population of Suppliers or Firms

When firms in an industry are earning supernormal profits, this may attract new firms into the industry (if it is not a monopoly industry) which would in turn increase the supply of the product. On the other hand, if more firms exit an industry, this could cause supply to decrease.

2.3.4 Types of Supply

a) ***Joint Supply***

Products have joint supply when the supply of one product is associated with the supply of other products. The other goods are seen as by-products of the main product supplied. Examples are beef and hide (leather), palm oil and palm kernel, gas and coke.

b) ***Competitive Supply***

This entails the supply of goods/services which can most easily be produced with the resources at the firm`s disposal.

2.2.5 Exception to the Law of Supply

This is usually discussed with respect to the labour market, whereby above a given level of wage rate, any further increase in the wage rate will cause supply of man/hour of labour services to fall. This produces a backward-bending supply curve as shown in the **Figure 2.7**

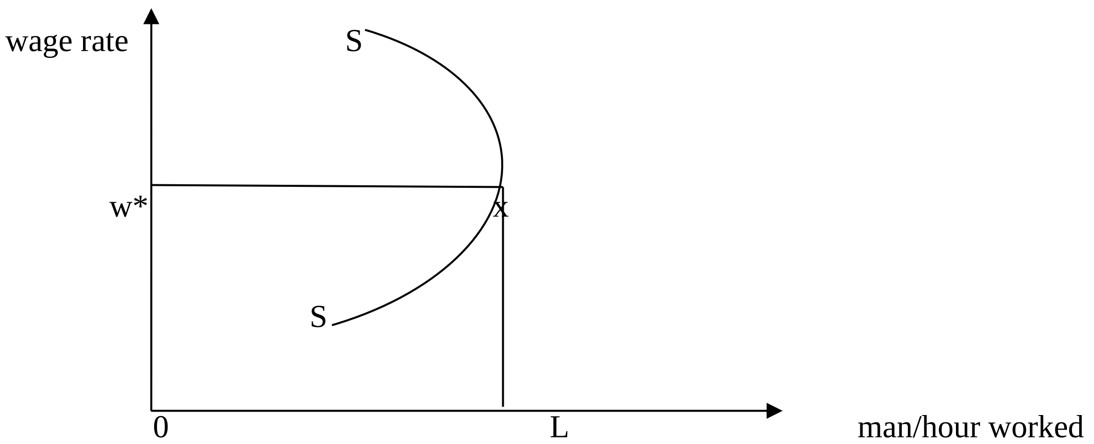


Figure 2.7: Backward-bending supply curve

In Figure 2.7 above, any further increase in the wage rage above W* will cause the worker to reduce his man/hour of work in favour of more hours of leisure. Therefore, the upper section of the supply curve marked SX violates the law of supply indicating a negative relationship between the wage rate (price of labour) and quantity supplied of labour services (man/hour).

2.2.6 Distinction between movement along the supply curve and shift of the supply curve.

All other things being equal, a movement will occur along the supply curve when a change in the supply price of a commodity leads to a change in the quantity of it supplied, as illustrated in the following Figure 2.8.

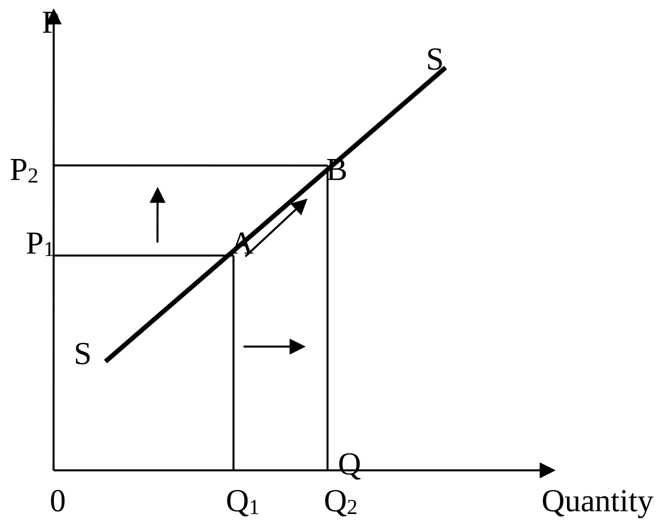


Figure 2.8(a): Upward movement along the supply curve

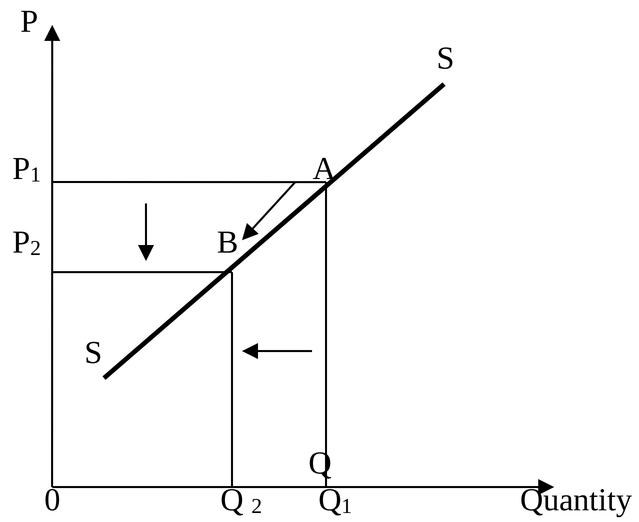


Figure 2.8(b): Downward movement along the supply curve

An increase in the commodity own price from OP_1 to OP_2 in Figure 2.8(a) leads to an increase in the supply of the commodity from OQ_1 to OQ_2 thus resulting in a movement along the supply curve from point A to point B. Similarly, a decrease in the commodity price form OP_1 to OP_2 will result in a decrease in supply form OQ_1 to OQ_2 and a downward movement from point A to point B on the supply curve as in Fig 2.8(b). Summarily therefore, a change in the commodity's price will lead to a change in the quantity supplied thus signalling a movement along the supply curve of the related commodity.

On the other hand, the supply curve shifts when there are changes in the determinants of supply other than the commodity's own price. These factors causing the supply curve to shift down and to the right **(S_1S_1)** are decrease in factor or material prices, improvement in technology, and government subsidization, and so on, while the converse behaviour of these factors will shift the supply curve to the left (S_2S_2) in Fig 2.9.

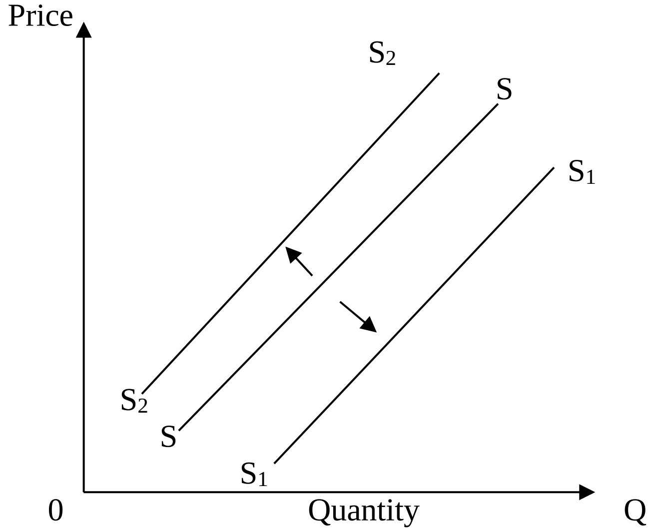


Fig 2.9: shifts in the supply curve

2.3.7 Individual Supply and Market Supply

An Individual supply is the quantity of a product an individual firm is willing to offer for sale at a given price and at a given time period when all other supply factors remain unchanged. The market supply, on the other hand, is the total quantity of a product that all firms in an industry are willing to offer for sale at a given market price and at a given time period when all other supply factors remain unchanged. The supply schedule could be used to illustrate this. If we assume that the Amala is produced by only two firms. NICE Ltd, and FINE Ltd. Table 2.4 shows the weekly individual supplies and market supply schedules of Amala. The set of prices (column 1) and the set of quantities that NICE Ltd. will supply (column 2) is the individual supply of NICE Ltd. Similarly, the set of prices (column 1) and the set of quantities supplied by FINE Ltd (column 3) constitute the individual supply of FINE Ltd. The market supply of Amala is the horizontal summation of the individual supplies of NICE Ltd., and FINE Ltd. That is, it is the set of market prices (column 1) and the corresponding set of quantities supplied by both producers (column 4).

Table 2.4: Individual Supplies and Market Supply Schedules of Amala

Price ₦ (1)	Quantities Supplied (in bags) NICE Ltd (2)	FINE Ltd (3)	**Market (4)**
1,000	0	0	**0**
2,000	6	4	**10**
3,000	12	8	**20**
4,000	20	10	**30**
5,000	25	15	**40**
6,000	30	20	**50**
7,000	35	25	**60**

2.4 Market Determination of Equilibrium Price and Quantity

In the competitive market, the determination of market price and quantity is by the *market mechanism*. The market mechanism is the process by which the market forces of demand and supply interact to establish a market price and determine the quantity of a commodity exchanged in a market.

Table 2.5: The Demand and Supply Schedules of Amala

Price (₦)	Quantity Demanded (Bags)	Quantity Supplied (Bags)	Excess (Bags)	Type of Excess
1000	120	0	+120	*Excess Demand*
2000	100	10	+90	*Excess Demand*
3000	80	20	+60	*Excess Demand*
4000	60	30	+30	*Excess Demand*
5000	40	40	**0**	***Equilibrium***
6000	20	50	30	*Excess Supply*
7000	0	60	-60	*Excess Supply*

Table 2.5 shows the demand and supply schedules of Amala. Quantity demanded exceeds quantity supplied at the price range of ₦1,000 to ₦4,000. For example, at ₦1,000 price, consumers want to consume 120 bags whilst producers are not willing to supply the product resulting in an excess demand or shortage of 120 bags. At ₦4,000, consumers want to purchase 60 bags whilst producers are willing to supply only 30 bags resulting in excess demand or shortage of 30 bags. None of these can remain as the market price of Amala for the excess demand will force the price up.

Quantity supplied exceeds quantity demanded at prices greater than ₦5,000. For instance, at ₦6,000 price of Amala, consumers want to buy only 20 bags whilst producers are willing to offer 50 bags for sale resulting in an excess supply or surplus of 30 bags. ₦6,000 cannot remain as the market price; for the excess supply will force the price down.

At ₦5,000 price of Amala, the quantity consumers are willing to consume is equal to the quantity producers are willing to offer for sale of 40 bags. In economics, this price is called the market-clearing or equilibrium price and the 40 bags of Amala is the *equilibrium quantity.* Equilibrium price is the price of a commodity that equates quantity demanded and quantity supplied. It is the price that clears the market and leaves it with no unsatisfied buyers or sellers (excesses).

Graphically, equilibrium occurs at the intersection of the demand and supply curves. Any price above the equilibrium price will result in excess supply or surplus which will cause a reduction in the market price. On the other hand, any price below the market equilibrium price will result in excess demand or shortage which will cause a rise in the market price (See Fig 2.10).

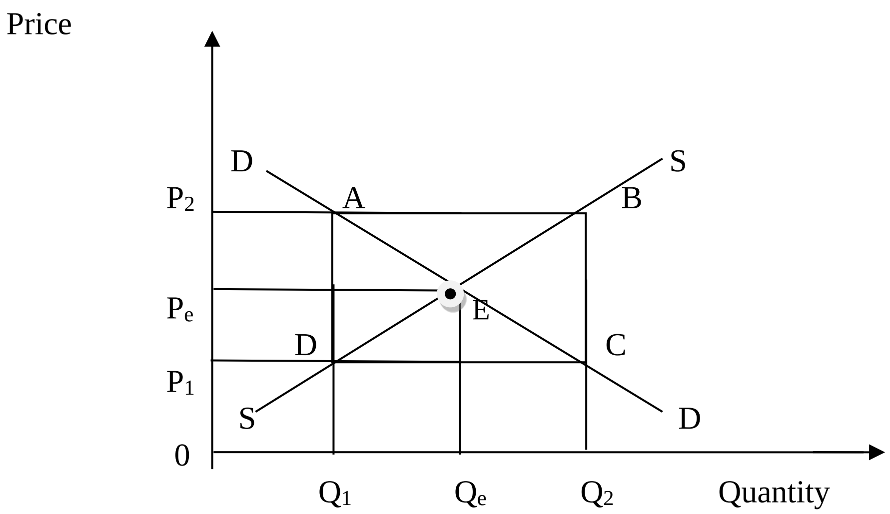


Figure 2.10: Equilibrium Price and Quantity

2.5 Shifts in Demand and Supply

Demand (supply) might change when there is a change in any of the other factors of demand (supply) other than the price of the commodity. This will necessitate a shift in demand (or supply) which might affect the equilibrium market price and quantity.

2.5.1 Shifts of the demand curve and effects on equilibrium price and quantity

All things being equal, a shift in the demand curve to the right or left with supply remaining unchanged will affect both the equilibrium price and quantity and this is what is referred to as the partial equilibrium analysis.

Rightward shift of the demand curve

A shift of the demand curve (DD) to the right (D_1D_1) when supply conditions remain unchanged (SS) will lead to an increase in the equilibrium price and quantity as illustrated in Fig 2.11

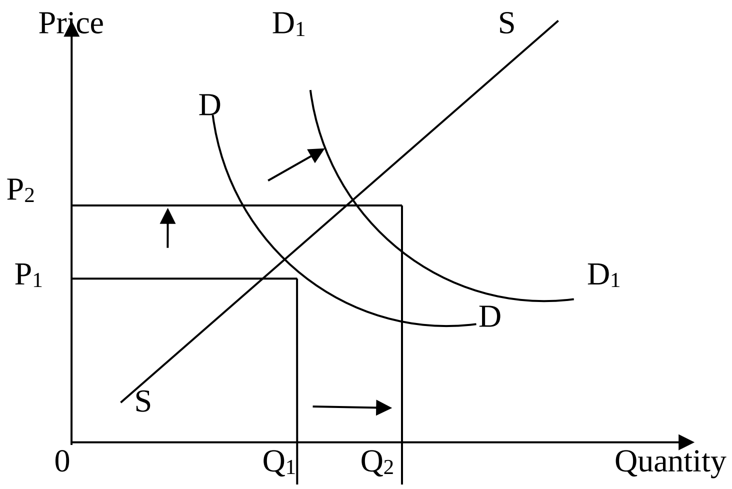
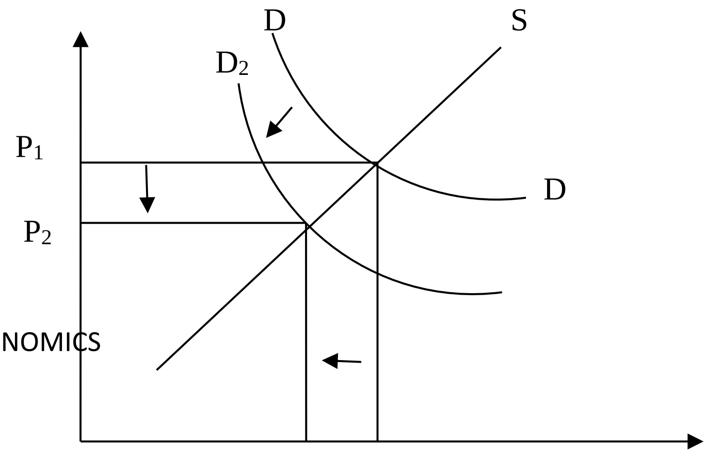


Fig 2.11: Rightward shift of the demand curve

(b) Left shift of demand curve

A leftward shift of the demand curve (DD) to the left (D_2D_2) and when supply conditions remain unchanged (SS) will lead to a fall in price and the equilibrium quantity as illustrated in Figure 2.9 below.



D2

S

0 Q_2 Q_1 Quantity

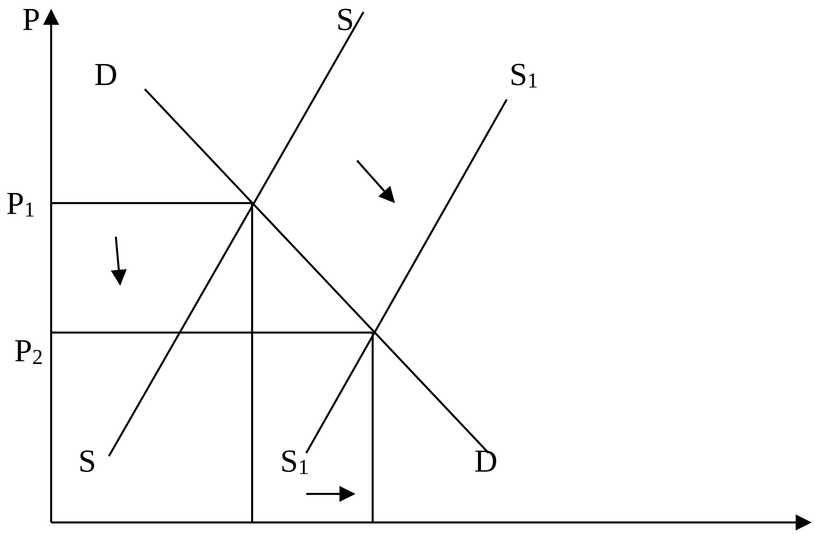
Figure 2. 12: Leftward shift of the demand curve

2.5.2 Shift of the supply curve and effects on equilibrium price and quantity

If all things remain the same, a shift in the supply curve to the left or right with demand remaining unchanged will affect both the equilibrium price and quantity as is demonstrated below.

a) Rightward shift of the supply curve

If the demand curve remains unchanged (DD), a rightward shift of the supply curve (S_1S_1) will lead to a decrease in the equilibrium market price $0P_1$ to $0P_2$ and an increase in the equilibrium quantity (OQ_2 from OQ_1) as shown in figure 2.13



0 Q_1 Q_2 Q

Figure 2.13: Rightward shift of the supply curve

b). Leftward shit of the supply curve

On the other hand, if demand remains constant (DD) and the supply curve shifts leftward (from SS to S_2S_2), the equilibrium price will increase (from OP_1 to OP_2) while the equilibrium quantity will decrease (from OQ_1 to OQ_2) as illustrated in figure 2.14

2.6 Producer Surplus

It is the difference between what the producers are willing to receive and what they actually receive on every unit of the commodity sold.

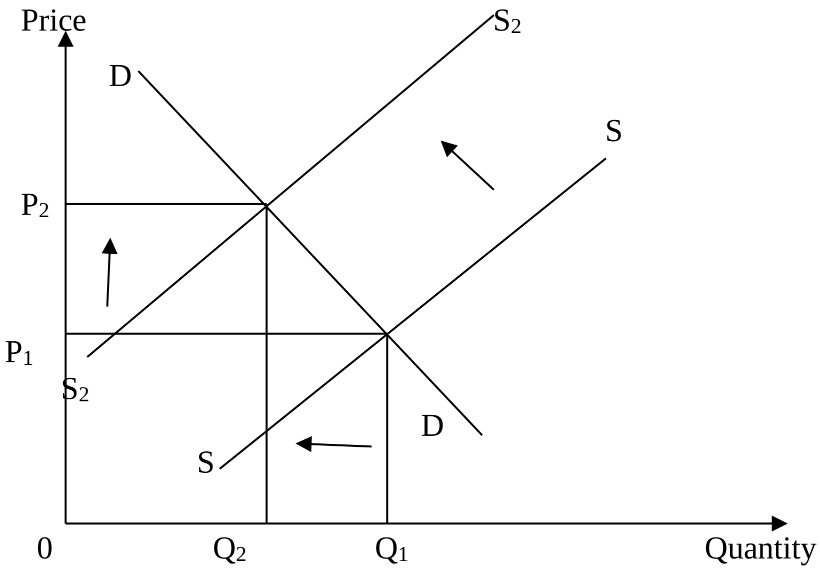


Figure 2.14: Leftward shift of the supply curve

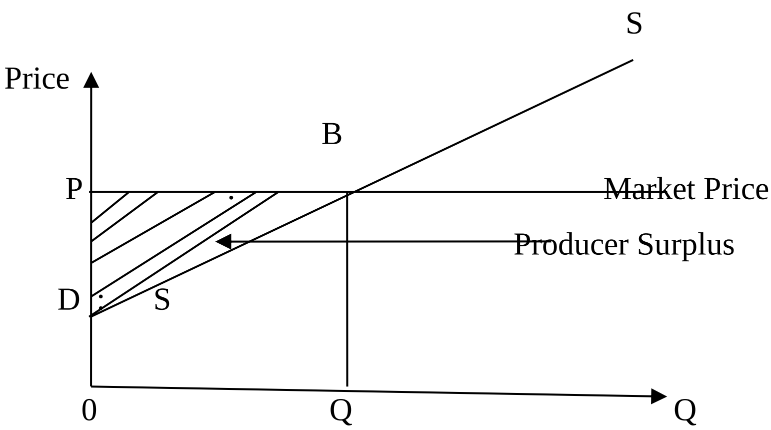


Fig 2.15: Producer Surplus

Figure 2.15 illustrates producer surplus. On every unit of the commodity, the producer actually receives the market price 0P. Whereas, the supply curve shows that on every unit less supply curve shows that on every unit less than OQ the producers are willing to receive less than OP*. Thus, the producer surplus is shown as the area of the shaded triangle DBP*.

2.7 APPLICATIONS OF DEMAND –SUPPLY DIAGRAM

2.7.1 Price Control

Whenever the forces of demand and supply are allowed to fix market prices of commodities in a competitive market, some of the prices may be unfairly high to buyers or unfairly low to sellers. In such instances, the government may attempt to regulate or limit prices through legislation. Price controls either in the form of maximum price (price ceiling) or minimum price (price floor) prevents markets from moving to equilibrium.

(a) Maximum Price Control (Price Ceiling)

A maximum price or price ceiling is a legal price set below the equilibrium market price above which a seller cannot charge for a product. It is set to safeguard consumers when the equilibrium market price for a commodity is found to be unfairly high. Maximum prices are normally set for essential goods such as pharmaceutical drugs or services such as house rental. When a maximum price is set for a good it increases the quantity demanded while the quantity supplied decreases thereby resulting in persistent excess demand or shortage of the good.

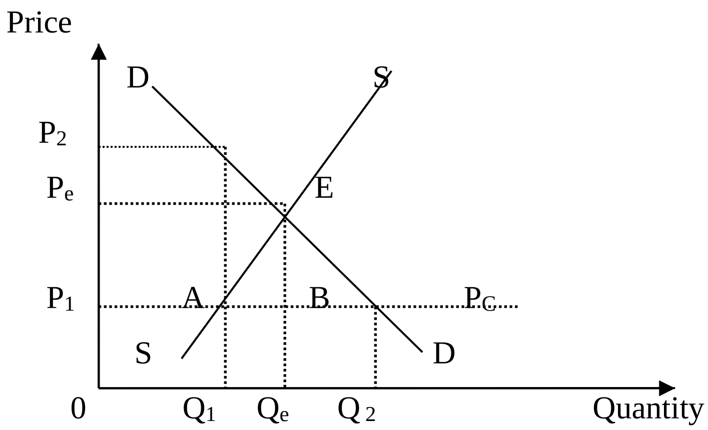


Fig 2:16: Price ceiling effect

From Figure 2.16, the equilibrium market price is OP_e while the maximum price is fixed at OP_1 below the equilibrium price. Because this price ceiling is not a market clearing price, quantity demanded will increase from OQe to OQ_2 while quantity supplied will decrease from OQe to OQ_1. The resulting shortage is OQ_2-OQ_1 or AB. This re-affirms the assertion that whenever a price ceiling is set for a good, it results in persistent shortage of the good.

The persistent shortage created by price ceiling will in turn pose the following problems:

(i) Rationing

Government may have to apportion the quantity supplied of OQ_1 among buyers who want to consume a greater amount of OQ_2. This may be done through the issue of coupons which must be surrendered together with cash, to obtain the good.

(ii) Queuing

Whenever the good is available; people will form long queues for it. The queues may be physical lines of people outside suppliers' shops typically in the case of essential commodities like drugs, bread, milk, etc. or tall waiting lists in the case of consumer durables such as cars, television sets, government flats/houses, etc.

(iii) Black (Parallel) Markets

Black or parallel markets in which the good will be illegally sold will spring up. In the illegal market, the price at which the good will be sold is usually higher than the equilibrium price.

(iv) Selling at Sellers' Preferences

Sellers may choose several ways to sell the good – first-come, first-served, selling to relatives and friends first, etc.

(v) Random Allocation

This is selling by luck or chance. This may defeat the aim of setting the maximum price to ensure that the poor as well as the rich get the good. Selling may go to all rich, or all poor.

Government may solve the various problems caused by maximum price control by accompanying it with certain other policies such as:

(i) The government coming out with policies to reduce consumption of the good. Policies that will discourage consumption may include:

- Reducing income levels through increased direct taxes when good is a normal good.
- Finding cheaper substitutes for the good.
- Creating impression that the price of the good would be reduced further in future to enhance consumer expectations of a further price cut so that they demand less now.

(ii) Government may also adopt economic policies that would increase supply of the good. Such supply management policies may include:

- Government subsidising the cost of producing the good.
- Creating investment incentives to attract new firms to supply more of the good.
- Importing more of the good from cheaper sources to augment domestic supply.

(b) Minimum Price Control (Price Floor)

A minimum price or price floor is a legal price set above the equilibrium market price. One can buy at or above the minimum price but cannot buy at a price below it. It is set to protect incomes of producers when the equilibrium market price for a product is found to be unfairly low. Minimum prices are normally set for agricultural products to protect the incomes of farmers. When a minimum price is set for a good, it reduces quantity demanded while quantity supplied increases thereby resulting in excess supply or surplus of the good.

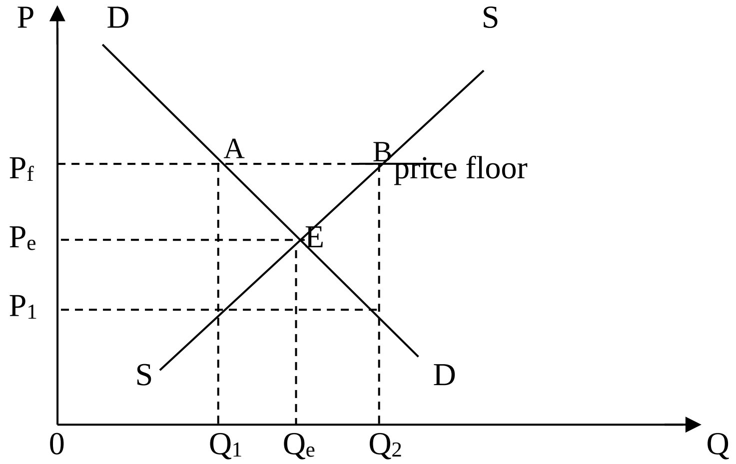


Fig 2.17: Price floor effect

From Figure 2.13 the equilibrium market price is OP_e which may be unfairly low; necessitating the setting of a price floor of OPf by government. Because the price floor is higher than the equilibrium price, quantity supplied will increase from OQ_e to OQ_2 while quantity demanded will decrease from OQ_e to OQ_1. This will create surplus of OQ_2-OQ_1 or AB of the good. Therefore whenever a price floor is set, it creates persistent surplus of the good.

The persistent surplus created by price floor will in turn pose the following problems to producers of the good:

(i) It brings about a lot of frustrated sellers wishing to dispose of surplus supplies.

(ii) The sellers out of frustration, undercut the legal minimum price from the diagram, sellers when frustrated may be willing to sell the commodity at P_{BM}, which is well below the equilibrium market price.

(iii) The sellers will allocate quotas among themselves

(iv) There will be buyers' preferences as they choose whom to buy from.

(v) It brings about conditional sales. The good with surplus may be sold with others that are in shortage.

To make minimum price control policies achieve their aim certain policies should be adopted by the government concurrently:

(i) Government should increase incomes of consumers so that they can buy more if the commodity is a normal good, and/or encourage increased consumption of the commodity through advertisements and other sales promotions strategies.

(ii) The government enters the market after setting the price floor to buy the surpluses, store and sell from its own stock piles (buffer stock) during times of shortage.

(iii) Financial institutions may make funds available for private individuals to buy and store the surpluses and sell them during lean season.

(iv) The government should encourage exportation of the surplus to needy countries. The government could promote such exports by creating incentives for exports. Such as lowering of export duties.

(c) Minimum Wage Legislation

The minimum wage legislation entails the fixing of the wage rate for the least paid worker in the society by the government. In every modern society, such legislation is used by the government to ensure that the least paid workers have access to the basic necessities of life.

The minimum wage is reviewed regularly by every progressive government using the inflation rate trend to prevent workers standards of living from falling .The labour unions, in addition, usually clamour for upward review of the minimum wage rate to promote improvement of living standards of their members.

The normal practice in the implementation of the legislation is for the government to fix the minimum wage above the equilibrium wage rate as explained in Figure 2.18

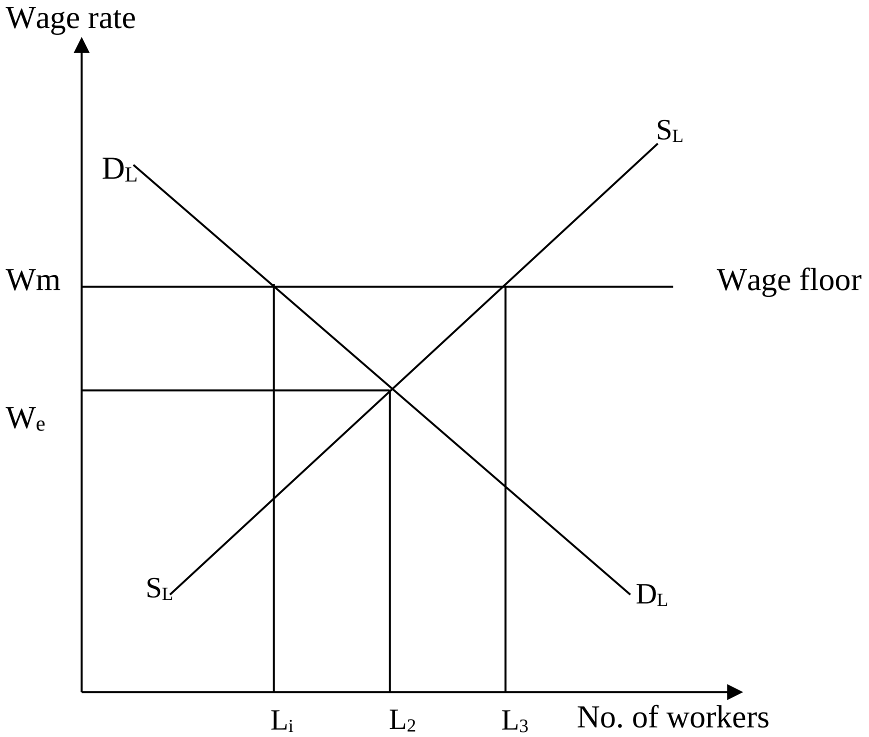


Figure 2.18: Minimum wage legislation

D_LD_L and S_LS_L represent demand and supply of labour services, respectively. Without government intervention, the wage rate will settle at W_e while L_e number of workers will be employed.

However, if the government fixes minimum wage at W_m above equilibrium, the likely consequences are listed below.

i. The numbers of people willing to work at legislated wage rate W_m is greater than L_1 that the labour market is able and willing to absorb i.e. excess supply of labour

ii. The problem of unemployment will worsen, precisely; L_e-L_i number of people will lose their jobs.

iii. There is the likelihood of labour union entering into a clandestine arrangement with their employer to receive wage rate that is less than the mandated minimum wage rate in other to prevent retrenchment of some workers.

iv. Those workers who are retained by their employer will receive higher wage rate and enjoy higher living standards given that price of goods and services remain stable in the economy.

v. It is evident from the above discussion that, for the minimum wage legislation to achieve its objectives; there must be adequate job opportunities especially in the public sector of the economy.

2.8 SUMMARY

In the competitive market prices, quantity demanded and quantity supplied are determined by the market forces of demand and supply.

Demand is the quantity of a commodity that consumers are willing and are able to buy at a given price at a given time period when all other things remain the same. A change in any of the other determinants of demand apart from the own price of the commodity (income of consumers, prices of related commodities, consumer tasted demand and shift the demand curve. A change in own price of the commodity will cause a change in quantity demanded and produce a movement along the same demand curve.

Supply on the other hand is the quantity of a commodity that suppliers are willing and are able to offer for sale at a given price at a given time period when all other things remain the same. A change in any of the other supply factors apart from the market price of the commodity (prices of inputs, technology, taxes or subsidies, prices of other commodities, weather/natural phenomena and population of suppliers) will cause a change in supply and shift the supply curve. A change in market price of a commodity will cause a change in quantity supplied and produce a movement along the same supply curve.

At equilibrium, the market clears. That is, quantity demanded is equal to quantity supplied. A change in demand or supply will cause the equilibrium price and quantity to change.

Whenever the equilibrium price is realised to be unfairly high or low it may necessitate the setting of a price ceiling or a price floor by government. Price ceiling is a legal price set below the equilibrium price.

2.9 REVISION QUESTIONS

SECTION A: MULTIPLE CHOICE QUESTIONS

1. The following are determinants of quantity demanded of a commodity EXCEPT:
   A. Income of the consumer
   B. Price of the commodity
   C. Prices of related commodities
   D. Prices of factors of production
   E. Taste

2. Which of the following is not responsible for a shift in supply curve?
   A. Changes in technology
   B. Increase in prices of related goods
   C. A reduction in inputs prices
   D. Prices of the good
   E. Favourable weather conditions

3. When the price of a given commodity rises above the equilibrium price, the quantity supplied of that commodity
   A. Exceeds the demand
   B. Equals demand
   C Less than the demand
   D. Increases continuously
   E. Cannot be determined

4. Given the demand function for milk as Qd = 120 – 3P, and supply function as Qs = 50 + 4P, the equilibrium quantity is
   A. 90
   B. 80
   C. 70
   D. 60
   E. 50

5. Which of the following best describes a tabular arrangement of various prices of a commodity and the corresponding quantities purchased at a given time?
   A. Demand curve
   B. Demand schedule

C. Demand line
D. Market demand
E. Law of demand

Answers to Multiple Choice Questions (MCQ)

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

Short Answer Questions

1. The graphical relationship between price and quantity purchased of a particular commodity is called …………………..
2. An increase in subsidies and reduction of taxes will shift the supply curve to the ……………….
3. The demand of a product for the production of another commodity is referred to as ………………..
4. All things being equal, the economic good whose demand decreases when the consumer's income increases, is classified as ....goods.
5. Given the demand and supply functions for a particular commodity as Qd=136-2p and Qs= 100+2p respectively, the market price is……………

Solution To Short Answers Questions

1. Demand curve
2. Right
3. Derived demand
4. Inferior
5. ~~N~~34

Qd = 136 – 2p

QS = 100 + 2p

Price is the point of intersection between the Demand and Supply functions. Thus, the equilibrium price (P) is obtained by solving the following equation for P thus

136 – 2p = 100 - 2p

4p = 136

or $p = \frac{136}{4} = 34$

Question 2.1

(a) Distinguish between a movement along the demand curve and a shift in the demand curve.

(b) What factors may cause a shift in the demand curve?

Answer

(a) A movement along the demand curve occurs when the demand for a commodity increases or decreases as a result a change in the price of the commodity, when all other demand factors remain unchanged. A shift of the demand occurs when either more or less quantity of a commodity is now demanded when the own price of the commodity has not changed. Such a change normally occurs when there is a change in any of the other demand factors such as taste, consumer's income, prices of related goods, government policies, and so on.

(b) The factors that can cause a shift in the demand curve may include the following:

(i) A change in consumer income

A change in consumer income may bring about a change in the quantity demanded of a good or service. However, the direction of change in quantity demanded will depend on the type of commodity in question. For a ***normal good,*** the quantity demanded might increase when consumer income increases and quantity demanded might fall when consumer income falls, ***ceteris paribus***. Therefore, inferior goods are those goods that we consume more when we are worse off financially and less when we are better off. For instance who would want to buy "second hand" goods when he becomes richer? For a ***necessity,*** a change in consumer income may not affect quantity demanded.

(ii) A change in the price of a related good

Goods relate to each other in two ways. Goods are either *complements* or *substitutes*.

Complementary goods are goods with joint demand. They are needed jointly before a want could be satisfied, e.g., camera and film. With complementary goods, a steep rise in the price of one will lead not only to a fall in its consumption but a fall in the consumption of the other good too. A fall in the price of one good would lead to an increase in the demand of the other. *Substitute goods* on the other hand, are goods that only one is needed to satisfy a want/need (not both). For substitutes, a fall in the price of one leads to a decrease in demand for the other and an increase in the price of one leads to an increase in the demand for the other, *ceteris paribus*

(iii) A change in consumer Taste/preference

Any change in consumer taste or preference causes demand to change. Increased taste or preference for a particular good causes demand to increase whilst declining taste or preference causes demand to fall, *ceteris paribus.* Taste or preference for goods and services are influenced by advertisement, fashion and sales promotions.

(iv) ***A change in consumer expectations***

The decision to buy a commodity today is influenced by the expected future price of the commodity and expected change in consumer income. If a consumer anticipates the price of a commodity to increase in future, today's demand for the commodity will increase but if the consumer anticipates a fall in future price, then today's demand for the commodity will fall. Similarly, an expected consumer income increase may cause demand for a normal commodity to increase and vice versa.

(v) ***A change in the population of consumers***

Population changes may affect the demand for a commodity. Areas of high population may demand more of certain commodities than areas of low populations. For example, Nigeria may demand more of certain goods and services than Ghana because Nigeria's population is higher than that of Ghana. Even as the population of a country increases, the demand for goods and services may also change.

(vi) ***Changes in market strategies***

Marketing strategies such as advertising, publicity and sales promotions (e.g. raffles are means used to get consumers to increase their purchases of a commodity. They are intended to inform and persuade existing consumers as well as new ones to buy more of the commodity. Effective marketing strategy will lead to an increase in demand for the commodity, all other things being equal.

(vii) ***Natural Factors***

Seasonal variations may affect the demand for a commodity at certain times of the year. For example, during the raining season, demand for commodities such as jackets, raincoats and umbrellas will increase while during the dry season, demand for commodities such as fans and air conditioners will rise.

(viii) ***Availability of credit***

When consumers are given credit facilities in the form of credit purchases, hire purchases and the use of credit cards and cheques, they are encouraged to buy more goods. Granting credit facilities, therefore, increased demand for goods covered by these facilities, all things being equal.

(ix) A change in cost of borrowing (Interest rate)

If the cost of borrowing is low (lower interest rates) then people can borrow and consume more of normal goods and services. If cost of borrowing is high then people can borrow less and so cannot consume more goods and services.

Question 2.2

Explain the determinants of quantity supplied of a good.

Answer

The quantity supplied of a product is influenced by factors such as the market price of the commodity, prices of inputs, technology, other output prices, government fiscal policy (taxes/subsidies), weather and other natural phenomena and population of suppliers (firms).

(i) The market price of the product

All things being the same, a firm offers more for sale as the price of the product rises and less for sale as its price falls.

(ii) Prices of Inputs

These are the prices firms pay to obtain factors of production or inputs. Firms pay wages and salaries for hiring labour, rent for the use of land and interest for borrowing capital. Increase in input prices in turn increases cost of production thereby causing supply to decrease. As supply decreases, the quantity of firms that are willing to supply falls. A decline in input prices lowers costs of production and increases supply.

(iii) ***Technology***

The kind of technology a firm uses to produce its products determines the type and quantity of inputs necessary to produce a given quantity of a product. When a firm uses the best technology available, it can produce a unit of a good at the lowest possible cost (economic efficiency). An advancement or improvement in technology is the development of new means of producing a good using a smaller quantity of inputs than was previously possible (technical efficiency). Technology innovation also results in the development of new products that are less costly to produce than the products they replace. Thus, technology change lowers production costs, which in turn leads to increase in profits and, therefore, increases supply.

iv) Prices of other products/outputs

Competitive supply products: Firms are not permanently committed to the production of particular products. Because firms have the objective of maximising profits, rising prices for other products could cause firms to switch to the production of different these products. For example, if the price of soft drinks were to rise sharply, breweries might switch from beer production to soft drink bottling. Such products are said to be in *competitive supply*. The same resources may be used to produce them.

Joint-supply products these are products that are always produced together. One is seen as the by-product of the other. Examples are beef and hide. An increase in the price of beef increases the supply of hides, from which leather products are made.

V) Government Fiscal Policy (Taxes and Subsidies)

Taxes increase cost of supplying a product and anything that causes the cost of supplying a product to increase in turn causes a decrease in supply of the product whiles subsidies decrease of the cost of supplying a product and hence cause an increase in supply.

vi) Weather and other Natural Phenomena

Changes in weather affect the supply of certain commodities especially agricultural products. A favourable weather condition such as good rainfall will increase the supply of agricultural products whiles an unfavourable weather such as drought will cause a decrease in the supply of agricultural products. Other natural phenomena such as floods, bush fire, pests and so on also affect the supply of agricultural products.

vii) Population of Suppliers or Firms

When firms in an industry are earning supernormal profits, this may attract new firms into the industry (if it is not monopoly industry) which would in turn increase the supply of the product. On the other hand, if more firms exit an industry, this could cause supply to decrease.

Question 2.3

A demand equation for a good is given by:

$Q_D = -3P + 5000$

And the supply equation for the same good is:

$Q_s = 2P + 2000$

where Q_D, Q_s and P are the quantity demanded, quantity supplied and price (in bags/units and naira) respectively.

Required:

(a) Find the equilibrium price and quantity

(b) If government in trying to control the price of the good fixes the price at ₦550

(i) Calculate and explain the type of excess which will result from the price control.

(ii) Give three (3) problems that the excess in (ii) may cause.

Answer

(a) Given the demand function $Q_D = -3P + 5000$ and the supply function as

$Q_s = 2P + 2000$. At equilibrium, $Q_D = Q_S$

$-3 + 5000 = 2P + 2000$

$5000 – 2000 = 2P + 3P$

$3000 = 5P$

$3000/5 = P$

P = ₦600

Therefore

$Q = 2(600) + 2000$

$Q = 1200 + 2000$

Q = 3200 bags/units

The equilibrium price and quantity are c600 and 3200 units respectively.

(i) At the price of c550:
$Q_D = -3P + 5000 = -3(550) + 5000 = -1650 + 5000 = 3350$ bags/units

$Qs = 2(550) + 2000 =1100 + 2000 = 3100$ bags/units

Excess demand = $Q_D – Qs = 3350 – 3100 =250$ bags/units

At the maximum price of c550, quantity demanded of 3350 bags/units exceeds the quantity supplied of 3100 bags/units resulting in an excess demand of 250 bags/units.

(ii) The persistent shortage created by price ceiling will in turn pose the following problems:

- ***Rationing***

Government may have to apportion the quantity supplied of OQs among buyers who want to consume a greater amount of OQd. This may be done through the issue of coupons which must be surrendered together with cash, to obtain the good.

- ***Queuing***

  Whenever the good is available, people will form long queues for it. The queues may be physical lines of people outside suppliers' shops typically in the case of essential commodities like drugs, bread, milk, etc. Or tall waiting lists in the case of consumer durables such as cars, television sets, government flats/houses, etc.

- ***Black (Parallel) Market***

  Black or parallel markets in which the good will be illegally sold and brought will spring up. In these illegal markets, the price at which the good will be sold will even be higher than the equilibrium price.

- ***Selling at Sellers' Preference***

  Sellers may choose several ways to sell the good-first come, first-serve, selling to relatives and friends first, etc

- **Random Allocation**

  This is selling by luck or chance. This may defeat the aim of setting the maximum price to ensure that the poor as well as the rich get the good. Selling may be to all rich, or all poor.

Question 2.4

Write short notes on the following:

(a) Derived demand
(b) Demand schedule
(c) Market supply
(d) Joint-supply
(e) Shift in the supply Curve

Answer

(a) ***Derived demand*** is where the demand for a final product leads to the demand for another product which is used to produce this final product – i.e. if the demand of a product is not for its own sake, but for the manufacture of another product which is in demand. For example, the demand for furniture derives the demand for wood; the demand for petrol derives the demand for crude oil.

(b) ***Demand schedule*** is a **table** or a **list** of various prices of a commodity and the corresponding quantities that would be purchased at a particular time period, when all other demand factors remain constant. For example, the table below shows the demand schedule for a commodity sold in bags. Column 1 of the Table 1 shows a set of prices of the commodity and column 2 shows the quantities of it that consumers are willing and able to buy at each price.

Price (₦000)	Quantity Demanded (bags)
1	120
2	100
3	80
4	60
5	40
6	20
7	0

(c) ***Market supply*** is the total quantity of a product that all firms in an industry are willing to offer for sale at a given market price and at a given time period when all other supply factors remain unchanged. The market supply is a horizontal summation of the supplies of all individual firms.

(d) ***Products have joint supply*** when the supply of one product is in association of the supply of other products. The other goods are seen as by-products of the main product supplied. Examples are beef and hide (leather), oil and petrol gas and coke.

(e) ***There is a shift in supply*** when there is supply variation of a product which is unrelated to the product's own price variation.

Question 2.5

a) Distinguish between a decrease in quantity supplied and a decrease in supply.

b) Explain the effects on the market situation of a commodity of a decrease in supply when demand remains unchanged using appropriate demand- supply diagram.

Answer

a) **A decrease in quantity supplied** refers to a situation in which less quantity of a commodity is offered for sale as a result of a fall in the own price of the commodity. Thus a decrease in quantity supplied is illustrated as a downward movement in the same supply curve

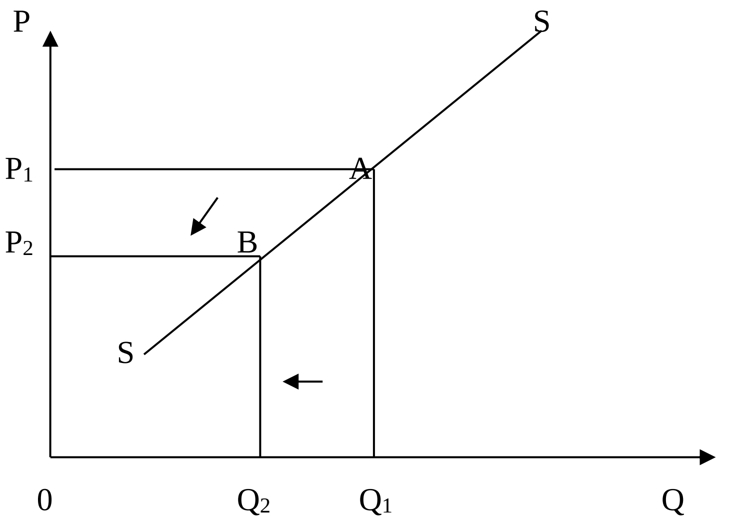


Figure 1: A Decrease in Quantity supplied

In figure 1 above, a fall in price from P_1 to P_2 leads to a decrease in quantity supplied from Q_1 to Q_2.

Decrease in supply on the other hand, refers to a less quantity being offered for sale without a change in commodity's own price. This implies that decrease in supply is caused by supply influencing factors other than the commodity's own price, such as a rise in the price of factor input or a loss of technical knowledge.

In the above figure 2 below, decrease in supply is shown as a leftward shift in the supply curve from S_1S_1 to S_2S_2.

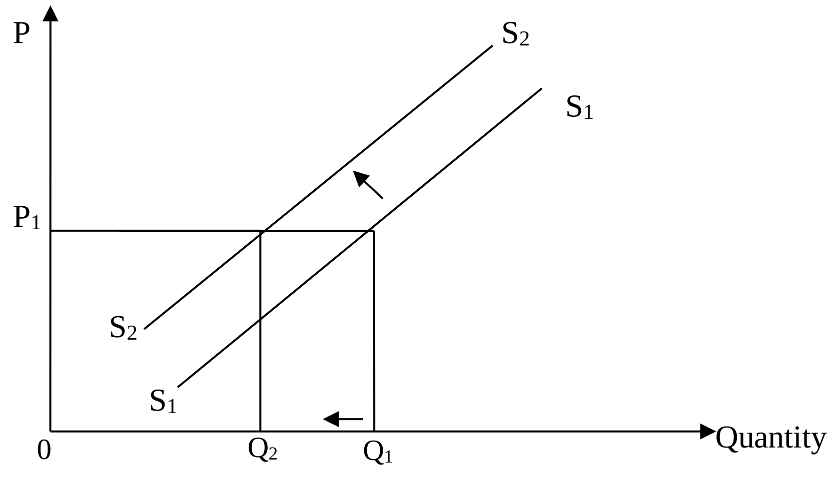
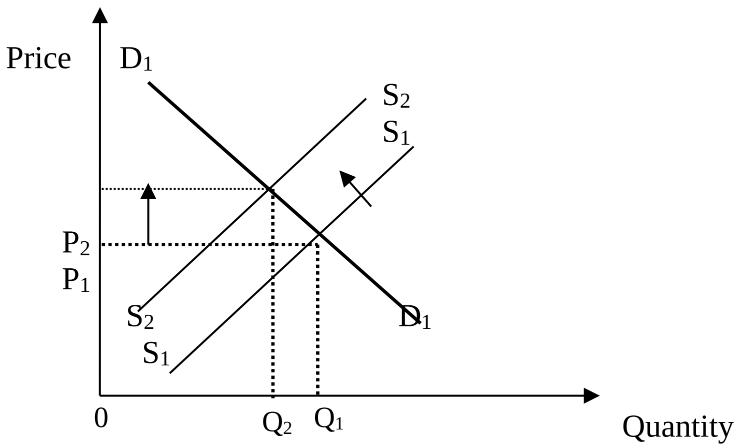


Fig 2 – A decrease in quantity supplied

(b) In the diagram below, Figure 3, the initial market situation is shown by the intersection of demand curve D_1D_1 and supply curve S_1S_1 giving the market price as P_1 and Q_1 as the quantity traded on the market.



A decrease in supply is illustrated as leftward shift in the supply curve from S_1S_1 to S_2S_2. This new market is shown by demand curve D_1D_1 and supply curve S_2S_2 with the new market price as P_2 and new quantity traded on the market as Q_2.

Therefore, the effects of a decrease in supply while demand remains unchanged are: (1) a rise in market price from P_1 to P_2 and (ii) a decrease in quantity traded on the market from Q_1 to Q_2 as illustrated in figure 3.

Practice Questions

1. (a) Distinguish between a '**demand function'** and a '**supply function'**.

   (b) State and describe the laws of demand and supply using demand and supply functions.

   (Hints: In each of (a) and (b) above, use the algebraic approach)

2. (a) Make a clear distinction between 'decrease in quantity demanded' and 'decrease in demand' for a normal good using relevant diagrams.

   (b) Explain, with the aid of appropriate diagram, how a decrease in demand of a normal good will affect its market situation if supply remains unchanged.

3.(a) State and illustrate graphically the law of supply.

   (b) Explain what you understand by the backward- bending supply curve.

4. With the aid of appropriate diagrams, examine the effect of each of the following on the equilibrium price and quantity of cement.

(i) Introduction of a new and cheaper technology in a local cement manufacturing company.

(ii) An increase in the supply of low-cost housing units by the government.

(iii) Government imposition of a tax on each bag of cement

(iv) A significant fall in the average level of income of consumers in the country.

CHAPTER THREE

ELASTICITY OF DEMAND AND SUPPLY

3.0 LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- Define, identify types and determinants of, compute and interpret
  - Price elasticity of Demand
  - Price elasticity of supply
  - Income elasticity of supply
  - Cross-price elasticity of demand

Understand and apply the knowledge of price elasticity of demand to explaining the incidence of government tax.

3.1 INTRODUCTION

In Chapter 2, we examined how demand and supply curves determine the equilibrium price and quantity of a commodity in a market system. We also learnt that there are many factors determining quantity demanded and supplied of a commodity or service. This chapter extends the discussion to the concept and measurement of demand and supply elasticities. Although many business and government policy decisions depend crucially on judgements regarding elasticity of demand and supply for various goods and service, we shall specifically explore how incidence of tax imposed by the government could be explained by the price elasticity of demand.

3.2 PRICE ELASTICITY OF DEMAND

3.2.1 Definition

Price elasticity of demand measures the responsiveness of quantity demanded for a good (or services) to the change in the price of the good. It is expressed as the ratio of percentage change in quantity demanded to percentage change in the commodity's own price. If E_d denotes price elasticity of demand, it follows that:

$$E_d = \frac{\textit{Percentage change in quantity demanded}}{\textit{percentage change in price}}$$

3.2.2 Types of Price Elasticity of Demand

Basically, there are five degrees or types of price elasticity of demand.

(i) ***Elastic Demand:*** Demand for a good is price elastic if a given percentage change in price causes a greater percentage change in quantity demanded. The demand curve will exhibit a gentle slope as shown in figure 3.1 (a)

(ii) ***Inelastic demand:*** Demand for a commodity is price inelastic if a given percentage change in price causes a lesser percentage change in quantity demanded. Demand curve will exhibit a steep slope as shown in figure 3.1(b).

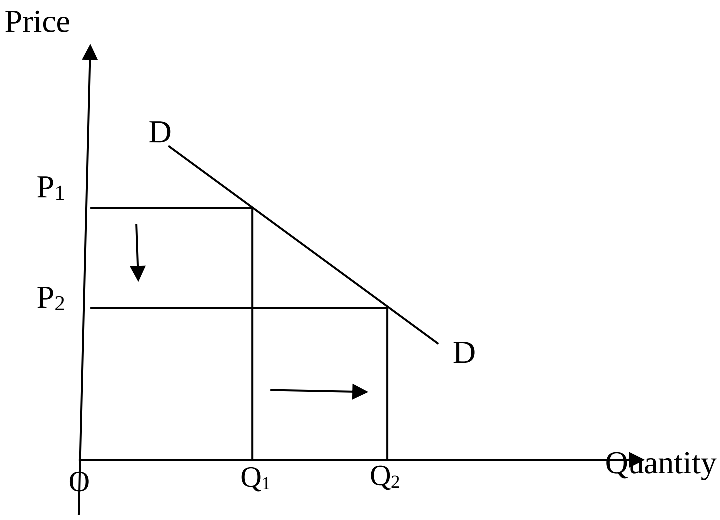


Figure 3.1 (a) Elastic Demand

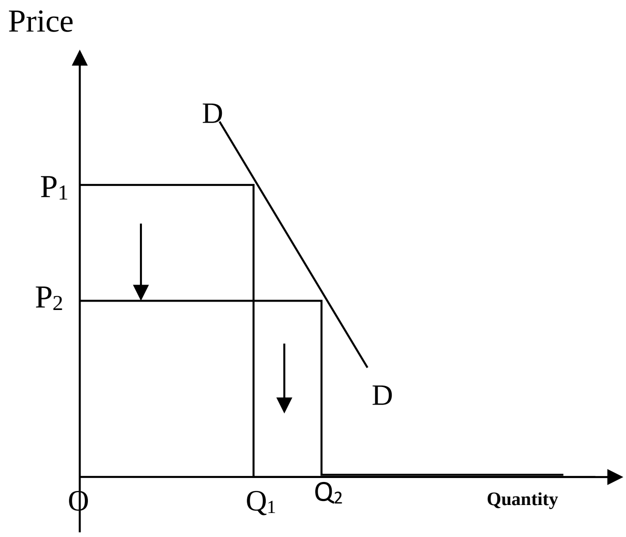


Figure 3.1 (b) Inelastic Demand

(iii) **Unit elastic Demand:** Demand for a commodity is unit price elastic if a given percentage change in price causes equal percentage change in quantity demanded.

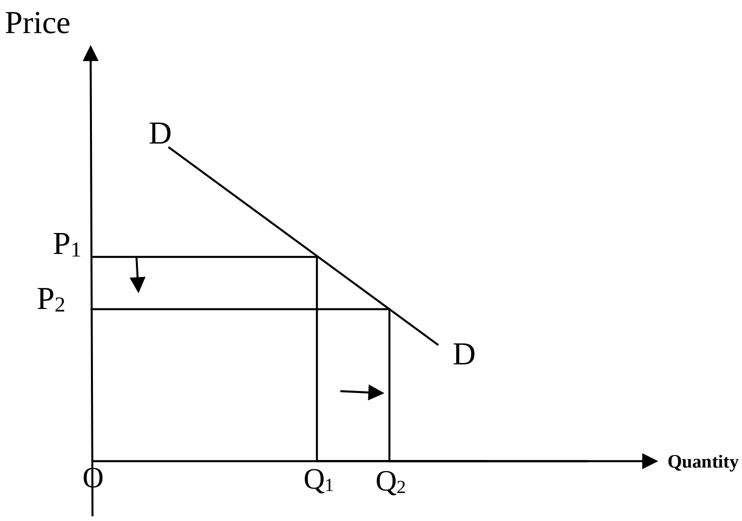
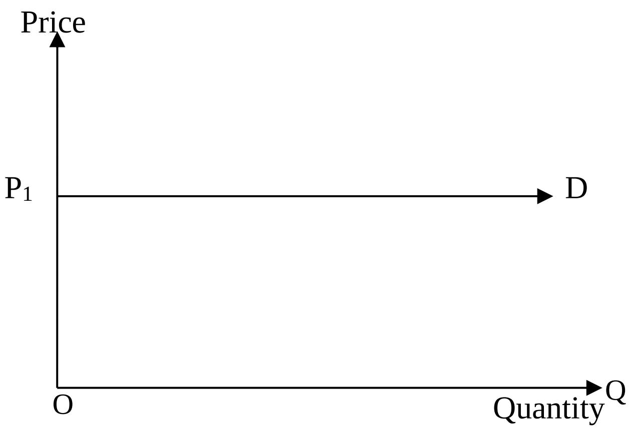


Figure 3.1 (c) Unit Elastic Demand

(iv) **Perfectly elastic demand:** This is the case when consumers will not buy the commodity at all for any change (increase or decrease) in price. Thus, the demand curve is horizontal as shown in Figure 3.1 (d)

(v) **Perfectly inelastic demand**: The demand for a commodity is perfectly inelastic if quantity demanded remains unchanged whatever the change (increase or decrease) in price. The demand curve is vertical as shown in Figure 3.1(e)



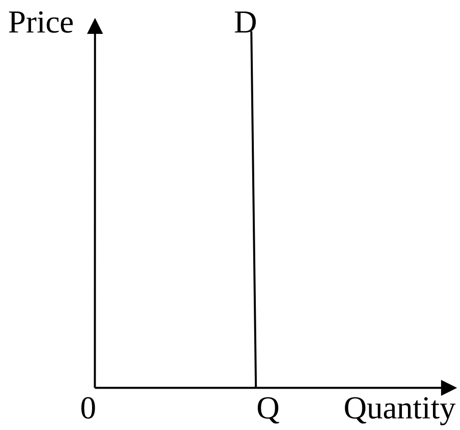


Fig 3.1 (d) Perfectly elastic demand **Fig. 3.1 (e) Perfectly inelastic demand**

The various types or degrees of price elasticity of demand discussed above will attract the range elasticity coefficients shown in Table 3.1 below.

Table 3.1: Range of Elasticity coefficients.

Types	Price elasticity of Demand coefficient (E_d)
Elastic	$1 < E_d < \infty$
Inelastic	$0 < E_d < 1$
Unit elastic	$E_d = 1$
Perfectly elastic	$E_d = \infty$
Perfectly inelastic	$E_d = 0$

3.2.3 Measurement of Price Elasticity of Demand

To compute price elasticity of demand coefficient, we shall consider the point method and the arc method.

(i) Point price elasticity of demand

(a) Applicable to a demand schedule

$$E_d = \frac{\Delta Q}{Q} / \frac{\Delta P}{P} = \frac{\Delta Q}{\Delta P} \text{ X } \frac{P}{Q}$$

where ΔQ = Change in quantity

= New quantity (Q_2) – Initial quantity (Q_1)

ΔP = Change in price

= New price (P_2) - Initial price (P_1)

Q = Initial quantity (Q_1)

P = Initial price (P_1)

(b) Applicable to demand function.

(i)

$$E_d = -\frac{dQ}{dP} \text{ x } \frac{P}{Q} \quad \text{(for one independent variable)}$$

where $\frac{dQ}{dp} < 0$, (Differentiate Q with respect to P)

Illustration 3.1

Given the demand function of a commodity estimated as:

Q = 100 – 3p

where unit price (p) = N20

Compute the price elasticity of demand and interpret your result

Answer

$$E_d = -\frac{dQ}{dP} \text{ x } \frac{P}{Q} \quad \text{(definitionally)}$$

From Q = 100 -3p, we have;

$\frac{dQ}{dp}$ = -3,

substitute this into

$E_d = -\frac{dQ}{dp} \text{ x } \frac{P}{Q}$ to get

$E_d = -(-3)\frac{P}{Q}$

But when p=20,

Q = 100 –3(20)

= 40

$\therefore E_d = -(-3) \text{ x } \frac{20}{40}$

$$= \frac{60}{40} = 1.5$$

Since

$1 < E_d = 1.5 < \infty$,

It means that demand is price elastic

(ii) Applicable to functions of multiple independent variables.

Consider a demand function specified as follows:

$Q_{dx} = f(P_x, P_y, M)$

Where

Q_{dx} = demand for commodity X

P_x = per unit price of commodity X

P_y = per unit price of commodity Y

M = Money income of the consumer

Each of the independent variables P_x, P_y, M has its elasticity named after the variable concerned. In which case we have:

(1) Own price elasticity of demand with respect to the above specified demand function is:

$$E_{dx} = \frac{\partial Qd_x}{\partial P_x} \cdot \frac{P_x}{Qd_x}$$

(2) Cross elasticity of demand

Cross elasticity of demand measures the responsiveness of the change in the quantity demanded of a commodity when the price of another related commodity changes. From our demand function above, the cross elasticity of demand for commodity X when the price (P_y) of commodity Y changes is measured as:

$$Ed_{xy} = \frac{\partial Qd_x}{\partial P_y} \cdot \frac{P_y}{Qd_x}$$

(3) Income elasticity of demand

Income elasticity of demand measures the responsiveness of the quantity demanded of a commodity x to a change in the consumer's income (M), ceteris paribus. The income elasticity of demand is measured as:

$$E_{dxM} = \frac{\partial Qd_x}{\partial M} \cdot \frac{M}{Qd_x}$$

The coefficient of income elasticity is always positive for normal goods and negative for inferior goods.

More discussion on income elasticity is given in section 3.4 ahead.

3.2.4 The Price Elasticity of Demand for a Straight Line Demand Curve

The price elasticity of demand is not the same along a downward sloping straight line demand curve. For a linear demand curve sloping downward from left to right, the price elasticity of demand starts from infinity (∞) at the point where the demand curve cuts the price axis and falls as we move downward to the right along the curve to zero at the point where the demand curve cuts the quantity axis.

Figure 3.1

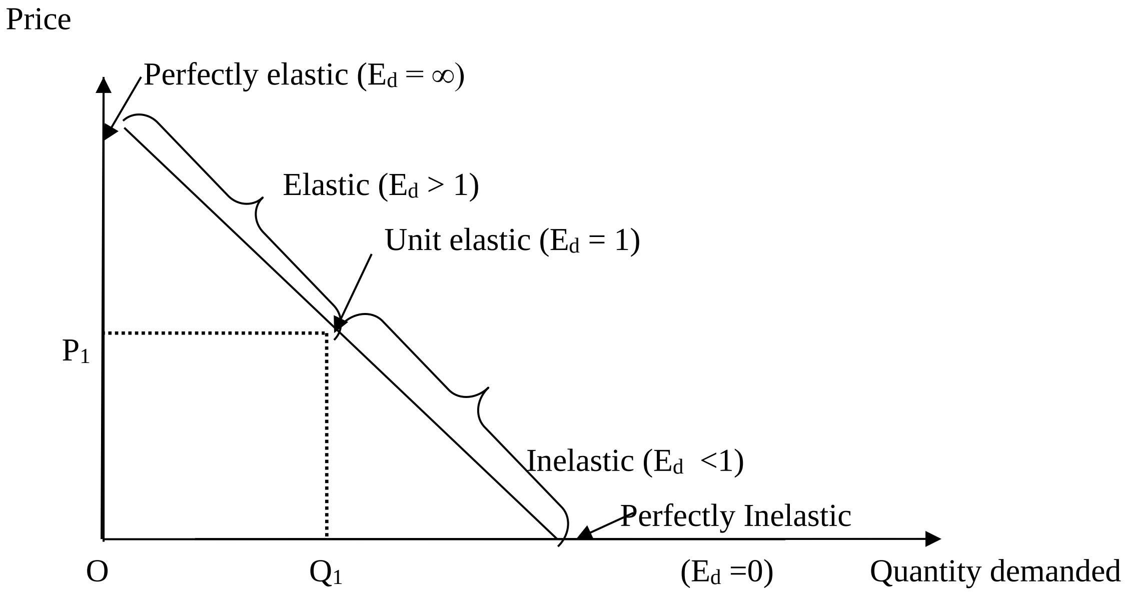


Fig. 3.1: Elasticity Types along a Straight Line Demand Curve

At the price intercept, demand is perfectly elastic. At the mid-point of the demand curve, demand is unit elastic. At the quantity intercept, demand is perfectly inelastic. Between the price intercept and mid-point of the demand curve, demand is elastic while between the mid-point and the quantity intercept, demand is inelastic.

3.2.5 Determinants of Price Elasticity of Demand

The price elasticity of demand varies widely across difference goods. Some goods have more elastic demand while others have less elastic. The major factors that determine price elasticity of demand are:

(i) The number of close substitute goods

The more substitutes a good has and the more close the substitutes are, the more elastic the demand for the good. For example the beverage, bournvita, has a number of close substitutes such as milo, chocomilo, ovaltine etc. Therefore, the demand for bournvita is likely space to be more elastic because the slightest increase in the price of bournvita, consumers of the product will switch to the consumption of one of the substitutes.

On the other hand, if the good does not have any close substitute, the demand tends to be less elastic or inelastic. For example, there is hardly a substitute to food as a whole hence the demand for food as a whole is inelastic.

(ii) The proportion of Income spent on the commodity

If the price of a good is relatively low such the expenditure on it is an insignificant fraction of most individual or family incomes, then consumers of such a commodity are insensitive to a price change of the good. It tends to have inelastic demand. On the other hand, if the price is high and the proportion of income(s) spent on it large then it tends to have elastic demand. For example, salt has relatively low price in Ghana and families spent insignificant percentage of their incomes on salt. Therefore even if the price of salt doubles, people find little difficulty in buying the same quantity they used to buy.

(iii) Time

The demand for a product tends to be more elastic in the longer period of time and less elastic in the shorter period of time. This is because consumers need a longer time to adjust to changes in price. In the case of substitutes like electricity and gas cookers, if the price of electricity goes up it will take time for consumers to switch over from electricity cooker to gas cooker for consumers need time to acquire the gadgets.

(iv) The number of possible uses

A commodity has high price elasticity of demand (or elastic demand) if it can be put into so many uses. With such a commodity, if the price changes, the response of quantity demanded to the price change becomes significant when changes in quantity demanded for each use are put together. For instance, a commodity such as sugar is used for direct consumption, baking break and cake, making jam, etc. Thus the demand for sugar may be fairly elastic.

(v) Habit Forming Commodities

Some commodities are habit forming while others are not. For habit forming commodities, they tend to have less elastic or inelastic demand because once the habit is formed it is a bit difficult to break away from it when the price of the commodity increases even significantly. For instance, one the habit of smoking cigarettes is formed, it is difficult to break away when the price of cigarettes rise. Non-habit forming commodities tend to have more elastic demand.

(vi) Luxuries and Necessities

Luxuries are things we can always do away with hen-ace they tend to have elastic demand. Necessities are difficult to dispense with. Therefore they tend to have inelastic demand.

(vii) Durability of the Commodity

With some commodities, we required one at a time and they are used for a very long time before they get spoilt. Examples of such goods are cars, televisions, cars, furniture, building, clothes etc. They tend to have low elasticity of demand (inelastic demand) because when the price of a durable commodity changes, consumers will continue to use what they have. Even when the price of such a commodity falls, it is new consumers who will mostly buy them.

3.2.6 Price Elasticity of Demand and Total Revenue

Total Revenue (TR) is the product of a commodity's market price (P) and the quantity of the commodity purchased (Q):

Total Revenue (TR) = Price (P) x Quantity purchased (Q)

The net effect of a price change on total revenue is determined by the size of the change is relative to the size of the change in quantity demanded or the price elasticity of demand for the goods. If demand is elastic, a fall in price increases the total revenue whilst a rise in the price reduces total revenue. If demand is inelastic, a fall in price reduces total revenue whilst a rise in price creases total revenue. If demand is unit elastic, a change in price (either a fall or a rise) does not affect total revenue). These effects can be shown tabularly as done in Table 3.2

<u>Table 3.2: Price Elasticity of Demand and Total Revenue</u>

(i)	**Elastic Demand :**	TR decreases as price increases TR increases as price decreased
(ii)	**Inelastic Demand**:	TR increases as price increases TR decreases as price decreases
(iii)	**Unitary elastic demand**	TR remains unchanged for an increase or a decrease in price

Table 3.2 shows the various effects on total revenue of changes in price for different degrees of price elasticity of demand.

3.3 PRICE ELASTICITY OF SUPPLY

3.3.1 Definition

Price elasticity of supply measures the responsiveness of quantity supplied of a commodity/ service to the change in the price of the commodity. It is expressed as the ratio of percentage change in quantity supplied to the change in the commodity's own price. If E_s denotes price elasticity of supply, it follows that:

$$E_s = \frac{percentate\ change\ in\ quantity\ supplied}{percentate\ change\ in\ price}$$

3.3.2 Types of Price Elasticity of Supply

These are five types of price elasticity of supply which are explained below

(i) **Elastic Supply:** Supply for a good is price elastic if a given percentage change in price causes a greater percentage change in quantity supplied. The supply curve will exhibit a gentle slope as shown in Figure 3.2a

(ii) **Inelastic Supply:** Supply for a good is price inelastic if a given percentage change in price causes a lesser percentage change in quantity supplied. Supply curve will exhibit a steep slope as shown in Figure 3.2b.

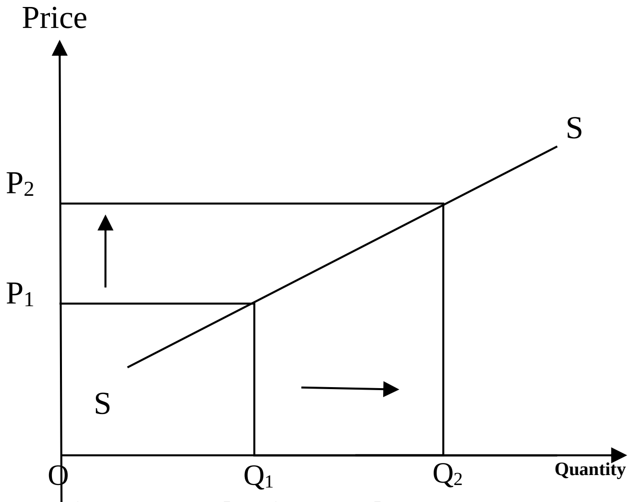


Fig 3.2(a): Elastic Supply

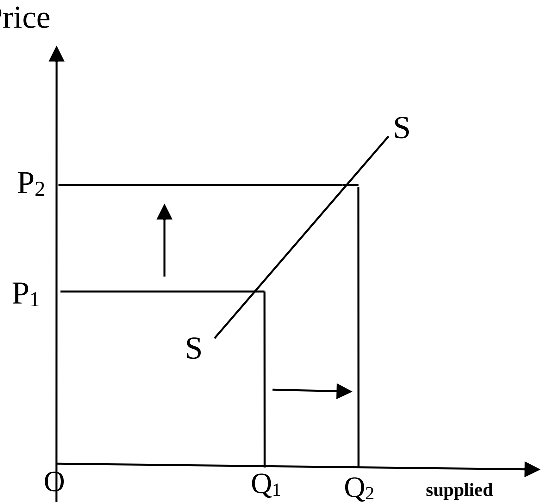


Fig 3.2(b): Inelastic Supply

(iii) **Unitary elastic supply:** Supply of a commodity is unit price elastic if a given percentage change in price causes equal percentage change in quantity supplied (see figure 3.2c)

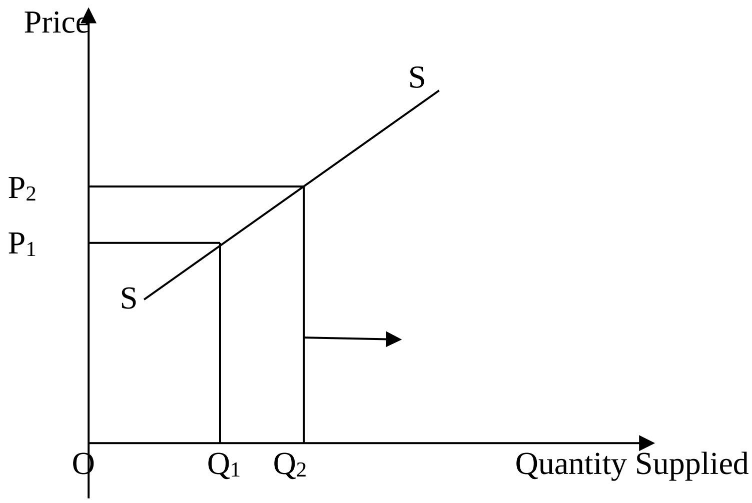


Figure 3.2c: Unitary elastic supply

(iv) **Perfectly elastic supply:** Supply is perfectly price elastic if the sellers are willing to offer all the available quantity for sale at the prevailing price only. Supply is alternatively said to be in finitely price elastic. The supply curve is horizontal as shown in figure 3.2.d

(v) **Perfectly inelastic supply:** Supply is perfectly price inelastic if a change in price causes no change in supply. The supply curve is vertical and the price elasticity of supply coefficient is zero.

Fig. 3.2 d Perfectly Elastic Supply

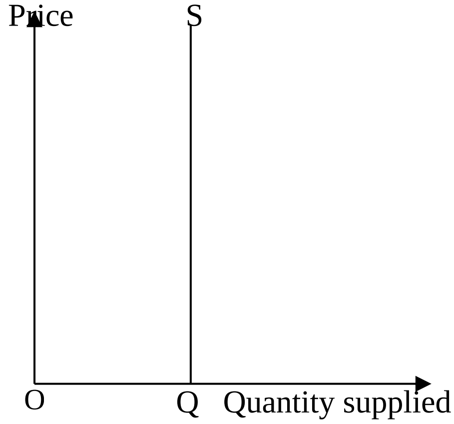


Fig.3.2d Perfectly Inelastic Supply

3.3.3 Measurement of Price Elasticity of Supply

To compute price elasticity of supply coefficient, we consider the 'point method' and the 'arc method' as done under measurement of price elasticity of demand

(i) Point price elasticity of supply

(a) Applicable to a supply schedule

$$E_s = \frac{\Delta Q}{\Delta P} \quad X \quad \frac{P}{Q}$$

Note that there is no minus (-) sign in the formula as it obtains under price elasticity of demand.

(b) Application to supply function

b (i) $E_s = \frac{\Delta Q}{\Delta P} \times \frac{P}{Q}$ (for one independent variable)

where $\frac{dQ}{dP} > 0$ (supply function has a positive slope)

b (ii) $E_s = \frac{\partial Q}{\partial P} \times \frac{P}{Q}$ (for two or more independent variables)

(iii) Arc price elasticity of supply

$$E_s = \frac{\Delta Q}{\Delta P} \times \frac{P_1 + P_2}{Q_1 + Q_2}$$

The various types of degrees of price elasticity of supply will attract the range of elasticity of supply coefficients shown in Table 3.2 below:

Table 3.2 Types and Price Elasticity of Supply Coefficient

TYPES	PRICE ELASTICITY OF SUPPLY COEFFICIENT (Es)
Elastic	$1 < E_d < \infty$
Inelastic	$1 < E_d < \infty$
Unit	$E_d = 1$
Perfectly elastic	$E_d = \infty$
Perfectly inelastic	$E_d = 0$

3.3.4 Determinants of Price Elasticity of Supply

The price elasticity of supply also varies widely across different products. Some products have more elastic supply while others have less elastic supply. The major factors that determine price elasticity of supply are:

i) **Availability and Mobility of Factors of Production**

If factors of production are available and mobile, then supply responses quickly and largely to a change in the price of a product (i.e. supply tends to be more elastic) and inelastic under contrary situation.

ii) **Influence of the Weather**

If output is controlled by weather conditions, as in the case of agricultural products, the output cannot be controlled by the producer. Hence the supply of such product tends to be less elastic (inelastic).

iii) **The level of Technology**

The extent to which output can be increased depends on the level of technology employed by the producer. Advanced technology used in production tends to make the supply of a product more elastic.

iv) **Cost of Production**

If the cost involved in the production of a product is very high, output cannot be easily increased when the market price increases unless the increase in price is great enough to absorb the cost.

v) **Degree of Perishability**

The supply of highly a perishable commodity is relatively inelastic and that of a less perishable commodity is relatively elastic. The explanation is that highly perishable goods cannot be stocked for longer period to be released when price for instance rises.

vi) **Time (Gestation Period)**

Supply elasticity to be greater in the longer period. The longer the period, the easier it is to shift factors of production among products, following a change in their relative prices. This holds for agricultural products, because of the natural time lag between planting and harvesting of crops. In the short-run, the supply of most products tends to be relatively inelastic.

3.4 **INCOME ELASTICITY OF DEMAND**

3.4.1 Definition

As stated in section 3.2.3(ii), income elasticity of demand measures the responsiveness of quantity demanded of a commodity (or service) to the change in the average consumer's income. It is expressed as the ratio of percentage change in quantity demanded (ΔQ) to the percentage change in consumer's income (ΔY).

$$E_y = \frac{percentage\ \ change\ in\ quqntity\ demanded}{percentage\ change\ in\ income}$$

3.4.2 Types of Income Elasticity of Demand

Five types or degrees of income elasticity of demand identifiable in the literature are.

(i) Elastic demand: This is the case when quantity demanded changes by a greater percentage than the percentage change in consumers income. In this case, the income elasticity of demand coefficient (E_y) is positive and greater than 1. The commodity is described as a normal good

(ii) Inelastic Demand: This is the case when the quantity demanded changes by a smaller percentage than that of income. The income elasticity of demand coefficient is positive but less than 1. The commodity is still described as a normal good.

(iii) Negative Income elasticity of demand: This is the case when quantity demanded falls as consumers income increases. The income elasticity of demand coefficient (E_Y) is less than zero (negative). The commodity is described as an inferior good.

(iv) Unit income elastic: This is when a percentage increase (decrease) in income causes equal percentage increase(decrease) in quantity demanded. The income elasticity of demand coefficient (E_y) is equal to 1.

(v) Perfectly inelastic demand: This occurs when any change in income leaves quantity demanded of a commodity remains unchanged. The E_y equal to zero.

3.4.3 Measurement of Income Elasticity of Demand

(i) The point method

(a) $E_y = \frac{\Delta Q}{\Delta Y} \times \frac{Y}{Q}$ (for demand schedule)

(b) $E_y = \frac{dQ}{} \times \frac{Y}{}$ (for demand function having one independent variable)

$dY \quad Q$

(c) $E_y = \frac{\partial Q}{\partial Y} \times \frac{P}{Q}$ (for a demand function with two or more independent variables including consumer income)

(ii) The Arc Method

$$E_y = \frac{\Delta Q}{\Delta Y} \times \frac{Y_1 + Y_2}{Q_2 + Q_1}$$

3.4.4 Interpretation of the Income Elasticity Coefficient (Y_{ED})

Usually it is the sign of the income elasticity of demand coefficient which is explained though we can also explain the magnitude of the coefficient as we do for price elasticity of demand.

Superior Good

This is when the income elasticity of demand coefficient is positive and greater than one, meaning that as income increases by a given percentage, the percentage demand for the good will increase more than that of income.

Normal Good

This is when the income elasticity of demand coefficient is positive but less than or equal to one meaning as income increases by a given percentage, the demand for the good will increase less than the given percentage increase in income.

Inferior Good

A good is described as inferior when its income elasticity of demand coefficient is negative, meaning less will be demanded as income rises.

Necessity Goods

A necessity good is one whose income elasticity of demand coefficient is zero (neutral number), meaning that the demand for the good is insensitive to changes in income.

When the coefficient without the sign is less than 1, its demand is income inelastic; if greater than 1, its demand is income elastic and when equal to 1, its demand is income unit elastic.

Illustration 3.3

Consider the following demand schedule for a good

	Period I	Period 2
Income (₦)	50,000	70,000
Demand	200	250

You are required to calculate for the good:

(i) Point income elasticity of demand and interpret your result.

(ii) Arc income elasticity of demand and interpret your result.

Answer

(i) Point income elasticity of demand

$$E_y = \frac{\Delta Q}{\Delta Y} \times \frac{Y}{Q}$$

Where ΔQ = 250- 200 and Y = ₦70,000 - ₦50,000 = ₦20,000

and Y = ₦50,000 (Y_1)

Q = 200 (Q_1)

It follows that:

$$Ey = \frac{50}{20,000} \times \frac{50,000}{2000}$$

$$= 0.63$$

The good is income elastic and normal

(ii) Arc income elasticity of demand:

$$E_y = \frac{\Delta Q}{\Delta Y} \times \left(\frac{Y_1 + Y_2}{Q_2 + Q_1}\right)$$

$$= \left(\frac{250 - 200}{70,000 - 50,000}\right) \quad X \quad \left(\frac{50,000 + 70,000}{200 + 250}\right)$$

$$= \frac{50}{20,0000} \times \frac{120,000}{450}$$

$$= 0.67$$

Interpretation: The good is income inelastic and hence normal

Note that although the results obtained under the point and arc methods are slightly different; the difference is not significant enough to alter the interpretation.

3.5 CROSS - PRICE ELASTICITY OF DEMAND

3.5.1 Definition

Cross – price elasticity of demand measure the responsiveness of quantity demanded of one good (or service) to the change in the price of another good. It is expressed as the ratio of percentage change in quantity demanded of one commodity to percentage change in the price of another commodity.

For two commodities A and B, cross –price elasticity of demand for commodity A with respect to the price of commodity B, as denoted as $E_{AB,}$ can be expressed as:

$$E_{AB} - \frac{percentage\ change\ in\ Quantity\ demanded\ of\ A}{Percentage\ change\ in\ price\ of\ B}$$

3.5.2 Types of Cross- Price Elasticity of Demand.

Table 3.3 shows the six types of cross-price elasticity of demand and interpretation of their co-efficients.

Table 3.3 Types of Cross-Price Elasticity of Demand

Type	E_{AB}	Interpretation
High Cross-Elasticity	$1 < E_{AB} < \infty$	A and B are close substitutes
Low Cross-Elasticity	$0 < E_{AB} < 1$	A and B are poor substitutes
Unit Cross-Elasticity	$E_{AB} = 1$	
Negative Cross-Elasticity	$E_{AB} < 0$	A and B are complementary goods
Infinite Cross-Elasticity	$E_{AB} = \infty$	A and B are perfect substitutes
Zero Cross-Elasticity	$E_{AB} = 0$	A and B are not related

Illustration 3.4

Consider the following data on goods A and B

Group A		Group B	
Price (₦)	Quantity Demanded	Price (₦)	Quantity Demanded
20	300	50	100
30	200	60	80

You are required to:

(i) Calculate cross-price elasticity of demand for commodity A with respect to the price of commodity B

(ii) State the relationship between commodities A and B using your result in (i)

Answer

(i) $E_{AB} = \frac{\Delta Q_A}{\Delta P_B} \times \frac{P_B}{Q_A}$ (Point method)

$$= \left(\frac{200 - 300}{60 - 50}\right) \times \left(\frac{50}{300}\right)$$

$$= -\left(\frac{100}{10}\right) \times \left(\frac{50}{300}\right)$$

$$= -\frac{5{,}000}{3{,}000} = -\frac{5}{3} = -1.67$$

(ii) The E_{AB} being -1.67 (negative cross – elasticity) implies that commodities A and B are complementary goods.

3.6 APPLICATION OF PRICE ELASTICITY OF DEMAND: THE CASE OF INCIDENCE OF TAX.

Taxation is one of the main sources of government revenue, as well as an instrument of government fiscal policy in every modern economy. Government's indirect taxes on goods and services such as Value –added tax (VAT), excise tax and sales tax usually affect both the producers and the consumer. The economists use the concept of *incidence of tax* to describe how the burden of tax on a good (or service) is shared between the producers and the consumers. One of the factors which determine incidence of tax is price elasticity of demand for the commodity or service in question. The incidence of tax on commodities with various degrees of price elasticity of demand are discussed below.

(i) Elastic demand: if the demand for a commodity is price elastic both the producer and the consumer will share the burden of tax, but the greater burden will fall on the producer

As illustrated in Figure 3.3a, the effect of tax is to shift the supply curve upward from S_1S_1 to S_tS_t. The tax revenue is shown as rectangle P_3P_1AC. Based of the higher price paid by the consumer (P_3) as against the initial market price (P_1), the burden of tax on consumer is shown by rectangle (P_3P_1BC).

Similarly, out of P_3 received by producer on each unit of the commodity a tax of P_3 - P_2 goes to the government. Hence, the producers revenue on oQ, of output falls by an area shown as rectangle P1P_2AB, which is greater than rectangle P3P1BC.

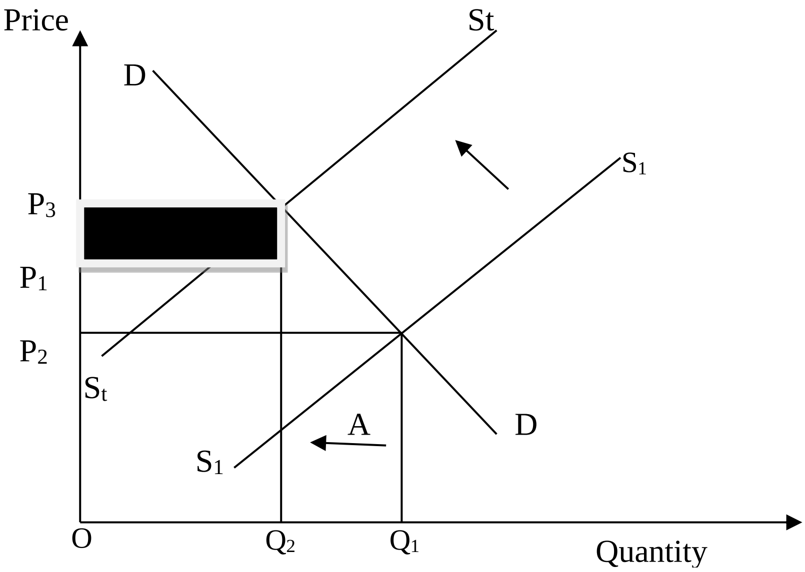


Figure 3.3 Incidence of tax for Elastic Demand

Note that similar analyses will produce the following explanations for other types of elasticity of demand.

(ii) Inelastic Demand: Both the producers and the consumers will share the burden of tax,
but the greater burden will fall on the consumer.

(iii) Unit elastic Demand: The burden of tax will be shared equally between the producers
and the consumers.

(iv) Perfectly elastic demand: The entire burden of tax will fall on the producers

(v) Perfectly inelastic: The entire burden of tax will fall on the consumers. The price
Will increase by the full amount of tax.

SUMMARY

This chapter explored elasticity of demand and supply: that is, how quantity demanded and supplied respond to changes in some of their determinants. The application of the concept of price elasticity of demand to the incidence of government tax reveals that: (i) the more price elastic is the demand for a good the greater the burden of tax on the producers and the less on the consumer; (ii) the more price inelastic is the demand for a commodity, the greater the burden of tax on the consumer, and the less on the producer; (iii) Both the consumers and the producers will share the burden of tax equally if demand is unit price elastic, (iv) the whole burden of tax will fall on the producer, if demand is perfectly price elastic, and (v) the consumers will bear the whole burden of tax if demand is perfectly inelastic.

3.7 PRACTICE QUESTIONS

SECTION A: Multiple Choice Question (MCQ)

CHAPTER THREE

1. When the price elasticity of supply coefficient is greater than 1, the supply of the product is said to be
   A. Perfectly elastic
   B. Perfectly inelastic
   C. Elastic
   D. Inelastic
   E. Unit elastic

2. Which of the following factors does not determine price elasticity of demand for particular goods?
   A. Closeness of substitute goods
   B. The percentage of income spent on the commodity
   C. Habit of the consumer on the commodity
   D. The quantity of the goods demanded
   E. The number of possible uses of the commodity

3. A good is described as inferior when its income elasticity of demand coefficient is
   A. Negative
   B. Positive
   C. Zero
   D. Infinity
   E. One

4. The responsiveness of the quantity demanded of one commodity to a change in the price of another commodity defines
   A. Own price elasticity of demand
   B. Cross-price elasticity of demand
   C. Income elasticity of demand
   D. Income inelasticity of demand
   E. Perfect elasticity of demand

5. When a 15 percent increase in the price of a product leads to a 25 percent increase in the quantity supplied of the product, then the price elasticity of supply coefficient is
   A. 0.6
   B. 1.7
   C. 1.5
   D. 0.33
   E. 0.25

6. A change in the prices of a good corresponds to:
   A. A change in demand
   B. A change in supply
   C. A change in quantity demanded
   D. A shift in demand
   E. A shift in supply

7. Which of the following factors does not determine price elasticity of demand for particular goods?
   A. Closeness of substitute goods
   B. The percentage of income spent on the commodity
   C. Habit of the consumer on the commodity
   D. The quantity of the goods demanded
   E. The number of possible uses of the commodity

8. A good is described as inferior when its income elasticity of demand coefficient is
   A. Negative
   B. Positive
   C. Zero
   D. Infinity
   E. One

9. The responsiveness of the quantity demanded of one commodity to a change in the price of another commodity defines
   A. Own price elasticity of demand
   B. Cross-price elasticity of demand
   C. Income elasticity of demand
   D. Income inelasticity of demand

E. Perfect elasticity of demand

10. When a 15 percent increase in the price of a product leads to a 25 percent increase in the quantity supplied of the product, then the price elasticity of supply coefficient is

A. 0.6
B. 1.7
C. 1.5
D. 0.33
E. 0.25

Answer to Multiple Choice Questions (MCQ)

1. C
2. D
3. A
4. B
5. B
6. A
7. B
8. B
9. B
10. B

Short Answer Questions

1. The responsiveness of quantity demanded for a commodity to changes in consumers income is called…………………….
2. Two commodities are …………………….if the co-efficient of their cross price elasticity of demand is positive.
3. If the quantity demanded of a commodity increases from 100 to 140 when unit price falls from$ 50 to $ 45, the co-efficient of price elasticity of demand is …………………….
4. Given that any quantity of a particular commodity can be bought at a given price, the demand for the commodity is said to be …………………………..
5. What will be the effect on the market price of a product if an increase in its demand and its supply remains constant and perfectly price inelastic?

Answers to Short Answers Questions

1. Income elasticity of demand
2. Substitutes
3. 4
4. Perfectly elastic
5. The market price increases

Question 3.1

(a) Define price elasticity of demand

(b) Explain the factors that determine price elasticity of demand?

Answer

(a) Own price elasticity of demand is the degree of responsiveness of the quantity demanded of a commodity to a change in its own price and measured as percentage change in quantity demanded divided by percentage change in the price of the commodity. That is

$$E_d = \frac{percentage\,in\,Quantity\,Demanded}{Percentage\,change\,in\,\Pr ice}$$

(c) The own price elasticity of demand varies widely across different goods. The demand for some goods is more elastic while others are less elastic. The factors that determine price elasticity of demand include:

i) The number of close substitute goods

The more substitutes of good has and the more close the substitutes are, the more elastic the demand for the good. For example, the beverage, bournvita, has a number of close substitutes such as milo, chocomilo, ovaltine etc. Therefore, the demand for bournvita is likely to be more elastic because the slightest increase in the price of bournvita, consumers of the product will switch to the consumption of one of the substitutes.

On the other hand, if the goods does not have any close substitute, the demand tends to be less elastic or inelastic. For example, there is hardly a substitute to food as a whole hence the demand for food as a whole is inelastic.

ii) The proportion of Income spent on the Commodity

If the price of a good is relatively low such the expenditure on it is an insignificant fraction of most individual or family incomes, then consumers of such a commodity are insensitive to a price change of the good. It tends to have inelastic demand. On the other hand, if the price is high the proportion of income)s) spent on it is large than it tends to have elastic demand. For example, salt has relatively low price in Ghana and families spent insignificant percentage of their incomes on salt. Therefore, even if the price of salt doubles, people find little difficulty in buying the same quantity they used to buy.

iii) Time

The demand for a product tends to be more elastic in the longer period of time and less elastic in the shorter period of time. This is because consumers need a longer time to adjust to changes in price. In the case of substitutes like elasticity and gas cooker, if the price of electricity goes up it will take time for consumers to switch over from electricity cooker to gas cooker for consumers need time to acquire the gadgets.

iv) The number of possible uses

A commodity has high price elasticity of demand (or elastic demand) if it can be put into so many users. With such a commodity, if the price changes, the responses of quantity demanded to the price change becomes significant when changes in quantity demanded for each use are put together. For instance, a commodity such as sugar is used for direct consumption, baking bread and cake, making jam etc. Thus, the demand for sugar may be fairly elastic.

v) Habit Forming Commodity

Some commodities are habit corning while others are not. For habit forming commodities, they tend to have less elastic or inelastic demand because once the habit is formed it is a bit difficult to break away from it when the price of the commodity increases even significantly. For instance, once the habit of smoking cigarettes is formed, it is difficult to break away when the price of cigarettes rise. Non-habit forming commodities tend to have more demand.

vi) Luxuries and Necessities

Luxuries are things we can always do away with hence they tend to have elastic demand. Necessities are difficult to dispense with and they tend to have inelastic demand.

vii) Durability of the Commodity

With some commodities, we require one at a time and they are used for a very long time before they get spoilt. Examples of such goods are cars, televisions, furniture, building, clothes etc. They tend to have low elasticity of demand (inelastic demand) because when the price of a durable commodity changes, consumers will continue to use what they have. Even when the price of such a commodity falls, it is new consumers who will mostly buy them.

Question 3.2

(a) Explain the concept of price elasticity of supply.

(b) What factors determine the price elasticity of supply?

Answer

(a) It is the responsiveness of quantity supplied of a commodity to a change in the price of the commodity and measured as percentage change in quantity supplied divided by percentage change in the market price of the commodity. That is:

$$\text{ES} = \frac{Percentage\ change\ in\ Quantity\ Suppied}{Percentage\ change\ in\ Price}$$

(b) The price elasticity of supply varies widely across different products. Some products have more elastic supply, while others have less elastic supply. The major factors that determine price elasticity of supply are:

(i) The Availability and Mobility of Factors of Production

If factors of production are available then supply response quickly and largely to a change in the price of a product (i.e. supply then tends to be more elastic), but less elastic (inelastic) when factors of production are not available. The more easily factors can be transferred from the production of one good to that of another, the greater the elasticity of supply.

(ii) ***Influence of the weat****her*

If output is controlled by weather conditions, as in the case of agriculture products, the output cannot be controlled by the producer. Hence the supply of such product tends to be less elastic (inelastic).

(iii) ***The Level of Technology***

The extent to which output can be increased depends on the level of technology employed by the producer. Advanced technology used in production tends to make the supply of a product more elastic.

(vi) ***Cost of production***

If the cost involved the production of a product is very high, output cannot be easily increased when the market price increases unless the increase in price is great enough to absorb the cost.

(vii) **Degree of perishability**

The supply of highly a perishable commodity is relatively inelastic and that of a less perishable commodity is relatively elastic. The explanation is that highly perishable goods cannot be stocked for longer period to be released when price for instance rises.

(viii) ***Time (Gestation Period)***

Supply elasticity tends to be greater in the longer period. The longer the period, the easier it is to shift factors of production among products, following a change in their relative prices. This holds for agricultural products, because of the natural time lag between planting and harvesting of crops. In the short-run, the supply of most products tends to be relatively inelastic.

Questions 3.3

(a) Distinguish between price elasticity of demand and income elasticity of demand.

(b) Of what uses are own price elasticity of demand and income elasticity of demand?

Answer

(a) Own price elasticity of demand is the degree of responsiveness of the quantity demanded of a commodity to a change in its own price and measured as percentage change in quantity demanded divided by percentage change in the price of the commodity. That is:

$$\text{ED} = \frac{Percentage\ change\ in\ Quantity\ demand}{Percentage\ change\ in\ Price}$$

On the other hand, income elasticity of demand is the responsiveness of demand for a commodity to a change in consumer income and measured as percentage change in quantity demanded divided by percentage change in income.

$$\text{Ey} = \frac{Percentage\ change\ in\ Quantity\ demanded}{Percentage\ change\ income}$$

(b) The concept of price elasticity of demand has some uses which include the following:

(i) Pricing of goods and services

It is important that price elasticity of demand is considered in decisions to change prices of goods and services. If the demand for a good or service is elastic then to increase sales revenue, price should be reduced. On the other hand, if a demand is inelastic then to increase sales revenue, price should be increased.

(ii) ***Government taxation policy***

Government imposes indirect taxes on goods and services to either raise revenue or discourage consumption of the good and service. Government pays attention to price elasticity of demand imposing indirect taxes on goods and services. If government's aim is to raise revenue then goods and services with inelastic demand will be selected. On the other hand, if the aim is to discourage consumption then goods and services with inelastic demand will be selected.

(iii) ***Minimum wage policy***

Minimum wage is usually fixed above the equilibrium market wage. This causes employers to demand less labour while supply of labour increases creating unemployment of labour. For minimum wage policy to succeed and cause less employment then demand for labour should be inelastic.

Income elasticity of demand on the other hand, has the following uses

(i) Income elasticity of demand shows how the pattern of consumer demand changes in response to economic growth or decline. If an economy is growing, consumers' demand for normal goods increases while the demand for inferior goods falls.

(ii) Income elasticity of demand is also important for businessmen when planning investments. Outputs of inferior goods should not be expanded during times that incomes are rising while those of normal goods could be expanded during times that incomes are rising.

Practice Questions

Question 3.1

a) Explain the concept of price elasticity of supply

b) Highlight any FOUR factors that determine price elasticity of supply

Question 3.2

a) What is cross-price elasticity of demand?

b) APUS Plc, manufactures a product which it sells at ₦5,000 each. Its sales have averaged

60,000 units per week during the past 5 years. But last week its competitor KELE Plc cuts its product price from ₦6,000 to ₦4,500 causing a decline in the sales of the product of APUS Plc to 30,000 units per week.

You are required to:

(i) Calculate the cross-price elasticity of demand for the product of APUS Plc

(ii) Confirm whether or not, APUS Plc and KEKE Plc are close competitors giving a reason.

Question 3.3

(a) What do you understand by income elasticity of demand?

(b) The table below shows the consumer's income and quantities demanded of commodity X at two different periods

Initial Period		New Period	
Income (₦)	Quantity	Income (₦)	Quantity
1.200	12	1,500	10

You are required to:

(i) Compute the point income-elasticity of demand for commodity X

(ii) Describe commodity X on the basis of the result obtained in b(i)

(iii) Determine if the description of commodity X given in b(ii) would have been different if you have computed arc-income elasticity of demand.

Question 3.4

(a) Explain what you understand by perfectly price inelastic supply.

(b) Discuss the effects on the market situation of a commodity if demand increase while supply remains stable and perfectly price inelastic using appropriate diagram.

Question 3.5

Suppose a researcher estimates the demand function of commodity A as:

$Q_a = 150 - 5P_a + 4P_b + 0.125Y$

Where Pa and P_b stand for the unit prices of commodities A and B, respectively and Y stands for average consumer's income. Given that P_a = ₦100, P_b = ₦150 and Y = ₦10,000.

You are required to:

(i) Compute the price elasticity of demand for commodity A and interpret your result

(ii) Compute the income elasticity of demand for commodity A and interpret your result.

(iii) Compute cross- price elasticity of demand for commodity A with respect to the price of commodity B.

(iv) On the basis- of your result in (iii), state the relationship between commodities A and B.

CHAPTER FOUR

THE THEORY OF CONSUMER BEHAVIOUR

4.0 LEARNING OBJECTIVES

After studying this chapter, readers should be able to understand

- How demand curve for a product can be derived
- Analyze the effects of a change in price of a product on consumers' purchases.

4.1 INTRODUCTION

The theory of consumer behaviour offers an explanation of how people as consumers choose which goods and how much of each of them to buy within the limits presented by each person's budget. By implication, the theory is suggested to explain the law of demand i.e. the derivation of the demand curve which we encountered in Chapter 2.

In this chapter, two main alternative explanations of the downward sloping demand curve are presented. First, the ***marginal utility theory*** otherwise referred to as the ***cardinalist approach***. *And second, the* **indifference curve theory**, *otherwise referred to as the* **ordinalist approach.**

4.2 THE MARGINAL UTILITY THEORY

4.2.1 Basic Concepts

Basic concepts in the explanation of the marginal utility theory of consumer behaviour are highlighted in this sub-section.

4.2.1.1 Total Utility

Total Utility refers to the total satisfaction obtained by a consumer from the consumption of some quantity of a good or service. For example, the total utility from Apple (TU_a) is dependent on the quantity of Apple (Q_a) consumed. More formally, this is written as

$$TU_a = f(Q_a) \tag{4.1}$$

Equation (4.1) is called total utility function

4.2.1.2 Marginal Utility

The marginal utility of a particular good or service is the additional satisfaction a consumer derives from one more unit of the good or service consumed. It is obtained as the ratio of change in total utility (ΔTU) to change in the quantity (ΔQ) consumed of a good or service. For instance, marginal utility of Apple can be expressed as

$$MU_2 = TU_2 - TU_1 \qquad (4.2)$$

Table 4.1: Total and Marginal Utilities of Apple

Quantity of Apple per day	Total Utility (Utils)	Marginal Utility
0	0	0
1	50	50
2	95	45
3	130	35
4	160	30
5	175	15
6	180	5
7	175	-5
8	160	-15

The *MU* column in Table 4.1 is obtained using the relationship described in equation (4.2)

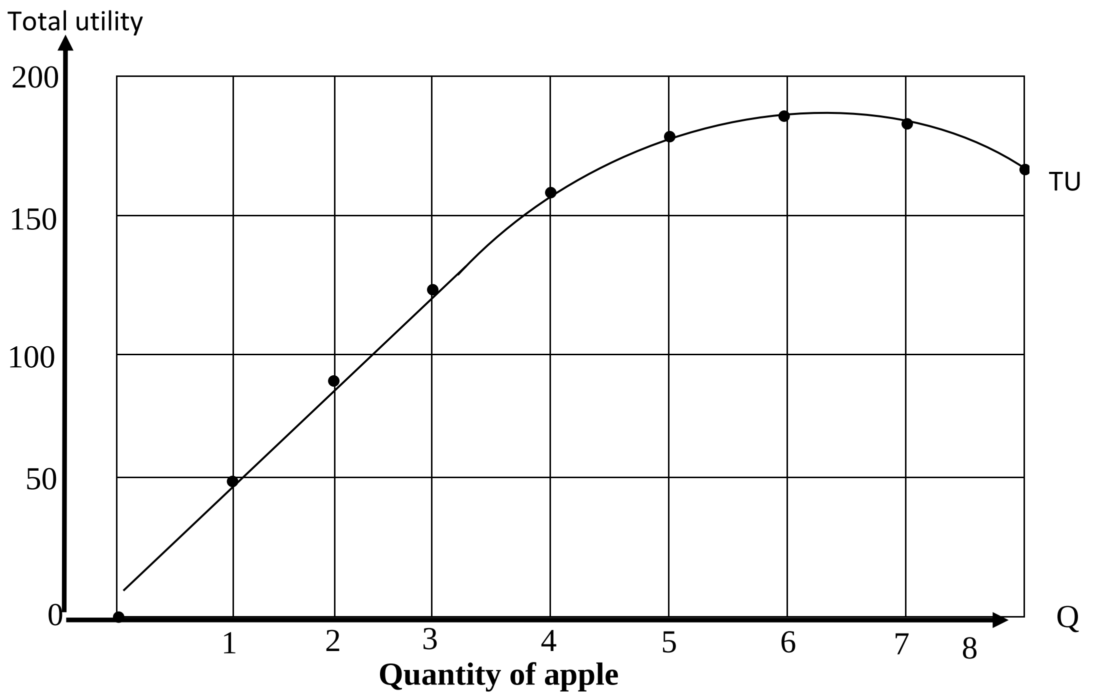


Figure 4.2: Graph of Total Utility of apple consumption

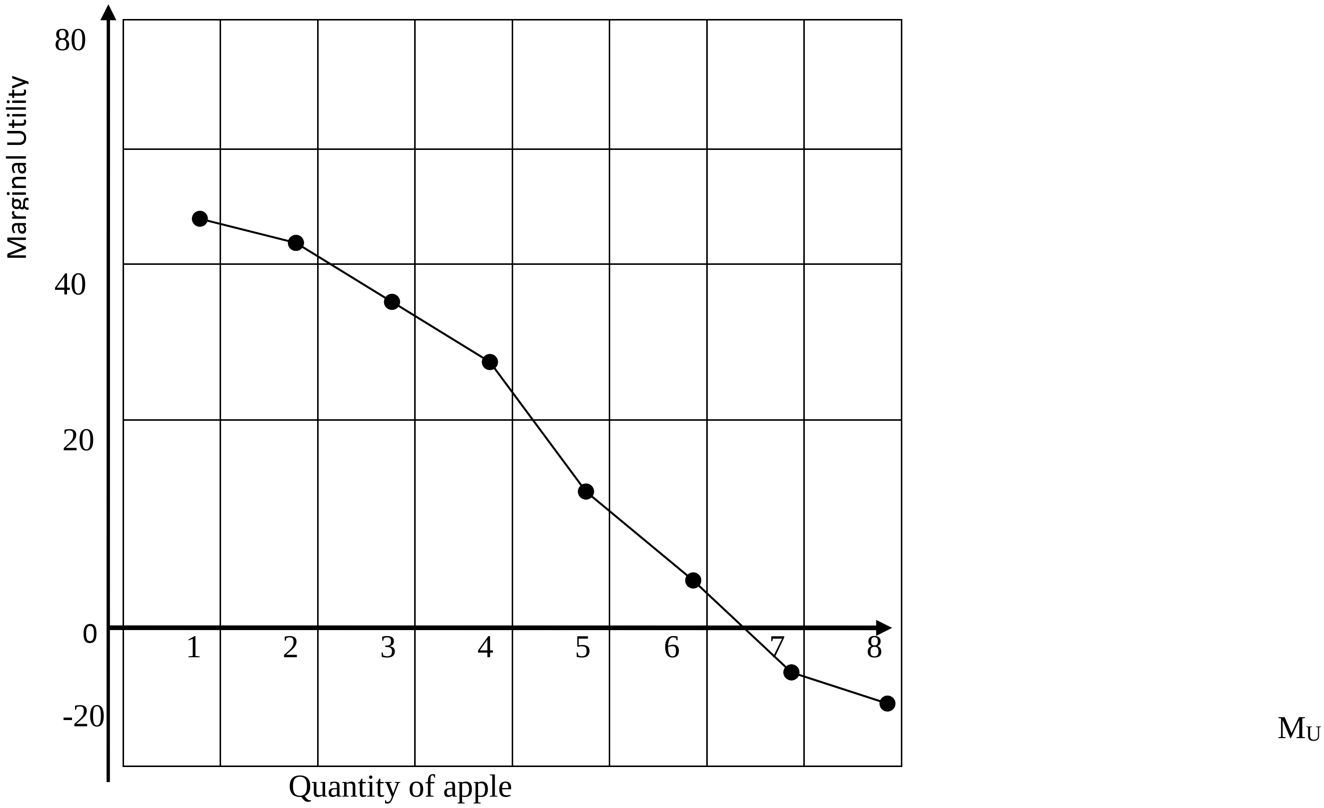


Figure 4.2: Graph of Marginal Utility of Apple Consumption

Table 4.1 shows a total utility schedule for consumption of apple by a hypothetical consumer, while in Figures 4.1 and 4.2 the consumer's total utility and marginal utility curves are plotted from the data in Table 4.1, respectively

4.2.1.3 The law of Diminishing Marginal Utility

The principle of diminishing marginal utility states that as more and more units of a particular good or service are consumed during a specific time period, the satisfaction derived from each additional unit of the good or service decreases.

4.2.1.4 Consumer Equilibrium

This refers to a situation in which consumers cannot increase the total utility they obtain from a given budget (i.e. the amount of money they have to spend at any given time) by shifting expenditure from one good to another. For a consumer that has a given amount of money to spend on two goods, the consumer equilibrium condition is said to prevail if the marginal utilities per naira worth of the two goods are the same. Assuming a consumer has an amount of money income to spend on meat pie and soft drink, the equilibrium conditions in equation form is

$$\frac{MU_m}{Pm} = \frac{MU_S}{P_S} \qquad (4.3)$$

Subject to $Y = P_mQ_m + P_SQ_S$ (4.4)

Where

MU_m = marginal utility of meat pie

MU_s = marginal utility of soft drink

P_m = unit price of meat pie

P_s = unit price of soft drink

Y = consumer's money income

Equation 4.4 is called the consumer's budget constraint. Equations 4.3 and 4.4 are also referred to as the necessary and sufficient conditions for consumer equilibrium, respectively. The consumer equilibrium condition is alternatively referred to as utility maximization condition.

4.2.2 Derivation of The Demand Curve

The following assumptions are made in the derivation of the demand curve via the utility approach:

i. ***Cardinal Utility:*** That the satisfaction derivable from the consumption of a good or service is measurable in some imaginary numerical terms called **utils.**

ii. ***Diminishing Marginal Utility:*** The satisfaction from a unit increase in the rate of consumption of a good or service decreases as more and more units of it are consumed.

iii. ***Constant Marginal Utility of Money:*** The marginal utility of money remains constant as income increases or decreases.

iv. ***Consumer Rationality:*** The average consumer will always maintain the utility maximization posture in his spending pattern.

Assuming again that the consumer has two goods – meat pie and soft drinks to buy, the explanation of the law of demand goes like this:

Given the initial equilibrium position described in equation (4.3) subject to equation (4.4) above,

Suppose the unit price of meat pie falls, the equality of the two ratios in equation (4.3) will be upset to give a disequilibrium situation as described in equation (4.5) below

$$\frac{MU_m}{Pm} \neq \frac{MU_S}{P_s} \qquad (4.5)$$

The assumption of consumer rationality dictates that the situation in equation (4.5) will elicit a reaction from the consumer in terms of change in the quantity of meat pie to be purchased in order to make the ratios in equation (4.3) equal again.

Mathematically, this will require (for example), MU_m to fall in the same proportion as the fall in P_m. According to the law of diminishing marginal utility, one way to get the marginal utility of meat pie to fall is to consume more of meat pie - that is, acting exactly as the law of demand predicts: *A fall in the price of a commodity would cause a greater quantity of it to be demanded,* ***ceteris paribus.***

ILLUSTRATION 4.1

The following table gives the total utilities schedule for the consumption of apple and beer by a hypothetical consumer.

Quantity	Total Utility	
	Apple	**Beer**
1	900	1440
2	1600	2640
3	2150	3600
4	2550	4320
5	2800	4800
6	3000	5040
7	3100	5160

Suppose the consumer has ₦900.00 to spend on apple and beer,

Required:

To determine how many units of each good he would buy to maximize his utility subject to his budget constraint, and given that the unit price of apple is ₦50, and price per bottle of beer is ₦120.

SUGGESTED SOLUTION 4.1

The problem requires calculation of the marginal utility – price ratios for apple and beer – i.e $\frac{MUa}{Pa}$ and $\frac{MUb}{Pb}$ at each level of consumption as shown in the table 4.2 below. Note that P_a = ₦50.00 and P_b = ₦120.00

Table 4.2: Total Utility and Marginal Utility

Units of Apple (Q_a)	TU_a	MU_a	$\frac{MUa}{Pa}$	No of bottles of Beer (Q_b)	TU_b	MU_b	$\frac{MUb}{Pb}$
1	900	-	-	1	1440	-	-
2	1600	700	14	2	2640	1200	10
3	2150	550	11	3	3600	960	8
4	2550	400	8	4	4320	720	6
5	2800	250	5	5	4800	480	4
6	3000	200	4	6	5040	240	2
7	3100	100	2	7	5160	120	1

The above table reveals that the first condition for consumer equilibrium i.e. $\frac{MUa}{Pa} = \frac{MUb}{Pb}$ is fulfilled at three different levels of consumption.

First: For $Q_a = 4$ and $Q_b = 3$

$$\frac{MUa}{Pa} = \frac{MUb}{Pb} = 8$$

Second: For $Q_a = 6$ and $Q_b = 5$

$$\frac{MUa}{Pa} = \frac{MUb}{Pb} = 4$$

Third: For $Q_a = 7$ and $Q_b = 6$

$$\frac{MUa}{Pa} = \frac{MUb}{Pb} = 2$$

However, the first condition is necessary but not sufficient for utility maximization. Thus, to identify which of the three combinations of apple and beer would yield maximum satisfaction, we need to consider the second condition for utility maximization i.e. the budget constraint.

₦50(4) + ₦120(3) = ₦560 ≠ ₦900

Second Combination: $Q_{a\,=\,6,}$ Q_b =5

₦50(6) + ₦120(3) = ₦900

Third Combination: $Q_{a\,=\,7,}$ Q_b =6 $\Rightarrow$ ₦50(7) +120(6) = ₦1,070 ≠ ₦900

Therefore, given his budget constraint, the consumer would derive maximum satisfaction from the consumption of 6 apples and 5 bottles of beer.

4.3 THE INDIFFERENCE CURVE THEORY

4.3.1 Basic Concepts

The indifference curve theory of consumer behaviour is a graphic derivation of demand curves for goods and services. The concepts which are germane to the explanation of the theory are highlighted in this sub-section.

4.3.1.1 Budget Line

It is a line showing various combinations of two goods that the consumer can afford, given his money income and the prevailing market prices of the two goods.

Table 4.2: Budget schedule for Apple and Beer

Table 4.3: Budget Line

Combinations	Quantity of Apple	Quantity of Beer
R	0	4
S	2	3
T	4	2
U	6	1
V	8	0

If we assume that the per unit price of apple is ₦50 and of beer is P_b = ₦100, and that the money income of the consumer is Y = ₦400, the consumer's budget equation can be stated as $50_a + 100_b = 400$. When this budget equation is plotted using the budget schedule in Table 4.2, we have the budget line in figure 4.3

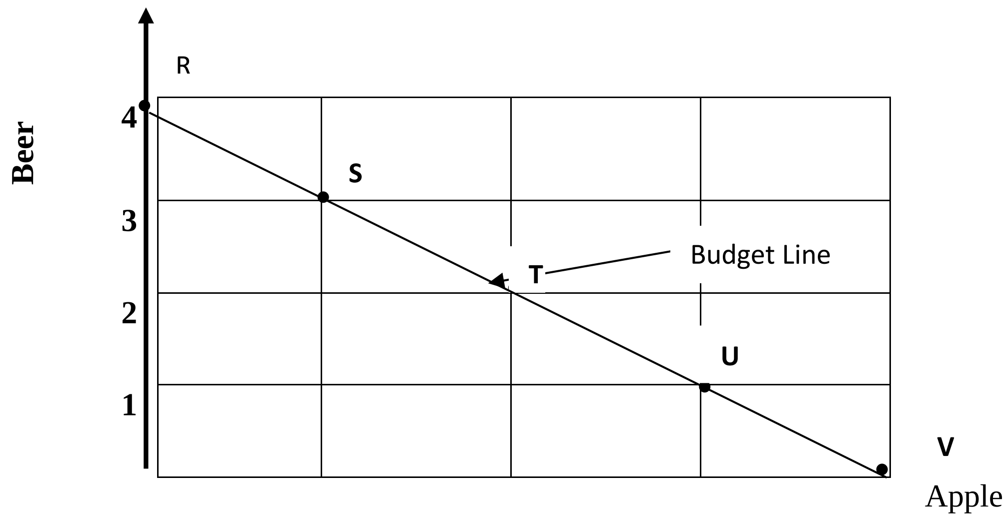


Figure 4.3: Budget Line for Apple & Beer

The slope of the budget line depends on the ratio of the prices of the two goods. The slope of a line is the change in the vertical distance (ΔQ_b) divided by the corresponding change in the horizontal distance (ΔQ_a).

$$\frac{\Delta Qb}{\Delta Qa} = \frac{Pb}{Pa} < 0$$

$$\frac{\Delta Qb}{\Delta Qa} = \frac{Pb}{Pa} \qquad \textbf{(4.5)}$$

Applying equation (4.5) gives the slope of the budget line in figure 4.3 as - $\frac{1}{2}$. The minus sign implies that there is a trade-off, meaning that we have to give up one good to obtain more of the other good.

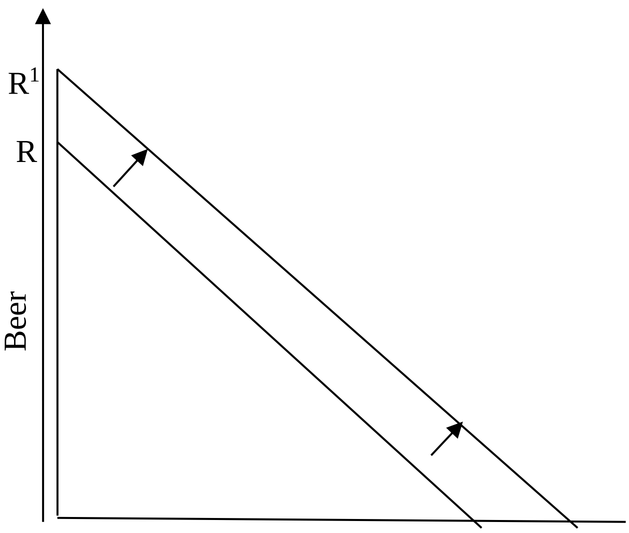
4.3.1.2 Shifts of the Budget Line

There will be a shift of the budget line if:

(i) Consumer's income changes while the prices of the two goods remain constant.

(ii) Relative prices of the two goods change while consumer's income remains constant.

How the changes in consumer's income and changes in the relative prices of the two goods affect the positions of the budget line are illustrated in Figures 4.4a and 4.4b respectively.



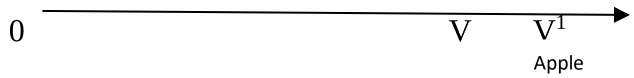


Figure 4.4a: A rightward shift of the budget line due to a rise in income

In Figure 4.4a a rise in income, *ceteris paribus,* will lead to a rightward shift in the budget line, such as from **RV** to R^1**V^1** implying that the customer can obtain more of both goods.

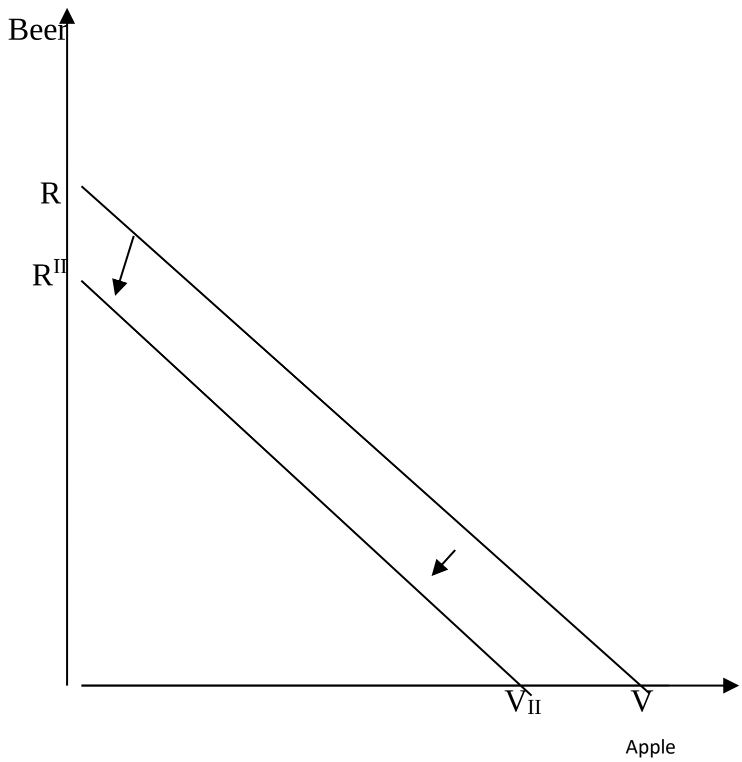
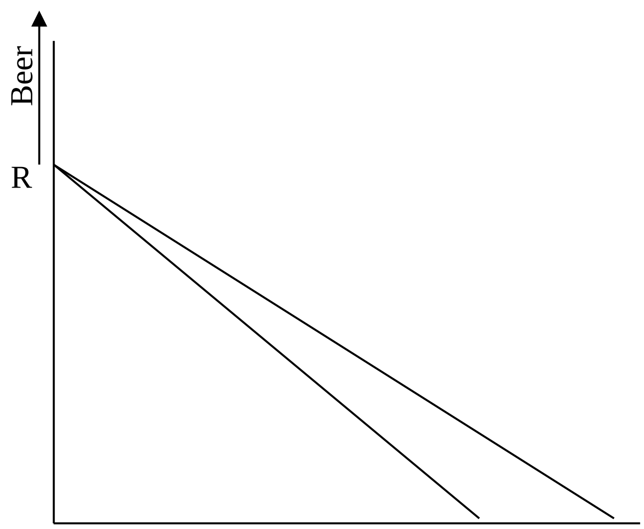


Figure 4.4b: A leftward shift of the budget line due to a fall in income

In Figure 4.4b, a fall in income, *ceteris paribus,* will lead to a leftward shift in the budget line, such as from **RV** to **R^{II}V^{II}** implying that the customer can obtain less of both goods.



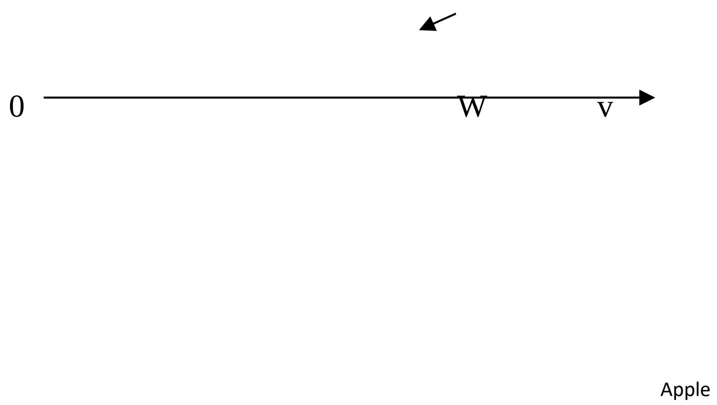


Figure 4.5a: Shift in budget due to a rise in price of apple only

Figure 4.5a illustrates a leftward shift of the budget line along the apple-axis. This implies that when the money income and the price of Beer are constant, a rise in the price of Apple will cause a leftward shift in the budget line leading to a situation where the consumer can only buy less amount of the apple. A decrease in the price of Apple will have the opposite effect as shown in fig 4.5b below.

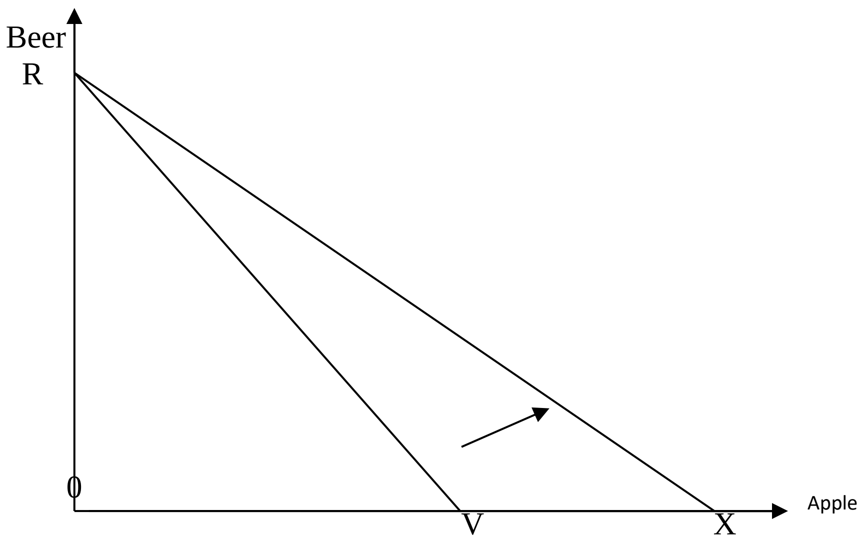


Figure 4.5b: Shift in budget line due to a fall in the price of apple only.

4.3.1.2 Indifference Curve

An **indifference curve** joins together all points representing different combinations of two goods which yield the same utility. It is defined as the locus of various combinations of two commodities which yield the same utility to the consumer.

Table 4.4: Indifference schedule for Apple and Beer

Combinations	Quantity of Apple	Quantity of Beer
M	2	8
N	4	6
O	8	3
P	12	2
Q	16	1

Figure 4.6 illustrates an indifference curve for the data in Table 4.4

The idea here is that all the combinations labelled M to Q are ranked equal in terms of satisfaction derived by the consumer; hence he has no reason to prefer one to the other.

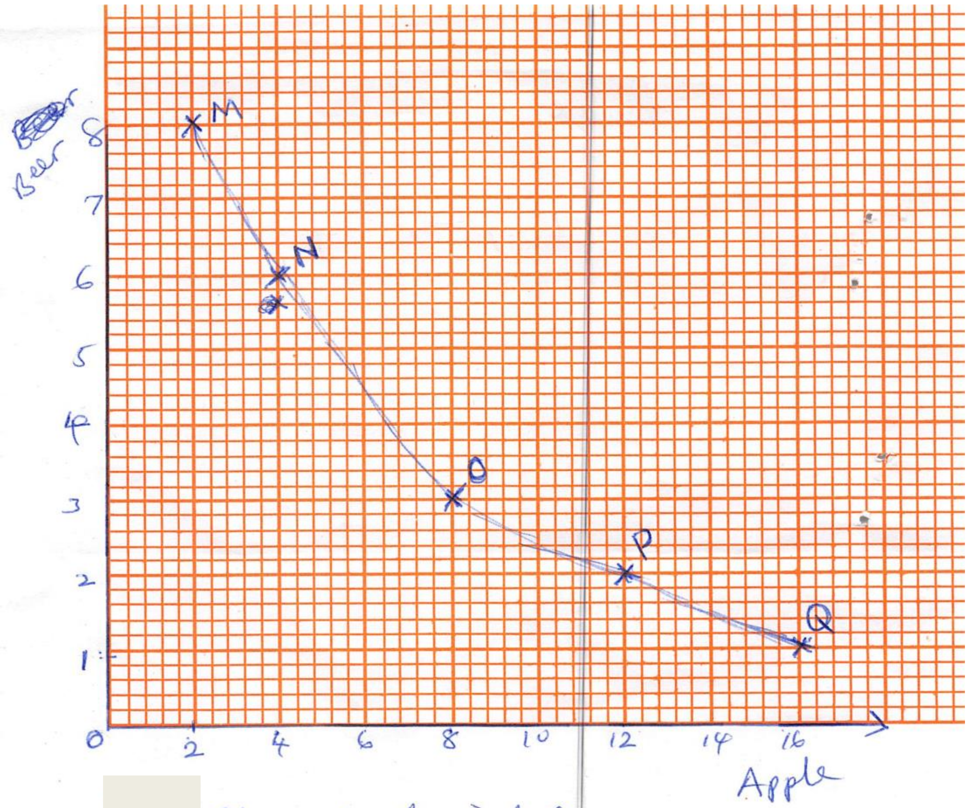


Fig 4.6 An Indifference Curve

A set of indifference curves is called an **indifference map** (see Figure 4.7). The farther away from the origin an indifference curve is, the higher the level of utility it represents.

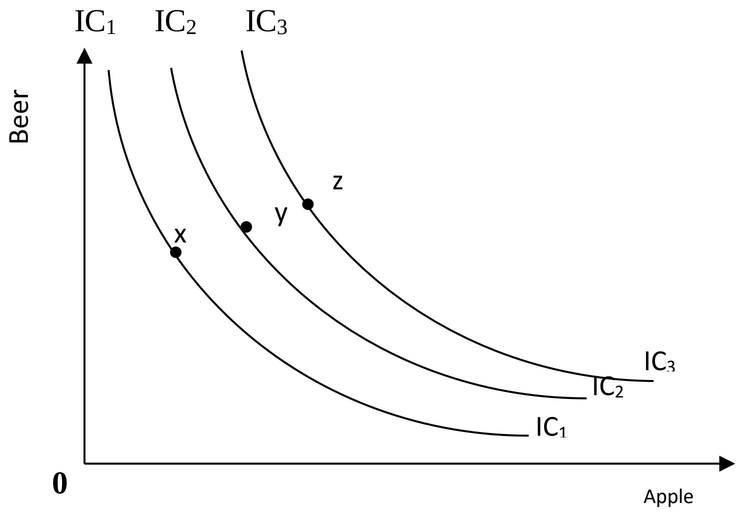


Figure 4.7: An Indifference Map

It follows from figure 4.7, that a rational consumer will prefer combination Y to X, and Z to Y.

4.3.1.3 Marginal Rate of Commodity Substitution (MRCS)

This refers to the amount of one commodity that is required to compensate the consumer for giving up an amount of another commodity for the consumer to maintain the same level of utility. The marginal rate of commodity substitution of apple for beer ($MRCS_{ab}$) is the rate at which apple can be substituted for beer, leaving the consumer at the same level of utility.

Geometrically, $MRCS_{ab}$ is the negative slope of the indifference curve in Figure 4.6

$$MRCS_{ab} = \frac{MUb}{Pa} > 0 \tag{4.6}$$

4.3.1.4 The Law of Diminishing Marginal Rate of Commodity Substitution

A typical indifference curve also illustrates the law of diminishing **marginal rate of commodity substitution.**

The less of one good (beer) the consumer gives up and the more of another commodity (apple) he obtains in the process, the less willing he is to give up a unit of the former good (beer) for an additional unit of the latter good (apple).

A careful inspection of Figure 4.6 will confirm the **law of diminishing marginal rate of substitution.**

4.3.2 Properties of Indifference Curves

The main properties of indifference curves are outlined below:

(i) ***An indifference curve has a negative slope:*** This means that as less quantity of one commodity is consumed (beer), a greater quantity of the other commodity (apple) must be consumed for the consumer to enjoy the same level of utility

(ii) ***Indifference curves can never intersect****:* If two indifference curves intersect, the point of intersection will represent two different levels of utility. Which is illogical or a contradiction. Figure 4.8 shows two indifference curves for a consumer that intersect at point x, meaning that the consumer would be indifferent between x and y on **IC_2** and between x and z on **IC_1** and hence indifferent between y and z. Since z offers more of both goods than y, this violates the assumption that the consumer usually prefers more to less.

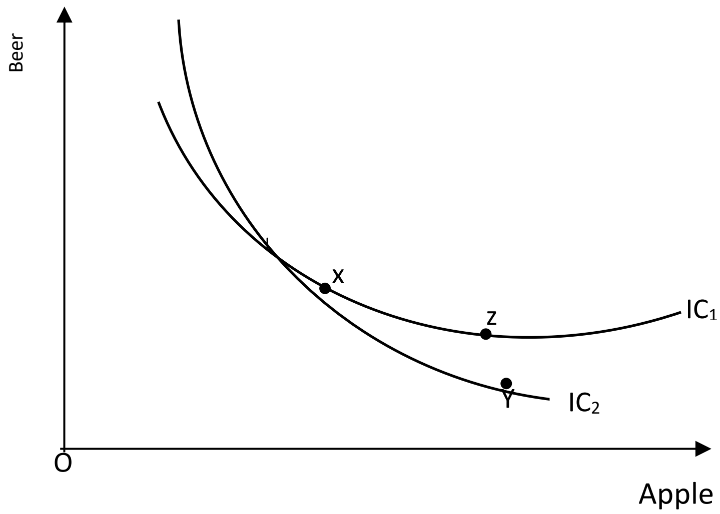
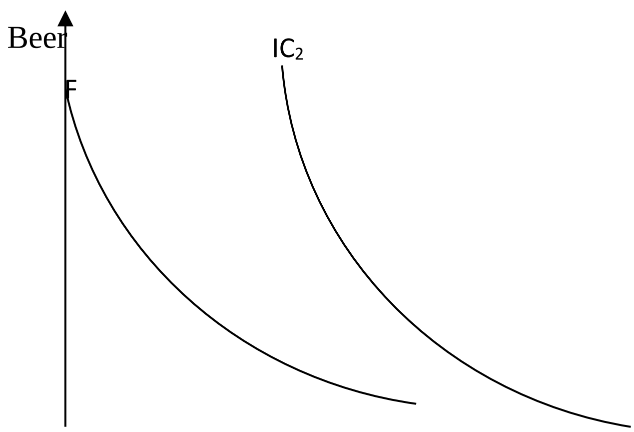


Figure 4.7: Indifference Curves do not intersect.

(iii) ***An indifference curve cannot touch either axis.*** If an indifference curve **IC_2** touches the apple axis at G as in fig 4.9, it implies that the consumer will be having **OG** quantity of apple and none of beer. Similarly, if an indifference curve **IC_1** touches the beer axis at **F**, the consumer will have only **OF** quantity of beer and none of apple. The assumption that the consumer buys two goods in combinations is violated.



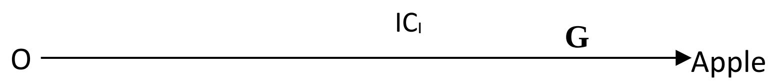


Figure 4.9: An indifference Curve cannot touch either axis.

(iv) ***A higher indifference curve.*** An indifference curve to the right of another represents a higher level of utility and preferable combination of the two goods. In Figure 4.10, below, the indifference curve **IC_2**, represents a higher level of utility than indifference curve **IC_1**. Therefore, as the distance of the indifference curve to the origin increases, the level of utility represented by the indifference curve also increases.

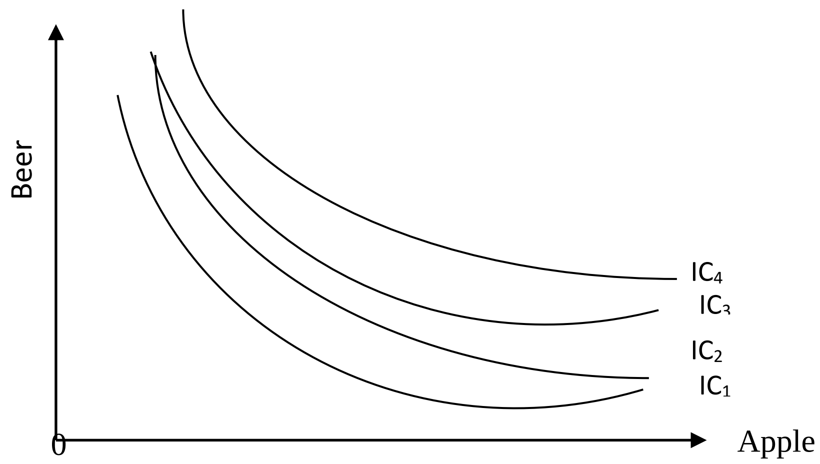
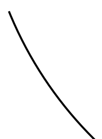


Figure 4.10: A higher Indifference Curve

(v) ***Indifference curves are convex to the origin.*** This property is expressed in the axiom of diminishing marginal rate of commodity substitution which implies that, to obtain every additional unit of one commodity (apple), the consumer is willing to sacrifice increasing number of the other commodity (beer).

4.3.3 Consumer Equilibrium Under Indifference Curve Analysis

Under the indifference curve approach, the consumer equilibrium is achieved when the consumer reaches the highest possible indifference curve (gets maximum satisfaction) given his budget constraint represented by his budget line. The consumer equilibrium position is illustrated in Figure 4.11.



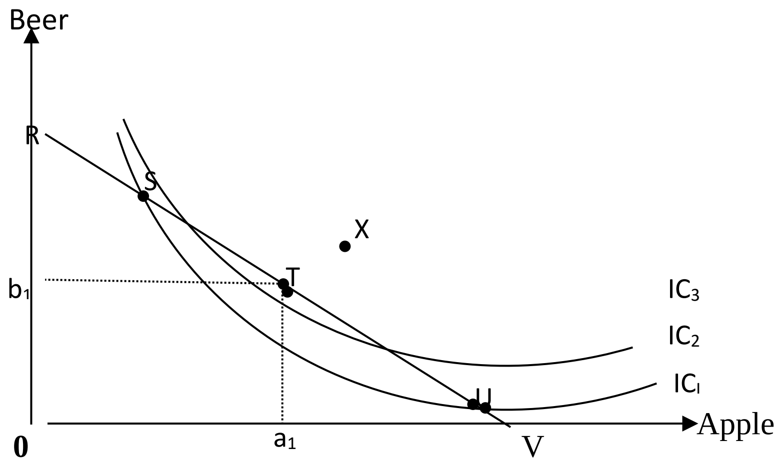


Figure 4.11: Consumer Equilibrium Position

In Figure 4.11, the consumer can afford to buy any of the combinations of apple and beer described by points S, T, and U given his budget line **RV.** However, he prefers the combination on point **T** (i.e a_1 quantity of apple and b_1 quantity of beer) because it gives him greater utility (**IC_2**) given his budget limitation than any of the combinations on points S and U (**IC_1**). He should have preferred x on **IC_3** but this is beyond the limit of his budget. it follows, therefore that:

> A consumer maximizes his satisfaction at the point where the budget line is just tangent to an indifference curve

In Figure 4.11, point T is called consumer equilibrium point or optimum consumption point. At that point, the slope of the indifference curve is equal to the slope of the budget line (see equation 4.7)

$$\frac{MUa}{MUb} = \frac{Pa}{Pb} \tag{4.7}$$

Equation (4.7) is identical to equation (4.3) obtained for consumer equilibrium point under the marginal utility approach.

4.3.4 The Price – Consumption –Curve and Derivation of Demand Curve

Suppose money income is held constant and the only thing allowed to vary is the elative price of the commodity (the price of apple relative to that of beer in this case). We can then define the price-consumption curve (PCC) as a curve joining the equilibrium consumption points of the consumer

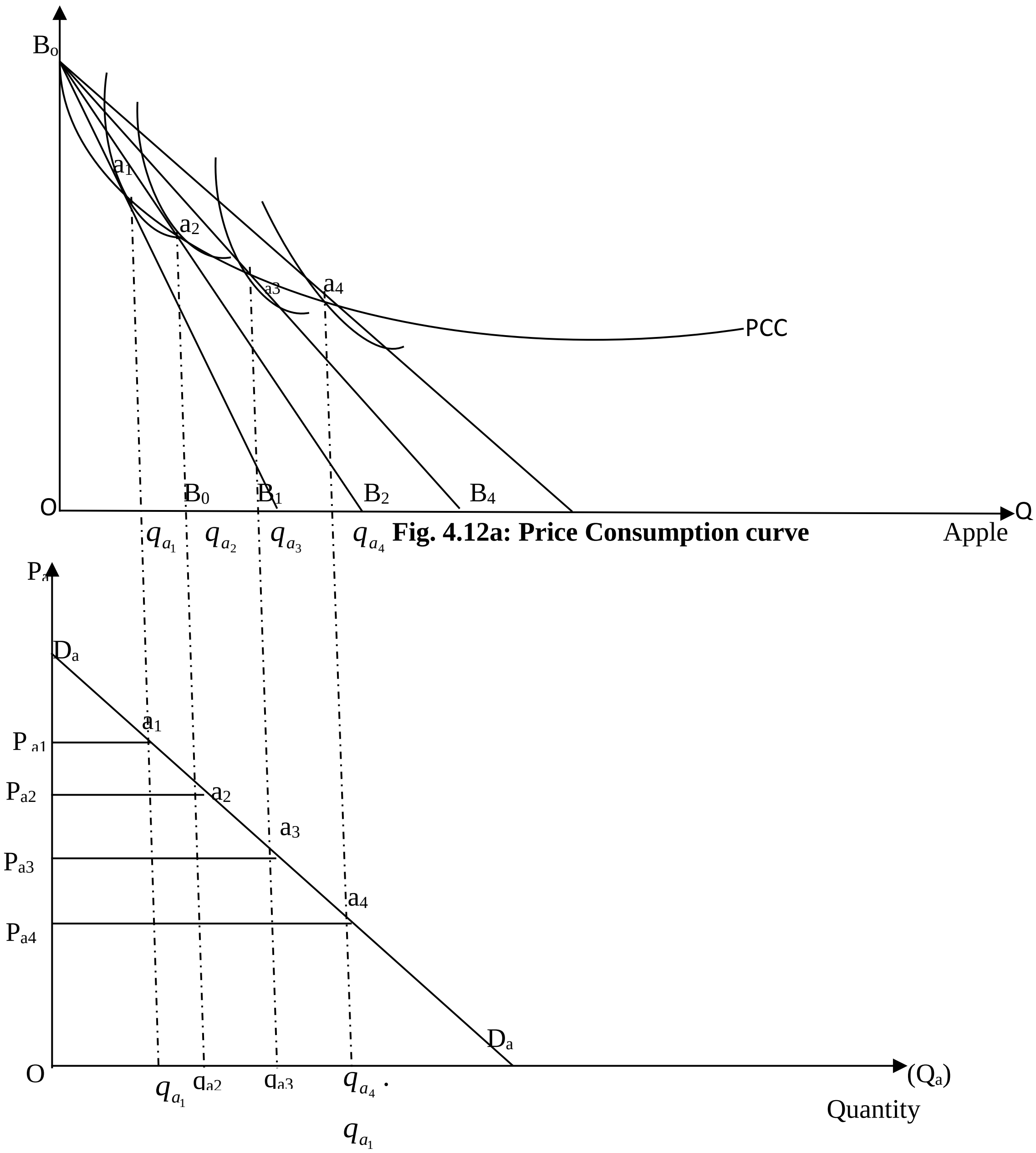


Fig. 4.12a: Price Consumption curve

Fig. 4.12b: Demand curve for Apple

It will be seen from fig 4.12a above that as the relative price of Apple falls from B_0 to B_3, the equilibrium quantity bought increases from q_{a_1} to q_{a_4}. The curve joining the equilibrium points in fig 4.12a is the PCC.

The importance of the PCC lies in the fact that the demand curve, which expresses the law of demand, can be derived from it as done in fig 4.12b.

Each equilibrium point in fig 4.12a is projected into an appropriate point in the price-quantity (demand) diagram in fig 4.12b. The points a_1, a_2, a_3 and a_4 in fig 4.12a become points a_1, a_2, a_3, a_4 respectively in fig. 4.12b. The line joining the points a_1,a_2,a_3 and a_4 in fig 4.12b give the demand curve for apple (D_aD_a). As shown by D_aD_a, demand for apple is inversely related to its price. As the price of apple falls, the quantity of apple bought increases.

4.4 SUMMARY

In this chapter, we presented two alternative approaches to the derivation of individuals demand curve for a normal commodity namely the marginal utility approach and the indifference curve approach.

4.5 REVISION QUESTIONS

SECTION A :

Multiple Choice Questions

1. The theory of consumer behaviour is propounded primarily to
   I. Validate the law of demand
   II. Disprove the law of demand
   III. Rationalize the downward sloping demand curve

   A. I only
   B. II only
   C. III only
   D. I and II only
   E. I and III only

2. The presumption that the average consumer will always maintain the utility maximization position in his spending is referred to as

   A. Cardinal utility
   B. Consumer equilibrium
   C. Consumer rationality
   D. Diminishing marginal utility
   E. Constant marginal utility of money

3. Which of the following indicates the negative slope of the indifference curve?

   A. Marginal rate of commodity substitution
   B. Axiom of transitivity
   C. Budget schedule
   D. Consumer equilibrium
   E. Ordinal utility

4. Which of the following gives the reason why it would be logically impossible for two indifference curves to cross?

   A. The law of diminishing marginal utility
   B. Axiom of transitivity
   C. Assumption of consumer rationality
   D. The negative slope of the indifference curve
   E. The law of diminishing marginal rate of commodity substitution

5. The adjustment of demand to the relative price change alone is called

A. The substitution effect
B. The income effect
C. The total effect
D. Market demand curve
E. Individual demand curve

6. The theory of consumer behaviour is propounded primarily to
I. Validate the law of demand
II. Disprove the law of demand
III. Rationalize the downward sloping demand curve

A. I only
B. II only
C. III only
D. I and II only
E. I and III only

7. The presumption that the average consumer will always maintain the utility maximization position in his spending is referred to as

A. Cardinal utility
B. Consumer equilibrium
C. Consumer rationality
D. Diminishing marginal utility
E. Constant marginal utility of money

8. Which of the following indicates the negative slope of the indifference curve?

A. Marginal rate of commodity substitution
B. Axiom of transitivity
C. Budget schedule
D. Consumer equilibrium
E. Ordinal utility

9. Which of the following gives the reason why it would be logically impossible for two indifference curves to cross?

A. The law of diminishing marginal utility
B. Axiom of transitivity
C. Assumption of consumer rationality
D. The negative slope of the indifference curve
E. The law of diminishing marginal rate of commodity substitution

10. The adjustment of demand to the relative price change alone is called

A. The substitution effect
B. The income effect
C. The total effect
D. Market demand curve

E. Individual demand curve

Section A: Solutions to Multiple Choice Questions

1. A

2. C

3. A

4. B

5. A

6. A

7. C

8. A

9.

10. B

11. A

Short Answer Questions

1. The additional satisfaction which a consumer derives from the consumption of one more unit of a commodity is called ………………………
2. The maximum combination of two goods that the consumer can buy given money income and unit prices of the goods is illustrated graphically by …………….
3. The locus of points representing different combinations of two goods which gives the consumer the same level of satisfaction is ………………………
4. The negative slope of the indifference curve is called………………………
5. Under the indifference curve theory of consumer behaviour, the equilibrium position of rational consumer is illustrated graphically by……………………

Solution To Short Answers Questions

1. Marginal utility
2. The budget line
3. Indifference curve
4. Marginal rate of commodity substitution
5. The point of tangency between the budget line and indifference curve.

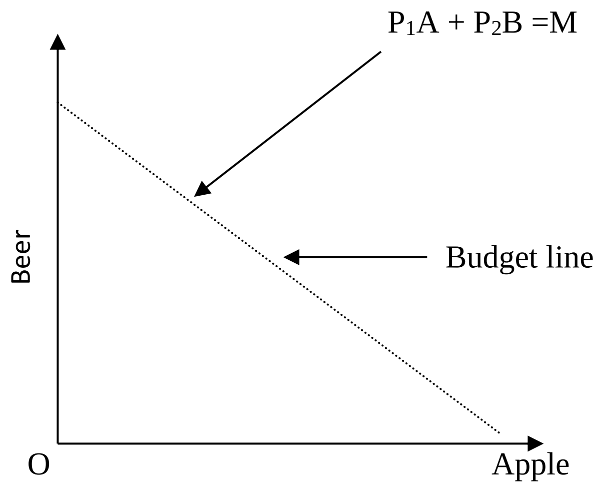
Question 4.1

(a) Make a clear distinction between a budget line and an indifference curve.

(b) Outline the main properties of an indifference curve.

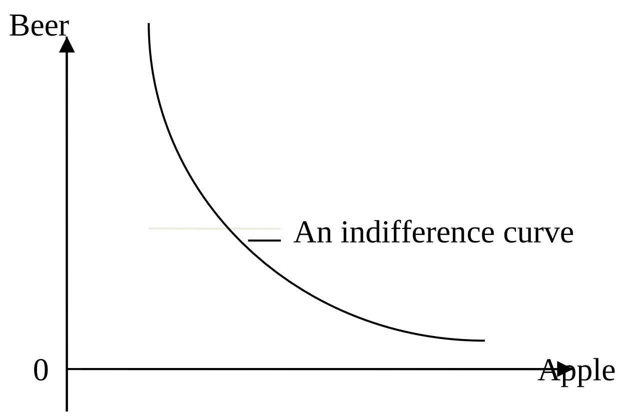
Solution

(a) A budget line shows different combinations of two goods that the consumer can afford, given his money income and market prices of the two goods.



The above budget line is drawn on the assumption that the consumer's income is M, unit price per apple is P_1, and unit price of beer P_2

An indifference curve, on the other hand, joins together all points representing different combinations of two goods which yield the same utility.



IC

An indifference curve is illustrated in the above diagram.

(b) The main properties of an indifference curve are highlighted below:

(i) **An indifference curve has a negative slope**. This means that as less quantity of one commodity is consumed a greater quantity of the other commodity must be consumed for the consumer to enjoy the same level of utility.

(ii) **Indifference curves do not intersect.** If two indifference curves intersect, the point of intersection will represent two different levels of utility, and this will be unreasonable and illogical.

(iii) **An indifference curve cannot touch either axis**. The assumption that the consumer buys two goods in combination if it indifference curve touches either of the two axis.

(iv) **A higher indifference curve.** An indifference curve to the right of another represents a higher level of utility and preferable combination of the two goods.

(v) **Indifference curves are convex to the origin**. This property is expressed in the axiom of diminishing marginal rate of substitution which implies that, to obtain every additional unit of one commodity the consumer is willing to sacrifice increasing number of the other commodity.

Note that

It would be necessary to explain with relevant diagrams if it is explicitly stated in the question that the characteristics of the indifference curve should be discussed or explained fully.

Question 4. 2

a) With the aid of relevant diagram describe an indifference map.

b) Suppose a consumer has ₦1000 to spend on stick meat and soft drink in a particular outing. The unit prices of stick meat (P_m) and soft drink (P_d) are given as ₦200 and ₦100, respectively. And, the consumer must consume 3 pieces of stick meat and 4 bottles of soft drink to maximize his utility subject to his budget constraint. Illustrate and explain the above information using the indifference curve – budget line diagram.

Answer

a) An indifference map is a set of indifference curves each corresponding to a different level of satisfaction. The closer an indifferent curve is to the origin, the closer an indifferent curve is to the origin, the lower the level of satisfaction represented. The indifference curve IC_4 represents the highest level of satisfaction in the diagram below. Thus an indifference map shows a complete picture of the individual consumer's preference.

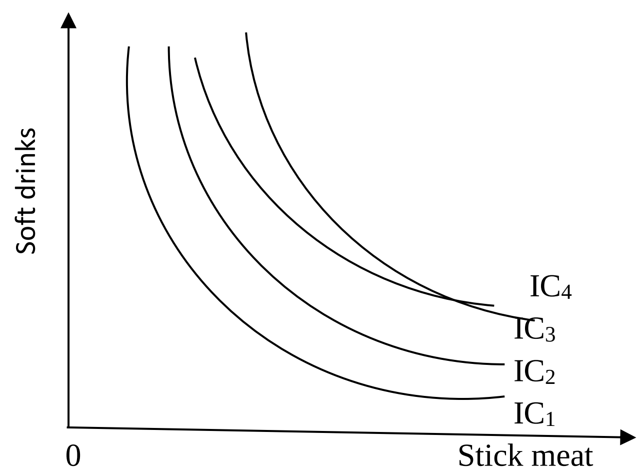
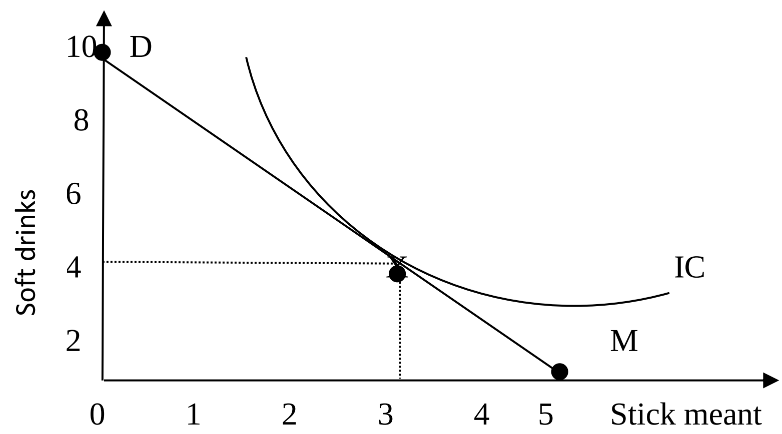


Figure: An indifference Map

b) The information provided is illustrated in the following diagram.



In the above indifference curve- budget line diagram, the budget line is labeled DM and the indifference curve IC pint D is obtained as:

$$D = \frac{Y}{Pd} = \frac{1000}{100} = 10$$

Point M is obtained as:

$$M = \frac{Y}{Pd} = \frac{1000}{200} = 5$$

Under the indifference curve theory of consumer behavior, utility is maximized and consumer attains equilibrium at the point where the indifference curve is tangential to the budget line, marked as point X in the above diagram.

Question 4.3

(a) State the law of diminishing marginal utility

(b) The table below show a consumer's utility form a malt drink

Malt drink (bottles per day)	Total Utility (TU)	Marginal Utility (MU)
0	0	-
1	A	20
2	35	B
3	C	10
4	50	D
5	E	0
6	45	-5

You are required to:

(i) Calculate the values of A,B,C,D and E and complete the table

(ii) Determine whether or not the principle of diminishing marginal utility apply to the consumer's consumption of malt drink. Explain your answer.

Answer

a. The law of diminishing marginal utility states that as more and more units of a commodity are consumed, during a specific period of time, total utility, increases but at a decreasing rate, the consumption of all other commodities being held constant.

b. A to E are the missing values of total utility (TU) and marginal utility (MU) in the table. Therefore, using the relationship:

$$M = \frac{\Delta TU}{\Delta Q}$$

To calculate A(TU): To calculate B(MU):

To calculate A(TU): To Calculate B(MU) $B = \frac{35-20}{2-1d}$

$\frac{A-0}{1-0}$ = 20 = 15

A = 20

To calculate C(TU)

$\frac{C-35}{3-2}$ =10

C = 45

To calculate D(MU)

$$D = \frac{50 - 45}{4 - 3}$$

= 5

To calculate E(TU):

$\frac{E-50}{5-4} = 0$

$$E = 50$$

Malt drink bottles per day(Q)	Total Utility (TU)	Marginal Utility(MU)
0	0	-
1	20	20
2	35	15
3	45	10
4	50	5
5	50	0
6	45	-5

The consumer's consumption of malt drink validates the principle of diminishing marginal utility. A cursory of glance at the completed table reveals that as more and more bottles of malt drink are consumed, total utility increases a a diminishing rate, that is, from 20 to -5 (See the marginal utility column).

PRACTICE QUESTIONS

1 (a) Explain the terms: total utility (TU) and marginal utility (MU)

(b) State and explain the equimarginal principle

(c) Explain the role of the marginal utility theory in economic analysis

2 (a) Outline the basic assumptions underlying the marginal utility theory

(b) Explain the relationship between total utility and marginal utility and illustrate your answer with the aid of appropriate diagram.

3 (a) Describe the budget line and indifference curve

(b) Explain the derivation of the downward sloping demand curve under the indifference curve theory.

CHAPTER FIVE

THE PRODUCTION PROCESS

5.0 LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- Define production and explain the types of production
- Discuss the factors of production
- Describe a production function
- Analyse short-run and long-run productions
- Explain division of labour
- Explain location of firms and localization of industries
- Describe the various forms of business organizations.

5.1 INTRODUCTION

Production is a process that transforms factors of production or inputs (land, labour, capital and entrepreneurship) into output of goods and services. Goods are tangible items or physical things that we can touch and see with our eyes such as television, shirts and rice. Services, on the other hand, are intangible things we cannot touch, such as medical service, teaching, transportation and concerts. A production process is not complete until the good or service reaches the final consumer.

5.2 TYPES OF PRODUCTION

Production may be categorized into three main types: primary, secondary and tertiary.

5.2.1 Primary

This involves the gathering of raw materials from their natural locations. It may include mining, quarrying, farming, forestry and fishing. This type of production provides raw materials for manufacturing and may also be called primary production.

5.2.2 Secondary

This involves all stages that the good passes through after extraction to manufacturing. Examples include the transformation of limestone to cement, wheat to floor, flour to bread, cotton to textile materials and so on.

5.2.3 Tertiary

These involve the services people give directly to members of society such as the services rendered by teachers, lawyers, the police, the armed forces, doctors, accountants, musicians, wholesales and retailers, so on. These services have indirect impact on the production of goods and services.

5.3 FACTORS OF PRODUCTION

The factors of production or inputs that are used to produce goods and services are classified into land, labour, capital and entrepreneurship.

5.3.1 Land

Land is the *natural resource* used in combination with the other resources to produce goods and services. Land includes the soils as well as all other resources that have been provided by nature (the water bodies, forest resources, etc). The price we pay to use land is rent.

Land is a gift of nature, fixed in supply, geographically immobile (i.e. cannot be moved around) but may be occupationally mobile (its usage can be changed).

5.3.2 Labour

Labour is the human resource used in production. It is human effort exerted in production. Hardly can production go on without labour. Labour can be skilled, meaning specialized intellectual or mental knowledge used in production. It can also be unskilled, meaning physical or mental effort undertaken by individuals in production. The reward or the price paid to hire labour is wage or salary.

Labour is both geographically and occupationally mobile and it is impossible to separate both the ownership and use of labour. The supply of labour depends on the size of population which in turn depends on birth rate, death rate and level of migration.

5.3.3 Capital

Capital is a man-made resource which is used in production of goods and services. It is wealth which is set aside for the creation of further wealth. It includes machines, factory buildings, vehicles, etc. It may be classified into fixed capital and circulating capital. Fixed capital includes any man-made item (such as machines, factory buildings, vehicles, etc.) used in the production process but does not get exhausted in the process. The *circulating capital*, unlike the fixed capital, is used up in the production process and includes the stock of raw materials, partly finished goods (known commonly as work-in-progress and stock of finished goods waiting to be sold.

The reward or the price of capital is interest. Capital is accumulated over a period of time and is subject to depreciation (wear and tear).

5.3.4 Entrepreneur

Entrepreneur is a special factor of production in the sense that it is in charge of the organization of the other three factors of production (land, labour and capital) in order to produce goods and services, bears the risk involved in business and manages the business. The entrepreneur's reward is profit or dividend.

Functions of the entrepreneur

(i) The entrepreneur is the owner of the business and provides the capital. The ownership of business may be one person or a group of persons who have provided the capital.

(ii) The entrepreneur organizes and combines the other three factors of production for the production of goods and services which are used to satisfy human wants.

(iii) The entrepreneur bears the risk of business failure when there is any. On the other hand, if there are any benefits, he enjoys them.

(iv) The entrepreneur is the principal decision-maker in any production process, though this may be shared with other people. He makes the broad decision on policy and is at the nerve-centre of management control.

(v) It is the main objective of every nation to achieve economic growth and development. A nation achieves economic growth when it is able to increase the final goods and services produced in the country over a given period of time usually one year. It is the entrepreneur who is the engine of economic growth in every nation because he produces these goods and services.

5.4 THE PRODUCTION FUNCTION

The production process involves the transformation of inputs or factors of production into output of goods and services. A production function shows the maximum quantities of a product that can be produced using various sets of inputs and an existing technology at a given time period. It may be shown as a table or a mathematical equation.

5.4.1 Periods of Production

Production is a process and goes on over a period of time. There are two main periods of production in economics namely, the short run and the long run.

(a) Short-Run Period in Production Analysis

This is a period of production during which some factors of production are fixed while some others are variable. The fixed inputs cannot be varied when demand conditions require a change in output. This period varies from firm to firm, depending on the type of production a firm undertakes and the inputs it uses.

(b) Long-Run Period of Production

This is a period of production within which all inputs are variable. This implies that if demand conditions warrant a change in production, all the inputs can be varied to achieve this.

5.4.2 Classification of Inputs

In production theory, inputs are divided into Fixed and Variable inputs. The distinction is important in that it helps us to determine whether a firm which does not cover its total costs of production (loss making firm) should stay open or shut down in the short-run.

(a) Fixed Input

A fixed input is an input whose quantity cannot be varied in the short-run when demand conditions require an increase or a decrease in production e.g. factory building, capital equipment, some skilled labour, etc.

(b) Variable Input

A variable input is that which can be changed at all times in the production process when demand conditions require a change in production e.g. raw materials, electrical power, unskilled labour, etc.

5.4.3 Production Analysis in the Short-run

In the production process, the output or product may be described in three ways in economics: total product (TP), average product (AP) or marginal product (MP).

(a) Total Product (TP)

Total product is the maximum output that a firm can produce over a given period of time when it employs a given set of inputs.

(b) Average Product (AP)

Average product is the output per unit of the variable factor employed. In other words, it is the productivity of the variable factor. It is measured by dividing total product (TP) by the amount of variable factor employed i.e

$$AP = \frac{TP}{Variable\ Factor}$$

Average product is measured in respect of a variable factor. For instance, where the variable factor is say labour (L), then it is the average product of labour (AP_L) or the productivity of labour that we can measure as:

$$AP_L = \frac{TP}{L}$$

(c) Marginal Product (MP)

Marginal product is the change in total product resulting from the use of one more (or less) unit of a variable factor. It may also be explained as the rate of change in total product with respect to a variable factor. i.e.

$$MP = \frac{\Delta TP}{\Delta\ in\ Variable\ Factor}$$

where Δ = change

For example, the MP of labour (MP_L) is measured as:

$$MP_L = \frac{\Delta TP}{\Delta L}$$

(d) Production Schedule

Table 5.1: A Short-run Production Schedule

Capital (K)	Labour Units (L)	Total Product Of Labour (TP_L)	Average Product of Labour (AP_L)	Marginal product of Labour (MP_L)
10	0	0	0	-
10	1	100	100	100
10	2	240	120	140
10	3	390	130	150
10	4	520	130	130
10	5	610	122	90
10	6	660	110	50
10	7	660	94.3	0
10	8	620	77.5	-40
10	9	560	62.2	-60
10	10	460	46	-100

Table 5.1 shows a Short-run Production Schedule. It is a short-run schedule because it has fixed input (capital) as well as variable input (labour). From Table 5.1 it is observed that as the employment of the variable factor (labour) increases, total product also rises from zero (0) to six hundred and sixty (660) when employment of labour is seven (7). Any additional employment of units of labour i.e. when labour is eight units (8) and above causes the total product to decline to four hundred and sixty (460) when ten units of labour is employed. The average and the marginal products of labour as depicted in Table 5.1 increase, but both eventually decline. Marginal product declines to zero (0) and even turns negative after the employment of the seventh unit. Average product on the other hand declines but remains positive so far as total product remains positive.

(e) Production Graphs

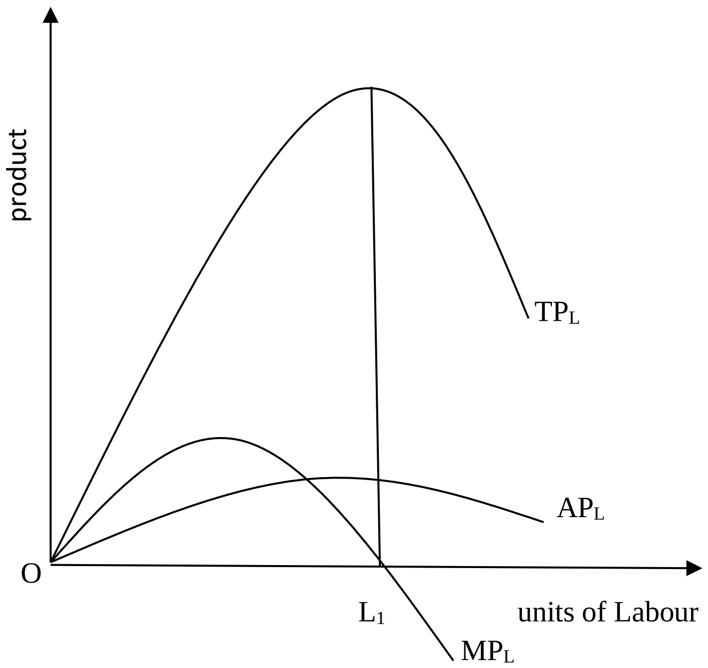


Fig. 5.1: Total Product, Average Product and Marginal Product Curves.

Figure 5.1 is sketched from Table 5.1, the Short-run Production Schedule. The figure shows the relationship between MP_L, AP_L and TP_L. The MP_L curve cuts the AP_L curve at the maximum of the AP_L curve. The AP_L curve rises as long as the MP_L curve is above it. At the highest point of the MP_L curve, the TP_L curve starts to experience diminishing returns to variable proportions. At the maximum of the TP_L, MP_L is equal to zero (i.e the MP_L curve intersects with the horizontal axis). When AP_L begins to decline the MP_L curve is below the AP_L curve. AP_L rises and falls, but never reaches zero (0)

5.5 THE LAW OF DIMINISHING RETURNS

The Law of Diminishing Returns states that other things being equal – e.g. given technology, socio-cultural environment, etc. – as more and more units of a variable input (say labour) are employed in combination with a fixed input (say capital), initially MP increases but eventually it diminishes.

The following are the conditions under which the law operates:

(i) The law is a short-run phenomenon where the producer uses fixed and variable inputs. All other inputs, apart from the variable input are held fixed in quantity.

(ii) The variable factor may be any input usually used in production (e.g. labour).

(iii) The variable factor is applied unit by unit, and each unit is identical in quantity and quality.

(iv) It applies in any production sector such as agriculture, manufacturing retailing, advertising, mining etc.

It is a law that describes the behaviour of the marginal product (MP). Therefore, it is the MP that eventually diminishes and it does so only after increasing. When fixed and variable inputs are combined to produce a product, the fixed input (capital) helps the variable input (labour). The marginal output of the variable input depends on the amount of the fixed input the variable input has received. In the first instance, if the amount of the fixed input received by the variable factor is relatively plentiful marginal output of the variable factor increases. In the second instance, as the variable input increases beyond a certain unit, they obtain less and less amounts of the fixed input to combine with which leads to decrease in marginal output. Each extra unit of the variable input adds less and less to total product. In the third instance, if the employment of more and more units of the variable input continues, there will be a cluster of the variable input such that the amount of fixed input each unit of variable input gets to combine with becomes insignificant, invariably turning negative.

In summary, there is a certain optimum combination of fixed and variable inputs which when exceeded will bring about diminishing returns. The law of diminishing returns, otherwise known as the law of variable proportion to variable proportion is important because it helps the producer to determine the best proportion in which to combine the fixed and variable inputs. If the MP is increasing it means there is too much of the fixed input in combination with the variable input. If the MP falls to zero, there is too little of the fixed input. This guides the producer in determining the best proportion between the fixed and variable inputs.

5.6 Production Analysis in the Long-run

The long-run has been defined as a period of production within which all the inputs are variable. This implies that if demand conditions require a change in production, all the inputs could be varied to achieve this. The long-run production analysis, therefore, looks at the relationship between output and inputs based on the fact that all the factors of production are variable. A firm which varies all its inputs is described as changing its scale of production.

5.6.1 Returns to Scale

The behaviour of output of a firm in the long run as its scale of operation (varying all inputs) is changed is called Returns to scale. In other words, returns to scale are the relationships between changes in scale and changes in output. When the scale of production is increased the resulting output displays three (3) stages of returns to scale: increasing returns to scale, constant returns to scale and decreasing returns to scale. These are depicted by the long-run production schedule below:

Table 5.2: A Long-run Production Schedule

Units of Capital (K)	Units of Labour (L)	Change in Scale (%)	Total Product (TP)	Change in Total Product (%)
1	2		1,000	
2	4	100	2,500	150
4	8	100	6,000	140
8	16	100	12,000	100
16	32	100	21,600	80
32	64	100	32,400	50

Table 5.2 is a Long-run Production Schedule because both factors of production (labour and capital) are varied to achieve an increase in output.

(a) Increasing Returns to Scale

Increasing returns to scale occur when increases in all inputs by a certain percentage cause a relatively higher percentage increase in output or total product. For instance in Table 5.2, when units of capital and labour were increased from 1 and 2 units to 2 and 4 units respectively (i.e. 100% increase in scale of production) output increased from 1,000 to 2,500 units (i.e. 150% increase in output).

(b) Constant Returns to Scale

When the scale of production of the firm continues to grow, the greater percentage increase in total product ceases and instead a constant rate of growth in production is observed. Constant returns to scale occur when the scale of production is increased by a certain percentage, output or total product increases by the same percentage. For instance, in Table 5.2 as the capital-labour combination was doubled from 4 to 8, 8 to 16 (100% increase in scale of production), output increased by the same 100%.

(c) Decreasing Returns to Scale

Finally, with further growth of the scale of the firm decreasing returns emerge. Decreasing returns to scale occur when the scale of production of a firm is increased by a certain percentage, output or total product increases by less than the given percentage. The total product indeed becomes larger but does so at a lower rate than the rate of growth of all the inputs used in production. For instance, from Table 5.2, a 100% rise in scale went with a lower than 100% rise in total product as when the inputs were increased from 8 and 16 units to 16 and 32 units.

5.7 Division of Labour

Division of labour involves dividing a production process into a number of smaller tasks for each task to be undertaken by a different worker. It may also be referred to as *specialization* because each worker specializes in doing only one task thereby producing a part of the product as against producing the whole product. Division of labour may be applied in all aspects of production including agriculture, manufacturing, etc.

5.7.1 Advantages of Division of Labour

Division of labour has many advantages including the following:

(i) *Development of Greater Skill by the Worker*. In division of labour, each worker specializes in doing only one task. By repeating the same task again and again, the worker develops greater skill in it and becomes a specialist in the task.

(ii) *Increase in Productivity*. Division of labour leads to increased productivity of the worker. By developing a greater skill and becoming a specialist in what the worker does increases the productivity of the worker and production as a whole.

(iii) *Saving of Time.* The time that would have been wasted by each worker moving around to change tasks and tools is saved when division of labour is practiced.

(iv) *Increased use of Machines and Equipment.* In division of labour, because the production process is broken up into smaller units of tasks and each worker routinely performs one task, machines or equipment may be used to perform the task. It is easier to develop machines and equipment to perform only a single and simple task than several and complex task.

(v) Mass Production at decreasing cost. Division of labour has led to mass production arising from increased productivity. This brings down the unit cost and cheaper selling price.

(b) Disadvantages of Division of Labour

Division of labour has associated with it many disadvantages including the following:

(i) ***Lack of Craftsmanship***. Division of labour does not make workers craftsmen. They are trained to be producers of only parts of products rather than producers of whole products. That is, each worker cannot claim the knowledge of all the processes used to produce a product.

(ii) ***Monotony of Work***. Performing the same task all the time and, over and over again may create boredom on the part of workers. It may also be unchallenging and in turn kill workers' initiatives.

(iii) ***Over-dependence among Workers***. In division of labour, there is total dependence of a worker on other workers. The task performed by each worker is key to the production process to the extent that the absence from work of a worker may halt production

(iv) ***Redundancy of Workers***. In division of labour, a worker may be rendered redundant whenever his/her skill is no longer needed. Because he/she is a specialist in the performance of one task, transferring him/her to perform another task becomes a problem.

(v) ***Dumping of Mass Produced Goods***. Division of labour has led to mass production of certain goods and brought about dumping of such goods in other countries to kill domestic production in countries where the goods have been dumped.

5.8 LOCATION OF FIRMS

Location of firms tries to answer the key economic question "where to produce". Where a firm should be located is an important decision to be taken because the success or failure of the firm may depend on the location chosen. It involves deciding on the area that an firm should be sited. In siting a firm, several factors may be considered which may include the following:

(i) *Closeness to the Source of Raw Materials.* Cost of production of firm include both costs incurred in purchasing and transporting the raw materials to the industry. When a firm is located close to the source of its raw materials, transportation costs are reduced especially in the case of bulky raw materials

(ii) *Closeness to Source of Power.* A key requirement for firm production is power. In most cases, source of power from the national supply is cheaper. Therefore, when locating a firm, the owner considers availability of power for easy operation.

(iii) *Supply of Labour.* Another important factor of production is labour. Unskilled labour may easily be found at all places but not specialized or skilled labour. If suitable labour is not available where the firm is located, then it should be attracted from other sources at higher costs.

(iv) *Closeness to Market.* When goods are produced, they should be sold. This makes the decision to site firms close to trading centres very critical and accounts for many firms crowding around established trading centres. This is particularly necessary if the goods are bulky to transport to the market.

(v) *Good Transport Routes.* Transport routes include roads, railways, water-ways and airways. Satisfactory all-weather transport routes are essential to any firm because raw materials would be transported to the firm and products produced would be transported to markets.

(vi) *Other Factors.* Other factors that should be considered may include:

- Reasonable social services and amenities in the form of hospitals, schools and facilities for relaxation (cinemas, clubs) for workers welfare.
- Reasonable communication facilities such as telephone services, banking services, postal services, etc.
- Reasonable security services such as police posts, fire services, etc.

5.9 LOCALIZATION OF INDUSTRIES

Localization of industries involves the concentration or centralization of firms in a particular industry within a limited area. It is the tendency for all firms in an industry to crowd or locate in a particular area, meaning the firms choose sites very close to one another. When firms in an industry do this, there are certain benefits the firm as well as the community gain and there may be some problems too.

(a) Advantages of Localization of Industry

(i) When firms locate in one area, very often there is the tendency for the development of pool of labour around the area. People around the area learn skills needed by the industry. Institutions may spring up to train people around in the skills needed by the industry.

(ii) Specialist-service industries such as banks, telecommunication organizations, postal organizations, security services organizations may extend their services to the area.

(iii) Subsidiary industries such as suppliers of raw materials, textaging industries, marketing industries, etc. may develop around the area.

(iv) Firms when concentrated in an area, may create keen competition among themselves. Competition leads to efficiency which can pass on to the consumers in the form of lower prices and increased quality.

(b) ***Disadvantages of Localization***

Despite the above advantages obtained from localization of industry, serious problems may arise which may include:

(i) Localization of industry may lead to population congestion in and around the area where the industry has been located. This will in turn lead to the creation of slumps around the industry and the consequent vices such as prostitution, crimes, etc.

(ii) The firms will compete with each other for factors of production and if the demand for such factors exceeds the supply, shortages will be created which will in turn lead to rising prices of these factors. This may be passed on to consumers in the form of higher prices.

(iii) If there is depression, mass unemployment may occur in the area. This can create serious economic problems unless there are alternative industries to absorb those who have lost jobs.

(iv) Industrial concentration can be target of enemies during war and this disrupts production and lower output as well as heavy casualty.

5.10 Forms of Business Organizations

Firms are the business organizations that organise factors of production to produce goods and services which are used to satisfy human wants. A firm is thus a single production unit. A group of firms producing the same good or service is called an industry. In every country, there are many firms ranging from those owned by one person to those owned by several persons. Basically there are about three (3) types of firms namely:

- The Sole Proprietorship
- The Partnership
- The Joint-Stock Company or Corporation

5.10.1 The Sole Proprietorship (Sole Trader)

The sole proprietorship or sole trader is a business organization owned and controlled by one person. It is often referred to as "one-man business". It is the most numerous or commonest form of business organization in West Africa. Examples are the shoemakers, hairdressers, various drinking spots, peasant farmers, doctors who operate their own clinics, etc.

(a) Features

i. It is the simplest form of business organization

ii. It is owned and controlled by one person meaning one person who raises the capital, takes every decision and bears all the risk involved in the business alone.

iii. The owner takes all the profits or bears all the losses that the business might yield.

iv. This type of business usually employs only a handful of paid persons or relatives for assistance.

(b) Advantages of the Sole Proprietorship

i. **Easy to form**: It is comparatively quite easy to start this type of business because there are no laid down requirements with regard to its formation. It only requires a small capital for its take off.

ii. **Personal Interest**: There is the spirit of self-interest and personal desire to ensure the success of the business on the part of the owner.

iii. **Quick Decision Making**: The owner is the sole decision maker and does not need to go through any bureaucratic channels before arriving at a decision. This makes decision making process very fast..

iv. **Secrecy**: The business strategy is completely kept secret by the proprietor. He is not under any obligation to divulge his business secrets.

v. **Intimate Relationship**: Due to the small size of the business, the proprietor maintains personal and close relationship with his workers. He also maintains close contact with customers.

(c) Disadvantages of Sole Proprietorship

i. *Unlimited Liability*: If the business fails, his liabilities may be extended not only to his capital but to some personal properties depending on the extent of the liability

ii. *Limited Capital*: Since capital is raised by the owner alone, he/she may not be in the position to raise enough when expansion of the scale of operation is needed to benefit from economies of scale.

iii. Business Liquidation: The death of the proprietor may end the business since the successor who is likely to be a relative may not be as efficient as the business owner.

iv. *Lack of Credit Facilities*: The sole proprietor may not have the requisite collateral needed by financial institutions before loans are given out. They thus have little access to capital to expand their businesses.

(d) Sources of Finance of the Sole Trader

- Personal savings
- Borrowings from banks, relations and friends
- Ploughing back of profits to expand the business
- Inherited capital.

5.10.2 Partnership

Partnership is a type of business organization usually formed by the coming together of two to twenty persons. The members of a partnership business are called partners. Usually they enter into legal agreement to run the business. However, in West Africa, we have persons forming informal partnership where there are no written down agreements.

(a) Features of Partnership

i. The membership of partnership ranges from a minimum two to a ceiling of twenty members.

ii. It may be the amalgamation (union) of sole proprietors.

iii. All the partners collectively own the business. They set out rules to govern the business and to define each partner's rights and obligations.

iv. A partner could be either a dormant or an active partner. A dormant partner only provides capital and share in profits and losses but does not participate in the running of the business, whilst an active partner provides capital and takes part in the day to day running of the business.

v. In the event of business failure, partners may not only lose their capital but also their private properties.

(b) Advantages

i. ***Raising of Larger Capital***: Since a number of people pool resources together in partnership, larger capital can be raised as compared to sole proprietorship. Thus partnership stands a greater chance of expansion.

ii. ***Better Decision-Making***: Decisions are taken by many and so are likely to be more effective than in the sole proprietorship. This is based on the old adage that "two heads are better than one".

iii. **Credit Worthiness**: The partnership business is more credit-worthy than the sole-trader because of its large assets contributed by its large number of partners.

iv. **Business Management**: The owners are themselves the managers and controllers of the business; interest, dedication and responsibility of partners in the business may be higher when compared with sole proprietorship.

v. **Business Liquidation**: The death of a partner may not collapse the business as in the case of a sole trader. This is because other partners are there to carry out the operations of the business.

(c) Disadvantages of Partnership

i. ***Disagreement***: Partnership entails coming together of several people with different business ambitions, it is therefore difficult to arrive at decisions and maintain perfect understanding among partners, especially in the distribution of profits and losses.

ii. ***Unlimited Liability***: In the event of business failure, partners may lose not only their contributed capital in the business but also their personal properties depending on the extent of liabilities

iii. ***Transfer of Shares***: Members cannot transfer their shares without the authority of the others.

iv. ***Difficult to enter***: Prospective entrants may find it difficult to do so because each partner must agree before the new partner is admitted. This may prevent dynamic persons from becoming a partner.

v. ***Limited Capital***: In partnership, capital raised may still be inadequate due to the limited number of partners. It may be higher as compared with sole proprietorship but lower as compared with corporations.

(d) Sources of Finance of Partnership

Partnership may be financed through:

i. Contributions from members
ii. Benefit from credit facilities
iii. Re-investment of profits
iv. Borrowing from financial institutions

5.10.3 Joint-Stock Company or Corporation

A joint-stock company is a type of business organization which the law recognizes as having a separate entity from those who formed it. This means that the business can be treated as a person who can sue and be sued. It is at times referred to as limited liability company because the liabilities of the owners are limited to their contributions to the capital of the company. The join-stock company is managed by a board of directors usually appointed by the shareholders. There are two types of joint-stock companies:

- Private joint-stock companies
- Public joint-stock companies

5.10.3.1 Private Joint Stock Company

(a) Features

i) Small in size with membership between two (2) and fifty (50). The minimum number of shareholders a private limited liability company can have is two and a maximum number of fifty.
ii) It has larger capital shareholders when compared with partnership and sole proprietorship.
iii) Stakeholders contribute their funds for the business as shares.
iv) The company does not sell shares to the public to raise capital.
v) The shareholders enjoy profits earned by the company.

(a) Advantages of Private Joint-stock Company

(i) It has a separate entity from the owner, meaning it can sue and be sued.

(ii) Shareholders have limited liability i.e. in case of business failure, they may lose only their contributed capital.

(iii) Private joint-stock companies can raise more capital than partnership and sole trader. This is because the maximum membership of private joint-stock company is fifty whilst those of partnership and sole trader are twenty and one respectively.

(v) Shareholders have the chance to appoint specialists as board of directors to direct the affairs of the company.

(b) *Disadvantages of Private Joint-stock Companies*

(i) A shareholder cannot transfer his/her shares in this type of business organization without the other shareholders agreeing to it.

(ii) Because membership is limited to fifty, there may be a limit to the capital they can contribute.

(iii) The private joint-stock company cannot raise capital from the public through the sale of shares.

(iv) Unlike public joint-stock company, business risk is spread among a limited number of people with fifty as maximum.

5.10.3.2 Public Joint-stock Company

A joint-stock company is a legal association which must be registered and the promoters must submit the following documents:

(i) *Memorandum of Association* which must contain:

- Name of the company,
- Address of the registered office,
- The capital,
- Objective(s) of the company, and duly signed by two persons if private company and seven if it is a public company.

(ii) *Article of Association of the company* containing the following:

- The internal constitution of the company,
- How shares are to be issued or transferred,

- Right of the various shareholders,
- The powers of the officers and
- How they will be elected.

It possesses a large capital raised from the sale of shares to the public. These shares are freely transferable to other members of the public. Liabilities of members are limited to the capital they contribute. Profits are shared out to members according to the contributions made. These are called "dividends". The public joint-stock company also employs paid board of directors who run the business. Shareholders therefore need not be involved in the administration of the company.

(a) Features of Joint-stock Companies

i) Large in size with membership of seven (7) and above.

ii) Has Large capital shareholders.

iii) Shareholders can freely transfer or sell their shares.

iv) Can sell shares to the general public to raise capital.

(b) Advantages of Joint-stock Company

i. ***Generation of Large Capital:*** Joint-stock companies are able to raise larger capitals when compared with the other forms of businesses, from the sale of shares and debentures from the public. They are therefore able to engage in large-scale production and thereby enjoy economies of scale.

ii. ***Limited Liability***: The liability of each shareholder is limited to the capital he/she has contributed to the company.

iii. ***Efficient Staff***: The companies are able to employ the services of specialized and efficient staff in various aspects of the company. It is possible for the public limited liability company to practise division of labour to increase productivity of employees.

iv. ***Easy transfer of Membership***: Membership is open to the general public and does not require the approval of other members. It is also easy for a shareholder to leave the company by selling or transferring his shares to another person.

v. **Size of Ownership**: Business risks are spread over a greater number of people (the shareholders) thereby reducing individual liability.

vi. ***Separate Entity:*** The public limited liability company has a separate entity, can sue and be sued.

(c) Disadvantages of Public Joint-stock Company

i. Difficult to form: Due to the need to produce a lot of documents and procedures before the company is incorporated, it is difficult to form and not all persons can engage in it.
ii. Since those responsible for the running of the business (Board of Directors) may not be the owners, interest and personal involvement may be low.
iii. Shareholders who are owners of the company have little control over policy.
iv. Large size of business makes it difficult to monitor activities of all employees.

5.11 PRIVATISATION AND COMMERCIALISATION

Privatisation and commercialization are part of the effort, mostly of developing countries to restructure their economies for sustainable growth and development.

5.11.1 Privatisation

Privatisation can be defined as the process of transferring ownership and control of publicly owned enterprises from government (public sector) to private individuals and companies (private sector).

a) Types of Privatisation

The main types of privatization include:

i. *SHARE ISSUE PRIVATISATION:* This involves selling shares of the enterprise to private individuals and businesses on the stock market.
ii. *VOUCHER PRIVATISATION:* This entails distributing shares of ownership of the enterprise to citizens usually for free or at any low price.
iii. *ASSET SALE PRIVATISATION:* This involves selling the entire enterprise or a substantial part of it to a strategic investor, usually by auction.

The choice of privatization method is influenced by capital market, political and enterprise-specific factors

b) Objectives of Privatisation

According to Aderinto and Abdullahi (2007), government's objectives for privatizing public enterprises have been identified to include the following:

i. To disengage government from economic or business activities in which it has no competence or in areas where the private sector is more competent.
ii. To make the enterprises and corporations more efficient by injecting private sector efficiency into them.

iii. To reduce government annual financial burden brought in the form of grants and subsidies to these unprofitable ventures and use money saved in the process of privatization to other needful sectors of the economy.

iv. To reduce government bureaucratic control which has militated against the operational efficiency of the affected public enterprises.

v. To reduce incidence of corruption in the economy. Most cases of official corrupt practices were perpetrated using public enterprises as the conduit pipes to steal public money.

c) Impact of Privatisation

If a privatization programme is carefully packaged and faithfully executed, it could impact positively on the economy in the following ways.

i. Free the government from heavy annual subventions and subsidies to unprofitable enterprises.
ii. Promote competition, efficiency and improved service delivery, especially for public utilities.
iii. Facilitate commerce and trade within the local economy.
iv. Promote integration of the local economy into the global economy.
v. Facilitate the emergence of modern and innovative entrepreneurs and the development of local ones.

However, if a privatization programme is poorly packaged, it could lead to massive retrenchment of public sector workers and engender over concentration of wealth in the hands of a few individuals. This could worsen the problem of poverty in the country.

5.11.2 Commercialisation

Commercialisation is the process of reorganizing a public enterprise to make it self-sustaining and self- accounting instead of depending on the government subventions and subsidies for its survival and operation. Such reorganised enterprises are not sub-divided by government and product pricing is achieved by market forces.

The primary goal of commercialization is to promote efficient use of public resources as well as improving quality of service delivery, especially in areas that are critical to the growth of the economy and poverty reduction.

5.12 Nationalisation

Nationalisation refers to a process whereby the government assumes the exclusive ownership and control of a firm or an industry. In most developing countries, the term is used to refer to the transfer of ownership and control of an industry or some firms of an industry from the private sector to the public sector. In the later case, nationalization is direct opposite to privatization.

a) The arguments for nationalisation

Nationalisation has been considered desirable or justifiable for the following reasons:

i. To rescue ailing firms, that is firms that are about to go bankrupt. The policy will save jobs not only in the firm itself, but also in other firms servicing it and in the local community.

ii. To make it easier to manage the economy. For instance, through nationalized industries government could keep price increases small to control inflation.

iii. To ensure adequate provision of essential services at affordable prices, especially when huge capital is required or where there is tendency for the provision of poor quality goods or services by private companies.

iv. To takeover foreign businesses that are considered could constitute security threat or be exploitative.

b) The argument against nationalisation

Critics of nationalisation argued that:

i. Nationalised industries are not exposed to market forces; hence there would be inefficiency, slower growth and inadequate responsiveness to the wishes of the customers.

ii. In nationalized industries, managers may be frequently required to adjust their targets for political reasons. Therefore and most of the times, management decisions may not be economically rational and there would be no good plan for future investments.

iii. Since the industry is not competing for investment funds with other companies, it may not be able to use these funds profitably.

5.13 Deregulation

The policy of deregulation refers to government removal of official barriers to competition in an industry that was originally organised monopolistically. Such barriers include sole licenses (entry barrier) and minimum quality standards. Thus, deregulation creates competition and encourages more companies to supply the market at competitive price levels.

Proponents of deregulation argued that the policy would lower prices, increase output, and eliminate bureaucratic inefficiencies. On the other hand, the critics contended that, if not well Packaged, it would result in gradual monopolization of the deregulated industry by one or two firms, higher prices, diminished output, deteriorating service, and industry instability due to resulting merger, acquisition and takeover.

In Nigeria, deregulation has occurred mostly in the telecommunications and postal service industries with significant gains in terms of adequate supply and improved quality of essential services. However, the deregulation in the banking industry has caused increased corruption, loss of job, merger and acquisition.

5.14 MERGERS AND ACQUISITION

Merger and acquisition (M& A) is a general term used to refer to the consolidation of companies. But specifically, a **merger** is the amalgamation of two or more firms to form a new company. It is a voluntary union in which the parties involved hope for the improvement of their current level of operations and profitability. On the other hand, an **acquisition** is the purchase of one company by another in which no new company is formed.

Under acquisition arrangement, the first firm usually put in a takeover bid- offering to buy the share of the second for cash, to swap them for shares in the acquiring company, or to issue fixed interest securities (debentures). The shareholders of the second firm then vote on whether or not to accept the offer (Sloman, 2003).

It has been generally observed that merger and acquisition transactions provide companies with important mechanisms for adjusting to challenges and opportunities in an ever changing business environment.

5.15 Types of Merger

There are three types of merger

a) **Horizontal merger**: This is the union of two or more firms in the same industry and at the same stage of production. For example, two motor car manufacturers could merge to produce one or variety of brands within the same company.

b) **Vertical merger:** This refers to a merger of firms in the same industry but at different stages of production of a good e.g. a car manufacturer with a car tyre manufacturer. The two firms thus become one and the tyre produced is used directly to achieve the output of a complete car.

c) **Conglomerate merger:** This occurs where firms in different industries merge. For example, a furniture making company might merge with a soap manufacturer to reverse declining demand trend. Once the merger has taken place, the organisation so formed can reorganize to reduce costs. For example, only one head office will now be needed, a process known as rationalization.

5.16 Merits of Merging

The merits of merging transactions include the following.

i. Merging promotes growth and exploitation of economies scale
ii. Merging companies often enjoy better credit worthiness and therefore better access to investment funds.
iii. It promotes efficient management of resources as different experiences are shared and new ideas are introduced
iv. Increased profitability resulting from production expansion and cost reduction.
v. It facilitates efficient planning for long - term development of the business.

The extent to which any merger transaction could be adjudged as successful depends on the primary motive for it .The motives for merger identified by economists include for growth, economies of scale, monopoly power, increased market valuation, reduction of uncertainty, and to respond to opportunities that may suddenly and unexpectedly arise.

5.17 SUMMARY AND CONCLUSION

Production is a process that transforms factors of production or inputs into output of goods and services. Production may be classified into extraction, manufacturing, commerce and direct services. The factors of production which are used to create goods and services are land, labour, capital and entrepreneurship. The relationship between inputs used and the maximum output that can be produced at a given time period using an existing technology is depicted by the production function. Production may be organised in the short-run or long-run period.

The concept of division of labour may be applied to production. It involves dividing a production process into a number of smaller tasks for each task to be undertaken by a different worker. It has various advantages as well as disadvantages.

Firms are the agents of production (they carry out production). In locating a firm, various factors such as sources of raw materials, labour, power and others should be considered. A firm may be established as sole proprietorship, partnership or corporation.

The policies of privatisation, commercialisation, nationalisation and deregulation can be used to restructure an economy for improved performance but the demerits of them should be taken care of.

5.18 REVISION QUESTIONS

Multiple Choice Questions

1. The output per unit of the variable factor employed is called
   A. Marginal product
   B. Average product
   C. Total product
   D. Average cost
   E. Productivity of labour

2. Increase in all inputs by a certain percentage resulting in a relatively higher percentage increase in output is referred to as:
   A. Constant returns of scale
   B. Decreasing returns to scale
   C. Increasing returns to scale
   D. Diminishing returns
   E. Law of variable proportion

3. The following are advantages of division of labour **EXCEPT**:
   A. Increase in productivity
   B. Monotony of work
   C. Saves time
   D. Improves skills of workers
   E. Increases use of machines

4. Which of the following is not a possible source of finance of a sole proprietorship?
   A. Personal savings
   B. Borrowing from banks
   C. Ploughing back profit
   D. Inherited capital
   E. Selling shares to the public

5. The following are contained in Article of Association of a limited liability company **EXCEPT**:
   A. The address of the registered office
   B. The rights of the shareholders
   C. Allocation of shares
   D. Internal constitution of the company
   E. How shares are transferred

Solution To Multiple Choice Questions (MCQ)

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

Short Answer Questions

1. The technical relationship between output and set of inputs at given time period is called…………………………
2. A man –made resource that is used up in a production process is referred to as …………………………
3. A change in total production resulting from the use of one additional unit of a variable input is …………………….
4. An operating period of production in which all factors of production are variables is called ………………………
5. The simplest form of business organisation is the ………………………

SOLUTION TO SHORT ANSWERS QUESTIONS

CHAPTER FIVE

1. Production function
2. Circulating capital or capital
3. Marginal product
4. Long-run period
5. Sole proprietorship/sole trader

Question 5.1

Who is the entrepreneur? Discuss the role that the entrepreneur plays in the economy.

Answer

(a)The entrepreneur is a special factor of production that is in charge of the organization of the other three factors of production (land, labour and capital) in order to produce goods and services, bears the risk involved in business and manages the business. The entrepreneur's reward is profit or dividend.

(b)The functions of the entrepreneur include the following:

(i) The entrepreneur is the owner of the business and provides the capital. The ownership of business may be one person or a group of persons who have provided the capital.

(ii) The entrepreneur organizes and combines the other three factors of production for the production of goods and services which are used to satisfy human wants.

(iii) The entrepreneur bears the risk of business failure when there is any. On the other hand if there are any benefits or profits he enjoys them.

(iv) The entrepreneur is the principal decision-maker, though this may be shared with other people. He makes the broad decision of policy and the nerve-centre of management control.

(v) It is the main objective of every nation to achieve economic growth and development. A nation achieves economic growth when it is able to increase the final goods and services produced in the country over a given period of time usually one year. It is the entrepreneur who is the engine of economic growth in every nation because he produces these goods and services.

Question 2

Distinguish between each of the following pairs of the concepts:

(a) Fixed input and variable input

(b) Short run production period and long run production period

(c) Increasing returns to scale and decreasing returns to scale.

(d) Average product and marginal product.

Answer

(a) **A fixed input** is that input whose quantity cannot be varied in the short-run when demand conditions require an increase or a decrease in production e.g. factory building, capital equipment, some skilled labour, etc. A **variable input** on the other hand is that where quantity can be changed in all times of production when demand conditions change to require a change in production e.g. raw materials, electrical power, unskilled labour, etc.

(b) **The short run** is a period of production during which some factors of production are fixed and some too are variable. The fixed inputs cannot be varied when demand conditions require a change in output. This period varies from firm to firm, depending on the type of production a firm undertakes and the inputs it uses. **The long run**, on the other hand, is a period of production within which all inputs are variable. This implies that if demand conditions warrant a change in production all the inputs can be varied to achieve this.

(c) **Increasing returns to scale** occur when increases in all inputs by a certain percentage cause a relatively higher percentage increase in output or total product. For instance when units of capital and labour are doubled (i.e. 100% increase in scale of production) if output more than doubles (say increase by 150%), then the firm is experiencing increasing returns to scale. **Decreasing** returns to scale on

the other hand, decreasing returns to scale occur when the scale of production of a firm is increased by a certain percentage, output or total product increases by less than the given percentage. The total product becomes larger but does so at a lower rate than the rate of growth of all the inputs used in production. for instance, if a 100% rise in scale results in a lower than 100% rise in total product then the firm is experiencing decreasing returns to scale.

(d) **Average product (AP)** is the output per unit of the variable factor (VF) employed. It is measured by dividing total product (TP) by amount of variable factor employed. i.e

$$AP = \frac{TP}{VF}$$

Average product is measured in respect of a variable factor. Where the variable factor is say labour (L), then it is the average product of labour (AP_L) and it is measured as:

$$AP_L = \frac{TP}{L}$$

If the variable factor is capital (K), then the average product of capital (AP_K) is:

$$AP_k = \frac{TP}{K}$$

Marginal product is the change in total product resulting from the use of one more (or less) unit of a variable factor. It may also be explained as the rate of change in total product with respect to a variable factor (ΔVF), i.e.

$$MP = \frac{\Delta TP}{\Delta \text{ in Variable Factor}} = \frac{\Delta TP}{\Delta VF}$$

where Δ = change. Thus the MP of labour is:

$$MP_L = \frac{\Delta TP}{\Delta L}$$

The MP of capital MP_K is:

$$MP_K = \frac{\Delta TP}{\Delta K}$$

Question 5.3

Consider the following production schedule:

Fixed Input (Y)	Variable Input (X)	Total Product (TP_x)	Average Product (AP_x)	Marginal Product (MP_x)
5	0	0	-	-
5	1	----	----	80
5	2	280	----	----
5	3	----	180	----
5	4	----	----	260
5	5	----	200	----
5	6	1080	----	----
5	7	----	----	-100

(a) Is the above production schedule for a short run period or a long run period? Explain your answer.

(b) Use your knowledge of production functions to complete the above production schedule.

Answer

(a) The production schedule is for the short run period. This is because it has fixed as well as variable input. Input Y is fixed whilst input X is variable.

Fixed Input (Y)	Variable Input (X)	Total Product (TP_X)	Average Product (AP_X)	Marginal Product (MP_X)
5	0	0	-	-
5	1	80	80	80
5	2	280	140	200
5	3	540	180	260
5	4	800	200	260
5	5	1000	200	200
5	6	1080	180	80
5	7	980	140	-100

Question 5.4

What is division of labour? What are its advantages and disadvantages?

Answer

(a) Division of labour involves dividing a production process into a number of smaller tasks for each task to be undertaken by a different worker. It may also be referred to as specialization because each worker specializes in doing only one task thereby producing a part of the product as against producing the whole product. Division of labour may be applied in all aspects of production including agriculture, manufacturing, etc.

(b) Division of labour has advantages including the following:

(i) *Development of Greater Skill by the Worker*

In division of labour, each worker specializes in doing only one task. By repeating the same task again and again the worker develops greater skill in it and becomes a specialist in the task.

(ii) *Increase in Productivity*

Division of labour leads to increased productivity of the worker. By developing a greater skill and becoming a specialist in what the worker does increases the productivity of the worker and production as a whole.

(iii) *Saving of Time*

The time that would have been wasted by each worker moving around to change tasks and tools is saved when division of labour is practiced.

(iv) *Increased use of Machines and Equipment*

In division of labour, because the production process is broken up into smaller units of tasks and each worker routinely performs one task, machines or equipment may be used to perform the task. It is easier to develop machines and equipment to perform only a single and simple task than several and complex tasks.

(v) *Mass Production*

It leads to mass production of goods at cheaper costs and therefore reduced selling price.

Division of labour may also have disadvantages that may include the following:

(i) *Lack of Craftsmanship*

Division of labour does not make workers craftsmen. They are trained to be producers of only parts of products rather than producers of whole products. That is, each worker cannot claim the knowledge of all the processes used to produce a product.

(ii) *Monotony of Work*

Performing the same task all the time and, over and over again may create boredom of the part of workers. It may also be unchallenging and in turn kill workers' initiatives.

(iii) *Over-dependence among Workers*

In division of labour, there is total dependence of a worker on other workers. The task performed by each worker is key to the production process to the extent that the absence from work of a worker may halt production.

(iv) Redundancy of Workers

In division of labour, a worker may be rendered redundant whenever his/her skill is no longer needed. Because he/she is a specialist in the performance of on task, transferring him/her to perform another task becomes a problem.

(v) *Dumping of Mass Produced Goods*

Division of labour has led to mass production of certain goods and brought about dumping of such goods in other countries to kill domestic production in countries where the goods have been dumped.

Question 5.5

Highlight the features of a joint- stock company

(a) Explain any FOUR advantages of a joint-stock company

Answer

(a) features of Joint-stock Companies

- i) Large in size with membership of seven (7) and above
- ii) Has small capital shareholders.
- iii) Shareholders can freely transfer or sell their shares
- iv) Can sell shares to the general to raise capital

(b) Advantages of Joint-Stock Company

(i) *Generation of Large Capital:* Joint-stock companies are able to raise larger capitals when compared with the other forms of businesses, from the sale of shares and debentures from the public. They are therefore able to engage in large-scale production and thereby enjoy economics of scale.

(ii) *Limited Liability:* The liability of each shareholder is limited to the capital he/she has contributed to the company

(iii) *Efficient Staff:* The companies are able to employ the services of specialized and efficient staff in various aspect of the company. It is possible for the public limited liability company to practice division of labour to increase productivity of employees.

(iv) *Easy transfer of Ownership:* Ownership is open to the general public and does not require the approval of other members. It is also easy for a shareholder to leave the company by selling or transferring his shares to another person.

(v) Business risks are spread over a greater number of people (the shareholders) thereby reducing individual liability.

(vi) *Separate Entity:* The public limited liability company has a separate entity, can sue and be sued.

Practice Questions

1. a) Explain what the economists meant by production.

   b) Distinguish between ‘labour ‘and ‘entrepreneurship’ as factors of production.

2. a) What do you understand by localisation of industries?

   b) Discuss any FOUR disadvantages of localisation of industries.

3. (a) State the law of diminishing returns

   (b) The following table shows the total product schedule for a cooking-stove producing business.

Number of workers(L)	Total Product(No of stove/day	Marginal product (MP)	Average Product (AP)
0	0		
1	10		
2	22		
3	30		
4	36		
5	40		
6	42		

You are required to:

(i) Complete the table by calculating average product and marginal product for all levels of output, showing your working

(ii) Determine the point of diminishing marginal returns and explain why.

CHAPTER SIX

COSTS, REVENUE AND PROFIT MAXIMIZATION OF FIRMS

6.0 LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- Explain the short run and long run cost concepts
- Explain the revenue and profit concepts
- Distinguish between economies of scale and diseconomies of scale
- Explain the conditions for profit maximisation by the firm

6.1 INTRODUCTION

In economic theory, profit- maximisation is assumed to be the primary objective of the firm. But profit is simply regarded as the excess of revenue over cost. Therefore, to establish what constitute a profitable performance for the firm, it is desirable to consider the short run and long cost and revenue concepts.

6.2 COSTS OF PRODUCTION

The economists usually classify the costs involved in the production of process into two; (i) the explicit costs, and (ii) the implicit costs.

(i) **Explicit Costs**: These are payments made by the firm when it purchases or hires factors of production in a production process. They include rent on land or business space, wages and salaries to labor and interest on loaned funds.

(ii) **Implicit Costs**: These are costs that do not require out-of-pocket expenses by the firm. Implicit costs are the imputed money value of owner's resources that are used in the production process. The salary forgone by an entrepreneur for his labor services, the rent forgone for using his house for business, and the hiring fee forgone by using his car to do running around for the business, are all examples of implicit costs. To the economists, the sum of both the explicit and the implicit costs constitute the total cost of production. Whereas, to the accountants, who are interested in the outflow and inflow of money, the explicit costs only constitute the total cost of production.

From the forgoing discussions, the economic cost and the accounting cost can be expressed as:

Economic Cost = Explicit Costs + Implicit Costs

Accounting Cost = Explicit Costs

6.3 SHORT-RUN COST CONCEPTS

The short-run period in production has been explained as when some inputs are fixed and others are variable. The firm will incur fixed cost on the fixed variable and variable cost on the variable inputs

(a) Total Fixed Cost (TFC)

Total fixed cost is the cost incurred on fixed factor inputs. Since the level of fixed factors employed does not change with output in the short-run, total fixed cost tends to be constant in the short run. The firm still pays for fixed costs even if no output has been produced. Hence, fixed costs are sometimes referred to as *unavoidable* or overhead *costs.* Examples of fixed costs include rent on premises, interest payments on loans, and hire purchase instalment payments, etc.

(b) Average Fixed Cost (AFC)

Average Fixed Cost (AFC) is total fixed cost per unit of output produced, meaning it is TFC divided by quantity of output produced (Q).

$$\text{AFC} = \frac{\text{TFC}}{\text{Q}}$$

(c) Total Variable Cost (TVC)

TVC is the total expenditure on variable factors used in the course of production in the short run. This can also be considered as the total explicit and implicit costs of variable inputs. Because the level of variable factors used in the short-run determines the level of output, total variable cost changes whenever output is varied. When the firm does not produce anything, variable costs are not incurred. Hence they are sometimes referred to as ***avoidable costs.*** They may include wages of operative staff, cost of fuel, cost of raw materials, etc.

(d) **Average Variable Cost**

Average variable cost (AVC) is the variable cost per unit of output produced. It is expressed as TVC divided by quantity of output produced (Q).

$$\text{AVC} = \frac{TVC}{Q}$$

(e) ***Total Cost (TC)***

Total cost is the sum of total fixed cost and total variable cost. Thus, if output is zero in the short run , TVC = 0 while TC = TFC. This is because TFC is always constant in the short run

$$TC = TFC + TVC$$

(f) ***Average Total Cost*** *(ATC) This* is the total cost per unit of output produced. It is TC divided by quantity of output produced (Q). Thus,

$$ATC = \frac{TC}{Q}$$

ATC may also be expressed as the sum of AFC and AVC. Thus,

$$TC = TFC + TVC$$

$$ATC = \frac{TC}{Q} = \frac{TFC}{Q} + \frac{TVC}{Q} = AFC + AVC$$

Again, we note that if AVC = 0, ATC will reduce to AFC only.

(g) Marginal Cost (MC)

Marginal Cost (MC) is change in total cost (TC) as a result of a unit change in output. It is generally defined as the addition to TC resulting from an additional unit of output produced. It is measured as:

$$MC = \frac{\Delta TC}{\Delta Q}$$

whereΔ TC means change in total cost (i.e. New TC minus Old TC) and QΔ means change in quantity of output, (i.e. New Q minus Old Q). The sum of MCs up to a given level of output gives the TC of that level of output. Thus,

$$TC = \sum MC$$

Table 6.1 is a hypothetical short-run costs schedule. Column 1 is the quantities of output produced (Q). Column 2 depicts TFC which is constant. It is ₦800 at every level of output. Column 3 shows TVC which increases from ₦0 to ₦3,400. Column 4 depicts TC (TFC + TVC) which also increases from

₦800 to ₦4,200 as output increases from 0 to 10 units, AFC declines from

₦800 to ₦80. Columns 6, 7 and 8 show AVC, ATC and MC respectively. Each of these three curves initially declines to a minimum before rising again. For instance, MC initially declines from ₦600 (when output is 1 unit) to a minimum of ₦100 (when output is 5 units) before rising again to ₦600 at output level of 10 units.

6.3.1 Schedule of Short-run Costs

Table 6.1: Short-run Costs Schedule

1	2	3	4	5	6	7	8
Output (Q)	**TFC (₦)**	**TVC (₦)**	**TC (₦)**	**AFC (₦)**	**AVC (₦)**	**ATC (₦)**	**MC (₦)**
0	**800**	**0**	**800**	**-**	**-**	**-**	**-**
1	**800**	**600**	**1,400**	**800.00**	**600.00**	**1400.00**	**600**
2	**800**	**1,000**	**1,800**	**400.00**	**500.00**	**900.00**	**400**
3	**800**	**1,200**	**2,000**	**266.67**	**400.00**	**666.67**	**200**
4	**800**	**1,300**	**2,100**	**200.00**	**325.00**	**525.00**	**100**
5.	**800**	**1,400**	**2,200**	**160.00**	**280.00**	**140.00**	**100**
6.	**800**	**1,600**	**2,400**	**133.33**	**266.67**	**400.00**	**200**
7.	**800**	**1,900**	**2,700**	**114.29**	**271.43**	**385.71**	**300**
8.	**800**	**2,300**	**3,100**	**100.00**	**287.50**	**387.50**	**400**
9	**800**	**2,800**	**3,600**	**88.89**	**311.11**	**400.00**	**500**
10	**800**	**3,400**	**4,200**	**80.00**	**340.00**	**420.00**	**600**

6.3.2 Graphical Depiction of Costs

a) short- run costs: *TFC, TVC and TC Curves*

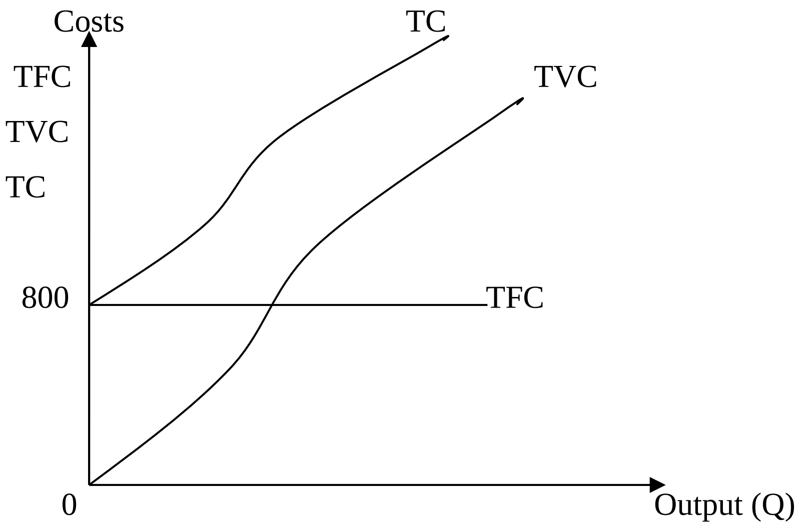


Figure 6.1: TFC, TVC and TC Curves

Figure 6.1 plots total product or output (Q) on the horizontal axis against total fixed cost (TFC), total variable cost (TVC) and total cost (TC) and total cost (TC) on the vertical axis. The total fixed cost (TFC) curve is horizontal in nature and parallel to the output axis. This indicates that TFC is insensitive to changes in the level of output in the short-run. Total variable cost (TVC) starts from the origin (meaning TVC is zero when nothing is produced) and increases as output rises. This is due to the fact that for any increase in output, there is the need to employ more variable factors in the short-run. Total cost (TC) is equal to TFC when output level is zero and also increases with output because of the Total Variable Cost effect on it. It must be noted that TC = TFC + TVC hence TVC is a component of TC and as such its behaviour with regard to variations in output influences the behaviour of TC.

Figure 6.2: AFC, AVC, ATC and MC Curves

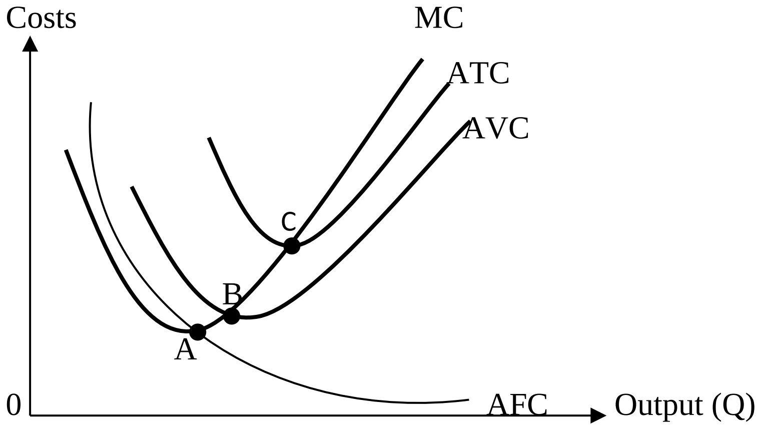


Fig 6.2: AFC,AVC, ATC & MC curves

Figure 6.2 shows the curves of AFC, AVC, ATC and MC. AFC curves. The AFC curve is a rectangular hyperbola asymptotic to both axes. The AVC, ATC and MC curves are all "U" shaped as shown in Figure 6.2. This shape is due to the fact that at first, increases in Q results in decreasing AVC, ATC and MC but beyond certain particular points, they increase with increases in output. The AVC and MC are "U" shaped because of the law of diminishing returns to variable proportion. ATC can be obtained by adding AFC to AVC. For those levels of output where both AVC and AFC are falling, ATC must decrease. However, ATC attains its minimum after that of AVC because the decreases in the AFC for a time more than offset the increases in the AVC. The MC curve intersects the AVC and ATC curves from below at their minimum points (point B for AVC and point C for ATC). The MC curve attains its minimum before AVC and ATC curves. The AVC curve attains its minimum at a lower level of output than the ATC curve. Also important is the fact that the MC curve lies below the AVC and ATC curves when both AVC and ATC curves are failing while the MC curve lies above the AVC and ATC curves when the MC curve is rising

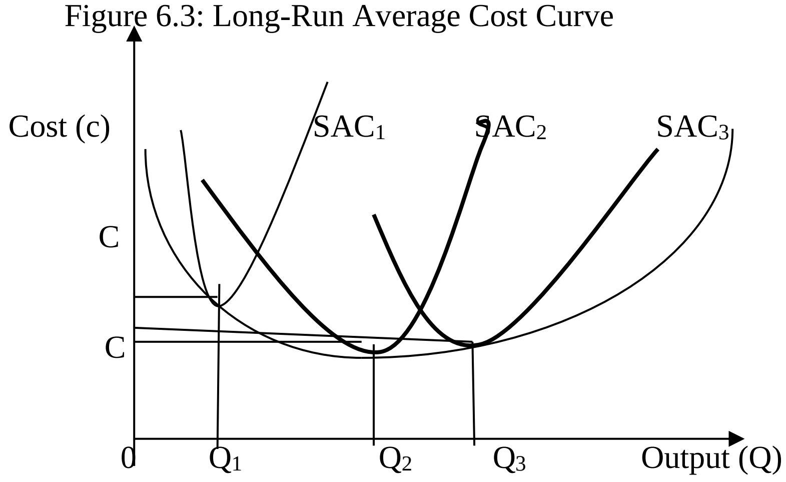
6.4 LONG-RUN COST CONCEPTS

In the long run, all factors of production are variable. Therefore, all costs are variable. The long-run average cost curve is a planning curve in the sense that it is a guide to the entrepreneur in his decision to plan the future expansion of his output. In this period, firms can plan to change their capacities or scale, which is prompted by the desire to reduce cost of production. This period is characterized by a number of possible capacities.

6.4.1 Derivation of the Long-Run Average Cost Curve (LAC)

The relationship between the Long-run Average Cost Curve (LAC) and the short-run Average Cost curve (SAC) can be used to derive the conventional "U" shaped LAC curve. Suppose technology is such that plants in a certain industry can assume only three different sizes. That is, the fixed capital equipment making up the plant is available only in three sizes – small, medium and large. Suppose again that the small size plant gives rise to SAC_1,the medium one yields SAC_2, and the large plant results in SAC_3 as illustrated in Figure 6.3.

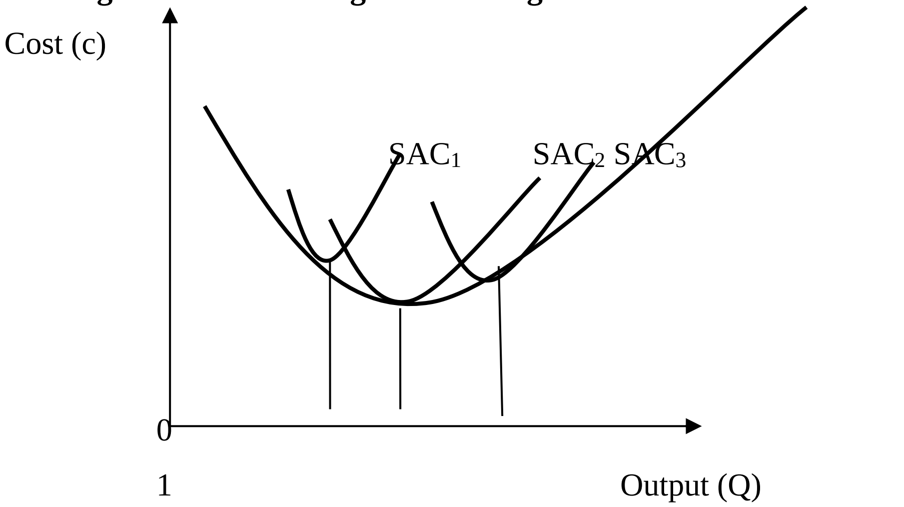
Figure 6.3: Long-Run Average Cost Curve



An entrepreneur in the long run has to choose among the three alternative plant sizes. If the entrepreneur expects his most profitable output to be Q_1, he will select the small size plant (i.e. SAC_1) if on the other hand, he perceives Q_2 as the most profitable level of output, then the medium size plant will be chosen (i.e. SAC_2). These choices are made on consideration that the entrepreneur aims at producing the desired level of output at a lowest per unit cost. If the entrepreneur expects his production to be at either Q_1 or Q_2 his decision will be more difficult. At each of these positions, two plants with different SACs could be engaged. Suppose that with time he actually finds it desirable to increase his output from Q1 to Q_2. He can do this with his plant (SAC_1) at an average cost of OC_1 per unit. In the short-run this is all that he can do but he can plan for the future. Once his old plant has worn out, he can replace it with a new plant, and in our hypothetical example, his choice will be the medium size plant SAC_2. This is because cost per unit of producing Q_2 is very high on SAC_1 (OC_1) as compared with cost per unit of producing Q_2 on SAC_2 (OC_2) which is substantially less.

In the short-run an entrepreneur may operate with SAC_1, SAC_2 and SAC_3 guided by the growth of his firm or output. In the long-run , however, the producer has to build a plant whose size leads to the lease average cost for any level of output. As a planning device the producer regards the heavily shaded portions of the SACs curves in figure 6.4 as his long –run average cost curve. This section of the SACs curve indicates the least unit cost of producing output levels. This curve is graphed in figure 6.4 below as a smooth U- shaped curve.

Figure 6.4: The Long-Run Average Cost Curve



When the long-run average cost (LAC) curve is drawn for a firm with an infinite number of plant sizes we obtain the conventional "U" shaped LAC curve in Figure 6.5 above. The LAC curve is frequently referred to as an envelope curve of the SAC curves, because it is derived from the least cost points of the various SACs curves. The LAC is so regarded because each SAC represents various short run period of the firm.

6.4.2 Economies and Diseconomies of Scale

Economies and Diseconomies of scale are respectively, the "advantages" and "disadvantages" of large-scale production. The expression "advantages" is used to present benefits that help the firm to produce at reduced unit cost of production. They are referred to as economies of scale.

The word "disadvantages", on the other hand, means those things that lead to increases in the unit cost of producing larger output. These are referred to as diseconomies of scale.

The advantages and disadvantages can be grouped into internal and external economies and diseconomies of scale. Economies and diseconomies of scale are long run phenomena.

(a) Internal Economies of Scale

Internal economies of scale are the advantages or benefits that the firm enjoys as it expands its size or increases its scale of operation. These may result from technical, financial, managerial, marketing and welfare advantages enjoyed by the firm and are as such said to be firm specific.

(i) **Technical Economies:** They are economies that accrue from the use of large machines with emphasis on full utilization and efficiency in production. First, there are some equipment which are available only in certain minimum sizes, and unless the plant acquisition and usage will permit the production of at least these minimum output levels of production, it will not be economical. Secondly, large-scale production allows for the specialization of different sets of equipment for the different functions. Thirdly, the firm can have a standby machine as an insurance against any form of equipment breakdown. Also, the specialization of machines aids the further development of division of labour. These benefits derived by the firm from such approach to production lead to substantial economies of scale thereby reducing the unit cost of output produced.

(ii) **Marketing Economies**: These are derived from the bulk purchasing of inputs and bulk distribution of outputs. A large firm is able to buy its raw materials in larger quantities. Such bulk purchases enable the firm to obtain discounts. It also costs a little more to sell smaller quantities of output as sales cost per unit of output sold tends to fall as the volume of sales increases. Distribution may even be taken over by subsidiary firms. As sales increase, advertising cost per unit sold reduces too. These advantages lead to a fall in per unit cost of production for the large firm.

(iii) **Financial Economies:** These are benefits obtained by large firms as a result of contracting credit from financial institutions at lower interest rates than smaller firms. The fact is that the large firms can provide collateral securities for such loans and their mere sizes alone make them credit-worth as compared to smaller firms. In addition to borrowing from financial institutions, large firms can easily float shares in the stock market. At times suppliers of materials to large firms may give them out on credit. This is a sort of pre-financing of the firm's activity. All these advantages lead to the lower per unit cost of output produced.

(iv) **Managerial Economies:** There are many managerial economies associated with large-scale production. A larger firm is in the position to employ more highly qualified and specialist managers (such as production manager, marketing manager, financial manager, etc) to man the various departments of the firm. Large firms can also mechanize managerial activities by introducing the usage of improved devices such as computers, telephones, fax, e-mail, etc. Opportunities are also made available for the training of young potential career managers for the firm. These economies lead to increased output and lower per unit cost of production.

(v) **Economies of research and Development:** All things being equal, larger firms make greater profits and can set aside some of these profits for research and develop the product.

(b) External Economies of Scale

These are advantages or benefits gained by a firm, as the industry in which it operates grows larger. These are cost-saving advantages derived by a firm as a result of its being sited in an area where there is a concentration of other firms or industries. These advantages manifest in:

i. **Economies of Skilled Labour:** This involves upgrading the skills of labour through the provision of education and training facilities in a well-organised industry. This ensures that education and training of labour do not become part of the industry's operations but rather some specialized institutions take over the performance of these functions. This is often easier in well-organised ones. Such education and training culminate in economies of manpower development and generally lower the cost of production in the industry.

ii. **Economies of Research and Development:** Another advantage enjoyed by firms in well-organised industry relates to research and development activities. The industry or other institutions may provide these research activities with the result being made available to all firms in that industry. This lowers per unit cost of output produced in the industry.

iii. **Economies of Common Services:** Through the concentration of firms in a given geographical location, the firms may enjoy certain common services. These services include special transport and telecommunication facilities, water, power, good roads as well as special treatment from bankers. Also, a well-organised industry may enjoy excellent marketing arrangements through which it can buy raw materials and sell finished products. All these lead to a lower per unit cost of output in the industry.

(c) Internal Diseconomies of Scale

These are disadvantages a firm has to contend with as it grows larger or increase its scale of operation. For instance managerial ability not only leads to economies of scale but also diseconomies of scale. If the firm's size continues to increase, certain indivisible factors may be duplicated. This increases the average cost of production as well as creates problems of managing and coordinating the functions of other productive factors. A typical example one can cite is the red tape bureaucratic practices characterizing most industrial activities, which delay decision making and implementation. Also, there is the problem of alienating the workers from the product and management and its consequential low morale of workers. The end-result of all these undesirable effects of large-scale operations is a rise in average total cost (ATC) of production.

(d) External Diseconomies of scale

These are the disadvantages that confront firms in an industry, as the industry grows larger beyond the optimal size. These disadvantages are due to external factors within the industry and not from within the set up of the firms. Examples of these external diseconomies are:

i. **Increasing Raw material Cost**: If an industry is growing, there will be an increase in the demand for raw materials mainly used in the industry. If supply conditions remain the same, then this will lead to an increase in the price of raw materials and subsequently an increase in the firms' unit cost of production within the industry.

ii. **Increasing Cost of Skilled Labour:** As firms demand more skilled labour, they tend to compete among themselves for the limited pool of such labour in the industry. To entice such labour to move from one firm to another, one has to bid up the wage rate. This invariably leads to an increase in production costs of the firms in the industry and the resultant increase in unit cost of production.

iii. **Excess Marketing Cost:** With the increase in the number of firms in the industry because of the growth of the industry, each firm has to compete for market shares or consumers. Advertising and other marketing strategies like sales promotions, therefore, become the order of the day. The consequence of these is an increase in unit cost of production of firms in the industry.

6.5 REVENUE CONCEPTS

Revenue is receipts from the sale of a firm's output. It is earned immediately a firm sells a given quantity of its output.

(a) **Total Revenue (TR)**

Total revenue is the total receipts from the sale of a given quantity of a firm's output. It is found by multiplying price (P) by the corresponding quantity (Q) sold by the firm. i.e.

$$TR = PQ$$

(b) Average Revenue (AR)

Average revenue is the revenue per unit of output sold. It is found by dividing total revenue (TR) by quantity sold (Q). i.e.

$$AR = \frac{TR}{Q}$$

But, $TR = PQ$

Therefore, $AR = \frac{PQ}{Q} = P$

Therefore Average Revenue is the same as price (P).

(c) **Marginal Revenue (MR)**

Marginal revenue is the change in total revenue with respect to a change in quantity sold. That is, it is the change in total revenue that results from the sale of one extra unit of the commodity. It is found by dividing the change in total revenue (TR) by the change in quantity sold (ΔQ).

$$MR = \frac{\Delta TR}{\Delta Q}$$

where ΔTR = change in TR = New TR – Old TR

ΔQ = change in Q = New Q – Old Q

6.6 PRICE-TAKING FIRM

A firm is described as a price-taker when it has no significant control over the price of its product. This means that the firm cannot influence the price of its product by altering its supply. Usually it is the market or industry demand and supply that will interact to fix the price of the product which is handed over to all firms in the industry. The firm can sell any quantity at the market or industry determined price. The perfectly competitive firm is a price-taking firm.

(a) ***Demand and Revenue Schedules for a Price-taking Firm***

Table 6.2: Demand and Revenue Schedule

Price (P) ₦	Quantity (Q)	Total Revenue (TR) ₦	Average Revenue (AR) ₦	Marginal Revenue (MR) ₦
1,000	0	0	-	-
1,000	1	1,000	1,000	1,000
1,000	2	2,000	1,000	1,000
1,000	3	3,000	1,000	1,000
1,000	4	4,000	1,000	1,000
1,000	5	5,000	1,000	1,000
1,000	6	6,000	1,000	1,000
1,000	7	7,000	1,000	1,000
1,000	8	8,000	1,000	1,000
1,000	9	9,000	1,000	1,000
1,000	10	10,000	1,000	1,000

From the above schedules, we observe that for a price-taking firm, price, average revenue and marginal revenue are the same.

$$P = AR = MR.$$

(b) ***Demand and Revenue Curves for a price-taking Firm***

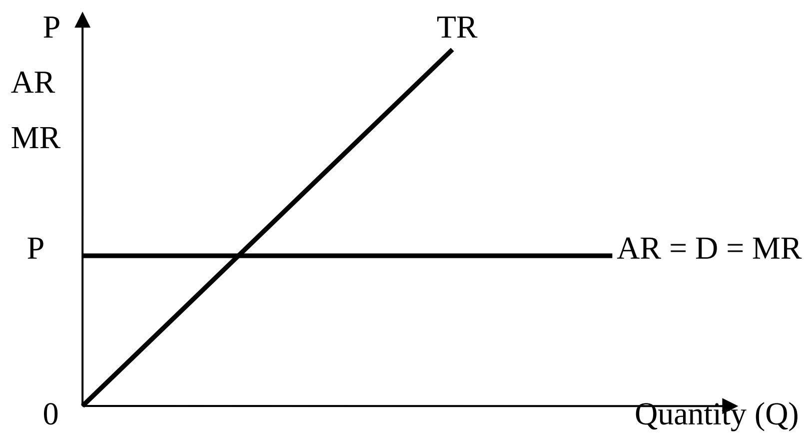


Figure 6.5: Demand and Revenue Curve for a price-taking Firm

From Figure 6.5, the total revenue (TR) curve for a price-taking firm is an upward-sloping straight line that passes through the origin:

6.7 PRICE – MAKING FIRM

A firm is described as a price-making firm if it has a significant control over the price of its product. However, such a firm can only influence the price and not the quantity it will sell in the market. This is the case for firms operating under the conditions of monopoly and monopolistic competition.

(a) Demand and Revenue Schedules for a price-making Firm

Table 6.3: Demand and Revenue Schedule (Price-making Firm)

Price (P)	Quantity (Q)	Total Revenue (TR)	Average Revenue	Marginal Revenue (MR)
C1100	0	C0	-	-
1000	1	1000	1000	1000
900	2	1800	900	800
800	3	2400	800	600
700	4	2800	700	400
600	5	3000	600	200
500	6	3000	500	0
400	7	2800	400	-200
300	8	2400	300	-400
200	9	1800	200	-600
100	10	1000	900	-800

From table 6.3 above, it is still confirmed that price (P) is the same as average revenue (AR) therefore the AR is the same as demand. From column 3 of Table 6.2, it is noticed that TR for a price-making firm initially increases, gets to a maximum and then declines. It increases from an initially increases, gets to a maximum of ₦30,000 and declined from this figure to ₦900. The MR for a price-making firm declines throughout. It starts from a positive figure of ₦1,000 then falls up to ₦0 and even turns negative. When TR is increasing, MR is positive, when TR reaches maximum, MR is zero and when TR is decreasing MR is negative.

(b) Demand and Revenue Curves for a Price-making Firm

The TR curve for a price-taking firm is "n" shaped as shown in Figure 6.6. Both MR and AR (D) curves are downward-sloping straight lines. Both MR and AR curves start from the same point but as quantity sold increases, MR curve lies below the AR or demand curve. TR revenue increases within regions that demand is elastic (MR is positive), TR is constant within regions that demand is unit elastic (MR is zero) and TR decreases within regions that demand is inelastic (MR is negative).

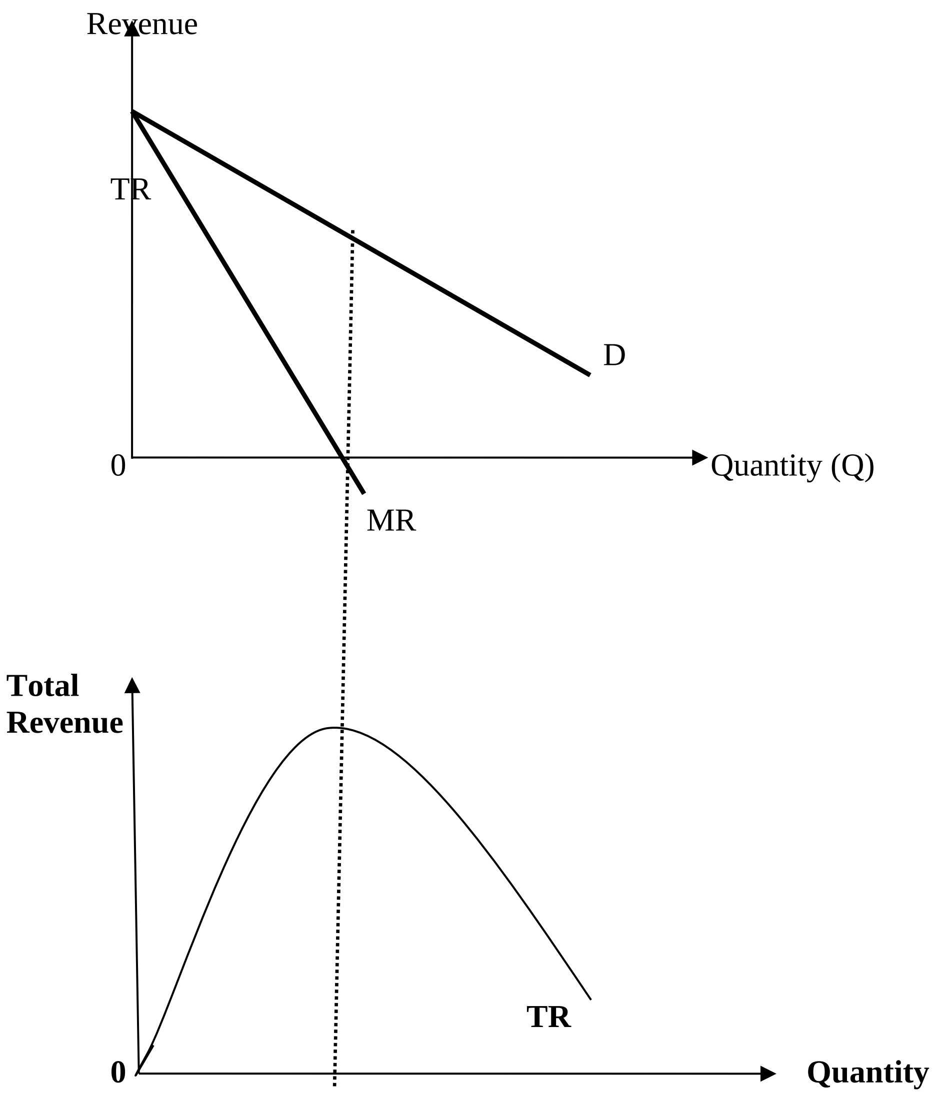


Figure 6.6: Demand and Revenue curves for a price-making firm

6.8 PROFIT CONCEPTS

Profit is the reward enjoyed by entrepreneurs or owners of businesses. It is found by subtracting total cost (TC) from total revenue (TR).

Profit = TR – TC

If after subtracting total cost from total revenue the result is negative, then it is referred to as *negative profit or loss*

6.8.1 Accounting Profit versus Economic Profit

The difference between accounting profit and economic profit is that economist include in total cost of production both *implicit and explicit* costs whilst accountants see cost of production as only the explicit costs.

(a) Accounting Profit

Accounting profit is total revenue less total cost (made up of only explicit costs). If this outcome is positive then an accounting profit is earned, if negative then an accounting loss is made and if zero then it is referred to as breakeven.

(b) **Economist's Profit**

Economic profit is total revenue less total cost (made up of explicit plus implicit costs). If the outcome is positive, then an *economic*, pure or supernormal profit has been earned; if negative then an economic loss is made and if zero then normal profit has been earned.

6.8.2 Economic Profit, Normal Profit and Economic Loss

(a) Economic Profit

Economic profit is the excess of total revenue over total cost when the latter includes both explicit and implicit costs. It is the type of profit which when made by firms in an industry attracts new firms into the industry when no barriers to entry exist while existing firms expand their production. It is also called pure or supernormal profit.

(b) Normal Profit

Normal Profit is earned when total revenue is exactly equal to total cost when the latter includes both explicit and implicit costs. It is the type of profit which when made by firms in an industry does not attract new firms into the industry even when no barriers to entry exist. Existing firms do not leave the industry also. The firm's profit then is equal to the implicit costs.

(c) Economic Loss

Economic Loss is the excess of total cost (both implicit and explicit) over total revenue. This type of loss, when made by firms in an industry, would discourage firms which are unable to cover their variable costs to exit the industry while those who are able to cover their variable costs will stay in the short run.

6.9 PROFIT MAXIMISATION

A firm is said to be in equilibrium, maximizing profit or minimizing loss at the output level whereby:

(i). The firm's marginal revenue (MR) is equal to its marginal cost (MC),

(Necessary Condition)

(ii). Provided that at that output level the **marginal cost is rising**. (Sufficient Condition)

6.10 SUMMARY

To the economist, the production costs that are incurred in the production process are classified into two; the explicit costs and the implicit cost.

The explicit costs are out-of-pocket payments made by the firm on the purchase of factors of production. The implicit costs on the other hand, are the imputed money value of business owners' resources that are committed into production. Revenue is the income received from the sale of output

In the long run when the firm can vary all inputs, the cost-saving advantages derived as it expands output are called economies of scale, on the other hand, the higher costs suffered as output expands are called diseconomies of scale.

Profit is maximised by the firm at the point (i.e output level) where marginal cost and marginal revenue are equal provided that at that output level, the marginal cost is rising

6.11 REVISION QUESTIONS

MULTIPLE CHOICE QUESTIONS

1. Which of the following is true of a perfectly competitive firm?
   - A. Price = AR ≠ MR at equilibrium
   - B. Demand is always greater than AR
   - C. The MR curve is downward sloping
   - D. Price = AR = MR = D at equilibrium
   - E. At equilibrium position, MR > MC

2. The sum of the average variable cost and average fixed cost gives
   - A. Marginal cost
   - B. Average total cost
   - C. Total cost
   - D. Total fixed cost
   - E. Total variable cost

3. At the levels of output where the Average Cost is falling, the marginal cost is
    A. Falling but less than Average cost
    B. Rising faster than the average cost
    C. Falling but greater than the average cost
    D. Equal to the average cost
    E. Rising but less than average cost

4. Which of the following profit concepts does not include implicit cost elements?
    A. Accounting profit
    B. Economists profit
    C. Normal profit
    D. Super normal profit
    E. Economic loss

5. The <u>necessary condition</u> for a firm to be at equilibrium at a given output level is where:
    A. The marginal cost is rising
    B. MC = MR
    C. AC = AR
    D. TC < TR
    E. TVC = TR

6. The sum of the average variable cost and average fixed cost gives
    A. Marginal cost
    B. Average total cost
    C. Total cost
    D. Total fixed cost
    E. Total variable cost

7. At the levels of output where the Average Cost is falling, the marginal cost is
    A. Falling but less than Average cost
    B. Rising faster than the average cost
    C. Falling but greater than the average cost
    D. Equal to the average cost
    E. Rising but less than average cost

8. Which of the following profit concepts does not include implicit cost elements?
    F. Accounting profit
    G. Economists profit
    H. Normal profit
    I. Super normal profit
    J. Economic loss

9. The <u>necessary condition</u> for a firm to be at equilibrium at a given output level is where:
    A. The marginal cost is rising

B. MC = MR
C. AC = AR
D. TC < TR
E. TVC = TR

10. Quasi rent refers to
A. Payment made on acquisition of a firm’s premises.
B. Payment made on the procurement of tools and equipment.
C. Payment received for factors of production.
D. Surplus earnings generated by the factors of production except land.
E. Returns on investment.

Solution to Multiple Choice Questions (MCQ)

1. D
2. B
3. A
4. A
5. B
6. B
7. B
8. A
9. B
10. D

Short Answer Questions

1. A cost concept that is equivalent of the change in the total variable cost with respect to output is……………………..
2. The benefits that a firm enjoys as it expands its scale of operation are called………………
3. The relationship P=MR=MC gives the profit maximisation condition for a market structure called………………………..
4. The product of price and the corresponding quantity sold by a firm is called………………
5. The cost disadvantages that a firm confronts as it expands its scale of production is called……………………………..

Solution To Short Answers Questions

1. Marginal cost
2. Internal economies of scale
3. Perfect market/ competitive market
4. Total revenue
5. Internal diseconomies

Question 6.1

a. Define the following terms:

(i) Total Cost (TC)
(ii) Average Fixed Cost (AFC)
(iii) Average Variable Cost (AVC)

b. Copy and complete the following short-run schedule of a firm to obtain the total cost, average fixed cost and average variable cost.

Complete the following cost table:

Output	TFC ₦	TVC ₦	TC ₦	AFC ₦	AVC ₦
0	C2000	0	-	-	-
1	2000	500	-	-	-
2	2000	900	-	-	-
3	2000	1200	-	-	-
4	2000	1600	-	-	-
5	2000	2200	-	-	-

ANSWER

(i) Total Cost: On the short run, total cost is the sum of the total fixed cost and total variable cost. This can be expressed as: TC = TFC + TVC

(ii) Total Fixed Cost: This is the sum of the costs of all fixed inputs. It can be obtained as TFC = TC –TVC

(iii) Total Variable cost: If is the sum of the costs of all variable inputs. It can be obtained as: TVC = TC -TFC

ANSWER

Output	TFC	TVC	(TFC+TVC)	$\frac{TFQ}{Q}$	$\frac{TVC}{Q}$
0	C2000	0	C2000	-	-
1	2000	500	2500	2000	500
2	2000	900	2900	1000	450
3	2000	1200	3200	666.7	400
4	2000	1600	3600	500	400
5	2000	2200	4200	400	440

Question 6.2

(a) Briefly distinguish between internal economies of scale and external economies of scale.

(b) Explain any **THREE** sources of each type of economies of scale.

Answer

(a) Internal economies of scale are the *advantages or benefits* that the firm enjoys as it expands its size or increases its scale of operation. These may result from technical, financial, managerial, marketing and welfare advantages enjoyed by the firm and are as such said to be firm specific. External economies of scale on the other hand, are cost saving advantages or benefits gained by a firm for its establishment in an area where there is a concentration of other firms or industries. These advantages are in the form of availability of cheaper inputs like skilled labour, common services and research.

(b) Any three (3) of the following sources of internal economies of scale

(i) **Technical Economies:** They are economies that accrue from the use of large machines with emphasis on full utilization and efficiency in production. First, there are some equipment which are available only in certain minimum sizes, and unless the plant acquisition and usage will permit the production or at least these minimum output levels of production, it will not be economical to acquire them. Secondly, large-scale production, it will not be economical to acquire them. Secondly, large-scale production allows for the specialization of different sets of equipment for the different phases of the firm's activities. This reduces the cost (i.e. time and money cost) involved in setting and re-setting the same equipment for different functions. Thirdly, the firm can have a standby machine as an insurance against any form of equipment breakdown. Also, the specialization of machines aids the further development of division of labour. These benefits derived by the firm from such approach to production lead to substantial economies of scale thereby by the firm from such approach to production lead to substantial economies of scale thereby reducing the unit cost of output produced.

(ii) **Marketing Economies:** These are derived from the bulk purchasing of inputs and bulk distribution of outputs. A large firm is able to buy its raw materials in larger quantities. Such bulk purchases enable the firm to obtain discounts and free transportation. It also costs a little more to sell smaller quantities of output as sales cost per cost per unit of output sold tends to fall as the volume of sales increases.

Distribution may even be taken over by subsidiary firms. As sales increases, advertising cost per unit sold reduces too. These advantages lead to a fall in per unit cost of production for the large firm.

(iii) **Financial Economies:** These are benefits obtained by large firms as a result of contracting credit from financial institutions at lower interest rates than smaller firms. The fact is that the large firms can provide collateral securities for such loans and their mere sizes alone make them credit-worthy as compared to smaller firms. In addition to borrowing from financial institutions, large firms can easily float shares in the stock market. At times suppliers of materials to large firms may give them out on credit. This is a sort of pre-financing of the firm's activity. All these advantages lead to the lower per unit cost of output produced.

(iv) **Managerial Economies:** These are many managerial economies associated with large-scale production. A large firm is in the position to employ more highly qualified and specialist managers (such as production manager, marketing manager, financial manager, etc.) to man the various departments of the firm. Large firms can also mechanize managerial activities by introducing the usage of improved devices such as computers, telephones, fax, e-mail, etc. Opportunities are also made available for the training of young potential career managers for the firm. These economies lead to increased output and lower per unit cost of production.

(v) **Economies of research and development:** All things being equal, larger firms make greater profits and can set aside some of these profits for research and develop the product.

Any three (3) of the following sources of external economies of scale

(i) Economies of Skilled Labour: This involves upgrading the skills of labour through the provision of education and training facilities in a well-organised industry. This ensures that education and training of labour do not become part of the industry's daily operations but rather some specialized institutions take over the performance of these functions. This is often easier in well-organised industries than less organized ones. Such education and training culminate in economies of manpower development and generally lower the cost of production in the industry.

(ii) **Economies of Research and Development:** Another advantage enjoyed by firms in well-organised industry relates to research and development activities. The industry or other institutions may provide these research activities with the result being made available to the firms in that industry. This lowers per unit cost of output produced in the industry.

(iii) **Economies of Common Services:** Through the concentration of firms in a particular industry in a given geographical location, the firms may enjoy certain common services. These services include special transport and telecommunication facilities, water, power, publication of trade journals with news and articles of special interest to the firms as well as even special treatment from bankers. Also, a well-organised industry may enjoy excellent marketing arrangements through which it can buy raw materials and sell finished products. All these lead to a lower per unit cost of output in the industry.

Question 6.3

(a) How does accountant's profit differ from economist's profit?

(b) Differentiate between normal profit and economic profit

Answer

(a) The difference between accounting profit and economic profit is that economists include in total cost of production both *implicit* and *explicit* costs whilst accountants see cost of production as only the explicit costs. Accounting profit is total revenue less total cost (made up of only explicit costs). The result if positive then an accounting profit is earned. If negative then an accounting loss is made and if zero then it is referred to as breakeven. Economic profit, on the other hand, is total revenue less total cost (made up of explicit plus implicit costs). The result if positive then an *economic,* pure or supernormal profit has been earned, if negative then an economic loss is made and if zero then normal profit has been earned.

(b)

(i) *Normal profit* is when total revenue is exactly equal to total cost when the latter includes both explicit costs. It is the type of profit when made by firms in an industry does not attract new firms into the industry even when no barriers to entry exist. Existing firms also do not leave industry also. The firm's profit then is equal to the implicit costs.

(ii) *Economic profit* is the excess if total revenue over total cost when the latter includes both explicit and implicit costs. It is the type of profit when made by firms in an industry attracts new firms into the industry when no barriers to entry exist while existing firms also expand their production. It is also called pure or supernormal profit.

(iv) *Economic Loss* is the excess of total cost (both implicit and explicit) over total revenue. This type of loss when made by firms in an industry would discourage firms which are unable to cover their variable costs to exit the industry while those who are able to cover their variable costs to exit the industry while those who are able to cover their variable costs to exit the industry while those who are able to cover their variable costs will stay in the short run.

Question 6.4

Consider the following Output cost and revenue Schedule for a firm:

Output	TC ₦	MC ₦	TR ₦	MR ₦
0	100	-	0	-
1	2200	-	2000	-
2	4100	-	3800	-
3	5700	-	5400	-
4	6700	-	6800	-
5	7500	-	8000	-
6	8500	-	9000	-
7	10100	-	9800	-
8	12000	-	10400	-
9	14100	-	10800	-

Required:

(a) Calculate the marginal cost (MC) and marginal revenue (MR) at each level of output.

(b) Determine the output-level at which will maximise profit and why.

(c) Determine the firm's total profit at the output level identified in (b).

Answer

(a)

Output	TC ₦	MC ₦	TR ₦	MR ₦
0	100	**-**	0	**-**
1	2200	**2100**	2000	**2000**
2	4100	**1900**	3800	**1800**
3	5700	**1600**	5400	**1600**
4	6700	**1000**	6800	**1400**
5	7500	**800**	8000	**1150**
6	8500	**1000**	9000	**1000**
7	10100	**1600**	9800	**800**
8	12000	**1900**	10400	**600**
9	14100	**2100**	10800	**400**

(b) The firm will maximize profits when it produces an output of 6 units. This because at this output level, MR = MR = ₦1000 and MC is rising.

(c) Total profit = TR –TC (at Q = 6)

= ₦(9,000 – 8500)

= ₦500

Practice Questions

1. Distinguish between the following pairs of Cost Concepts:
   a. Economic cost and Accounting Cost
   b. Fixed Costs and Variable Costs

2. (a) What do you understand by the concepts of average revenue and marginal revenue?
   (b) The following table gives a revenue schedule of a firm.

Output (Q)	Total Revenue (TR)	Average Revenue (AR)	Marginal Revenue(MR)
1	40		-
2	78		
3	114		
4	148		
5	180		
6	216		
7	238		

Required

(i) Calculate average revenue and marginal revenue at each level of output to complete the table.

(ii) Determine the unit price of the good for output of 4, and explain

3(a) Define each of the following types of short-run costs and draw a graph to illustrate their relationship

(i) Total Fixed Cost (TFC)
(ii) Total Variable Cost (TVC)
(iii) Total Cost (TC)

(b) Describe a firm's long-run average cost curve with the aid of appropriate diagram.

CHAPTER SEVEN

MARKET STRUCTURE

7.0 LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- Outline the features of perfect competition, monopoly, monopolistic competition and oligopoly.
- Illustrate and explain the short-run and long-run equilibrium positions of perfectly competitive, monopoly and monopolistically competitive firms.
- Explain the advantages and disadvantage of perfect competition.
- Explain the sources of monopoly power.
- Identify the conditions under which price discrimination can be successfully practised.
- Define and explain the behaviour of a duopoly firm.

7.1 INTRODUCTION

To the economist, the term market generally refers to the various arrangements people have for trading with one another. The type of market structure within which a firm operates is determined by essential features or characteristics of the market, including the number of firms involved, the extent to which the products of different firms are diverse or homogeneous, and the ease of entry into and exit from the market. The main types of market structure include perfect competition, monopoly, monopolistic competition, oligopoly, and duopoly.

7.2 PERFECT COMPETITION

Basically, perfect competition refers to the market structure in which there is a large number of relatively small firms, each firm having freedom of entry into and exit from the industry. All firms produce homogeneous product and all market participants (buyers and sellers) have full knowledge of the situation in the market, especially about the present price and location of the product.

7.2.1 Characteristics of Perfect Competition

From the definition of perfect competition provided in the preceding section, the main characteristics or essential features of perfect competition can be identified as follow:

(i) **Large number of buyers and sellers:** There are many buyers and sellers in the market to the extent than no single buyer or seller can influence the product price. Thus, all buyers and sellers are described as *price-takers.*

(ii) **Homogeneous product:** The products of all firms must be identical in the eyes of the consumers. Hence, it makes no difference which firm they purchase from, and especially since no factor other than price will influence their purchasing decision.

(iii) **Perfect mobility of resources:** There must be perfect mobility of factors of production so that firms can move freely into or out of the market (i.e. free entry and exist).

(iv) **Perfect knowledge of all relevant information:** All buyers and sellers must have adequate knowledge of existing market conditions. That is, the firms must know technological conditions of production, price of inputs and price at which the product can be sold, while all buyers must know where they can get the product to buy and at what price.

7.2.2 A Firm's Demand Curve in Perfect Competition

Following from the assumption that all firms are price-takers, the demand curve facing each firm in perfect competition is horizontal i.e. perfectly price elastic as shown in Figure 7.1.

Figure 7.1 shows that the firm can sell all it wishes to at the prevailing market price and that price or average revenue *(AR)* is constant and it is equal to marginal revenue *(MR)* because the sale of additional units does not require lowering of price.

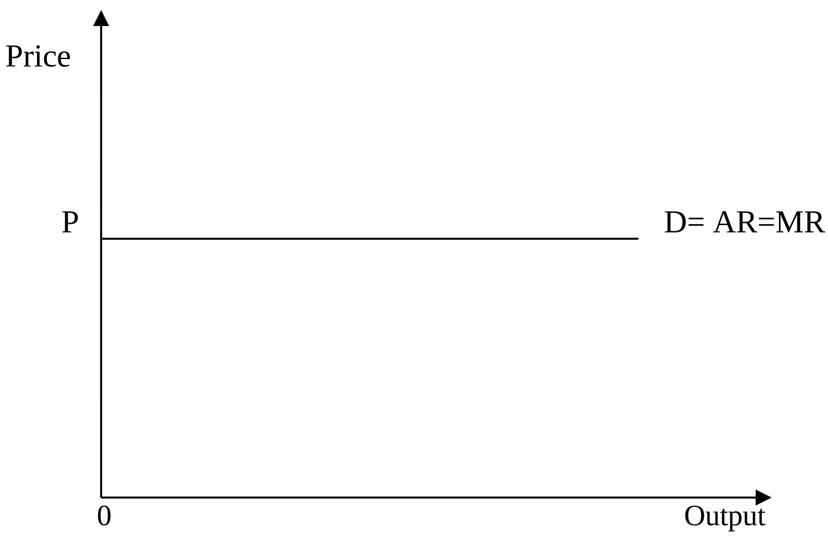


Figure 7.1. The Demand Curve for a Perfectly Competitive Firm

7.2.3 An Industry's Demand Curve In Perfect Competition

All the firms in a perfectly competitive industry together can influence the market price by their collective actions. Hence the industry's demand curve is downward sloping as shown in Figure 7.2.

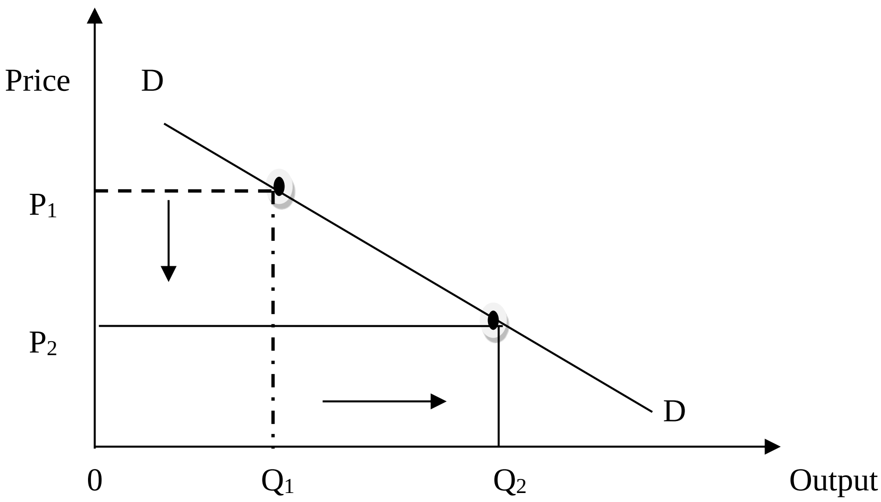


Figure 7.2: Industry Demand Curve in Perfect Competition

7.2.4 Short Run Equilibrium of the Perfectly Competitive Firm

A firm is said to be in equilibrium at the output level where there is no incentive to alter output or supply decision e.g. at the profit – maximizing output level.

The general rule for profit-maximization is that the firm will achieve the maximum profit at the output level where marginal cost (MC) = (MR). Since in the case of perfectly competitive firm, price and marginal revenue are equal, the profit-maximizing rule can be redefined as the point (i.e. output level) where MC = MR=P. It is also necessary that at that output level, MC is rising and the firm is incurring the least cost per unit i.e. short-run average total cost (SAC) of output.

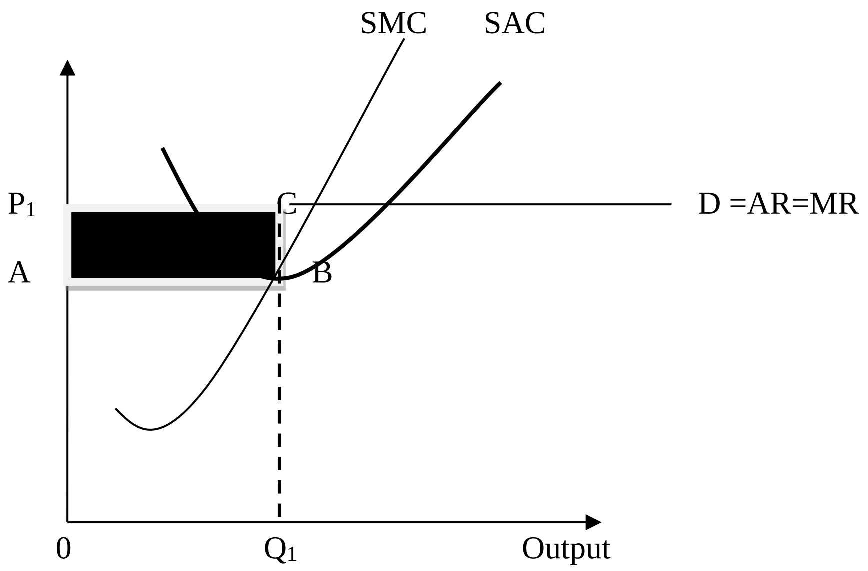


Figure 7.3: The short –run profit- maximising position for a perfectly competitive firm

As shown in Figure 7.3, the firm maximizes its profit by producing output Q_1 where MC = MR =P. The firm's total profit represented by shaded rectangle P_1ABC is obtained as total revenue (rectangle P_1OQ_1C) less total cost (rectangle AOQ_1B). Hence, the perfectly competitive firm is making positive economic profit, otherwise referred to as abnormal profit or supernormal profit in the short-run.

7.2.5 Long Run Equilibrium of the Perfectly Competitive Firm

The existence of positive economic profit in the short-run will encourage new firms to join the industry, especially when there are no barriers to entry. This process of new entry will persist until the profit of each firm in the industry drops to zero; as a result of excess supply and continuous downward review of price to the level where price (P) equals average total cost (LAC).

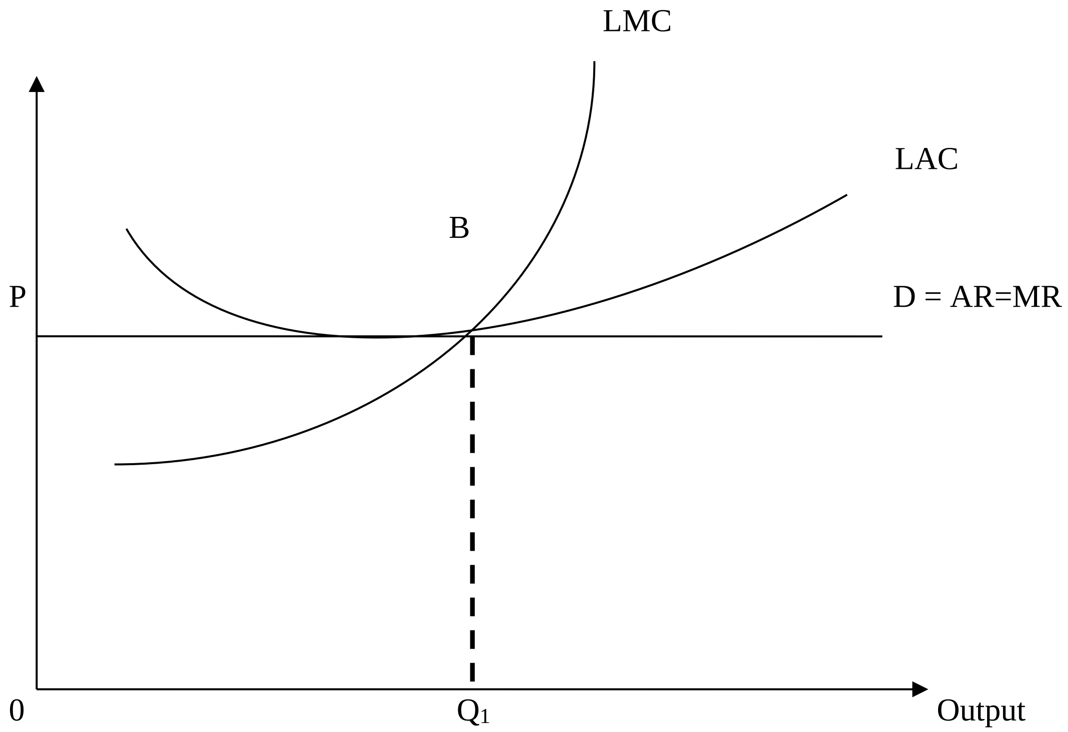


Figure 7.4: The Long –run Equilibrium position of the Perfectly Competitive Firm

In Figure 7.4, it is evident that the perfectly competitive firm makes *zero economic* profit or what is alternatively referred to as *normal profit* in the long run because total revenue (TR) equals total cost (TC).

7.2.6 The Shut Down Point for a Perfectly Competitive Firm

This section provides an analysis of the short-run supply decisions of the perfectly competitive firm.

(a) The Short-run Supply Decision of the Perfectly Competitive Firm

If a firm shuts down operation in the short-run, it will incur a loss equal to its total fixed cost ***(TFC)*** because no variable cost will be incurred. Therefore, the perfectly competitive firm will shut down and produce nothing at any price below which the firm's loss will exceed its total variable cost (TVC) to include a fraction of or all the TFC.

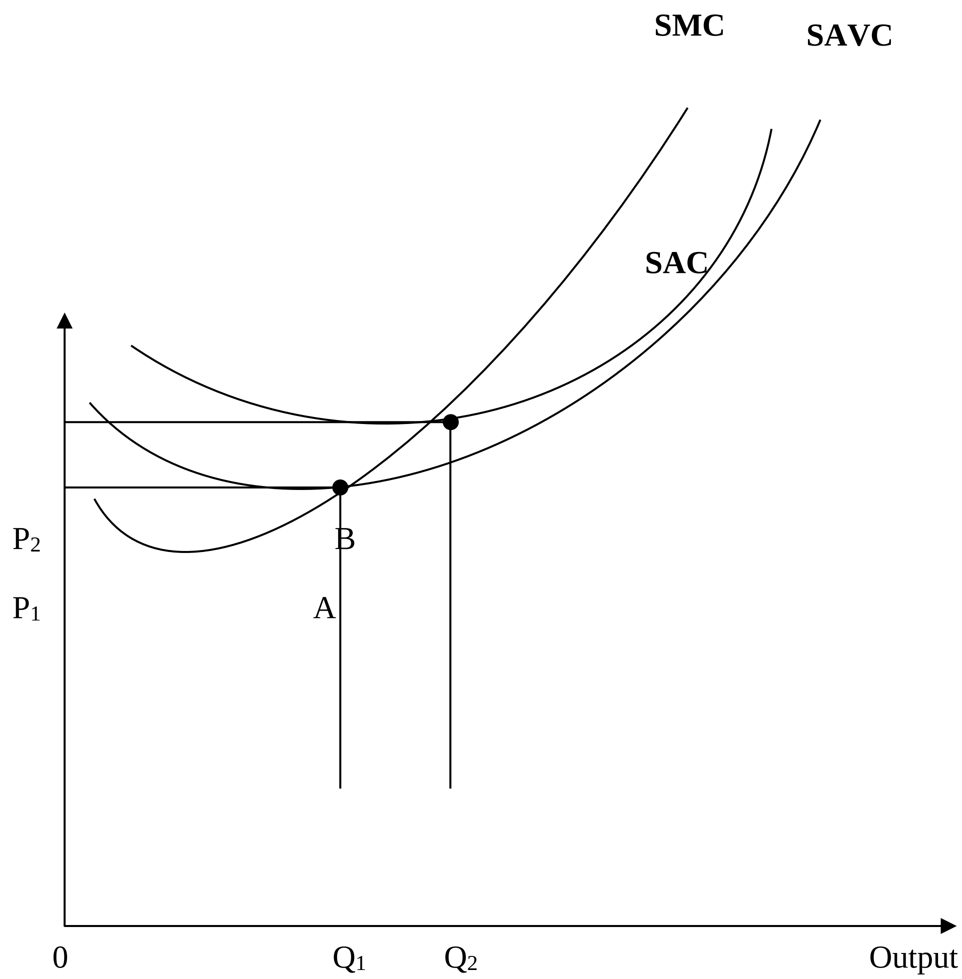


Figure 7.5: The Short-run Shutdown Point for the Firm in Perfect Competition

In Figure 7.5, the firm's short-run supply curve is the short-run marginal cost ***(SMC)*** curve above that point A, the shutdown point corresponding to the output level (***Q_1***) and price (***P_1***) below which the firm cannot cover average variable costs ***(SAVC)*** in the short-run.

(b) The Long-run Supply Decision of the Perfectly Competitive Firm

The long-run shutdown point for a perfectly competitive firm is the minimum point on its long-run average total cost (LAC) curve such as point C in Figure 7.6

In Figure 7.6, point **C** is the firm's shutdown point corresponding to price (P_3) and output (Q_3) below which the firm will not produce any output. The long-run supply curve of the firm is given by the long-run marginal cost curve *(LMC*) above point C (the minimum point on ***LAC***)

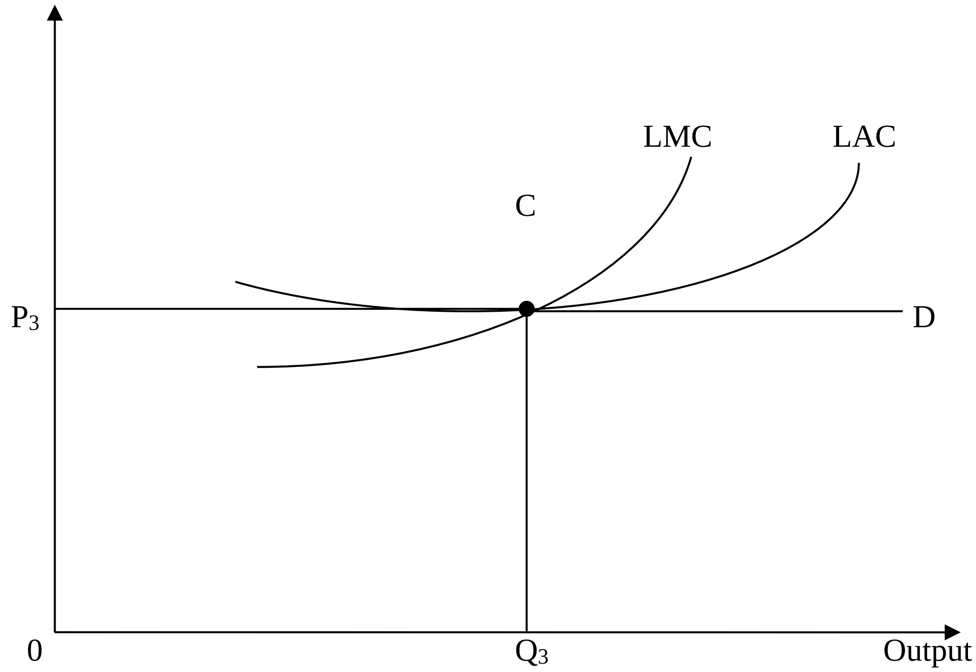


Figure 7.6: The Long-run Shutdown Point for a Perfect Competition Firm

7.2.7 Advantages and Disadvantages of Perfect Competition

Advantages and disadvantages of perfect competition are highlighted in this section

(a) Advantages of Perfect Competition

(i) Goods are sold at the lowest possible price: The absence of barriers to entry makes it possible for new firms to emerge when positive economic profits are being recorded in the industry. As industry supply increases the price falls, to the extent that it may be possible for the consumers to pay prices equal to marginal cost of production.

(ii) Efficient Utilization of resources: Every firm being a price-taker strives to minimize costs thereby making most efficient utilization of resources.

(iii) Sales promotion is less expensive: In perfect competition, products are homogenous in the eyes of the consumers, therefore, expensive advertisement or sales promotional strategy is avoided.

(iv) Consumers enjoy and are better off in terms of consumer surplus.

(b) Disadvantages of Perfect Competition

(i) Firms make little or no profits: The perfectly competitive firm is generally small and makes little profit in the short-run. And in the long-run, the firm earns only normal profits.

(ii) Inventions and Innovations are not encouraged: The absence of barriers to entry promotes technological theft which in turn, discourages inventions and innovations. Therefore, there is no guarantee that resources are most efficiently utilized.

(iii) Social costs are disregarded: The firm equates its private costs to its marginal costs in determining its optimum output. This means that the social costs resulting from negative externalities, especially environmental pollution are not considered in determining the actual benefit of an output to the society.

(iv) The problem of income inequality is worsened: In the long-run, some entrepreneurs who have access to bigger financial capital will adopt cost-saving technology, lower price and drive the smaller firms out of business.

7.3 MONOPOLY

Monopoly is the exact opposite of perfect competition. Strictly defined, pure monopoly is a market structure in which there is a single firm producing a commodity or providing a service that has no close substitutes. As the sole supplier to its market, the pure monopolist is assumed to have no current competitors, and it is protected against the potential competition of new entrants into market.

7.3.1 Characteristics of Monopoly

The main characteristics of monopoly can be identified as:

a. ***One firm in the industry:*** A pure monopoly is an industry consisting of only one firm. The monopoly firm's demand curve is therefore the industry demand curve and it slopes downward – i.e. it must lower price to sell a greater amount of its product.

b. ***Barriers to entry:*** In order for a firm to maintain its monopoly position, barriers exist to prevent the entry of new firm. Such barriers including control over the factors of production, legal protection, economies of scale and consumer loyalty are the main sources of monopoly power.

c. ***Absence of supply curve:*** When deciding how much to produce and what price to charge, the monopolist simultaneously considers demand and cost. The monopolist does not have a supply curve independent of demand conditions contrasts to what obtains under perfect competition.

7.3.2 Sources of Monopoly Power

Any of the following factors may explain the emergence of monopoly firm:

(i) ***Control of the entire supply of a basic input:*** If the entire supply of the basic raw materials required in the production of a commodity is controlled by single firm, such a firm will monopolize the supply of the product.

(ii) ***Economies of scale:*** A large firm may retain a monopoly power through cost advantages gained from the use of cost-saving technology which enables it to sell profitably at a lower price than could any small competitor.

(iii) ***Franchises and patents:*** If a firm invents a machine or production process after huge costs have been incurred on research and development (R and D) efforts, the government may grant the firm monopoly privilege in the form of exclusive license or patent i.e. legal protection that makes it illegal for new firms to produce exactly the same type of machine. This is to encourage creativity in the economy.

(iv) ***State monopoly:*** The government may assume a monopoly power in the production of some commodities or in the provision of some services; either to prevent people from being exploited or to ensure adequate supply of essential facilities which cannot be provided by private entrepreneurs because of huge capital and high risk involved. This is the case for public utilities, such as electricity, water, railway transport service, etc.

(v) ***Merger and acquisition:*** Large firms may merge to control the entire market supply or a large firm may acquire (buy) smaller firms that can no longer operate profitably to gain total control of the market supply.

(vi) ***Location factor:*** Due to the size of an area, there might not be incentive for investors to establish firms in the areas until one investor takes the risk and remains the sole firm in the community enjoying the monopoly power. This is the case for rural banking scheme in most developing economies.

7.3.3 The Short-Run Equilibrium of a Monopoly

The monopoly attains its profit-maximizing objective by following exactly the same rule as the perfectly competitive firm – that is, adjusting its rate of production to the point where marginal cost (MC) is equal to marginal revenue (MR)

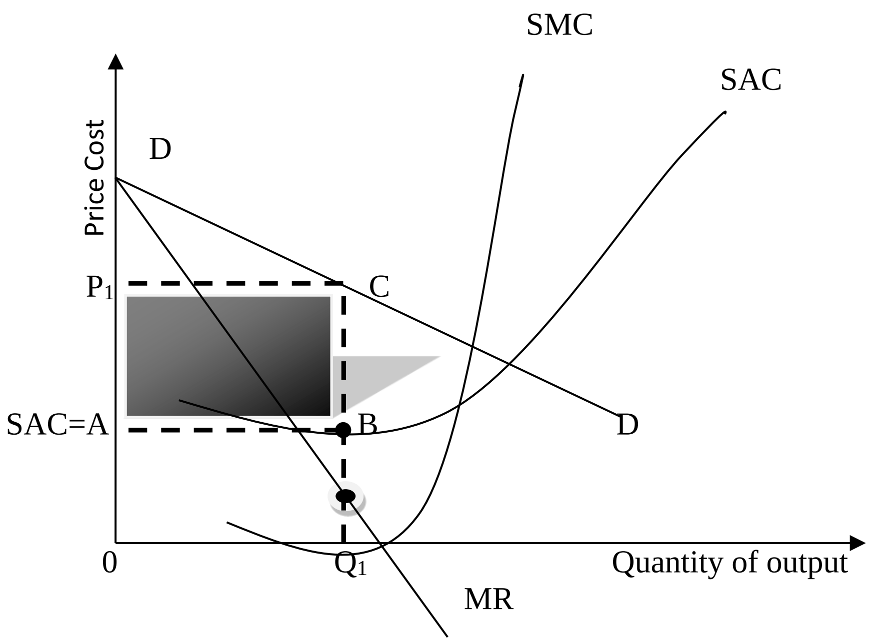


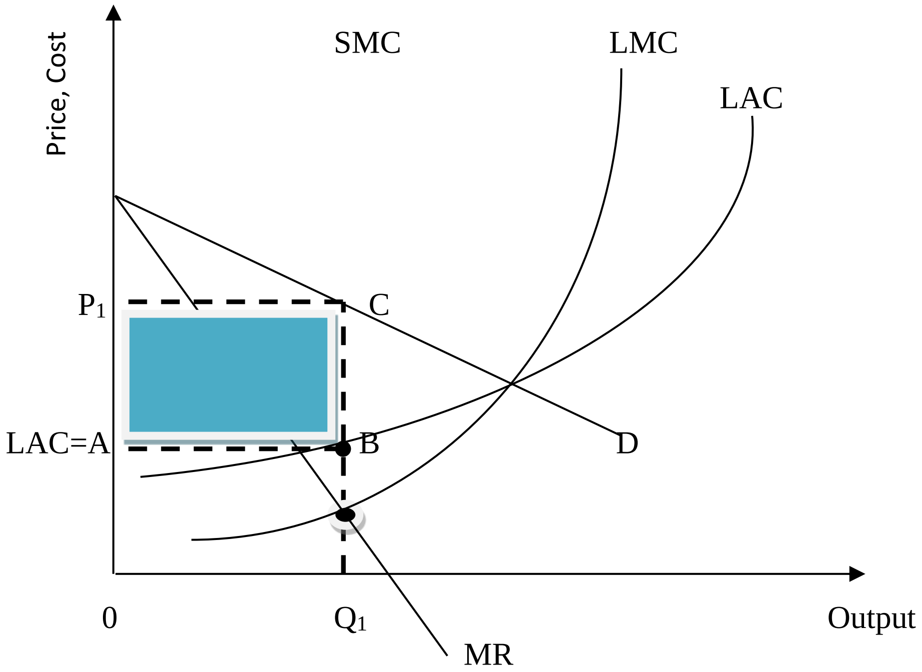
Figure 7.7 Short-Run profit maximising position for a monopoly

Figure 8.1 illustrates the case of a monopoly firm that earns supernormal profit (i.e. positive economic profits) in the short-run by producing output Q_1 where SMC equals *MR*., since price. (P_1) is greater than short-run average cost (SAC). The area of the shaded rectangle P_1 *ABC* gives the magnitude of monopolist`s profits.

7.3.4 The Long-Run Equilibrium of a Monopoly

Under monopoly, barriers to entry allow profits to remain supernormal in the long run. Therefore, in the long-run a monopoly firm will maximize profit by producing where marginal revenue (MR) is equal to long-run marginal cost (LMC), as long as price (P) is greater or equal to long-run average cost (LAC). It also follows that the monopoly firm is not forced to operate at the minimum point on ***LAC*** curve, hence, long run prices will tend to be higher and output lower, under monopoly than under perfect competition, *ceteris paribus.*

FIGURE 7.8 Long-run profit-maximizing positions for a monopoly.



In Figure 8.2, the monopoly firm`s supernormal profit is represented by the shaded rectangle P_1 ABC, while the price charged and the profit-maximizing output are given as P_1 and Q_1 respectively.

7.3.5 Monopoly Price Discrimination

A monopolist may be able to charge different prices to different customers, primarily to increase its profits, if it can identify different types of customers whose demand curves are quite distinct. According to Edwin Dolan (1980):

> Price discrimination is the practice of charging more than one price for different units of a single product, when the price differences are not justified by difference in the cost of serving different customers.

The conditions under which a monopolist will be able to discriminate profitably are given as:

(a) The price elasticity of demand for the product must be different between classes of buyers or in each market. This may be due to differences in income level or in tastes. The firm will charge higher price in the market where demand is less elastic to gain higher total revenue and profit.

(b) The firm must be able to segregate the different buyers according to their elasticity of demand, and the cost of such segregation must not be too high as to wipe off the intended profit of price discrimination.

(c) It must be impossible for some buyers to purchase the commodity at the lower price and then resell it to others at the higher price.

The profit-maximizing output level of the price discriminating monopoly firm is the output level where the marginal cost of its entire output is equal to the marginal revenue in each market.

7.3.6 Advantages and Disadvantages of Monopoly

The usual arguments for and against monopoly are presented in this section.

(a) The Advantages of Monopoly

- **(i) No risk of over – production:** As a sole producer, the firm knows the quantity that consumers of its product will demand and therefore will not produce in excess of demand.
- **(ii) Efficient and full use of resources:** The monopoly firm can use its equipments and machines to their full capacity to producing a large quantity of its product based on the known market. The perfectly competitive firm is not sure of its market share and therefore its resources may be underutilized.
- **(iii) Monopoly helps to reduce price:** Monopoly is associated with large scale production and low average cost; therefore, the firm can afford to sell at a lower price than the perfectly competitive firm.
- **(iv) Inventions and innovations:** The monopolist is encouraged to invest in research and development (R and D) efforts because of the barriers to entry. There is a tendency for the firm to introduce a cheaper technique, sell at a lower price or improve the quality of its products for the benefit of the consumers.

(b) The Disadvantages of Monopoly

- **(i) Exploitation of the consumers**: Consumers pay higher prices than what they would have paid under perfect competition because there is no other place they can access the product.
- **(ii) Consumer choice is restricted**: The firm is the only producer in the market; therefore buyers cannot choose from a wide range of identical goods as it is the case under perfect competition.
- **(iii) Creation of Artificial Scarcity:** Most often the typical monopolist tries to reduce output in order to sell at higher prices and enhance its profit.

(iv) **Inefficiency:** The monopolist faces no challenge as a result of absence of competition. In other words, there is no urge for the firm to adopt cost-saving production technique for efficient use of its resources.

7.3.7 Comparison between Monopoly and Perfect Competition

In perfect competition and monopoly, maximum profit is the primary objectives of the firm and, the objective is attained at the output at the output level where MC = MR. Despite some similarities, there are a number of important difference between the perfect competition and monopoly models.

(i) ***Number of firms in the Industry:*** There is a very large number of small firms (sellers) and buyers in perfect competition. Price is determined for the entire industry by the forces of demand and supply, and each firm is a price – taker. On the other hand, a pure monopoly is an industry with only one firm, and the firm fixes the price for its production. It is therefore called a price setter.

(ii) ***Output and price:*** The perfectly competitive price is lower and the level of output greater than the monopoly price and output, respectively.

(iii) ***Equilibrium conditions:*** Under perfectly competitive equilibrium MC = MR = Price (AR) because MR and AR coincide and is a straight line parallel to the quantity axis. Under monopoly, the AR curve slopes down to the left with MR curve below it. They are at equilibrium when $MC = MR < Price\ (AR)$.

(iv) ***Profit maximization positions in the long-run:*** In the long-run, the firm in perfect competition will earn normal profit because the short-run supernormal profits are competed away by the new firms that will enter the industry. On the contrary, the monopoly firm will always earn supernormal profits in the long-run because there are barriers preventing entry of new firms and competition.

7.4 MONOPOLISTIC COMPETITION

Monopolistic competition describes a market or industry where there are large numbers of firms producing (selling) products which consumers believe are close but not perfect substitutes for each other.

7.4.1 Characteristics of Monopolistic Competition

The following are the main features of monopolistic competition.

(a) ***Larger market of firms in the industry:*** There are many small firms each supplying only a small share of the total market output. Hence, no firm has any perceptible influence on the price and output decisions of other firms in the industry.

(b) ***Product differentiation:*** *The* firms supply products that are differentiated i.e. similar but not identical. Therefore, each firm has some degree of market power, especially some discretion as to what price to charge for its products.

(c) ***Freedom of entry and exit of firms:*** Barriers to entry are relatively small or non-existent, and productive resources are highly mobile. Product differentiation tends to facilitate the entry of new firms in the industry.

(d) ***Nature of demand curve:*** The demand curve for each firm's product is downward sloping and highly price elastic due to the large number of close substitutes. Price must be lowered to sell a large quantity hence, *MR* curve also slopes downward and falls below the demand curve.

7.4.2 Short-Run Equilibrium under Monopolistic Competition

Equilibrium follows the same rule as in perfect competition and monopoly. That is, to maximize its profits, the monopolistic competitive firm will adjust its rage of production to the point where *MC* is equal to *MR.* Similarly, the firm will be shut down completely in the short-run to minimize its losses, if it is unable to cover all of its variable cost of production at any positive rate of output.

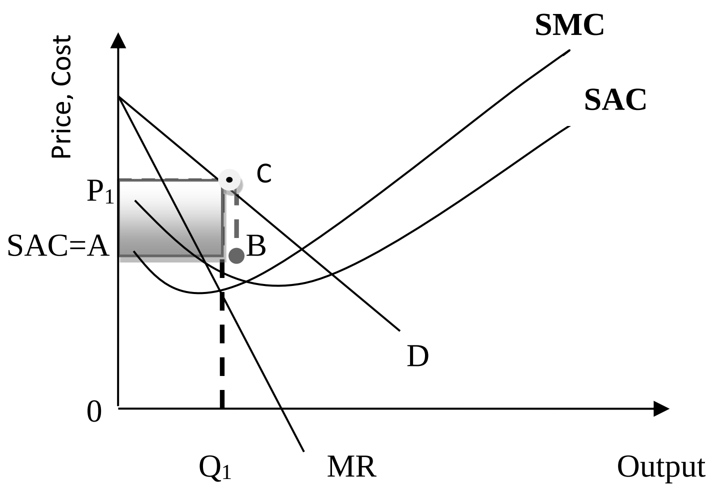


Figure 7.9 Short-run profit maximising position of a monopolistically competitive firm

Figure 7.9 above shows that, in the short-run, the firms is earning supernormal profits represented by the shaded rectangle P_1ABC by charging price P_1 and producing output Q_1.

7.4.3 Long-Run Equilibrium under Monopolistic Competition

The supernormal profits earned in the short-term is competed away in the long-run as a result of the entry of new firms that are producing close substitutes (as experienced by firms under perfect competition). Eventually, the monopolistically competitive firm will reach long-run equilibrium (profit-maximization) position whereby it receives a price (P) that is equal to long-run average total cost (LAC), so that it will be earning only a normal profit as illustrated in Figure 7.10

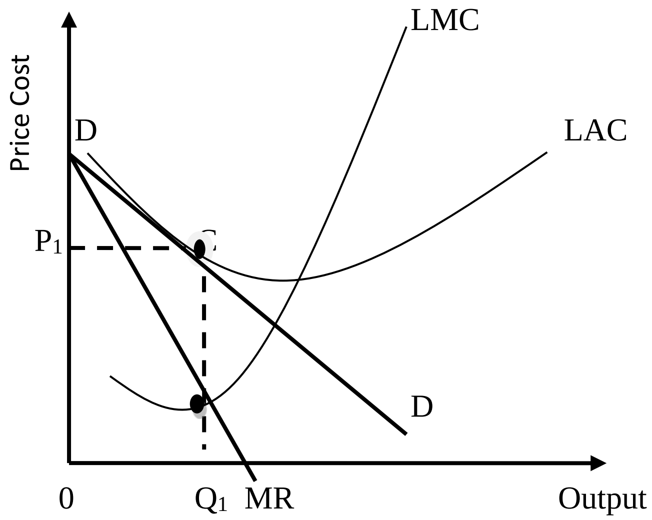


Figure 7.10: Long-Run Profit Maximizing Position of a Monopolistically Competitive Firm

7.5 OLIGOPOLY

Oligopoly refers to an industry or market with a few firms producing (selling) products that are either homogeneous or differentiated. The firms are so few that the action of one firm affects the decision of other firms in the industry. Where the firms produce homogeneous products, it is called *pure* or *perfect Oligopoly* and where they produce heterogeneous or differentiated products it is called *imperfect or differentiated oligopoly*. Examples of oligopoly are found in the few industries producing automobiles, cement, cigarettes, rubber tyres, newspaper, and so on.

7.5.1 Characteristics of Oligopoly

The following are the main features of oligopoly:

(a) ***Interdependence:*** There is mutual interdependence among the firms. That is, the market share of one firm is significantly affected by the actions of one or more of its rival firms, and this is recognized by each firm in the industry.

(b) ***Barrier to entry:*** There are substantial barriers to entry into the oligopolistic industry. Such barriers include exclusive patents, control over essential inputs, economies of scale, high capital requirements, plant cost, etc.

(c) ***Advertisement:*** As in monopolistic competition, oligopolistic firms also strive to achieve product differentiation and higher proportion of the market share through intensive advertisement.

(d) ***Identical or differentiated products:*** The firms in the oligopolistic industry may produce either identical or differentiated products. Firms in the steel and banking industries produce virtually identical products, whereas firms in the automobile industry are characterized by differentiated products.

(e) ***Lack of uniformity:*** The firms in the industry differ considerably in size. The industry is highly concentrated as a result of several kinds of barriers preventing new firms from entering. Note that, a *concentrated industry* is an industry that has a large percentage of its output produced by a few firms.

(f) ***Absence of unique pattern of pricing behaviour:*** The rivalry arising from interdependence among the oligopolistic firms lead to two conflicting motives. Each firm wants to remain independent as well as achieve maximum possible profit.

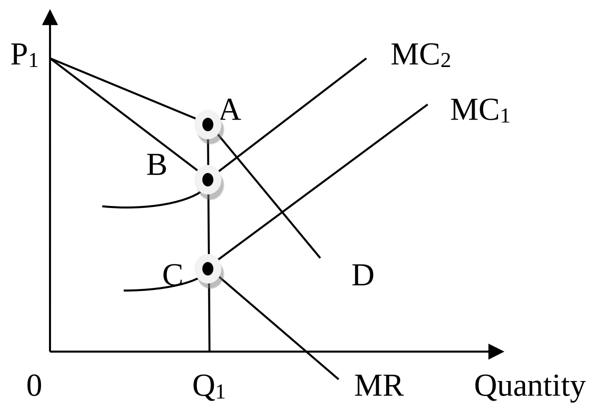
7.5.2 The Behaviour of Firms under Oligopoly

There is no unique relationship between price and output of firms in an oligopolistic industry. The demand curve for the product of an oligopolistic firm is therefore derived from assumptions regarding the actions and reactions of competitors in terms of a price review, or a new advertising campaign, or development of a new product, and so on.

Based on the features of oligopoly identified in section 7.5.1, the oligopolist also faces a downward sloping demand curve whose nature is dependent on competitor's reaction to a price change, especially where products are similar. For instance, the tendency for the oligopolist to be driven by self-interest towards stable prices is discussed in the context of the kinked demand curve theory.

As shown in Figure 7.11, the oligopolistic firm believes rivals will match price cuts but not per unit. If price is raised above P_1, the quantity sold (demand) will decrease by a greater proportion (demand is price elastic) because rivals will not raise their prices. A price reduction, however, would be matched by rivals, and the quantity sold would not increase proportionally (demand is price inelastic). Hence, the oligopolist's demand curve is kinked at A, which in turn, produces a discontinuity in the MR curve between B and C.

Figure 7.11 The kinked Demand Curve



As shown in Figure 7.11, the oligopolistic firm believes rivals will match price cuts but not per unit. If price is raised above P_1, the quantity sold i.e. demand will decrease by a greater proportion (demand is price elastic) because rivals will not raise their prices. A price reduction, however, would be matched by rivals, and the quantity sold would not increase proportionally (demand is price inelastic). Hence, the oligopolist's demand curve is kinked at A, which in turn, produces a discontinuity in the MR curve between B and C.

The general presumption is that firms in an oligopoly market tend to charge higher prices and produce a smaller total industry output than do firms in perfectly or monopolistic competitive industries due to the existence of substantial barriers to entry by new firms. In social welfare terms, this implies that there is underproduction and inefficient allocation of resources.

Similarly, following the same assumption of barriers preventing new firms from entering the market, the firms in an oligopoly are also able to earn economic profit in the long-run.

7.6 DUOPOLY

Duopoly is a special case of the theory of oligopoly. Duopoly is a market structure in which only two firms constitute the industry – i.e. they produce the entire market supply. A change in the price – output policy of one will affect the other, and may elicit a chain of reactions.

7.7 SUMMARY

Market structure refers to the nature and extent of competition that exist within a particular market. Every modern economy is characterised by a range of market structures including perfect competition, monopoly, monopolistic competition, oligopoly, and duopoly.

Perfect competition is market structure in which there are many buyers and seller selling homogenous product, hence no one has the power to influence the market price. In monopoly, there is only a single seller for the whole market. Monopolistic competition refers to a market structure in which there are many firm producing differentiated products. Thus a monopolistically competition firm can exert influence on its market price. Oligopoly is a market structure having few independent firms in the market, while in duopoly there are only two firms existing or dominating the market.

7.8 Revision Questions

Multiple Choice Questions

1. The demand curve facing each firm in perfect competition is

   A. Perfectly price elastic
   B. Perfectly price inelastic
   C. Fairly price elastic
   D. Fairly price inelastic
   E. Unit-price elastic

2. Which of the following statements is true of the perfectly competitive firm?

   A. Marginal revenue is less than its price
   B. Marginal revenue is equal to its price
   C. Marginal revenue is higher than its price
   D. Marginal cost is equal to its total cost
   E. Marginal cost is equal to its fixed cost

3. The demand curve faced by a pure monopoly is

   A. Downward sloping
   B. Horizontal
   C. Vertical
   D. Upward sloping to the right

E. Upward sloping from the left

4. The monopoly firm is in short-run equilibrium when

A. Price equals marginal cost
B. Price equals average cost
C. Price equals marginal revenue
D. Marginal cost equals marginal revenue
E. Marginal cost equals average revenue

5. Kinked demand curve is associated with:

A. Perfect competition
B. Monopolistic competition
C. Monopoly
D. Duopoly
E. Oligopoly

6. Kinked demand curve is associated with:

A. Perfect competition
B. Monopolistic competition
C. Monopoly
D. Duopoly
E. Oligopoly

7. A market situation with only a few sellers each anticipating the reaction of others is called

A. Monopolistic competition
B. Perfect competition
C. Duopoly
D. Oligopoly
E. Monopoly

8. Monopolistic competition is characterized by

I. A few numbers of firms.
II. Product differentiation.
III. Supernormal profit in the long run.

A. I only
B. II only
C. III only
D. I and II only
E. I, II and III together

9. One of the disadvantages of perfect competition is

A. Absence of or less expensive sales promotion
B. Invention and innovations are not encouraged

C. Lowest price is obtainable in the market
D. Consumer’s choice is not restricted
E. Free flow of market information

10. The monopoly firm faces the market demand curve which is also its
    A. Average revenue curve
    B. Total revenue curve
    C. Marginal revenue curve
    D. Variable cost curve
    E. Average fixed cost curve

Solution to Multiple Choice Questions

1. A
2. B
3. A
4. D
5. E
6. E
7. D
8. B
9. B
10. A

Short Answer Questions

1. A market structure in which the firm is also the industry is …………………….

2. The demand curve facing the firm in the perfect competition is ……………….elastic

3. A market structure characterised by a large number of firms producing differentiated product is called ………………………

4. The shut-down condition for a monopolistic firm is when……………………..

5. A profit maximization position of a monopolistic firm is when…………………….

Solution to Short Answers Questions

1. Monopoly
2. Perfectly price elastic
3. Monopolistic competition
4. Price is less than average variable cost (AVC)
5. MC=MR

Question 7.1

(a) Explain what you understand by perfect competition

(b) Explain the long–run equilibrium position of a firm operating under conditions of perfect competition. (12 Marks)

Solution

(a) Perfect completion refers to the market structure in which there are a large number of relatively small firms, each firm having freedom of entry into and exit from the industry. All firms produce homogeneous product and all market participants (buyers and seller) have full knowledge of the situation in the market, especially about the present price and location of the product.

(b) In the long-run, in the firm in perfect competition is making normal profit or zero economic profit as shown in Figure 1 below (total cost equal total revenue)

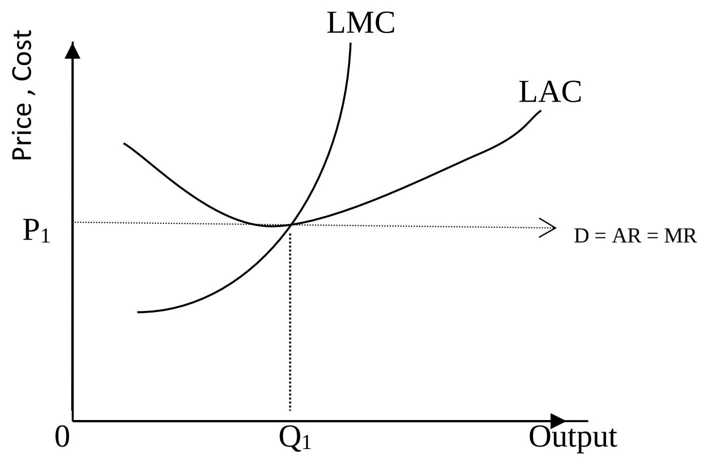


Figure 1: The Long-run Equilibrium Position of the Perfectly Competitive Firm.

The existence of positive economic profit in the short-run serves as an incentive for new firms to join the industry, especially since there are no barriers to entry. The process of new entry will persist until the profit of each firm in the industry is competed out. That is, excess supply and continuous downward review of price to the level where price (P) equals average total cost (LAC) will engender zero economic or normal profit in the long-run.

Question 7.2

(a) Explain the term ‘monopoly’

(b) Outline any FOUR main sources of monopoly power

Solution

(a) Monopoly is a market structure in which there is a single firm producing a commodity or providing a service that has no close substitutes. As the sole supplier to its market, the pure monopolist is assumed to have no current competitors, and it is protected against the potential competition of new entrants into its market.

(b) The main sources of monopoly power include the following:

(i) ***Control of the entire supply of a basic input.*** It only one firm has access to or controls the entire supply of the basic raw materials required in the production of a product, such a firm will monopolize the supply of the product.

(ii) ***Economies of scale.*** A large firm may retain a monopoly power through cost advantages gained from the use of cost – saving technology which enables it to sell profitably at a very low price that discourages other firms or make it unprofitable for other firms.

(iii) ***Franchise and patent right.*** A discovery or invention of a give product or a new production process can lead to emergence of monopoly, when government gives the firm legal backing so that no other firm produces the same product or copy the technology. This is to allow the inventor derive the benefit of the money (resources) committed to research and development (R ad D) effort.

(iv) ***State monopoly***. The government may assume monopoly power in the production of some commodities or in the provision of some services; either to prevent people from being exploited or to ensure adequate supply of essential services or facilities which cannot be provided by private entrepreneurs because of huge capital and high risk involved. This is the case for public utilities, such as electricity, water, railway, transport service, and so on.

Question 7.3

(a) Give four main features of monopolistic competition.

(b) A firm operating under conditions of monopolistic competition has the following total cost and total revenue function.

Output/month (000s)	Total Cost (N'000s)	Total Revenue (N'000)
1	47	90
2	80	140
3	105	170
4	125	190
5	160	200
6	215	180

You are required to determine the:

(i) Marginal revenue (MR) and marginal cost (MC) trends

(ii) Profit-maximizing level of monthly output

(iii) Profit – maximizing selling price

Solution

(a) The main features of monopolistic competition are:

(i) ***Large number of firms in the industry.*** There are many small firms each supplying only a small share of the total market output. Hence, no firm has any perceptible influence on the price and output decisions of other firms in the industry.

(ii) ***Product differentiation.*** The firm supplies products that are differentiated i.e. similar but not identical. Therefore, each firm has some degree of market power, especially some discretion as to what price to charge for its products.

(iii) ***Freedom of entry and exit of firms***. Barriers to entry are relatively small or non-existent, and productive resources are highly mobile. Product differentiation tends to facilitate the entry of new firms in the industry.

(iv) ***Nature of demand curve.*** The demand curve for each firm's product is downward sloping and highly price elastic due to the large number of close substitutes. Price must be lowered to sell a large quantity hence, MR curve also slopes downward and falls below the demand curve.

(b) (i) To obtain the MC and MR trends, use the following formulas:

$$MC = \frac{\Delta TC}{\Delta Q} \quad : \quad MR = \frac{\Delta TR}{\Delta Q}$$

Where ΔTC = change in total cost
ΔTR = change in total revenue
ΔC = change in output (quantity)

Q (000s)	**MC (N000s)**	**MR (N'000)**
1	-	-
2	33	50
3	5	30
4	20	20
5	35	10
6	55	-20

(ii) The profit – maximizing output level is the level of output at which MC = MR. Therefore, in the above table of MC = MR trends, the profit – maximizing level of monthly output is 4, 000 (i.e. where MC = MR = ₦20)

(iii) Profit – maximizing selling price (P) can be obtained at the profit – maximizing output Level as: $P = \frac{\Delta TR}{Q} = \frac{190{,}000}{4{,}000} =$ ₦47.50

Practice Questions

1. (a) Highlight any FOUR main features of the perfectly competitive firm.
   (b) Explain the short-run equilibrium position of the perfectly competitive firm.

2. (a) Distinguish between the terms *product differentiation* and price discrimination.
   (b) Explain any THREE disadvantages of monopoly.

3. (a) Explain briefly each of the following market structures
   (i) Oligopoly
   (ii) Duopoly

   (b) Outline any FOUR main features of Oligopoly.

CHAPTER EIGHT

NATIONAL INCOME ACCOUNTING

8.0 LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- Explain what is meant by national income accounting
- Explain basic or key accounting concepts: (i) Gross Domestic Product (GDP), (ii) Gross National Product (GNP) (iii) Net National Product (NNP)
- Identify and explain the methods of computing national income:
  (i) Output/Product method, (ii) Income method and (iii) Expenditure method.
- The concept of the circular flow of income.
- Identify and explain the problems associated with national income measurement
- Explain the uses of national income statistics.

8.1 INTRODUCTION

Knowledge of the output measure of a country's economic activities is necessary if the government of the country is to formulate and implement economic policies essential to enhance the country's production performance. This is possible if the government can measure, in monetary terms, the total output of goods and services produced in the country during any given period of time. This chapter, therefore, identifies the various national income concepts and provides the platforms which have been designed for measuring national output.

8.2 DEFINITION AND KEY NATIONAL INCOME CONCEPTS

8.2.1 Definition of National Income

National income is a term used to measure the monetary value of the flow of the output of goods and services produced in an economy over a period of time, usually a year.

8.2.2 Basic National Income Concepts

- **Gross Domestic Product (GDP)**

  Gross domestic product measures the total output in the domestic economy. It is the total monetary value of all final goods and services produced within a country during a specified period of time, usually a year. It includes all the output produced by local and foreign-owned firms domiciled in the economy. Nominal GDP, real GDP and potential GDP are three different measures of aggregate output.

Nominal GDP is the market value of all final goods and services produced in the domestic economy in a one-year period at current prices. By this definition, (i) only output exchanged in a market is included (do-it-yourself services such as washing your own clothes are not included); (ii) output is valued in its final form (output is in its final form when no further alteration is made to the good which would change its market value); and (iii) output is measured using current year prices.

Because nominal GDP values are inflated by prices that change overtime, aggregate output is also measured holding the prices of goods and services constant over time. This valuation of GDP at constant prices is called real GDP. The third measure of aggregate output is potential GDP (trend GDP), the maximum production that can take place in the domestic economy without putting upward pressure on the general price level.

- **Gross National Income (GDP)**

GNP is the market value of all final goods and services produced by the nationals of a country during a specified period of time usually a year. It follows from this definition that all goods and services produced by the nationals of a country (within or outside) are embodied in the GNP.

- **Net National Product (NNP)**

NNP is the net money value of final goods and services produced in an economy in a time period, usually a year. It is obtained by deducting capital consumption allowance from GNP.

- **National Income (NI)**

This is the sum of all incomes earned by the factors of production in the economy during a specified period of time, usually a year. The national income measures the costs of the economic resources which have gone into the current production (of this year's output), hence, it gives us the value of output at factor costs rather than at market prices.

8.3 METHODS OF COMPUTING NATIONAL INCOME

There are three mutually exclusive methods of computing national income. They are: (i) The Product/Output method; (ii) The Income method; and (iii) The Expenditure method. Which method is to be employed will depend on data availability and the purpose in hand.

8.3.1 The Product/Output Method

Under this method, the value of all goods and services in a given economy during a particular period (e.g. a year) are added or aggregated

The first stage in the aggregation process is to determine the value of goods and services produced within the geographical boundaries of a country known as Gross Domestic product at market prices (GDP). GDP is calculated by summing the values added at intermediate levels of production or the monetary value of all final goods and services in a particular accounting period within a country. Market prices are used to convert real values of goods and service to their monetary values.

The addition of the relevant monetary values of goods and services produced during the accounting period gives GDP.

GDP measures the value of goods and services produced within the domestic boundaries of a country e.g. Ghana. It includes goods and services of foreign owned firms that are located in Ghana.

The second stage is to determine GDP at factor cost . Market prices are used to convert real values into monetary values to arrive at GDP. These values are distorted because of indirect taxes and subsidies and do not reflect the factor cost of output. To adjust for these effects, indirect taxes are subtracted and subsidies added to GDP to arrive at GDP factor cost.

GDP at factor cost = GDP – indirect taxes + subsidies

The third stage in using the product method is to calculate the gross national product at factor prices (GNP). GNP measures the final monetary value of goods and services produced by Nigerian owned factors of production whether they are located in Nigerian or overseas. For example, Nigeria's GDP will include the services of Chevron, a foreign owned oil consortium. But some of the profit made by Chevron in Nigeria will be sent to Belgium and will be part of Belgium's GNP. This is so because Chevron is owned by Oil consortium in Belgium. Therefore,

GNP = GDP± Net property income (NPI)

NPI is the net difference of interest, profits and dividends coming into the Ghana from Ghanaian assets owned overseas matched against the flow of profits and other incomes from foreign owned assets located within Ghana.

Finally, we calculate the net national product. When capital stock is used to produce goods and services they wear and tear. To account for wear and tear depreciation is provided for. When depreciation is subtracted from GNP, we obtain net national product at (NNP), which is identical to national income.

8.3.2 The Income Method

This method values GDP as the sum of final incomes earned by factors of production located in a country for the production of goods and services for a defined accounting period.

The first stage under the income method is to determine and sum up factor incomes. We account for only factor incomes generated through the production of goods and services. Some of these incomes are wages, salaries, commissions, etc. before taxes, social security and pension deductions which accrue to labour; rent, royalties, etc. which accrue to land; interest and dividends which are earned by capital and profits of private and public businesses which accrue to enterprise.

We therefore, exclude from the accounts transfer payments e.g. state pension, private transfer of money from one individual to another.

The summation of these relevant incomes before taxes and other deductions gives gross domestic income at factor cost (GDY_f).

The next stage is to calculate gross national income at factor cost (GNY_f). This is done by subtracting or adding net property income (NPI) to GDY_f. That is $GNY_f = GDY_f \pm NPI$

Finally we determine the net national income. This is done by subtracting depreciation from the GNY_F, this is what is referred to as national income.

8.3.3 The Expenditure method

Under the expenditure method GDP is the sum of the final expenditure on goods and services produced in a country measured at market prices. There are four main spending sectors: Household consumption (C), Firms (l), Government (G) and Foreign sector (X-M).

Symbolically, GDP = C+1+G+(X-M)

where: C = Household spending on consumption i.e. personal consumption expenditure. This is made up of expenditure by households on durable and non-durable goods and services, for example, household expenditure on plantain, cars, shoes, etc

I = Capital investment spending measured as gross private domestic Investment, i.e. business fixed investment e.g. plant and machinery, all construction such as business and residential buildings and changes in inventory.

G = General government spending i.e. government purchases of final goods and services. They consist of central government expenditure on defence, wages and salaries of government employees and other expenditure on and by local authority. However, it excludes all government transfer payments because such outlays do not reflect any current production.

(X-M) = Net exports: - these consist of exports of goods and services minus imports of goods and services.

Having identified the spending sectors we now begin to sum them up. The first stage is to calculate total spending in the domestic economy on all goods and service whether produced locally or imported for an accounting period. This is referred to as Total Domestic Expenditure at market prices (TDE). That is, TDE = C+I+G.

The second stage is to compute gross domestic expenditure (GDE) which is identical to GDP. GDE is total spending on domestically produced goods and services. Since TDE is total spending in a country on goods and services whether produced in the country or imported we need to adjust the TDE to arrive at GDE. There two adjustments:

a. Exports are goods produced within the domestic economy but exported. If we are interested in total value of output which is GDE we must determine the value of current output exported and add it to TDE.
b. Imports, on the other hand, are goods and services we spent money on but are not produced within the domestic economy and must be subtracted from TDE to have GDE.

Symbolically, GDE = C+I+G+(X-M)

GDE is calculated using market prices hence it must be converted to factor cost. This is done by subtracting indirect taxes and adding subsidies to GDE at market prices.

From GDE at factor cost, we add or subtract net property income (NPI) to obtain GNE at factor cost. That is GNE at factor cost = GDE at factor cost ± NPI.

Finally, we subtract depreciation from GNE at factor cost to get NNE at factor cost which is referred to as national income.

8.4 The Circular Flow of Income.

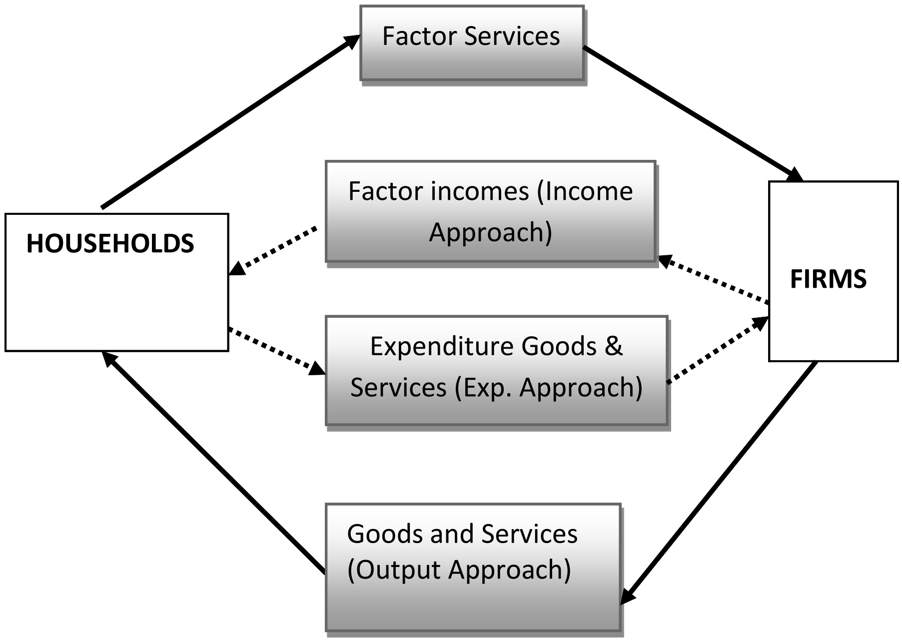


Figure 8.1: The Circular Flow of Income

The diagram (Fig 8.1) shows Real Flow (goods and services) and Monetary flow (Income and expenditure).

The bottom pair of arrows depicts the goods market. In this market, households exchange money for the goods and services produced by the firms. The total value of these goods and services estimates national income from the product/output side. The other arrow shows the expenditure approach. (The summation of these expenditures represents the expenditure approach).

The top pair arrows represent the factor market in which the firms exchange money for the services provided by the households, that is , wages – payments for labour services, interest for capital, rent for land and profit for enterprise. This look at national income represents the incomes earned by factors of production for producing the economy's goods and services.

The circular flow diagram shows that national income may be measured by final output or product (Product or Output Method), final incomes (Income Method) and final expenditure (Expenditure Method)

The diagram gives us the basic national income identity: National Income = National Product= National Expenditure. This identity means that actual incomes received in the economy are identical to both actual expenditure and actual output or product produced in the economy.

We must also emphasize here that in accounting for national income, we use ex-post (what actually happened in the economy) not ex-ante (what people wish or intend to happen).

8.5 PROBLEMS OF MEASURING NATIONAL INCOME

(i) **Multiple or double counting:** this has to do with intermediate goods, intermediate expenditure and transfer payment. There is the likelihood of valuing, for example, cassava and gari, counting expenditure on materials for making suit, as well as the suit and counting incomes earned not for productive activities (transfer payments). If this happens, the value of total output will be grossly exaggerated. This problem is avoided to a very large degree by taking note of only the value added or final expenditure and excluding transfer payments.

(ii) **Marketability of goods**:- National income is the money value of goods and services produced in a given period. A problem arises in connection with goods and services that are not exchanged through the market. This problem is solved to some extent by including goods and services that do not enter the market. Conventionally, items that do not enter the market are included.

(a) Rent is imputed to owner occupied houses.

(b) Value is also imputed to food produced and consumed on the farm.

(c) Housewives' services are excluded but services of maid – servants and washer-men are included.

(iii) **Depreciation**:- Capital stock wears and tears when used to produce goods or to render services. We account for this as depreciation or capital allowance. To arrive at NNP depreciation is subtracted from GNP. The problem here is how to accurately estimate depreciation. If the value of depreciation is over estimated or under estimated national will be invariable affected.

(iv) **Inadequate statistical data**:- One basic problem of estimating national income is the lack of statistical data. This problem is more pronounced in developing countries like Ghana and Nigeria. Individuals, business firms and the government at times do not keep proper records of incomes, output and expenditure. Government departments with the responsibilities to collect and collate vital statistical data do not keep up-to-date records. For example in Ghana because of lack of data on income the income method is not used in estimating national income.

(v) **Price Level Changes**: National income is measured in terms of money whose value changes from time to time. It is therefore, difficult to make a stable valuation of national income. This problem is dealt with by expressing national income estimates in real terms in constant prices.

(vi) **National income records legal incomes of goods and services:** This means illegal incomes are excluded. This may pose a practical problem to the national income accountants since some illegal incomes may find their way into the national income.

8.6 USE OF NATIONAL INCOME ESTIMATES

(i) **Indices of Economic Welfare:** National income estimates particularly the per capita income is a very useful indicator of economic welfare. Per capita income in real terms gives a rough idea about the economic welfare of people in a country.

(ii) **Used for Economic planning:** National income estimates are used to determine the savings and investment potential rate of economic growth of a country. To plan for an increase in the national income, current levels of national income must be known. This information is provided if we calculate income estimates.

(iii)**Helps policy makers to understand the economic structure of a country:** The product approach provides detailed information on the contributions of the various sectors and sub-sectors of the economy. Data provided by the expenditure approach gives an idea about the proportion of income invested, consumed or transferred. Finally, data provided by the income approach provides information on functional distribution of income, which is useful for income tax policies.

(iv) **Used to approximate the potential demand:** Per Capita Income data is used to estimate demand for various commodities. This is a very useful piece of information for potential investors. An investor will be interested in per capita income because generally the higher the per capita income, all other things being equal, the higher will be the demand for goods and services.

(v) National income estimates are used to determine the subscriptions of nations to international bodies e.g. IMF, IBRD, UN, ECOWAS etc to which they belong.

(vi) **National Income estimates are also useful as a basis for inter-temporal and international comparison of living standards:** These estimates make it possible for comparison of standard of living of two or more countries. In this respect, the per capita income in real terms is normally used. In addition, the performance of an economy after a planned period can be ascertained by comparing the size of the national income before the plan with the national income after the implementation of the plan. This is known as inter-temporal comparison. The national income statistics of different countries can be compared. This type of comparison is called the international comparison.

8.7 SUMMARY

The national income or product or expenditure provides a measure of total value at factor cost of final goods and services, which are available either for consumption or for addition to wealth.

GDP is the monetary value of final goods and services produced in an economy (for example within the four walls of Ghana) in a given time period, say one year.

National Income estimates are very useful to economists, policy makers, business people and investors. However, some problems are faced in accounting for national income.

8.8 REVISION QUESTIONS

Multiple Choice Questions

1. Which of the following expressions best describes the GDP at factor cost?

    A. GDP – subsidies + indirect taxes
    B. GDP – Indirect taxes + subsidies
    C. GDP + Indirect taxes + subsidies
    D. Indirect taxes + Subsidies – GDP
    E. Subsidies – indirect taxes + GDP

2. Using the income method of computing the National Income of a country, which of the following are excluded?

    A. Value added
    B. Net wages
    C. Transfer payments
    D. Interest and dividends earned
    E. Final values of goods

3. Which of the following measures the value of goods and services produced within a given country for a given year?

    A. GNP
    B. NNP
    C. NNI
    D. Per Capita Income
    E. GDP

4. The following are problems associated with National Income computation except:

A. Changes in price level
B. Depreciation
C. Double counting
D. Adequate statistical data
E. Illegal incomes

5. In a two-sector circular flow model, the factor services are provided by the

A. Firms and households
B. Households
C. Firms
D. Government
E. Foreign nations

6. Which is correct according to the national income accounting model?

A. GDP=GNP-Depreciation

B. GDP=C+I+G+(X-M)

C. GDP=Total Income- Total Expenditure

D. Net Imports= X-M

7. Consider the following statements and identify the right ones.

i. National income is the monetary value of all final goods and services produced.

ii. Depreciation is deducted from gross value to get the net value

A. i only

B. ii only

C. both

D. none

8. Select the correct statement:

A. Transfer payment are included in national income

B. Depreciation allowance is a part of GNP

C. Taxes are not included in NNP

D. GDP means gross direct production

9. To avoid double counting when GDP is estimated, economists:

A. Use GDP deflator

B. Calculate value added at each stage of production

C. Use retail prices

D. Use price of only intermediate goods

10. Personal income includes:

A. direct taxes and transfers

B. indirect taxes and transfers

C. depreciation and transfers

D. none of these

Solution to Multiple Choice Questions

1. B
2. C
3. E
4. D
5. B
6. B
7. C
8. B
9. B
10. A

Short-Answer Questions

1. The monetary value of total goods and services in an economy during a year at the prevailing market prices is called………………………

2. The difference between the gross value of a product and the raw materials used for its production is described as the …………………..

3. Gross National expenditure less depreciation gives………………………..

4. The conventional identity of national income equilibrium of an open economy under the expenditure approach is ……………………..

5. Payments made not in return for any contribution to current output are called……………………

Solution to Short Answers Questions

1. Nominal GDP
2. Value added
3. Net National Expenditure
4. Y= C+I+G+(X-M)
5. Transfer payments

Question 8.1

(a) Explain the concept of Gross Domestic Product (GDP)

(b) How is Real Gross Domestic Product different from real Gross National Product

Solution

a) GDP measures the total monetary value of goods and services produced within the domestic boundaries of a country e.g. Ghana for an accounting period. It includes all the goods and services produced by foreign owned firms that are located in the country e.g. Ghana for the accounting period.

b) GNP measures the final monetary value of goods and services produced by citizens whether they are located in the country or overseas. For example, Ghana's GDP will include the services of Areeba a foreign owned communication giant. But some of the profit made by Areeba in Ghana will be sent to South Africa and will be part of South Africa's GNP. This is so because Areeba is owned by MTN South Africa.

Question 8.2

a) Define Gross Domestic Product at market prices.
b) Show how the Gross Domestic Product (GDP) at market prices is computed.
c) What is the economic merit of using the value added approach in computing the GDP?

Solution

a) GDP measures the total monetary value of goods and services produced within the domestic boundaries of a country e.g. Ghana for an accounting period. It includes all the goods and services produced by foreign owned firms that are located in the country e.g. Ghana for the accounting period.

b) The first stage, GDP is calculated by summing the values added at intermediate levels of production or the monetary value of all final goods and services in a particular accounting period within a country. Market prices are used to convert real values of goods and services to their monetary values. The addition of the relevant monetary values of goods and services produced during the accounting period gives GDP.

   The second stage is to determine GDP at factor cost. Market prices are used to convert real values into monetary values to arrive at GDP. These values are distorted because of indirect taxes and subsidies and do not reflect the factor cost of output. To adjust for these effects, indirect taxes are subtracted and subsidies added to GDP to arrive at GDP at factor cost.

   GDP at factor cost = GDP – indirect taxes + subsidies

Question 8.3

a) Explain why Gross domestic Product is identical to Gross Domestic Expenditure and Gross Domestic Income.
b) What is the importance of this national income identity in (a) to national income statiscians?

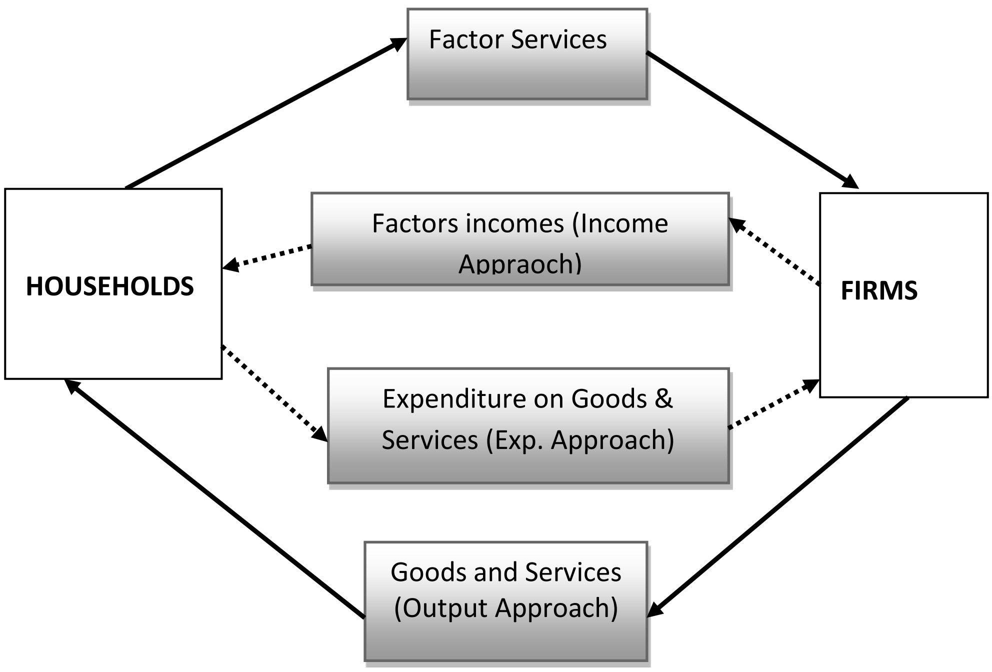
Solution

a) There are three (3) methods used in computing national income: These are the Income Method, the Product /Output Method and the Expenditure Method. The reason for this is shown by the two sector circular flow of income below.

Basic Assumptions:

1. ***The economy has two sectors – household sector and business sector.***
2. ***The role of savings investment is not captured.***
3. The government and the foreign sectors are also not represented.

The Circular Flow of Income



The diagram shows Real Flow (goods and services) and Monetary Flow (Income and expenditure).

The bottom pair of arrows depicts the goods market. In this market, households exchange money for the goods and services estimates national income from the product/output side. The other arrow shows the expenditure approach. The summation of these expenditures represents the expenditure approach).

The top pair of arrows represents the factor market in which the firms exchange money for services provided by the households, that is, wages-payment for labour services, interest for capital, rent for land and profit for enterprise. This look at national income represents the incomes earned by factors of production for producing the economy's goods and services.

The circular flow diagram shows that national income may be measured by final output or product (Product or Output Method), final incomes (Income Method) and final expenditure (Expenditure Method)

The diagram gives us the basis national income identity: National Income ≡ National Product ≡ National Expenditure. This identity means that actual incomes received in the economy are identity to both actual expenditure and actual output or product produced in the economy.

The importance of this identity, is that it allows national income statisticians to decide on the best method to use for the estimation of a country's national income. Having taken into account the strengths and the weaknesses of the three approaches as well as the conditions prevailing in and specific to the country the statistician decides on which method(s) to use.

Question 8.4

a) Define National Income.
b) State and explain three (3) uses of national income statistics.
c) Identify and explain three (3) problems relating to national income estimation.

Solution

a) National Income is the total income that accrues to the inhabitants or normal residents of a country for participating in economic activities within a year.

b) Any three (3) of uses of national income statistics.

- It helps to organize economic data and activities.
- It helps to classify economic activities into various segments or sectors.
- It helps to keep track of total production within the macro economy.
- It helps to determine the economic performance of a country.
- It helps in policy formulation and implementation etc.

c)

i. Changing prices of goods and services. Prices of goods and services do change from one period to another. This makes comparison of national income estimates from year to year difficult because the yearly estimates are in current prices of the various years (nominal terms)

ii Multiple or double counting: This is the problem of intermediate goods, intermediate expenditure and transfer payments. There is the likelihood of valuing, for example, both the corn and kenkey, counting expenditure on shoes as well as the leather that was used in making them and counting incomes earned not for productive activities (transfer payments)

iii.) Marketability of goods:- Since national income is the money value of goods and services produced in a given period, the problem arises in connection with goods and services that are not exchanged through the market.

iv.) Depreciation: - when capital is used in production, it wears and tears. To account for this, capital allowance must be deducted from the GNP to arrive at the NNP. A problem arises of accurately estimating depreciation. If care is not taken, national income will be overestimated or underestimated.

v.) Inadequate statistical data: - one basic problem of estimating national income is the lack of statistical data. Individuals, as well as the businessmen, do not keep proper records of incomes, output, expenditure, etc. this stems from the

Question 8.5

Explain the meaning of the following terms as used under national income accounting:

i. Final goods
ii. Value added
iii. Current output
iv. Factor Cost

Solution

Final Goods: Final goods are goods and services which are being purchased for final use and not for resale or further processing or manufacturing.

Value Added: It is the extra worth that a firm or a producer adds to a product in the course of its production. If a gari processing firm purchases cassava for hundred thousand naira and later turns it into gari which is sold or valued at hundred and fifty thousand naira, then, the value added is fifty thousand naira (i.e. ₦ 150,000 -₦100,000 = ₦50,000).

Current Output: It refers to goods and services produced in the accounting period. This is so because under national income we are accounting for output within a defined time or accounting period say for 1st January 2000 to 31st December 2000.

Factor Cost: The net price, that is, the market price minus indirect taxes or plus subsidies, is the factor cost, which is the amount received by the factors of production in that productive activity.

Practice Questions

1. Draw a well-labeled circular flow of income.

2. Given the information below for an economy (amount in ₦m)

Net Income from abroad	= -2.5
Gross Domestic Product	= 101
Indirect Business Taxes	= 10.2
Consumption of fixed capital	= 17
Company Tax	= 1.1
Personal Tax	= 1.5
Social Insurance Contribution	= 3.5
Undistributed Profits	= 2.6
Transfer Payments	= 2.4
Subsidy	= 2.0

Required: Calculate,

(a) The Gross National Product (GNP)

(b) The Net National Product (NNP)

(c) The National Income (NI)

(d) The Personal Income (PI) and

(e) The Personal Disposable Income

3. What is the purposes of comparing national income data of two countries and what difficulties may be encountered in the process?

CHAPTER NINE

NATIONAL INCOME DETERMINATION

9.0 LEARNING OBJECTIVES

At studying this chapter, you should be able to

- Explain the concept of aggregate expenditure.
- Identify and explain determinants of consumption expenditure
- Distinguish between investment as a component of aggregate expenditure and investment used in the ordinary sense.
- Identify and explain the factors that determine investment, government expenditure and net exports.
- Explain the processes of determining equilibrium national income.
- Explain factors that cause equilibrium national income to change over time.
- Explain the role of multipliers in the Keynesian employment theory.
- Distinguish between inflationary and recessionary gaps.
- Explain the rudiments of the accelerator theory of the demand for investment.
- Calculate equilibrium national income and the multiplier given a simple structural equation.

9.1 INTRODUCTION

Under Chapter 9, we accounted for total production of goods and services which we dubbed national income accounting. This chapter will take us through the determinants of national income. A little bit of history is needed for thorough understanding.

Classical Economics is the school of economic thought before the appearance of Keynes' work, propounded by Adam Smith in 1776. This school believed that individual self-interest and competition determine prices and factor rewards. They argued that the price system is the most efficient device for resource allocation. The classical macroeconomic theory is rooted on Say's Law of markets. According to Say's Law, supply creates its own demand as prices move to balance demand with aggregate supply. In effect, the Classical believed that supply (aggregate production) determines national income and full employment is assured. In the 1930s, this way of thinking ran into problems. This led to the Keynesian economics.

Keynesian Economics is the body of economic thought developed by John Maynard Keynes who held the view that a capitalist system did not automatically tend towards full employment equilibrium. Keynes believed that the resulting under-employment equilibrium could be cured by fiscal or monetary policies to raise aggregate demand. According to Keynes, aggregate production or national income is determined by aggregate expenditure i.e. total planned spending by all sectors of the economy.

9.2 FACTORS DETERMINING THE SIZE OF NATIONAL INCOME

The size of a nation's national income is determined primarily by the size of its planned aggregate expenditure.

(a) **Planned Aggregate Expenditure (AE) or Y:** This is planned total spending in an economy on domestically produced goods and services within a specified period of time. It is determined as the sum of planned spending by all sectors of the macro economy represented as households (C), firms (I), government (G), exports (X) and imports (M).

(b) **Models of Aggregate Expenditure:**

i. A closed economy without government: This is also referred to as a two sector economy made up of households and firms. In this economy Y= C + I.
where C = Consumption; I = Investment

ii. A closed economy with government. This is made up of households, firms and government. Aggregate expenditure is the sum of C, I and G. i.e. Y = C + I + G

iii. An open economy: This is made up of households, firms, government and the foreign sector (X-M)
i.e. Y = C + I + G + (X –M)

9.3 COMPONENTS OF AGGREGATE EXPENDITURE (REVISED)

(a) **Consumption Expenditure and Consumption Function**

i. Planned Consumption Expenditure (C) is made up of planned expenditure by households on durable and non-durable goods and services such as household expenditure on plantain, cars, shoes, and so on.

ii. Consumption Function: A consumption function, in its simplest form expresses the relation of consumption to disposable income (defined as gross income minus tax), holding non-income determinants of consumption constant. This function is represented as follows:

$C = a+bY_d \qquad a > 0; \quad 0 < b < 1$

where C = Consumption expenditure;

Y_d = Disposable income

The consumption function in this form is a linear function (a straight line) where:

"a" measures consumption expenditure when income is zero ($Y_d = 0$). This is called autonomous consumption. It is independent of the level of disposable income.

"bY_d" is income induced consumption expenditure. This is the proportion of consumption expenditure that is dependent on the level of disposable income.

"b" measures the extent of a change in consumption expenditure with respect to a change in disposable income. It is the slope of the consumption function. It is called the marginal propensity to consume (mpc).

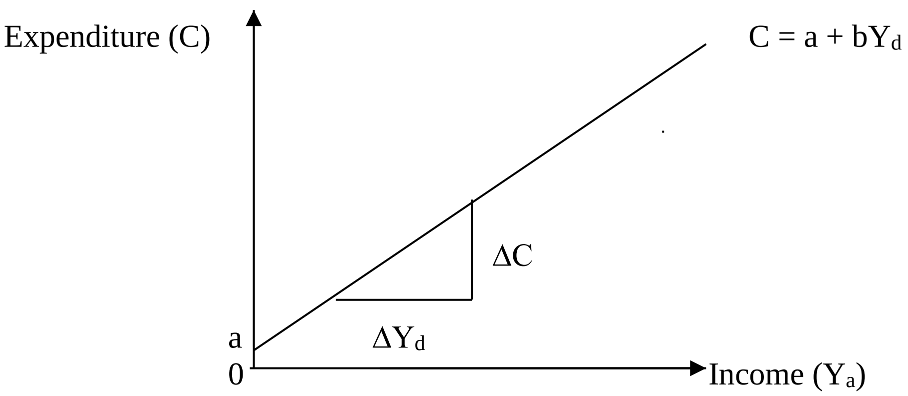


Figure 9.1: Consumption Function

Figure 9.1 depicts the consumption function. "a" is non-income induced consumption expenditure or the autonomous consumption expenditure and the line marked $C = a + bY_d$ is the consumption function. The slope of the consumption function is $\Delta C/\Delta Y_d$ and is equal to "b"

b) Saving and the Saving Function

i. Saving:- This is part of disposable income not consumed. It is disposable income less consumption expenditure. This is calculated as $S = Y_d - C$ where 'S' is saving, Yd (disposal income) and C (consumption expenditure).

ii. The Saving Function is also a functional relationship between saving and disposable income. The saving function complements the consumption function because disposable income is either consumed or saved. There are two main components of the saving function: autonomous saving and income induced saving. Below is the saving function that complements the consumption function specified above.

$S = -a + (1\text{-}b)Y_d \qquad -a < 0 \;; \quad 0 < (1 - b) < 1$

where:

"a" is the non income induced saving or autonomous saving, that is, saving at zero level of disposal income (dis-saving).

"(1-b)" is the marginal propensity to save (MPS).

"(I-b) Y_d" is the income induced saving.

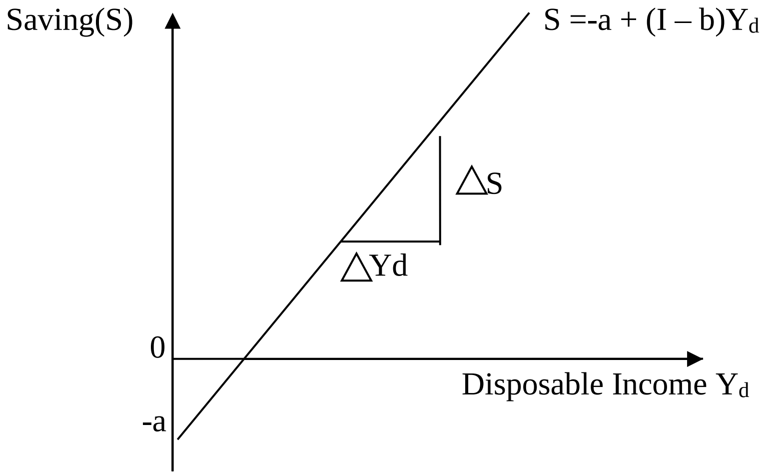


Figure 9.2: Saving Function

Figure 9.2 shows the saving function which relates saving to the level of disposable income in the form $S = -a + (1 - b)\, Y_d$

(c) Determinants of Consumption and Saving

(i) The level of disposable income: The level of disposable income is the basic determinant of how much households will consume or save. All things being equal, an increase in disposable income will increase consumption expenditure/saving and vice versa.

(ii) Wealth: This refers to the stock of accumulated purchasing power stored up from the past. For example, savings done in the past can be used to finance current consumption. The higher an economy's wealth, all other things being equal, the higher will be current consumption.

(iii) Expectations: Households' anticipation regarding future prices of goods, their nominal income and the availability of goods may have an impact on their current spending. Anticipation of rising prices and product shortages tend to cause more spending and less saving.

(iv) Total household indebtedness: Debts are paid with current income. If in an economy total household debts are huge, there is the likelihood that current level of consumption expenditure and saving will be low and vice versa.

(v) Inflation: In an economy, the higher the level of inflation, the lower the volume of savings.

(vi) Fiscal Policy: Changes in fiscal policy in the form of taxation will affect the consumption function. For example, increased taxation will adversely affect the consumption function. by reducing the disposable income of the people.

(d) Planned Investment Spending

Planned Investment in this context is defined *as planned spending devoted toward increasing or maintaining the stock of capital.* Planned Investment as defined here does not include planned buying of bond, purchasing of stocks, creating deposits in banks, etc.

There are three kinds of investment

i. Housing construction (residential and business)
ii. Purchasing of machinery and
iii. Additions to a firm's inventory of goods

For the sake of simplicity, we will assume that investment as used here is autonomous, meaning it does not depend on aggregate income. There are two main determinants of such investments:

- *Anticipated Rate of Return*: Businesses invest because of profit. This implies that investment spending is based on profit motive; the business sector buys capital goods only when it anticipates such purchases to be profitable.
- *The real interest rate (i):* Business firms at times borrow funds for investment. These borrowed funds are repaid out of future revenues. The annual opportunity cost of using a Naira to make an investment is represented by the real interest rate. Thus, the higher the real rate of interest, the less will be the profits to the business after paying interest and the less it will want to invest and vice versa.

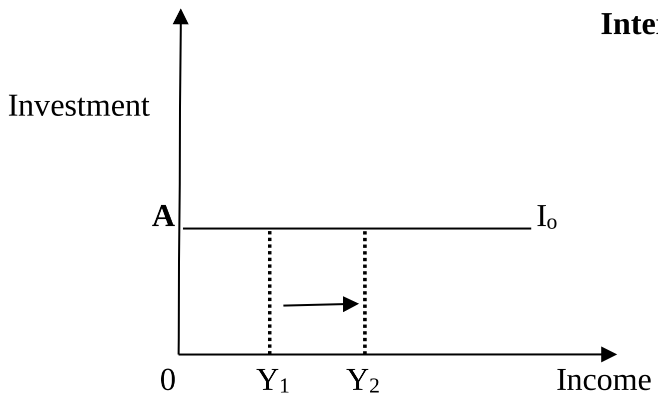


Figure 9.3(a): Autonomous Investment

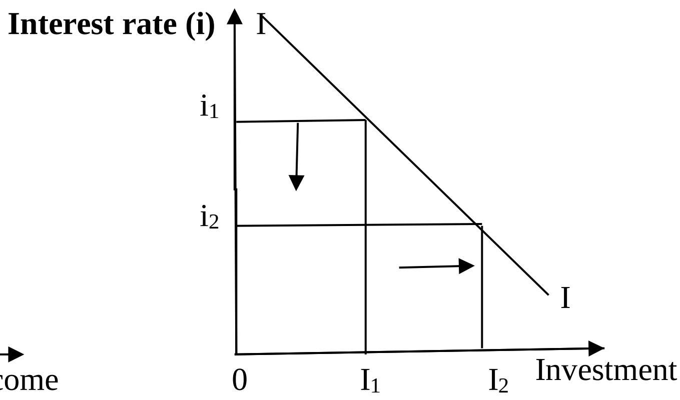


Figure 9.3(b): Investment Function

Figure 9.3 (a) shows the level of autonomous investment spending which remains constant at **A** irrespective of income levels. It is an investment spending which is independent of income changes.

Fig. 9.3 (b) shows that investment expenditure (I) increases as interest rates (i) falls from i_1 to i_2. An investment demand curve shows the relationship between gross investment and the rate of interest, holding constant other variables that affect investment spending.

(e) Government Expenditures (G)

The third component of aggregate demand is government expenditures on goods and services. This component embraces all spending at each level of government - federal, state, and local. Government purchases of goods and services may be used directly in the construction and maintenance of roads, hospitals, schools, and so on. By varying these expenditures, government can influence the equilibrium level of national income and output.

(f) Net Exports (X-M)

To complete our discussion on aggregate demand, we should add the demand in the external sector. Demand in the external sector is described as net exports (X-M) where X stands for expenditures on exports and M for expenditures on imports.

9.4 EQUILIBRIUM LEVEL OF NATIONAL INCOME AND MULTIPLIER

9.4.1 Aggregate Demand = Aggregate Supply Approach

The equilibrium level of national income is determined at the point where aggregate supply is equal to the aggregate demand for the country's goods and services. The aggregate demand is attained by adding up the spending from all sectors of the economy (AD = C + I + G + [X - M]). Aggregate supply, on the other hand is measured by the national income (Y). Therefore, the equilibrium stands at the point where Y = AD or Y = C + I + G + [X - M]

This means that equilibrium national product corresponds to the intersection of the aggregate expenditure schedule and the 45^0 line (aggregate output schedule) as shown in figure 9.4.

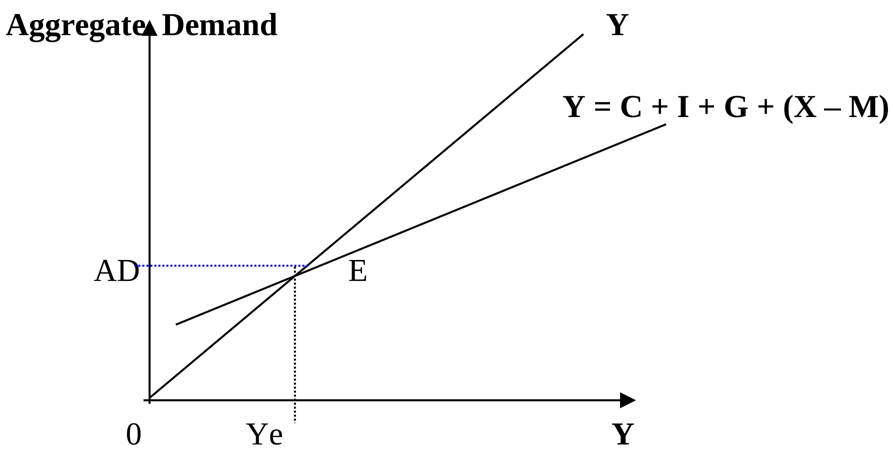


Figure 9.4: Aggregate demand - Aggregate supply Approach to the Equilibrium

National Income Determination

Observe that the aggregate supply is represented by the 45^0 line starting from the origin in figure 9.4.

9.4.2 Leakages and Injections Approach

(a) Leakages (L)

A leakage represents a part of aggregate income that is not used to purchase domestically produced goods and services during the year. There are three kinds of leakages in an open economy. These are

i. Savings (S) e.g. personal saving from current disposable income.

ii. Import purchases (M) e.g. the purchase of refined sugar from Cuba.

iii. Net taxes – the difference between taxes paid to government and transfer payments (T).

(b) Injections (J)

An Injection of spending is a purchase made by business firms, governments or foreign buyers that increase the flow of income in a nation. These injections are in the form of:

i. Investment

ii Government expenditure

iii. Exports (X)

In an open economy when Y = AE, injections must equal leakages. Aggregate income (Y) is disposed of in three main ways

First, as consumption expenditure: second as saving and finally as taxes. We can represent this as

$$Y = C + S + T \qquad [9.1]$$

We also noted that in equilibrium

$$Y = C + I + G + X - M \qquad [9.2]$$

We can rewrite equation 9.2 as

$$C + S + T = C + I + G + X - M \qquad [9.3]$$

Re-arranging equation 9.3 gives 9.4

$$I + G + X = S + T + M \qquad [9.4]$$

Equation 9.4 shows that in equilibrium, injection must equal leakages.

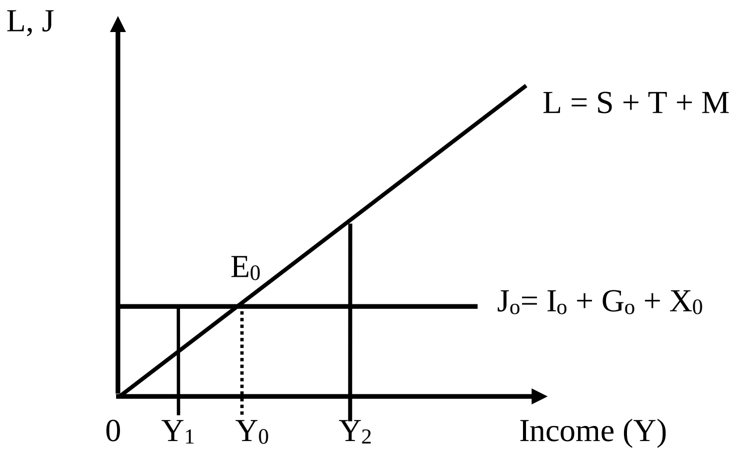


Figure 9.5: Injection – Leakages Approach

In Figure 9.5, equilibrium income is given as Y_0 and equilibrium point as "E_0". The injections line is parallel to the income axis because the components of injections (I, G and X) are autonomous of changes in aggregate income. On the other hand, the leakages line is positively inclined because the components of leakages are income induced. At real income level Y_1, Injections are more than leakages implying disequilibrium. At Y_2, leakages are more than injections showing disequilibrium.

9.4.3 Algebraic Determination of Equilibrium Income

An open economy is represented by the structure equation (model) below:

$Y=C+I+G+(X-M)$ (9.5)

where $C = a + bYd$ $a > 0;\ 0 < b < 1$ (9.6)

$Yd = Y-T$ [disposable income] (9.7)

$T = T_o$ [Lump-sum tax] (9.8)

$I = I_o$ [Investment Expenditure] (9.9)

$G = G_o$ [Government Expenditure] (9.10)

$X = X_o$ [Export (autonomous)] (9.11)

$M= M_o$ [Import (autonomous)] (9.12)

Derivation of equilibrium national income

Substitute into equation (9.5)

$Y = a + bYd + I_o + G_o + (X_o - M_o)$

$= a + b(Y - T) + I_o + G_o + (X_o - M_o)$

$= a + bY - bTo + I_o + G_o + (X_o - M_o)$

$Y - bY = (Y - T) + I_o + G_o + (X_o - M_o)$

$(1 - b)Y = (Y - T) + I_o + G_o + (X_o - M_o)$

$Y = \frac{1}{1-b}\frac{1}{1-b}\ [a - bT_o + I_o + G_o + (X_o - M_o)]$ (9.13)

where $\frac{1}{1-b}\frac{I}{I-b}$ is the multiplier

Equation (9.13) gives the equilibrium national income

Note that, at this level, we are concerned with a simple national income model for an open-economy.

Hence, our assumptions include that tax (T), investment expenditure (I) government expenditure (G), export (X) and import (M) are fixed or given. (i.e. they are said to be autonomous)

In a more complex national income model, the tax and import functions can be defined as:

$T = T_o + tY$ (9.14)

$M = m_o + mYd$ (9.15)

Where T_o = lump sum tax

M_0 = autonomous import expenditure

m = marginal propensity to import

When T and M are redefined as in equations (9.14) and (9.15), we will arrive at equilibrium national income that is different from what we have in equation (9.13). We consider such discussion to be outside of the current syllabus.

Algebraic illustration of the multiplier $\frac{-b}{1-b}$

Recall:

$$Y = \frac{1}{1-b}\frac{1}{1-b}\ [a - bT_o + I_o + G_o + (X_o - M_o)] \qquad (9.13)$$

If we expand equation (9.13) we will arrive at

Investment multiplier (K_I)

$$K_I = \frac{dI}{dY}\frac{1}{1-b}\frac{d1}{dy} = = \frac{1}{1-b}$$

Government expenditure multiplier (K_G)

$$K_G = \frac{dI}{dY}\frac{1}{1-b}\frac{dG}{dy} = \frac{1}{1-b}$$

Tax multiplier (K_T)

$$K_T = \frac{-b}{1-b}\frac{-b}{1-b}$$

The algebraic illustration shows that we could have other kinds of multiplier by taking the partial derivatives of equation 9.13

9.4.4 The Concept of Multiplier

Equilibrium national income changes if injections and/or leakages change. Under this section we introduce you to the Multiplier. This analyses the magnifying effects of changes in leakages and/or injections on equilibrium income. The multiplier effect is the ability of a given initial change in demand expenditures to cause a bigger total change in equilibrium national income. The multiplier is the multiple of the change in demand expenditures by which the equilibrium national income rises. That is, for a given change in investment spending, the associated multiple change by which equilibrium national income rises will be specially referred to as the investment multiplier.

If ΔY = change in national income and ΔI = change in investment expenditure, then,

$\Delta Y/\Delta I$ = Investment multiplier which can be denoted as:

$K = \Delta Y/\Delta I$ …………………………………………….(9.16)

Figure 9.5 gives a graphical illustration of the investment multiplier. Similarly, government expenditure multiplier can be denoted as:

K = ΔY/ΔG …………………………………………..(9.17)

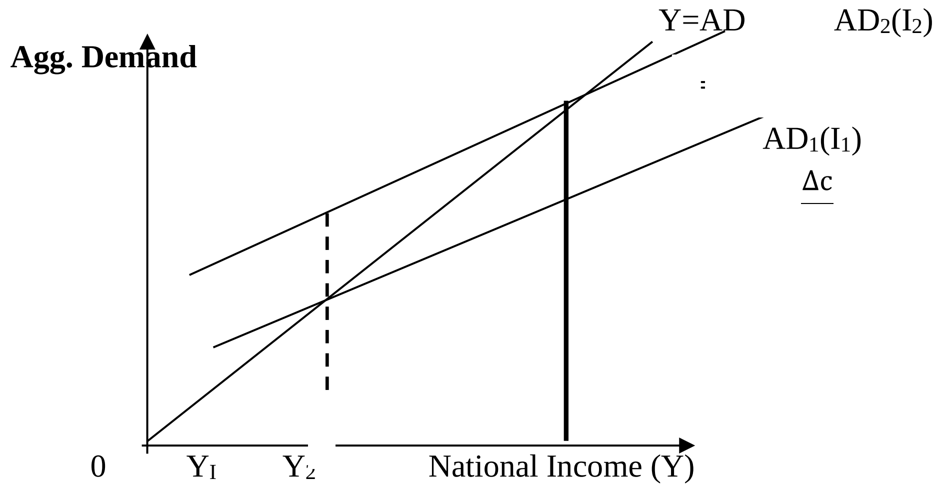


Figure 9.5: Investment Multiplier

9.5 THE ACCELARATOR PRINCIPLE OF INVESTMENT

(a) The Multiplier concept we introduced to you linked increased investment spending with increased aggregate expenditure that invariably increased aggregate income and employment. We however, did not account for what would cause the increase in investment spending. The Accelerator Principle is one of the theories that explains the demand for investment.

Accelerator Principle holds that a change in the rate of output induces a change in the demand for investment in the same direction.

The accelerator Principle deals with the relationship between net investment, the stock of capital and the level of income or output. The principle indicates that net investment will take place only when aggregate output is increasing.

(b) How the Accelarator Works:

Assume that in period “t” the capital stock required to produce a given level of (Y_t) is given as

$$\mathbf{K_t = \mu Y_t} \qquad (9.18)$$

Where μ is the capital-output ratio which shows the average amount of capital required to produce a unit of output. If we assume that μ equals 2 then it means it takes C2 worth of capital to produce one cedi worth of output.

If μ is assumed to be a constant then any change in output will require a proportional change in K (capital stock). Assume again that the new period's output is given as Y_{t+1} the required capital stock in period t+1 will be given

$$K_{t+1} = \mu Y_{t+1} \qquad (9.19)$$

Working in terms of changes to reflect the movement between period "t" and period "t+1" we subtract equation (9.18) from equation (9.19) to obtain equation (9.20) $K_{t+1} - K_t = \mu Y_{t+1} - \mu Y_t$ (9.17)

We factor out the R.H.S of equation (9.20) to obtain equation (9.21)

$$K_{t+1} - K_t = \mu(Y_{t+1} - Y_t) \qquad (9.21)$$

Let $\triangle K = K_{t+1} - K_t$ (9.22)

and $\triangle Y = Y_{t+1} - Y_t$ (9.23)

We substitute $\triangle K$ for $K_{t+1} - K_t$ and $\triangle Y$ for $Y_{t+1} - Y_t$ into equation (9.21) to obtain equation (9.24)

$$\mathbf{\triangle K = \mu (\triangle Y)} \qquad (9.24)$$

But changes in capital stock between two time periods for example, between period "t" and period "t + 1" equals Net Investment (N1). We substitute N1 for $\triangle K$ to obtain equation (9.25)

$$\mathbf{NI = \mu(\triangle Y)} \qquad (9.25)$$

Equation (9.25) shows that net investment (NI) at any given time period depends on changes in aggregate income or output. The coefficient μ is termed the accelerator.

(c) Depreciation:

Gross investment is normally decomposed into two namely:

(i) Replacement investment and
(ii) Net Investment

Replacement investment equals capital consumption allowance or depreciation. If the rate of depreciation is d% in period “t” it means that d% of the previous capital stock “K_{t-1}” was used up for production in period “t”. This is represented as equation (9.26)

$$\mathbf{Dt = dk_{t-1}} \qquad (9.26)$$

Where; Dt is the capital consumption allowance

We noted earlier that gross investment (GI) is the sum of replacement investment (Dt) and net investment (NI). This is given as equation (9.27)

$$\mathbf{GI = NI + Dt} \qquad (9.27)$$

Substituting equations (9.25) and (9.26) into equation (9.27) we obtain equation (9.28)

$$\mathbf{GI = \mu(\triangle Y) + dk_{t-1}} \qquad (9.28)$$

From equation (9.28), if $\Delta Y = 0$ or if output is constant over time then net investment (NI) will be zero and gross investment (GI) will equal consumption allowance or replacement investment. This is investment just to maintain the existing capital stock.

(d) Illustration

Table 9.1: An illustration of the Accelerator Theory of Investment (in ₦m)

1	2	3	4	5	6	7	8
TIME	Y	Y △	K=µy	D	RI=D	NI	GI
t-1	110	-	-	-	-	-	-
t	110	0	220	22	22	0	22
t+1	110	0	220	22	22	0	22
t+2	111	1	222	22.2	22.2	2	24.2
t+3	113	2	226	22.6	22.6	4	26.6
t+4	116	3	232	23.2	23.2	6	29.2
t+5	119	3	238	23.8	23.8	6	29.8

Where; Y = Aggregate output

△ Y= Change in aggregate output

RI = Replacement Investment

RI= Replacement Investment

K= Capital Stock

NI = Net Investment

GI = Gross Investment and

D = Depreciation

Table 9.1 depicts the working of the accelerator. It is constructed based on the following assumptions: the coefficient μ=2 and the rate of depreciation = 10%. Column 1 of Table 9.1 records time path. Aggregate income or output is recorded in column 2 while change in aggregate income or output is captured in column 3. In column 4 we show the capital stock needed to produce the respective aggregate output or income. This is shown as K =μY which means that the capital stock is the product of the accelerator coefficient and the level of output or income. The rate of depreciation, replacement investment, net investment and gross investment are captured in columns 5, 6, 7 and 8 respectively.

Explanation of Table 9.1

In a period "t" aggregate output is ₦110m. The change in income is zero (0). This means that in the previous (t_{-1}) the aggregate income was ₦110. With an accelerator coefficient of 2, the capital stock needed to produce c10m in period "t" is ₦220m [K=2 x110]. The rate of depreciation is 10%. This means that 10% [₦22m] of the capital stock in period "t_{-1}" was used up in production. It also shows that to maintain the capital stock as it was in period "t -1" in period "t", replacement investment of ₦22m must take place in period "t". In this circumstance net investment is zero (0) because the level of aggregate output for the two periods was the same. In this case gross investment equals replacement investment.

In period t_{+1} aggregate output is again ₦110. The change in income is again zero (0). With an accelerator coefficient of 2, the capital stock needed to produce ₦10m in period "t_{+1}" is ₦220m [K = 2 x 110]. The rate of depreciation is 10%. This means that 10% [₦22m] of the capital stock in period "t" was used up in production. It also shows that to maintain the capital stock as it was in period "t+1". In this circumstance net investment is zero (0) because the level of aggregate output for the two periods was the same. Again gross investment equals replacement investment.

Now, in period "t+2" aggregate output is ₦111m. The change in income is ₦1m. With an accelerator coefficient of 2 the capital stock needed to produce ₦11m in period "t_{+2}" is ₦22m [K = 2 x 111]. The rate of depreciation is 10%. This means that 10% [₦22.2m] of the capital stock in period "t_{+1}" was used up in production. It also shows that to maintain the capital stock as it was in period "t+2. But in period "t+2", ₦222m worth of capital stock is needed to produce ₦111m worth of aggregate output. In this circumstance the net investment needed to increase the capital stock from ₦220m to ₦222m is ₦2. In this case gross investment (₦22.2) plus net investment (₦2).

Finally, in period "t+5" aggregate output is ₦119m. The increase in output from period t+4 to period t+5 is ₦3m. The capital stock needed to produce ₦119 in period "t+2" is ₦238m [K=2 x 119]. The rate of depreciation is 10%. This means that 10% [₦23.8] of the capital stock in period "t+4" was used up in production. It also shows that to maintain the capital stock as it was in period "t+4" in period "t+5"' ₦238m worth of capital stock is needed to produce ₦119m worth of aggregate output. In this case the net investment needed to increase the capital stock from ₦232m to ₦238m is ₦6. In this case gross investment (₦2).

Finally, in period "t+5" aggregate output is ₦119m. The increase in output from period t+4 to period t+5 is ₦3m. The capital stock needed to produce ₦119m in period "t+2" is ₦238m [K=2 x119]. The rate of depreciation is 10%. This means that 10% [₦23.8] of the capital stock in period "t+4" was used in production. It also shows that to maintain the capital stock as it was in period "t+4" in period "t+5", replacement investment of ₦23.8m must take place in period "t+5". But in period "t+5", ₦238m worth of capital stock is needed to produce ₦119m worth of aggregate output. In this case the net investment needed to increase the capital stock from ₦232m is ₦6. In this case gross investment (₦29.8m) equals replacement investment (₦23.8m) plus net investment (₦6m).

(e) **Criticism of the Accelerator Theory:**

1. The assumption of a constant value of the accelerator throughout the trade cycle is unrealistic. That is, it is not true that an increase in output or income by an amount must always give rise to a multiple increase in investment. This is because, if already, some machines are lying idle, we shall try to use them before rushing in for new equipment.

2. It has been assumed that no machines are lying idle and no extra shift working is possible. This assumption may not hold in reality. If expectation of entrepreneurs is that the rise in demand brought about by increase in income or output is only a temporary one, they will try to meet it by overworking the existing machinery rather than installing a new plant. Thus, in the theory of accelerator it has been assumed that there is no excess capacity existing in consumer goods industries.

3. It has also been assumed that in the capital goods industries, there exists surplus productive capacity. If there is no excess capacity in the machine-making industries, increased demand for machines caused by the requirement for additional output would not lead to increase in the supply of machines. In the absence of supply of machines, investment cannot increase in the short run.

4. Only when the demand has increased permanently, will the entrepreneurs find it worth-while to increase investment in machine-making industries. Since stocks cannot be reduced below zero and working double shifts or adoption of other experiments is found to be expensive.

5. The size of the accelerator does not remain constant over time as assumed in the theory. Its value will be affected by the businessmen's calculation regarding the profitability of installing new plants to make more machines on the basis of their probable working life. It is also assumed that the demand for machines will remain stable in future, although the increase in demand has suddenly cropped up.

9.6 Full Employment National Income, Inflationary gap and Deflationary gap

According to J. M. Keynes, full employment means the absence of involuntary unemployment. In other words, full employment presents a situation in which everybody who wants to work is employed. The Keynesian theory asserts that equilibrium national income could occur either below or above the full employment level, but the desirable level of national income for any economy is one that occur at full employment and without inflation. It is in this context that we discuss the inflationary gap and deflationary gap.

The Keynesian thesis asserts that the level of employment depends upon the level of aggregate demand and unemployment resulted from the low level of aggregate demand. In this wise, whenever aggregate demand exceeds the equilibrium national income, then an inflationary gap is created. The figure below shows the inflationary gap.

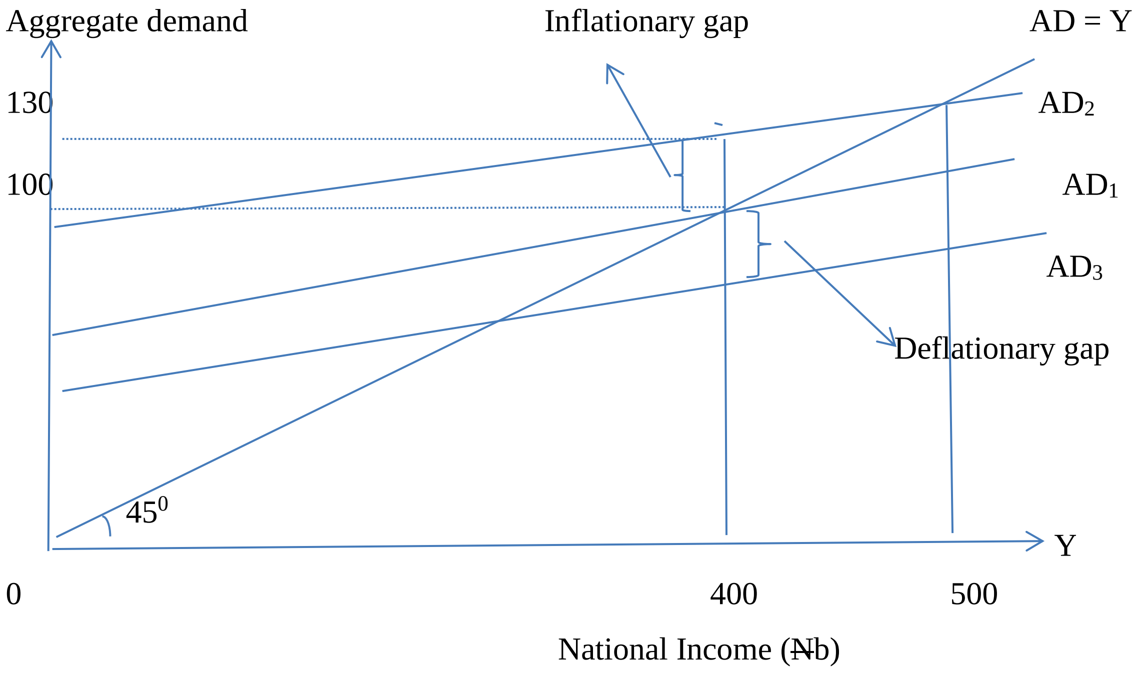


Figure 9.6: Inflationary / Deflationary Gap

At the national income of N400b, all the economy's productive resources are fully employed, that is, aggregate expenditure (AD) is equal to aggregate output (Y) (Full employment). An inflationary gap occurs when the equilibrium national income is above the full employment level of income - Inflation is the outcome of excess demand, that is aggregate demand exceeds the aggregate output (Y). In order to close the inflationary gap, measures to reduce the aggregate demand (AD) must be put in place. Measures such as, cut in government spending, increase in taxation to reduce disposable income are advocated by the Keynesians. The monetarists, another school of thought advocated restrictive or contractionary monetary policies as measures to reduce aggregate demand.

From the above diagram, deflationary gap exists when the equilibrium level of income is less than the full employment level of income. The gap measures the magnitude of the increase in aggregate demand required to bring about full employment. In the case of deflationary gap, expansionary fiscal policies (increase in government expenditures and reduction in taxes) will be required to close the gap as advocated by the Keynesians. However, the monetarist advocates, expansionary monetary policies (increasing money supply such as by lowering reserve requirements).

9.7 SUMMARY

National Income Determination deals with what determines the size of a nation's national income. The size of a nation's national income is determined primarily by the size of its planned aggregate expenditure.

This is planned total spending in an economy on domestically produced goods and services within a specified period of time. It is determined as the sum of planned spending by all sectors of the macro economy represented as household spending on consumption (C), firms (I), government (G), exports (X) and imports (M)

Equilibrium national income occurs when the total level of output produced in the economy exactly matches the level of planned total spending (aggregate expenditure) in the economy.

The Multiplier analyses the magnifying effects of changes in leakages and/or injections on equilibrium income.

The accelerator principle deals with the relationship between net investment, the stock of capital and the level of income or output. The principle indicates that net investment will take place only when aggregate output is increasing.

9.8 REVISION QUESTIONS

Multiple Choice Questions

1. A linear relationship between consumption expenditure and disposable income is

   A. Consumption function
   B. Marginal propensity to consume
   C. Average propensity to consume
   D. Autonomous consumption function
   E. Aggregate consumption

2. In a three-sector closed economy, which of the following is a form of leakages?

   A. Investment expenditure
   B. Export
   C. Personal savings
   D. Government expenditure
   E. Investment on intermediate goods

3. Given a consumption function in an economy as $C = 200 + 0.75Y_d$, the marginal propensity to save is

   A. 0.75
   B. 200
   C. 0.25
   D. 200.75
   E. 1.75

4. As disposable income increases, all things being equal

   A. Both consumption and savings decrease
   B. Both consumption and savings remain unchanged
   C. Consumption decreases and saving increases
   D. Both consumption and savings increases
   E. Consumption increases and saving decreases

5. Which of the following is not a component of aggregate demand in an open economy model?

   A. Households consumption
   B. Investment expenditure
   C. Net export
   D. Government expenditure
   E. National income

6. If savings exceed investment, then:

   A. National income rises
   B. National income falls
   C. National income is not affected
   D. None of the above

7. Inflationary gap arises when:

   a. Equilibrium national income is below full employment national income
   b. Inflation rate falls short of full employment national income
   c. Equilibrium national income is greater than full employment national income.
   d. Aggregate demand exceeds aggregate supply

8. When deflationary gap arises in an economy, which of these is an appropriate measure to close the gap?

   a. Policies that strengthen aggregate demand
   b. Policies that weaken aggregate demand
   c. Policies that improve the external sector
   d. Uncertain

9. The national income multiplier is the same for all specifications of the national income model.
   a. False
   b. True
   c. Uncertain
   d. Insufficient information

10. In the national income model, a lump sum tax

    a. Varies with the level of investment expenditure
    b. Is unaffected by the level of national income
    c. Decreases with increases in national income
    d. Increases with increases in national income

Solution To Multiple Choice Questions

1. A
2. C
3. C
4. D
5. E
6. B
7. C
8. A
9. A
10. B

Short-Answer Questions

1. The level of consumption that is independent of disposable income is called…………..

2. A change in saving with respect to a change in disposable income is referred to as……………………………

3. The relationship between net investment, stock of capital and the level of output in an economy is the concern of ……………..principle

4. Given the value of Marginal Propensity to Consume (MPC) in a simple national income model as 0.8, the value of the investment multiplier is…………………..

5. The sum of marginal propensity to consume and marginal propensity to save equals…………………….

Solution To Short Answers Questions

1. Autonomous Consumption
2. Marginal Propensity to Save (MPS)
3. Accelerator
4. 5
5. One (1)

Question 9.1

1. a) In a hypothetical economy a consumption function is given as

$$C = a + bY_d \qquad a>0 \text{ and } 0< b < 1$$

Where C = aggregate consumption expenditure and

Y_d = aggregate disposal income

Required:

i. Explain the meaning of "a"
ii. Define "b"
iii. What is the meaning of bY_d

b) Explain four (4) factors that influence aggregate level of consumption.

Answer

a.

(i) **"a"** is the intercept. It measures consumption expenditure when income is zero (0). This amount of consumption is called autonomous consumption since it is independent of the level of income (non-income induced consumption expenditure).

(ii) **"b"** is the slope of the consumption function. It measures the extent of a change in consumption expenditure with respect to a change in disposable income. This is called the marginal propensity to consume (MPC).

(iii) **"bY_d"** is the proportion of consumption expenditure that depends on disposable income (income induced consumption expenditure).

b.

i. The level of disposable income: The level of income is the basic determinant of how much households will consume. As households` income increase consumption expenditure increases and vice versa.

ii. Stock of durable goods on hand: If the economy has enjoyed an extended period of prosperity, consumers may find themselves well supplied with various durable goods, e.g. cars, televisions, etc. all worth years of service. Hence, for sometime, many households will be out of the market for such products with the result that consumers will be willing to spend less and save more at each level of disposable income.

iii. Wealth: This is a stock of accumulated purchasing power stored up from the past. For example, if you have a fat savings account accumulated from your past earnings, your current spending may be greater than your current income. This implies that what actually determines consumption is not nominal wealth but real wealth, which takes the price level into account.

iv. Expectations: Households` expectations concerning future prices, money income and the availability of goods may have a significant impact on their current spending. Expectations of rising prices and product shortages tend to trigger more spending and less saving, that is, it shifts the consumption function upward and the saving function downward.

v. Aggregate household indebtedness: This is the purchasing power of the sum of money outstanding that households have borrowed and are currently obligated to repay. If households are in debt to the degree that part of their current incomes are committed to instalment payments on previous purchases, they may well be obliged to reduce current consumption.

vi. Availability of credits

vii. The level of prices etc.

Question 9.2

Given the following national income model for a hypothetical economy.

Y=C+I+G+(X-M)

Where C = \$ 180 billion + 0.8 Y_b (Consumption function)

Yd = Y-T (disposable income)

I = \$ 24 billion (Investment Expenditure)

G = \$ 46 billion (Government Expenditure)

X = $ 25 billion (Export)

M= $ 31 billion (Import)

T = $ 10 billion (Lump sum tax)

You are required to determine:

a) The equilibrium national income
b) The investment multiplier
c) The aggregate consumption

Answer

a) Equilibrium national income:
$Y=C+I+G+(X-M)$
$= 180+ 0.8\ Y_d + 24+ 46+ (25-31)$
$= 244+ 0.8\ Y_d$
$= 244+ 0.8(Y-T)$
$= 244 +0.8Y-0.8T$

$Y-0.8Y =244 -0.8(10)$

$0.2Y =236$

$$\frac{236}{0.2}$$

$Y =\$\ 1,180$ billion

b) Investment multiplier (k)

Where

$$K =\frac{1}{1-b}\frac{1}{1-b} \quad = b = \frac{dc}{dyd}$$

$$=\frac{1}{1-0.8}\frac{1}{1-0.8}$$

$=5$

c) Aggregate consumption
$C = 180 + 0.8\ Yd$
$= 180 + 0.8(Y-T)$

$= 180 + 0.8Y-0.8T$
$= 180 +0.8(1180)-0.8(10)$

= 180 + 944-8
= $1,116 billion

Question 9.3

In a hypothetical economy aggregate expenditure or demand (AE) is given as:

$$AE = C + I$$

Where C = Consumption Expenditure
I = Investment Expenditure

Required:

a. What is the meaning of C?
b. Identify two factors that influence C.
c. Define Investment in this context
d. State the three main components of Investment in this context.
e. What are the two main determinant of investment|?

Answer

a. C = Personal Consumption Expenditure is made up of expenditure by households on durable and non-durable goods and services. For example, household expenditure on plantain, cars, shoes, etc.

b. Identify two factors that influence C.

i. The level of disposable income:The level of income is the basic determinant of how much households will consume.As households' income increase consumption expenditure increases and vice versa.

ii. Stock of durable goods on hand: If the economy has enjoyed an extended period of prosperity, consumers may find themselves well supplied with various durable goods, e.g. cars, televisions, etc. all worth years of service. Hence, for sometime, many households will be willing to spend less and save more at each level of disposable income.

iii. Wealth: This is a stock of accumulated purchasing power stored up from the past. For example, if you have a fat savings account accumulated from your past earnings, your current spending may be greater than your current income. This implies that what actually determines consumption is not nominal wealth but real wealth, which takes the price level into account.

iv. Expectations: Households' expectations concerning future prices, money income and the availability of goods may have a significant impact on their current spending. Expectations of rising prices and product shortages tend to trigger more spending and less saving, that is, it shifts the consumption function upward and the saving function downward.

v. Aggregate household indebtedness: This is the purchasing power of the sum of money outstanding that households have borrowed and are currently obligated to repay. If households are in debt to the degree that part of their current incomes are committed to instalment payments on previous purchases, they may well be obliged to reduce current consumption.

vi. Availability of credits

vii. The level of prices etc.

c. Investment as a component of aggregate expenditure is defined ***as spending devoted towards increasing or maintaining the stock of capital.***

d. State the three main components of investment in this context.

(i) Business fixed investment e.g. Plant and Machinery

(ii) Construction such as business and

(iii) Residential buildings and changes in inventory.

e. The two main determinants of investments are:

(i) ***Expected Rate of Return:*** Investment spending is guided by the profit motive; the business sector buys capital goods only when it expects such purchases to be profitable.

(ii) the real interest rate: Business firms typically borrow funds to make an investment and to repay their borrowings out of future revenues. Even if they do not borrow, managers know that if they use current revenues to finance investment purchases, they forgo the opportunity to earn interest. The annual opportunity cost of using a cedi to make an investment can therefore be represented by the real interest rate. The real interest rate is the price of using a cedi to make an investment purchase. Thus, the higher the real rate of interest, the less would be the profits to the business after paying interest and the less it will want to invest and vice versa.

Question 9.4

Given the data below, Aggregate Income, Consumption Expenditure and Investment Table

Aggregate Income (Y) c million	Consumption Expenditure (C) c million	Investment Expenditure (I) c million
0	100	100
100	180	100
200	260	100
300	340	100

400	420	100
500	500	100
600		100
700		100
800		100
900		100
1000		100

Required:

a) Determine the level of autonomous Consumption Expenditure in this economy?

b) Determine the value of the marginal propensity to consume in this economy?

c) Specify the consumption function for this economy

d) Copy and complete the table

e) What is the equilibrium income in this economy?

Answer

a) 100 million cedis

b) Marginal propensity to consume is $\frac{\Delta C}{\Delta Y} = \frac{80}{100} = 0.8$

c) C = 100 + 0.8Y

d)

Aggregate Income (Y) c million	Consumption Expenditure (C) c million	Investment Expenditure (I) c million
0	100	100
100	180	100
200	260	100
300	340	100
400	420	100
500	500	100
600	580	100
700	660	100
800	740	100
900	820	100
1000	900	100

e. At equilibrium National Income

$$y = C + 1_0$$
$$y = 100 + 0.8Y + 100$$
$$y - 0.8Y = 200$$
$$0.2Y = 200$$
$$Y = \frac{200}{0.2} \quad 1000$$

Question 9.5

The Table below depicts national expenditure information for an economy.

ITEM	IN MILLIONS OF C
Private Consumption Expenditure (C)	786
General government final consumption (G)	530
Gross domestic capital formation (I)	135
Taxes on expenditure	192
Subsidies	50
Export of goods and services (X)	92
Import of goods and services (M)	127
Property income received from abroad	100
Property income paid to foreigners	165
Depreciation (capital consumption allowance)	58

Required:

a) What is Total Domestic Expenditure in this economy?

b) Calculate the Gross Domestic Expenditure in market prices for this economy

c) What is the value of Net Property Income for this economy?

d) Calculate the Net National expenditure at factor cost for this economy

Answer

a) Total Domestic Expenditure = C + I + G = 786 + 530 + 135 = €1451million

b) Gross Domestic Expenditure in market prices = C + I + G + X – M = 1451 + 92 – 127 = 1416

c) Net Property Income = 100 – 165 = 65

d) Net National expenditure at factor cost NNPF = GTPM ± Net Property Income – Taxes on Expenditure + Subsidies – Depreciation.

NNPF = 1416 – 192 + 50 – 58 = c1,151million.

Practice Questions

1. (i) What do you understand by investment demand?
   (ii) Explain the determinants of investment demand

2. Show that the multiplier is always the reciprocal of the marginal propensity to save (MPS)

3. What do you understand by the accelerator principle of investment?

4. Explicitly distinguish with the aid of a diagram inflationary and deflationary gaps.

CHAPTER TEN

MONEY

10.0 LEARNING OBJECTIVES

After studying this chapter, you should be able to

- Explore the role of money in a modern economy
- Identify the desirable attributes of money
- Appreciate the various forms of money, and have a good grasp of the concept of money supply
- Understand the main motives for holding money
- Explain the quantity theory of money and its policy relevance towards the achievement of the macroeconomic goal of price stability.

10.1 INTRODUCTION

Money, as defined in economics, is anything that is readily and widely accepted as a medium for the exchange for goods and services or in settlement of debts. Money plays a crucial role in the economic system of any country. It is a means for promoting specialization and exchange on which modern economic activity is based.

Before the invention of modern money in the forms of currency notes and coins as we know today, trade had been conducted by barter, through the use of commodity monies such as cowries' shells, cow, manilas, iron bars, etc. **The barter system** refers to a situation where goods are directly exchanged for goods. The problems associated with the system are:

(i) ***Double coincidence of wants:*** It entails finding a person who has what you want and requires what you have. For example, a person who has a cow and needs a yam must search for another person who has a yam and needs a cow. This process is cumbersome and leads to a waste of time.

(ii) ***No common unit of measure:*** It is difficult to arrive at a uniform or an easily acceptable exchange rate between different commodities

(iv) ***The absence of a means of storing wealth or value:*** Under the barter system, it is difficult to store wealth because most articles of trade, especially agricultural products are easily perishable.

(iv) ***Difficulty in making deferred payment:*** As a result of exchange rate problem, the barter system makes deferred payment impossible.

(v) ***Problem of bulkiness and indivisibility of most goods:*** The goods are often too bulky to be carried from one place to the other, and are not capable of being divided into similar units to facilitate transaction

The introduction of money has enabled man to overcome the problem associated with the barter system.

10.2 THE FUNCTIONS OF MONEY

The four main functions of money in every modern economy are:

i. **A medium of exchange:** Money facilitates the exchange of goods and services because people exchange the goods and services they produce for money and then use the money to buy other goods and services they want. This enabled man to overcome the problem of 'double coincidence of wants' associated with trade by barter.

ii. **A unit of account or a measure of value:** Money serves as the unit of account in terms of which the values of goods and services are measured and recorded. The problem of barter with regards to the determination of exchange rate between different goods is solved.

iii. **A store of value:** Money is a good store of value providing purchasing power in a general form that can be used to meet future needs for goods and services. Under the barter system, articles of trade are easily perishable and cannot be stored for future transactions.

iv. **A standard of deferred payment:** Money makes it possible for people to enter into contracts, such as lending, borrowing, and enjoyment of services for fixed amount of money payable at a future date. The exchange rate problem makes this impossible under the barter system.

10.3 THE CHARACTERISTICS OF MONEY

For anything to perform the functions of money outlined above effectively, it must possess the following attributes or qualities.

(i) **General acceptability:-** It must be acceptable by all economic agents in the country in which it is used as payment for goods and services, and in settling debts and obligations.

(ii) **Divisibility:** It should be available in units of a standard size sufficiently divisible to facilitate the purchase and sale of goods and services over a wide range of prices.

(iii) **Durability:** It should be able to last for a long time without losing its value. This is the reason why high quality papers are used to print paper currency and precious metals are used in minting coins.

(iv) **Portability:** Money should be convenient to carry about for easy transfer to other people during transactions.

(v) **Homogeneity:** One unit of money must be the same in all respects (i.e. identical) everywhere throughout the country. This will promote general acceptability.

(vi) **Relative Scarcity:** It must be unique, not something that can be found easily anywhere. And it must not be supplied in excess so as not to lose its value whereby it will not be able to serve effectively as a store of value and a standard of deferred payment.

10.4 TYPES OF MONEY

The three main types of money are classified as:

a. ***Paper money and coins:*** These are monies issued exclusively by the financial institutions, such as the Central Bank of Nigeria (CBN), Federal Reserve of the United States etc. They are backed by law and hence accepted in exchange for goods and services and in settlement of debt obligations.

b. ***Bank deposits:*** These are money deposited with financial institutions, especially commercial banks which are withdrawable or transferable without prior notice by writing a cheque. Such deposits are held in **current account** of the customer, and a fee is charged for processing the cheque. The three types of bank deposits are:

   i. ***Demand deposits:*** It is deposit of funds (usually paper money and coins) with a bank which are withdrawable or transferable without prior notice by writing a cheque. Such deposits are held in **current account** of the customer, and a fee is charged for processing the cheque.

   ii. ***Saving deposit:*** It is a deposit of fund with a bank which can be withdrawn with or without a notice of withdrawal. Savings deposits are held in savings account and they yield interest for the depositor.

   iii. **Time Deposit:** It is a deposit of fund that cannot legally be withdrawn from the bank without at least 30 days notice of withdrawal. Time deposits are held in fixed deposit accounts opened for depositors and they yield interests.

c. ***Quasi*- money or near money**: These are assets which adequately serve as a store of value but do not fulfil the medium of exchange function. Examples include saving and time deposits, stock and shares, postal and money orders, treasury bills etc. What constitute quasi – money varies from one country to another.

10.5 THE NATURE OF MONEY

The nature of money is usually discussed under three headings:

a. ***Legal tender:*** This refers to money which by nature must be accepted in payment for goods and in discharge of debt obligations. Currency notes and coins are legal tender in all modern economies.

b. ***Fiat money:*** This is money that is not a commodity and it is not redeemable in any commodity. What gives such money value and acceptability is their being declared as legal tender by the government. Money in the form of currency notes fit into this description.

c. ***Token money:*** This refers to money whose face value is greater than the actual value of the material of which it is made. In most economies, coins are token money, whose value as metal is less than their monetary value.

10.6 THE SUPPLY OF MONEY

Money supply or money stock refers to the total amount of money in the economy for purposes of policy. Various definitions or variants of money supply exists (e.g. M_1, M_2, etc)

Generally, the narrow money or narrow definitions refers mainly to the money used as medium of exchange while the broad money or broad definitions include money being used as a store of value.

In every country, the Central Bank always state which definitions of money it is adopting at any particular time and for which purpose. The quantity of money in an economy has direct effect on the price level and therefore on the value of money. Hence, to promote price stability and economic growth, the total money supply is subject to government control through the Central Bank in every modern economy.

10.7 THE DEMAND FOR MONEY

Demand for money otherwise referred to as ***liquidity preference*** means the desire of people to hold their resources or wealth in the form of cash i.e. currency notes and coins, instead of interest – yielding assets. The British economist, John Maynard Keynes (1883 – 1946) identified three reasons for demand for cash balances or why people hold money. These are:

a. ***The Transactions Motive:*** This represents cash balances held in order to carry out ordinary, everyday transactions. For example, individual persons need to hold money to buy fares, and so on. Similarly, business organizations need money to pay wages and electricity bills, buy raw materials, vehicles and equipment, etc. The transactions demand for money is directly related to income.

b. ***The Precautionary Motive:*** This refers to holding cash balances as a precaution against unexpected expenses. For instance, people hold money to provide them with some degree of security against sudden illness, accidents, fire or flood disaster, etc., while firms hold money against unpredictable occurrences such as sudden breakdown of vehicles, equipments and so on. The main factor influencing this motive is the level of income.

c. ***The Speculative Motive:*** This refers mostly to the desire to hold cash balances in order to make speculative dealing in the bond or securities (interest – yielding assets) markets. The demand for money for speculative purposes is interest – elastic. The higher the rate of interest, the lower the demand for speculative cash balances. Thus, there is an inverse relationship between the price of bond and interest rate. This motive for holding money is a decreasing function of the rate of interest and it is also influenced by incomes.

Lord Keynes refers to the money held for transactions and precautionary motive as active balances, and that which is held for speculative motive as ***idle balances***. The total demand for money is found by the summation of transactions, precautionary, and speculative demands.

10.8 THE QUANTITY THEORY OF MONEY

This theory suggests the existence of a direct relationship between money supply and the average price level in the macro economy. Specifically the quantity theory of money states that the price level is strictly proportional to the money supply.

The quantity theory of money which was pioneered by the 18th century economists including Adam Smith and David Hume, was modified and popularized in 1911 by the American Economist, Irvin Fisher (1867 – 1947) in what is known as ***equation of exchange:***

$$MV = PQ \qquad (10.1)$$

where M = Total money supply

V = velocity of circulation of each unit of money

P = average price level

Q = real national output or real GNP

The assumptions of the theory are that:

(i) The velocity of money circulation (V) is fixed.

(ii) The real GNP denoted (Q) is fixed in the short – run.

(iii) The money stock (M) is determined from time to time by the country`s monetary authorities.

(iv) The economy is at full employment level.

Given the above assumptions, the equilibrium price level (P) is determined by the money stock (M) as expressed in equation (10.1)

$$P = \frac{MV}{Q} \qquad (10.2)$$

Equation (10.2) which also represents the quantity theory of money is obtained by making P the subject of the relation in equation (10.1). It follows, for example, that a 5 percent increase in money stock will cause average price level in the economy to rise by 5 percent. Thus, inflation is conceived as a monetary phenomenon.

The major policy implication of the theory is that monetary policy of the restrictive type is most relevant for effective control of inflation. In other words, to curb the problem of inflation effectively requires the reduction of money stock through the use of monetary policy instruments such as open market operations (OMO), reserve requirements and bank rate.

The weakness of the quantity theory of money lies in the underlying assumptions, especially the assumption of fixed output and fixed velocity of money circulations which are unrealistic.

However, the theory provides a guide to the government to regulate money supply along the rate of changes in national output so as to avoid the problem of inflation.

10.9 SUMMARY

The chapter explored the role of money in every modern economy. The chapter also revealed that it is necessary for the government to ensure consistency between the quantity of money and the amount of goods and services available in the economy in order to promote price stability and rapid economic growth.

10.10 REVISION QUESTIONS

Multiple Choice Questions

1. A situation where goods are directly exchanged for goods is described as

   A. The functions of money
   B. The barter system
   C. The focus of exchange
   D. A medium of exchange
   E. Quasi money system

2. Which of the following statements is not true of the functions of money?

   A. Ability to last for a long time without losing its value
   B. Facilitating the exchange of goods and services
   C. A unit in terms of which the value of a good is determined
   D. Providing purchasing power to meet future needs of goods and services
   E. A standard of deferred payment

3. Money whose face value is greater than the actual value of the materials of which it is made is referred to as

   A. Legal tender
   B. Quasi – money
   C. Fiat money
   D. Token money
   E. Near money

4. Which of these statements is/are true of speculative demand for money?

   I. A liquid store of value which can be invested at opportune moment in interest – bearing bonds or securities.
   II. It is determined by the expectations about changes in bond price or in the current market rate of interest.
   III. It is a decreasing functions of the rate of interest.

   A. I only
   B. II only
   C. III only
   D. I and II only
   E. I, II and III together

5. Which of the following statements is/are consistent with the quantity theory of money?

   I. It explains the main reasons why people may decide to hold cash balances
   II. It predicts the effect of a change in money stock on the general price level
   III. It explains the nature of money

   A. I only
   B. II only
   C. III only

D. I and II only
E. I and III together

6. ___________is the primary function of money.
   A. Transfer of value
   B. Medium of exchange
   C. Standard of deferred payment
   D. Store of value

7. The motive for holding money that encourages investors to hold bonds when interest rates are low, with the hope of selling them when interest rates are high, is the_________ motive.
   A. Transactions motive
   B. Precautionary motive
   C. Profit motive
   D. Speculation motive

8. Which of these is suggested by the quantity theory of money?
   A. The average price level is a decreasing function of the supply of money
   B. The average price level is an increasing function of the supply of money
   C. The average price level is a constant function of the supply of money
   D. The average price level is determined outside the supply of money

9. In the quantity theory of money, the term, V, which captures the velocity of money is assumed
   A. Constant
   B. Increasing at an increasing rate
   C. Decreasing at an increasing rate
   D. Increasing at a decreasing rate

10. Broad money refers to_________ while narrow money refers to__________
   A. Money as medium of exchange and money as store of value, respectively.
   B. Money as store of value and money as medium of exchange, respectively.
   C. None of the above
   D. Insufficient information

Solutions to Multiple Choice Questions

1. B
2. A
3. D
4. E
5. B
6. B
7. D
8. B
9. A

10. B

Short-Answer Questions

1. An acceptable medium for the exchange of goods and services or in settlement of debts is called…………………….

2. The desire to hold wealth in form of cash instead of interest-yielding assets is described as…………………………..

3. Assets which serve as a store of value but do not perform the function of medium of exchange are called………………………

4. Money whose face value is greater than the actual value of the material of which it is made is referred to as……………………….

5. In the quantity theory of money, the equation of exchange approach shows that money supply is proportionately directly related to………………..

Solution to Short Answers Questions

1. Money
2. Demand for money/ liquidity preference
3. Quasi- money
4. Token money
5. The price level

Question 10.1

(a) Explain the motives why people hold cash balances
(b) Advance any three arguments in favour of transforming your country into a cashless society.

Solution

a. Motives why people hold cash balances.

   i. The Transactionary motive.

   People hold cash balances for daily business transactions. As a medium of exchange, money is required by individuals to pay for the goods and services (food, clothes, transport, etc.) they buy daily.

   ii. The Precautionary motive.

   People also hold money as a precaution against unpredictable emergencies such as sudden illness, accidents, fire or flood disasters, vehicle breakdowns, social engagements, and so on.

   iii. The Speculative motive.

People hold cash balances for speculative reasons. For example, if a stock market speculator feels or gets information that stock prices will fall on the Stock Exchange market in the near future, he would likely sell his current stock holdings today and use the proceeds to buy more stocks when the stock prices must have fallen.

b. Arguments in favour of transforming Nigeria into a cashless society

A cashless society is one that depends to a large extent on the use of near monies or other financial assets which have a high degree of liquidity and can easily be converted into money. Transforming Nigeria into a cashless society, where people depend less on the use of cash for business transactions can be informed by the following arguments;

i. It reduces the burden of carrying huge volumes of cash for business transactions and the attendant vulnerability of holders of cash balances to robbery attacks.
ii. It ensures the safety of the cash wealth of the individual cash owners.
iii. It creates a platform for the effectiveness of monetary policy as it encourages people to keep their money assets in financial institutions.
iv. It facilitates market expansion.

Question 10.2

(a) Distinguish between deposit money and quasi money
(b) Explain the term legal tender

Solution

(a) Deposit money are money deposited with financial institutions, especially commercial banks which are withdrawable or transferable without prior notice by writing a cheque. Such deposits are held in current account of the customer, and a fee is charged for processing the cheque. While quasi money are assets which adequately serve as a store of value but do not fulfil the medium of exchange function. Example includes time deposits, shares, and stocks, treasury bills etc.

(b) Legal tender: This is a financial instrument issued exclusively by the Central Bank of Nigeria (CBN), Bank of England, Federal Reserve of the US etc. This instrument is a legal tender because it is backed by law and hence be accepted in exchange for goods and services, and in settling debt obligations.

Question 10.3

Write short notes on the following
i. Quantity theory of money
ii. Fiat money
iii. Narrow money and Broad money

Solution

(i) The quantity of money as developed by the classical economists and modified by Irving Fisher asserts strictly that price level is proportional to money supply. Given the assumptions that velocity (v) is fixed and real national output (Q) is fixed, the equilibrium price level (P) is determined by the money stock (M) as expressed as;

PQ = MV

$$\mathbf{P} = \frac{MV}{Q}$$

Increase in (M) directly affects (P), that is, increase in money stock will cause price level to rise.

(ii) Fiat money: This refers to money whose value or cost as a commodity is less than its value as money. The monetary authority has a monopoly over the issue of a fiat money. The most important example of a fiat money is paper currency.

(iii) Narrow money and Broad money:

Narrow money refers generally to mainly money used as medium of exchange while the broad money or broad definitions include money being used as a store of value. Countries have variants of this definition as defined differently by monetary authorities of different countries.

In Nigeria, for example narrow money (M_1) includes currency outside banks (COB), plus privately held demand deposits with commercial banks and Central bank; while M_2, broad money, is composed of M_1 as defined (Narrow money), plus savings and time deposits with commercial banks plus total deposits liabilities of merchant banks.

$M_1 = COB + DD$ (Narrow money)

$M_2 = M_1 + Qm$ (Broad money)

Practice Questions

1. Outline the attributes which anything that is money must possess to perform its function effectively and adequately.
2. Discuss the quantity theory of money and its implications.
3. Briefly enumerate the problems associated with the barter system that led to the invention of modern money.

CHAPTER ELEVEN

FINANCIAL INSTITUTIONS

11.0 LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- Explain the functions of commercial and merchant banks and the creation of money by the commercial banking system.
- Understand the role of the Central Bank in the economy.
- Discuss the importance of development banks and other financial institutions in the economy.
- Distinguish between money market and capital market.

11.1 INTRODUCTION

Financial institutions are the main channel by which funds flow from the sectors of the economy with surplus funds to other sectors with insufficient funds to ensure efficient utilization of such resources in the promotion of economic growth and development.

Financial institutions may be broadly divided into two groups – banking and non-banking financial institutions. The banking institutions include commercial and merchant banks, development banks, and the Central Bank. On the other hand, the non-banking institutions include insurance companies, equipment – leasing companies, hire – purchase companies, building societies, discount houses, etc.

However, it is important to note that the legal framework within which the financial institutions operate in an economy varies from one country to the other. Therefore, only the conventional activities of financial institutions in most developing economies are highlighted in this chapter.

11.2 COMMERCIAL AND MERCHANT BANKING

The commercial and merchant banks are profit – making enterprises, as well as the major financial intermediaries through which the monetary authorities facilitate effective distribution of money in the economy.

11.2.1 Functions of Commercial Banks

The commercial banks offer a range of services which include the following:

(i) ***Accepting deposits of money:*** Commercial banks, as savings institutions, provide facilities for the mobilization of savings by accepting deposits from households, firms and government. They use current account, saving account and fixed deposit account to accept demand deposits, saving deposits and time deposits respectively.

(ii) ***Granting loans and advances:*** The most profitable function of commercial banks is extending credits to worthy borrowers while charging interest rate higher than the rate they pay on deposits. Short – term credit facilities are extended to customers using special loan account or in the form of overdraft using current account. It may also take the form of loan syndication whereby two or more banks agree to finance a large project.

(iii) ***Acting as agents of payment:*** Commercial banks` customers keep current accounts from which they can draw for settlement of debt and for payments for goods and services. They also transfer funds on behalf of their customers through collection of standing orders and direct debiting.

(iv) ***Creating demand – deposit money:*** By lending out the money – i.e. deposit that they collected from some customers, commercial banks create additional purchasing power in the economy.

(v) ***Providing international trade service:*** Commercial banks are involved in the financial aspects of international trade, especially by discounting bills of exchange for their customers who are exporters and opening letters of credit in favour of their customers who are importers. A letter of credit is an undertaking by the bank accepting to redeem the liability of its customers on an import contract.

(vi) ***Providing brokerage services:*** Commercial banks undertake to buy and sell stocks and shares on behalf of their customers.

(vii) ***Foreign exchange services:*** Commercial banks act as intermediaries between the Central Bank or authorized foreign exchange dealers and their corporate customers to process foreign exchange allocation. They also provide traveller's cheque to their customers who are travelling out of the country.

(viii) ***Safekeeping of valuable items:*** Commercial banks undertake to keep, for their customers, valuable items such as government stock, share certificates, academic certificates, certificate of occupancy, jewelleries, insurance policies, etc.

(ix) ***Equipment leasing:*** This is the activity of banks in financing purchases of fixed assets by their customers (mostly business enterprises) and allowing repayment over an agreed period of time. The bank is the lessor, while the beneficiary is the lessee.

11.2.2 Creation of Money by Commercial Banks

Creation of money by commercial banks reflects the view that by granting loans and advances, an initial deposit with a commercial bank can yield a greater cumulative demand deposits in the entire commercial banking system. When a commercial bank advances a loan, it opens an account in the name of the customer creating a claim against itself and in favour of the customer (borrower). Note that the loan is made, not by physically handing over claims, but by creating a book - keeping entry. The same procedure is followed by other banks – each keeping small cash in reverse and lending the remaining amount. The entire commercial banking system thus creates demand deposit money and the economy is reflated.

The maximum total demand deposit money (M_{dep}) that the entire commercial banking system will create given an initial deposit (A) and statutory cash reserve ratio (r) can be obtained using the formula:

$$M_{dep} = \frac{A}{r} \text{ or } \left(\frac{1}{r}\right)A \qquad (11.1)$$

In equation (13.1), the deposit multiplier (K_{dep}) is

$$K_{dep} = \left(\frac{1}{r}\right) \qquad (11.2)$$

According to equation (11.2), the deposit multiplier is the reciprocal of the cash reserve ratio maintained by the banking system. The higher the cash ratio, the lower the deposit multiplier and the lower the demand deposit expansion and vice versa. Multiple demand – deposit expansion occurs when an initial cash deposit causes an expansion of the money supply by a multiple of the initial deposit.

The assumptions underlying the process of deposit money creation are:

i. The banking system is comprised of many banks.

ii. There is no cash leakage in the system.

iii. The statutory cash reserve ratio (i.e . the percentage of the total deposit liabilities of the banks that they are legally required to keep with the Central Bank) is given.

iv. All banks in the system are willing and able to make loans to the limit set by cash reserve requirements.

v. The initial deposit of a customer in his current account is given.

ILLUSTRATION 11.2

Suppose a customer deposits ₦120,000 in a commercial bank, and the cash reserve ratio imposed by the Central Bank is 5 per cent.

Required:

a. Calculate the deposit multiplier.

b. Determiner the maximum amount of deposits money that can be created by the entire commercial banking system of the economy.

ILLUSTRATION 11.2 (Solution)

a) To obtain demand deposit multiplier (K_{dep})

$$K_{dep} = \frac{1}{r}$$

$$= \frac{1}{0.05}$$

$$= 20$$

b) The maximum deposit money that can be created is

(i) $M_{dep}\left(\frac{A}{r}\right)$, where A = ₦120,000 (i.e. deposit)

(ii) $\frac{120{,}000}{0.05}$

(iii) = ₦2.4 million

The formula given in equation (11.1) will change if we relax the assumption of no cash leakage so that there is vault cash (vc) and cash drain (cd). The vault cash is the amount of money kept by banks in their vaults to meet their liquidity obligations, while cash drain refers to the proportion of the loan which the borrower spent or not redeposited within the banking system. In this case, the formula for obtaining M_{dep} becomes;

$$\text{Mdep} = \frac{A}{r + cd + vc} \text{ or } \left(\frac{1}{r + cd + vc} \right) \quad A \qquad (11.3)$$

In equation (13.3), the deposit multiplier becomes:

$$K_{dep} = \frac{1}{r + cd + vc} \qquad (11.4)$$

From the foregoing discussions, we can identify factors affecting creation of money by commercial banks as:

i. Central Bank control via cash reserve ratio and special deposit

ii. Cash leakage out of the banking system

iii. Willingness of the banks to lend

iv. Willingness of customers to borrow

11.2.3 Functions of Merchant Banks

The traditional functions of merchant banks include the following:

(i) ***Acting as issuing houses in the capital market:*** Merchant banks are engaged in issuing or floating of new securities for private and public companies and for government (state and local) seeking to raise long-term or permanent finance for their projects. For all services involved in the performance of this function, merchant banks receive a commission called brokerage.

(ii) ***Accepting deposit:*** Merchant banks accept large deposits from their customers, mostly corporate bodies. Such deposits attract interest and can be withdrawn only with *certificate of deposits* (CD) and not with cheques as in the commercial banks transactions.

(iii) ***Providing foreign exchange services:*** Merchant banks are authorized dealers in the foreign exchange market and as a result they are engaged in the buying and selling of foreign exchange (forex) for commercial and other purposes. They also provide services for both importers and exporters.

(iv) ***Granting loans and advances*:** The banks provide medium and long-term loans and advances to manufacturers and big-time traders. They are also engage in loan syndication.

(v) ***Project Financing:*** The merchant banks are engaged in the financing of new industrial and agricultural projects on the understanding that the repayment would be made from the revenue stream generated by the project.

(vi) ***Providing advisory services:*** Merchant banks offer advice to their clients on project financing, joint ventures, mergers and acquisitions, debt financing, and on the rationalization of the company's capital structure.

(vii) ***Equipment Leasing***: The business of equipment leasing, as described under commercial banking, is more popular with the merchant banks. Equipment leasing can be in the form of *finance lease* where a bank provides funds to a firm to purchase the equipment, or operation lease where a bank or lessor buys the equipment and rent it out to the firm – i.e (the leasee).

11.2.4 Comparison between Commercial and Merchant Banks

The activities and functions of commercial and merchant banks in a typical developing economy can be compared and contrasted as follow:

i. Commercial banks are retail bankers accepting deposit from individuals, businesses and government, not considering the size. On the other hand, merchant bankers accept deposit not below a specified minimum, mostly from corporate bodies.

ii. Commercial banks grant more of short-term loans and advances to their customers. Merchant banks, on the other hand, grant medium and long-term loans and advances to their customers .

iii. Commercial banks operate with wider branch network, while merchant banks, as wholesale bankers, operate with limited branch network.

iv. Commercial banks offer more of general banking services such as deposit taking and granting of loans and advances. Merchant banks offer mostly specialized banking services such as equipment leasing, debt factoring, project financing, etc.

v. Both commercial and merchant banks facilitate foreign trade by providing for their customers facilities for establishing letters of credit with overseas trading partners. Both also provide bills of exchange facility.

11.3 THE CONCEPT OF UNIVERSAL BANKING

Broadly defined, universal banking refers to an arrangement whereby a bank, that is, any deposit taking institution, could engage in a wide range of financial activities and could as well own and control non financial institutions.

It should be noted, however, that there is no generally accepted definition of universal banking. Universal banking practice depends essentially on the definition of banking business which varies from one country to the other. But there seems to be an agreement on its salient features. For instance, Universal banking practice entails the removal of restriction between money, capital and insurance markets such that a banking institution can offer integrated financial services. These include deposit taking and lending, underwriting of new debt/equity issues, stock broking, insurance, investment management and so on.

a) Merits of Universal Banking

The following points are usually raised in favour of universal banking practice.

(i) It promotes economic growth through supply of long-term financing for commerce and industry

(ii) It promotes efficiency through economies of scale and scope

(iii) It fosters competition by opening up various areas of financial and non-financial activities for entry by banks.

b) Demerits of Universal Banking

The following arguments are often advanced against universal banking practice.

i. It distorts credit allocation to various economic activities because of increased connected lending.
ii. It promotes greater concentration of economic and political power
iii. It leads to conflicts of interest with a bank engaging in more activities that could cope with or difficulty in how to patronize its activities
iv. There is a great potential for banks to engaging in more risk activities which could destabilize the banking system.

The adoption of universal banking practice in Nigeria commenced in the last quarter of 2000, following the CBN circular (Ref no: BSD/DO/CIR/VOL.1/10/2000), dated 22 December, 2000, which was addressed to all licensed banks.

11.4 CENTRAL BANK

A Central Bank is the apex institution of the monetary and banking system of every country. It is owned by the government but the responsibility of its management is usually rested in the Board of Directors whose members are appointed by the government. The Bank of Ghana (BOG) and the Central Bank of Nigeria (CBN) are among the earliest Central Banks established in the West African sub-region.

11.4.1 Traditional Functions of the Central Bank

In both developed and developing economies, the following are performed by the Central Bank.

(i) ***Currency issue and distribution***: The Central Bank is the only institution empowered by law to issue currency notes and coins that are used as a medium of exchange in the country. The monopoly power of issuing legal tender currency is important to control the supply of money in order to prevent inflation.

(ii) ***The bankers' bank:*** The Central Bank provides facilities for other banks especially commercial banks to keep their cash reserve and clear their balance through the clearing house. It also grants loans to or discount the bills of commercial banks when they are short of fund; hence the Central Bank is referred to as 'lender of last resort'.

(iii) ***Banker to the government:*** The Central Bank keeps the accounts of the government and of all its corporations and agencies. It receives all payments due to the government, as well as undertake borrowing on behalf of the government through the issuance of short-term and long-term securities e.g. treasury bills, treasury certificates and long term securities e.g. development stocks. The Central bank is also responsible for the management of domestic and external debts of the government.

(iv) ***Promotion of monetary stability:*** The Central Bank controls money supply in the economy to promote price stability. This involves the use of instruments of monetary policy such as open market operations (OMO), reserve requirements, discount rate, etc.

(v) ***Foreign exchange management:*** To ensure that foreign exchange disbursement and allocation are consistent with economic priorities, the Central Bank acquires, allocates and monitors the use of scarce foreign exchange resources as well as maintains the country`s foreign exchange reserves.

(vi) ***Supervision of finance houses:*** In every modern economy, the Central Bank is backed by law to monitor and supervise the activities and practices of financial houses in order to promote effective execution of monetary policy.

11.4.2 Developmental Functions of The Central Bank

These are activities of the Central Bank to promote growth in various sectors of the economy.

(i) **Promotion of the growth of financial markets**: The Central Bank usually initiates instruments of mobilizing short-and long-term funds in both the money and capital markets.

(ii) **Promotion of development of financial institutions**: The Central Bank participates actively (morally and financially) in the establishment of development banks e.g. Bank of Industry (BOI) and Nigeria Agricultural Co-operative and Rural Development Bank (NACRDB) in Nigeria, as well as non bank financial institutions including the Stock Exchange.

(iii) **Human capital development**: The Central Bank participates directly and indirectly in the training of manpower for the banking industry. For example, in Nigeria, the CBN is involved in the activities of the Chartered Institute of Bankers of Nigeria (CIBN) and the Financial Institution-Training Centre (FITC).

(iv) **Establishment of special schemes and funds**: The Central Bank promotes special schemes and funds in the areas of agricultural finance, export development and small and medium scale enterprises so as to enhance economic development. Examples in Nigeria include the Agricultural Credit Guarantee Scheme Fund (ACGSF) and Small and Medium Industries Equity Investment Scheme (SMIEIS).

(v) **Sources of data for research**: Through its regular publications, the Central Bank provides information on financial indices and indicators for use in research and development (R&D) efforts.

11.5 DEVELOPMENT BANKING

Development banks or Development Financial Institutions (DFIs) are specialized financial institutions established to contribute to the development of specific sectors of the economy e.g. industrial, commerce, agricultural, rural, urban and housing sectors. The role of development banks, especially in low-income countries (LICs) include:

(i) Provision of medium and long-term loans for investment in various sectors like agriculture, manufacturing and commerce.

(ii) Identification, promotion and development of viable projects for the private sector.

(iii) Advice and assistance to indigenous businesses. This includes financial, technical and managerial advice to ensure profitable outcomes.

(iv) Directly investing in agriculture, housing, and mining sectors of the economy

(v) Supervising the implementation of projects they finance but requesting progress reports and visiting the project sites,

(vi) They commission and/or carry out studies into the social and economic needs of the economy with a view to making policy recommendations to the government.

(vii) They develop in the citizens, entrepreneurial ability and support their efforts with take-off loans.

(viii) They serve as a channel for bringing into the local economy investible funds from international organisations.

(viii) Nominating technical and managerial partners to both local and especially foreign investors thereby promoting foreign direct investments (FDIs).

Examples of DFIs in Nigeria include the Nigeria Agricultural Cooperative and Rural Development Bank (NACRDB), Bank of Industry (BOI) and Urban Development Bank (UDB)

11.6 OTHER FINANCIAL INSTITUTIONS

Some of the other institutions that play intermediating roles within the financial system are discussed below.

11.6.1 Finance Companies

Finance companies are institutions that specialize in short-term non-bank financial intermediation.

Their activities include:

i. Mobilising funds from the investing public in the form of borrowing and providing facilities for local purchase order (LPO), project financing, equipment leasing, hire purchase and debt factoring;

ii. Helping companies to establish efficient management structures and controls; and

iii. Providing corporate finance advice such as on capital restructuring and project financing services.

11.6.2 Discount Houses

Discount houses are financial institutions which intermediate funds between the Central Bank, licensed banks and other financial institutions. Their activities include:

i. Mobilizing funds for investment in short-term securities, especially treasury securities and other short-term financial instruments by providing discounting/re-discounting facilities.

ii. Assisting financial institutions to effectively manage their idle cash balances by bringing together surplus and deficit units in the money market.

iii. Underwriting issues of treasury securities thereby promoting monetary policy objectives.

11.6.3 Insurance Companies

Insurance companies, consisting of life and non-life institutions, are also important financial intermediaries in any economy. Their main functions are:

i. Mobilising relatively long-term funds in the form of premiums from policy holders thereby promoting savings in the economy.

ii. Investing their funds in bonds, stocks, mortgages and government securities, in the process contributing to effective utilization of scarce investible resources.

iii. Providing palliatives in the form of `claims` where a policy holder suffers a loss. Hence, they encourage asset acquisition and facilitate the growth of commerce and industry.

PAYMENT SYSTEMS

According to the World Bank, payment and settlement systems are mechanisms established to facilitate the clearing and settlement of monetary and other financial transactions. Secure, affordable & accessible payment systems and services help expand financial inclusion, support financial stability and promote development.

Since the phasing out of the barter system, various systems of payment have evolved continuously up to the last decade. Broadly, these payment systems can be grouped into two (2) categories- Retail Payment Systems and Large Value Payment Systems.

11.7.1 Retail Payment Systems:

This payment system caters for payment for transactions related mainly to settlement of obligations arising from the purchase of goods and services. The retail payment system handles transactions that are relatively low in value, but for large user groups such as individuals, firms and corporations. The retail payment systems include paper-based payment systems and electronic-based systems, among others. Individuals using cash, cheques and payment cards or electronic transfers of any kind are considered part of the retail payment system. Retail payments systems mostly involve any of the following:

i. **Cash Payments**

This is the oldest, most common and arguably most preferred payment method for small payments because it involves no transaction cost. The cash payment option offers payment flexibility as it enjoys wide-spread acceptability. The major drawback of this payment system is its high-risk attribute making it only more suitable for smaller transactions.

ii **Paper-Based Payments**

Paper-based payments are all payments in the form of cheques, payment orders, banker's cheques, demand drafts, refund orders etc. They are generally called cheques, for simplicity. Compared to cash payments, paper-based payments are more advantageous in the sense that they are safer than cash and are more efficient for higher volumes of transactions. Some weaknesses of paper-based payments are that they are less liquid compared to cash payments and could also have some transaction costs attached.

iii Card-Based Payments

Card-based payments involve the use of credit cards, debit cards or ATM Cards. The card-based payments are generally safer than cash payments and faster than paper-based payments. Card-based payments can also be used for online transactions and are backed by more sophisticated security architecture that reduce the risk of theft. The major argument against card-based payments is that such cards are costly to maintain because they are operated at fees payable to the banks.

iv Electronic Payments and Remittances

The advancement recorded in information and communication technology have led to the emergence of electronic payment systems. Electronic payments and remittances include the transfer of funds electronically, direct credits, direct debits, internet banking, and e-commerce payment systems. These electronic payments systems provided by banks and other financial institutions are alternatives to tendering cash in domestic and international transactions. Although there are still many country and product-specific systems in electronic payment systems, these payment systems have little variations in their quality of service delivery globally.

11.7.2 Large Value Payment Systems:

Large value payment systems are the nucleus of global economies and financial systems. These payment systems are responsible for processing higher level payments electronically and in real time between banks and financial institutions. Large value payment systems are therefore responsible for the smooth running and functioning of the financial system and the macro economy as a whole. Since large value payment systems are responsible for large-scale transactions between banks and between financial institutions, fundamental problems in such payment systems may have devastating consequences for the economy as shocks emanating from them can be easily propagated to the rest of the economy in a short time. Large value payment systems are under the regulation of the local Central Banks for this reason.

Some notable examples of Large Value Payment Systems are:

1. Foreign Exchange Clearing System
2. High-Value Cheques Clearing System
3. Systemically Important Payment Systems (SIPS)
4. Inter-Bank Cheques Clearing Systems
5. Real-Time Gross Settlement (RTGS) System
6. Government Securities Clearing System
7. SWIFT (Society for the Worldwide Interbank Financial Telecommunication)

11.8 MONEY AND CAPITAL MARKETS

The money and capital markets are financial markets created and nurtured by a country`s monetary authorities to mobilize savings for economic growth.

11.8.1 The Money Market

The money market is a market for short-term loans. It consists of financial institutions having surplus funds to lend on short-term basis, and those wishing to borrow. The market allocates savings into investment thereby promoting rational allocation of resources. It also encourages savings and investment habits by promoting liquidity and safety of financial assets.

Institutions that operate in the market include the Central Bank, commercial banks, and discount houses. The major short-term instruments associated with the Nigerian money market include treasury securities, commercial papers, call money, Bankers Unit Fund, Bankers` Acceptances, etc.

11.8.2 The Capital Market

The Capital market is a market for mobilizing medium and long-term funds. It is a market for new issues of securities as well as for trading in existing securities. The major instruments for raising funds in the capital market include equities, debentures, bonds, and stocks.

The main institutions in the market are the stock exchange, the issuing houses, and the stock broking firms.

11.9 MONETARY POLICY

In this section, we consider the meaning, instruments and targets of monetary policy.

11.9.1 Monetary Policy Defined

Monetary policy refers to the combination of measures designed to regulate the value, supply and cost of money in the economy in consonance with the expected level of economic activity. An expansionary monetary policy is that which is designed to increase money supply, while a contractionary or restrictive monetary policy is that which is intended to reduce money supply.

11.9.2 Instruments of Monetary Policy

The main instruments or tools of monetary policy vary between economies and over time. However, the main instruments of monetary policy are:

i. ***Open market operations (OMO):*** This refers to purchases and sales of securities in the open market by Central Bank in order to achieve the desired level of money stock in the economy. To reduce money supply, the Central Bank will sell securities in the open market. Conversely, to increase money supply, it will require the purchase of government securities.

ii. ***Reserve requirements:*** This refers to the proportion of the total deposit liabilities of the commercial and merchant banks which they are required by law to keep as reserve with the Central Bank. The reserve requirements (i.e cash reserve ratio and liquidity ratio) will be increased to reduce money supply or reduced to increase money supply.

iii. ***Discount rate:*** It is the minimum lending rate of the Central Bank at which it rediscounts bills and government securities, or the rate charged by the Central Bank on its loans to the commercial and merchant banks as a lender of last resort. It is used to regulate credit conditions and availability in the economy because other rates depend on it.

iv. ***Moral suasion:*** It is the use of persuasion rather than compulsion by the Central Bank to get other financial institutions to adopt a pattern of behaviour that is favourable to effective conduct of the monetary policy.

v. ***Special deposits:*** Sometimes, commercial and merchant banks are required by law to hold a non-interest bearing special deposit with the Central Bank to complement other contractionary monetary policy measures.

vi. **Selective credit control:** It involves issuance of credit guidelines to commercial and merchant banks to direct their credit facilities to the so-called favoured or preferred sectors of the economy.

vii. ***Credit ceiling:*** It is a directive by the Central Bank prescribing the growth rate of credit expansion by the commercial and merchant banks. This is to ensure stability in both the domestic and external sectors of the economy.

11.9.3 Monetary Policy Targets

The instruments of monetary policy can be manipulated in different ways by Central Bank to achieve macroeconomic objectives of full employment, economic growth, price stability, and balance of payment (BOP) equilibrium.

Monetary policy and inflation: The problem of inflation will call for contractionary monetary policy measures such as:

i. Sales of government securities (under OMO)
ii. Increase of reserve requirements
iii. Increase of discount rate
iv. Call for special deposit

All these measures will reduce money supply and aggregate demand in the economy and thereby operate to stem the inflationary pressure.

Monetary Policy and full employment: To raise the level of employment and output in the economy will require adoption of expansionary monetary policy measures i.e a reverse of the measures listed above for inflation.

11.10 SUMMARY

This chapter dealt with banking and non-banking financial institutions, the money and capital markets and the roles they play in the modern economy. It also treated monetary policy, especially how it can be employed to influence the level of economic activities in a developing economy.

11.11 REVISION QUESTIONS

Multiple-Choice Questions

1. Which of the following is not a function of commercial banks?

   A. Accepting deposits of money
   B. Issuing and distributing currency notes and coins
   C. Providing foreign exchange services
   D. Granting loans and advances
   E. Safe keeping of valuable items

2. Which of the following controls money supply in the economy to promote economic growth and development?

   A. Commercial banks
   B. Development banks
   C. Finance companies
   D. Discount houses
   E. Central Bank

3. One of the primary functions of development banks is

   A. Providing medium and long-term loans for viable projects.
   B. Granting short-term loans for the development of private properties.
   C. Accepting deposits from government agencies.
   D. Printing of the country's currency notes and coins.
   E. Supervision of finance houses.

4. The practice whereby two or more banks agree to finance a large project is called

   A. Overdraft facility
   B. Bill of exchange
   C. Loans syndication
   D. Equipment leasing
   E. Debt factoring

5. Which of the following is a relevant monetary policy measure to stem inflationary pressures?

   I. Purchase of government securities
   II. Lowering of discount rate
   III. Increasing reserve requirements

   A. I only
   B. II only
   C. III only
   D. I and II only
   E. I, II and III together

6. The ratio of total deposit that a commercial bank has to keep with the CBN is called
   A. Statutory Liquidity Ratio
   B. Deposit Ratio
   C. Cash Reserve Ratio
   D. Legal Reserve Ratio

7. Commercial banks are able to create credit many times more than initial deposits through
   A. Secondary deposits
   B. Providing overdraft facilities
   C. Accepting deposits
   D. Advancing loans

8. In order to encourage investment in the economy, the Central Bank may ______
   A. Reduce Cash Reserve Ratio
   B. Increase Cash Reserve Ratio
   C. Sell Government securities in the open market
   D. Increase Bank Rate

9. Which of the following cannot be accommodated under retail payment systems?
   a. Cash payments
   b. Electronic payments
   c. Inter-bank cheques clearing
   d. Paper payments

10. ________ is not an example of a large value payment system
a. SWIFT
b. Government Securities Clearing System
c. Real-Time Gross Settlement (RTGS) System
d. None

Solutions to Multiple Choice Questions

1. B
2. E
3. A
4. C
5. C
6. C
7. A
8. A
9. C
10. D

Short-Answer Questions

1. Given the initial deposit of ₦ 240,000 and cash reserve ratio of 5% in the commercial banking system, the maximum money that can be created is ……………………..

2. The apex institution of the monetary and banking system in a country is known as …………………………

3. The non –banking financial institution which intermediates funds between the central bank, licensed banks and other financial institutions is called……………

4. The market for short term loans is …………………

5. The policy designed to regulate the value, supply and cost of money in an economy is referred to as ………………………

Solution To Short-Answers Questions

1. ₦4,800,000 or ₦4.8 million
2. Central Bank
3. Discount Houses
4. Money market
5. Monetary policy

Question 11.1

1. (a) Outline four main functions of Central Bank

   (b) Distinguish clearly between the 'money market' and 'capital market'

Solutions

1(a) The main functions of the Central Bank in both developed and developing economies include:

(i) Currency issue and distribution: The Central Bank is the only institution empowered by law to issue currency notes and coins that are used as a medium of exchange in the country. The monopoly power of issuing legal tender currency is important to control the supply of money in order to prevent inflation.

(ii) The bankers' banks: The Central Bank provides facilities for other banks, especially commercial banks to keep their cash reserve and clear their balance through clearing house. It also grants loans to or discount the bills of commercial banks when they are short of fund; hence the Central Bank is referred to as 'lender of last resort'.

(iii) Banker to the government: The Central Bank keeps the accounts of the government and of all its corporations and agencies. It receives all payments due to the government, as well as undertake borrowing on behalf of the government through the issuance of short-term securities e.g. treasury bills and treasury certificates, and long-term securities – e.g. development stocks. The Central Bank is also responsible for the management of domestic and external debts of the government.

(iv) Promotion of monetary stability: The central bank controls money supply in the economy to promote price stability. This involves the use of instruments of monetary policy such as open market operation (OMO), reserve requirements, discount rate, etc.

(b) The money market is a market of short-term loans. It consists of financial institutions having surplus fund to lend on short-term basis, and those wishing to borrow. The market allocated savings into investments thereby promoting rational allocation of resources. It also encourages savings and investment habits by promoting liquidity and safety of financial assets. Institutions that operates in the market include the Central Bank, commercial banks, and discount houses. The major short-term instruments associated with the Nigerian money market includes treasury securities, commercial papers, call money, Bankers' Unit Fund, Banker' Acceptance, etc.

The capital market on the other hand, is a market for mobilizing long-term funds. It is a market for new issues of securities as well as for trading in existing securities. The major instruments for raising funds in the market include equities, debentures, bonds, and stocks. The main institutions in the capital market are the stock exchange, the issuing houses, and the stock broking firms.

Question 11.2

"The reserve requirement affects the ability of the banking system to create additional demand deposits through the money creation process."

(a) What is reserve requirement?
(b) With a reserve requirement of 10% and an initial deposit of N100m, calculate the additional demand deposits that will be created.

Solution

(a) The reserve requirement is a rule set by the monetary authority specifying the amount that must be satisfied by all depository institutions including commercial banks, savings banks, thrift institutions and credit unions. It requires that a fraction of the bank's total transactions deposits be held as a reserve either in the form of coin and currency in its vault or as a deposit (reserve) and kept with the monetary authority. This would include checking accounts but not certificates of deposit. The monetary authority in Nigeria is the CBN.

(b) The reserve requirement affects the ability of the banking system to create additional demand deposits through the money creation process. The total amount of demand deposits that can be created by a reserve requirement of 10%, and an initial deposit of N100m in a Bank (i.e. Bank X) is given by the

formula:

Demand deposit = Initial Deposit/Reserve Requirement

Hence,

Demand deposit = ₦100/(10/100)

= ₦1, 000/0.1

= ₦1, 000m

By implication, the reserve requirement of 10% and an initial deposit of N100m will increase the money supply by N1, 000m.

(c) A bank (Bank X) that receives a deposit of N100m will be allowed to lend out N90m of that deposit and keep N10m (10%) as a reserve. The N90m loan will result in the creation of a N90m demand deposit in the name of the borrower. When the borrower spends the N90m, a check will be drawn on Bank X's deposits and this N90m will be transferred to another checking account in say Bank Y. Thus, Bank Y's deposits now rose by N90m. Bank Y will be allowed to lend out N81m, holding back N9m (10%) as a reserve. This N81m will make its way to another bank, leading to another increase in deposits, allowing another increase in loans. This process goes on and on until the whole amount of the initial deposit is exhausted. It therefore, can be seeing that:

Demand deposit = N100 + (.9)N100 + (.9)(.9)N100 + (.9)(.9)(.9)N100 +

(.9)(.9)(.9)(0.9)N100 +…….

This simply means that,

DD = ID + RR(ID) + RR(RR)(ID) + RR(RR)(RR)ID +RR(RR)(RR)(RR)ID +…….

DD = ID + RR(ID) + RR^2(ID) + $(RR)^3$ID +$(RR)^4$ID +…….+$(RR)^n$ID

Where:

DD = Demand deposit

RR = Reserve requirement.

Question 11.3

(a) What do you understand by financial reforms?

(b) Briefly discuss two major financial reforms implemented in the banking industry between 2000 and 2008

Solution

(a) Financial reform is the deliberate government policy usually initiated and implemented by the Monetary authority to change the structure and composition of the financial system. It may be in form of liberalization of existing restrictions on the financial sector or may involve streamlining some institutional arrangement?

(b) Two major financial reforms implemented in the banking industry between 2001 and 2008 are the introduction of universal banking system and the bank consolidation exercise in 2004.
Prior to 2004, there was dichotomy between commercial banks and merchant banks. The merchant banks before this period usually complained that the restriction on their retail banking curtailed them from tapping fully the market opportunities and potentials. With the introduction of universal banking system, the dichotomy between commercial banks and merchant banks was removed. All banks in Nigeria were issued a universal license that allows them to engage in any form of financial

activities without any restriction on both wholesale and retail. The license also permits them to diversify into non-core banking operations such as insurance, stock broking, equity underwriting, real estates and many non conventional banking activities

In 2004, the Central Bank of Nigeria introduced a policy that mandated all banks in Nigeria to increase their capital base from N2billion to N25 billion before the end of the year. Before then there were about 89 banks in Nigeria, most of the banks were unable to meet this mandate and had to look for alternative. The Central Bank had envisaged this and encouraged those that could not raise the funds to engage in merger and acquisition. The resultant effect of this was the reduction of banks in Nigeria to 25 banks by the end of 2005. The 2004 reform had two significant effects; it led to most of the banks engaging in equity finance by publicly offering their shares to the public through listing in stock exchange. This increased the tempo of stock trading in Nigeria and the level of public awareness of stock activities increased. To remain afloat, most of these banks engaged in massive branch networking and massive recruitment. In order to meet up with the challenges of global financial demands, they introduced high tech innovative banking system that resulted in many innovative banking products.

Practice Questions

1. If the monetary base increases by N4billion, and the quantity of money increases by N10billion, what is the money multiplier?
2. Universal banking system is one which liberalizes the banking practice and remove restrictions in activities of the banks, what are its demerits?
3. Identify and discuss Four (4) instruments of monetary policy.

CHAPTER TWELVE

FUNDAMENTALS OF PUBLIC FINANCE

12.0 LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- Identify alternative sources of government revenue.
- Account for the growth in government expenditure, especially in developing countries.
- Distinguish between direct and indirect taxes; progressive, regressive and proportional taxes.
- Explain the general uses of taxation, and specifically as a tool for implementing government fiscal policy.

12.1 INTRODUCTION

Public finance is concerned with the revenue – raising and spending activities of the government and, especially how such activities affect the economic life of people. Five main areas of the subject matter of public finance can be explicitly identified as:

i. ***The theory of public revenue:*** This aspect deals with alternative sources of government revenue, taxation, non-tax revenue, public debt and creation of additional currency notes and coins.

ii. ***Theory of public expenditure***: How government through its expenditure, influences financial flows in the economy, and how public expenditure serves as a tool for implementing growth, welfare and other policies of government.

iii. ***Financial administration:*** The formulation, execution, and auditing of government budgetary policies and related matters.

iv. ***Stabilization, growth and distributive justice***: The financial implications of government economic policies meant to promote issues relating to economic growth and development.

v. ***Federal Finance:*** An analysis of issues and problems relating to inter-governmental financial flows where multilevel or federal system of government exists.

It is evident from the above discussion that public finance explores the principles and problems of the public sector of the economy.

12.2 GOVERNMENT REVENUE

Government exists in every society to perform a number of functions which are critical to the general well-being of the people. Such functions include:

i. Provision of legal framework and a social environment conducive to the effective operation of the price system.

ii. Creation and maintenance of social and economic infrastructure e.g. roads, bridges, electricity, pipe-borne water, sanitation, etc. They are called public goods or social overheads.

iii. Redistribution of income e.g. through direct transfer payments or welfare programmes for the vulnerable members of the society.

iv. Re-allocation of resources, and

v. Promotion of macroeconomic objectives

To be able to perform these and other related functions, however, government requires some funds. *Government revenue* is the income which accrues to the government to enable it perform its traditional functions.

Sources of government revenue are conventionally classified into two:- tax revenue and non-tax revenue.

(a) ***Tax Revenue:*** A tax is a compulsory levy imposed by the government on individuals, businesses or institutions without any service rendered to the tax payer in return. The composition of the various taxes in total tax revenue (i.e. the tax structure) varies from one country to the other. With the exception of major oil exporting countries like Nigeria and other members of Organisation of Petroleum Exporting Countries (OPEC), tax revenue constitutes the major part of government revenue in most countries.

(b) ***Non – Tax Revenue:*** Sources of non-Tax revenue include

i. **Fees, Fines, and Specific charges:** These include fees received from services rendered by government e.g. court fees, school fees, stamp duties, fines imposed for violating government rules, charges like water rates, vehicles licences, toll fees, contractors' registration fees.

ii. **Rents, Royalties, and Profits**: These are incomes derived from the use of government property, profits from government business enterprises and income from mining rights.

iii. **Grants:** These are incomes received in the form of aid from other countries or from international organization, in most cases, to finance specific developmental programmes. But all grants are voluntary gifts and are thus very uncertain sources of government revenue.

iv. **Loans:** These are incomes generated by borrowing from private individuals or businesses within the country (domestic/ public debt) or from foreign countries or international financial institutions (external public debt).

12.3 GOVERNMENT EXPENDITURE

This refers to government spending in the performance of its functions as identified in the preceding section. They are usually classified into two: recurrent expenditure and capital expenditure.

12.3.1. Recurrent Expenditure

These are expenditures on running costs of government – that is, expenses incurred in the maintenance of government's administrative machinery. Such expenditures include salaries and wages of public servants and members of armed forces, interest on public debts, travel and transport expenses, charges for utility services enjoyed e.g. electricity bills, etc.

12.3.2 Capital Expenditure

This refers to government spending on projects which are not recurrent in nature, especially developmental projects that enhance the productive capacity of the economy as well as improve the general standard of living of the people. Expenses on the construction and maintenance of roads, bridges, dams, schools, and hospitals readily fall within this category.

12.3.3 Functional Classification of Government Expenditure

In a typical developing economy, each of recurrent and capital expenditures is usually grouped into the following headings:

a. ***General Administration:*** These are expenditures on defence, police and the cost of running the entire civil service.

b. ***Social and community services:*** These are expenditures on health care, education, public housing and other items which promote social and community development.

c. ***Economic Services:*** These are payments that take the form of gifts i.e., they are not for goods exchanged or service rendered and they need not be repaid e.g. pension payments, unemployment allowance, payments to victims of national disasters like flood, fire, bird flu and motor accidents as well as bilateral grants.

Direct Money Transfers are usually a very important instrument of government to share money among the tiers of governments, as well as make payments to service debts.

12.3.4 Growth of Public Expenditure

In most countries of West Africa, government expenditure has been growing over time. The reasons for this cannot be far-fetched; they include:

a. ***Increasing population***: As the population increases, there are many more people requiring government-supplied amenities such as schools, hospitals, recreational facilities and so on.

b. ***Inflation:*** Government expenditure usually exhibits a rising trend because of rising price level over time. For example, items of government expenditure become more expensive and contracts and salaries are periodically adjusted upward in line with inflation rate.

c. ***Crises and wars:*** It costs more to arrest crisis and also to prosecute wars e.g. civil and insurgency wars in Nigeria, Liberia, Sierra Leone and Sudan.

d. ***Growth in national income:*** The growth of public expenditure is functionally and positively related to national income. As the level of national income rises, so also is the level of government expenditure.

e. ***Development projects:*** After independence, most West African governments embarked on development projects, especially in the areas of roads, airports, dam construction, electricity, water supply, etc. The implementation of such projects has partly explained the growth in government expenditure.

f. ***Public debt servicing:*** The servicing of both domestic and external public debts requires large payments of interest and principal as they fall due. This has also contributed significantly to the growth of government expenditure.

g. ***Increased urbanization***: Increasing rate of rural urban migration of people also translates into increasing demand for social amenities such as roads, water supply, electricity, sanitation services, and consequently an increase in government expenditure.

h. ***Changing political and bureaucratic structure:*** As borne out of Nigerian experience, the various changes in the administrative and bureaucratic structure of the country, from a four regional structure, to nineteen and now thirty six states have meant an upsurge in public expenditure on administration and governance.

i. ***Promotion of technological progress:*** To accelerate economic growth and development most West African countries established universities and research institutes of various kinds. The need for adequate and regular funding of such institutions has also led to the growth of government expenditure.

12.4 TAXATION

A tax is a compulsory levy payable by individuals and business organizations to the government without receiving any definite corresponding service or good directly in return from the government.

12.4.1 Elements In a TAX

There are three elements in a tax namely: the **base**, the **rate**, and the **yield**.

(a) **Tax base**: This is the object being taxed. For example, in personal income tax, the tax base is the taxpayer's income (salary), while in value added tax (VAT), taxpayers expenditure is the tax base.

(b) **Tax rate**: This refers to the proportion of the tax base which is paid in tax. It is usually expressed as a flat rate (lump sum) or as a percentage.

(c) **Tax yield**: It is the amount of revenue received by the government from tax.

12.4.2 Principles of Taxation

A good tax system should have certain attributes. These are:

a. **Equity:** Every taxpayer should pay tax in proportion to his income i.e. taxpayers should make equal sacrifice by paying the same percent of their incomes in tax. This is also known as ability to pay principle.

b. **Convenience**: Taxes due should be paid at times most convenient to the taxpayer.

c. **Certainty:** The taxpayer should know in advance the exact amount to pay and when to make the payment.

d. **Economy:** The cost of assessing and raising taxes should be kept to a minimum.

e. **Flexibility:** It should be possible at any time to revise the tax structure to meet the revenue requirements of government without delay and at no significant extra costs.

f. **Productivity:** A tax should bring large revenue which should be adequate for the government.

g. **Simplicity:** A tax should not be difficult to administer and understand so as not to breed problems of differences in interpretation. Its calculations must be simple.

The first four principles were first mentioned by the acknowledged founder of modern economics, Adam Smith (1723 – 1790), in his famous book – The Wealth of Nations (1776). He referred to these principles as *cannons of taxation.*

12.4.3 Direct Versus Indirect Taxes

Taxes are classified as direct or indirect based on the method of payment or in terms of their incidence (i.e. how their burden is shared).

(a) ***Direct Taxes:*** These are taxes levied directly on the incomes of individuals and business enterprises. The burden of direct taxes falls directly on the taxpayers, but they are usually progressive. Examples of direct taxes include personal income tax, company tax, capital gain tax, capital transfer tax, petroleum profit tax.

(i) **Personal Income Tax:** It is levied as a graduated tax on the income of individuals after reliefs and allowances in respect of personal needs, wife, children, dependent relatives, pension fund, life insurance, research effort, etc. have been deducted. The pay-as-you-earn (PAYE) scheme is applied to people in employment. The personal income tax satisfies most of the criteria for a good tax system as specified in sub-section (14.4.2)

(ii) **Company Tax:** This is levied on the net profits of companies. That is, it is applied to the whole of a company's profit after deducting depreciation and other allowances.

(iii) ***Capital Gain Tax:*** This is a tax on the appreciated value of an asset on disposal. This is usually caused by inflation.

(iv) ***Capital Transfer Tax:*** This tax applies to both life – time and after death transfer of wealth.

(v) ***Petroleum Profit Tax:*** This tax is levied specifically on the profits of oil companies. It has been a major source of government revenue in Nigeria since the oil boom started in the early 1970s.

(b) ***Indirect Taxes:*** These are taxes levied on goods and services. The burden of such taxes first fall on the manufacturers, wholesalers or importers, who pass it on to the consumers through upward review of prices. Examples of indirect taxes are import duties, export duties, excise duties, value-added tax (VAT), and sales tax.

i) ***Import Duties:*** These are taxes levied on goods which are imported from other countries. Apart from being a source of government revenue, import duties is also used to protect infant industries and to correct adverse balance of payments.

ii) ***Export Duties:*** These are taxes which are levied on goods that are exported to other countries. In West Africa, export duties are paid on agricultural products such as cocoa, cotton, rubber, cashew, etc.

iii) ***Excise Duties:*** These are taxes levied on goods which are manufactured within the country. In most West African countries, excise duties are paid on commodities such as soft drinks, cement, textiles, beer, cigarettes, plastic products, etc.

iv) ***Sales Tax:*** This is levied on goods as they are purchased by the consumer from the seller. The producer or seller adds the tax to the cost of the product especially for a commodity whose demand is price inelastic.

v) ***Value – Added – Tax (VAT):*** It is a consumption tax levied on business at every stage of production and distribution on the value they add to the raw materials and other inputs. The tax is borne by the final consumer of goods and services because it is included in the price paid. It has wide coverage as it applies to most goods and services. VAT was introduced in Nigeria in January 1994 to replace Sales Tax.

Some of the advantages of direct taxes over indirect taxes include that, they are based on ability to pay and their collection is economical, especially with reference to PAYE method. On the other hand, a major disadvantage of direct taxes is that they can be easily evaded, whereas evasion rate is relatively low for indirect taxes.

12.4.4 Progressive, Regressive, and Proportional Taxes

An alternative classification of taxes is according to the proportion of a person's income (or the tax base) which is paid in tax.

a) ***Progressive Tax***: A tax is progressive if the proportion of income paid in tax varies directly with the level of income. That is, the higher the income, the higher the proportion of that income which is paid in tax. Personal income tax is a good example of a progressive tax.

b) ***Regressive Tax:*** A tax that takes lower percentage of income as income rises. The most regressive tax of all is the poll tax under which every person pays the same amount in tax, irrespective of each person's income.

c) ***Proportional Tax:*** A tax is said to be proportional if at any level of income, taxpayers pay the same percentage of their incomes in taxes: An example of proportional tax is the company tax.

The concept of progressive, regressive and proportional taxes can be illustrated using either Table 12.1 or Figure 12.1 as shown below.

Table 12.1: Progressive, Regressive & Proportional Taxes Illustrated

	Income (1)	Progressive Tax (2)	Regressive Tax (3)	Proportional Tax (4)
James	₦5 million	2%=100000	5%=250000	5%=250000
Kofi	₦10 million	3%=300000	3%=300000	5%=500000
Kabiru	₦12 million	5%=600000	2%=240000	5%=600000

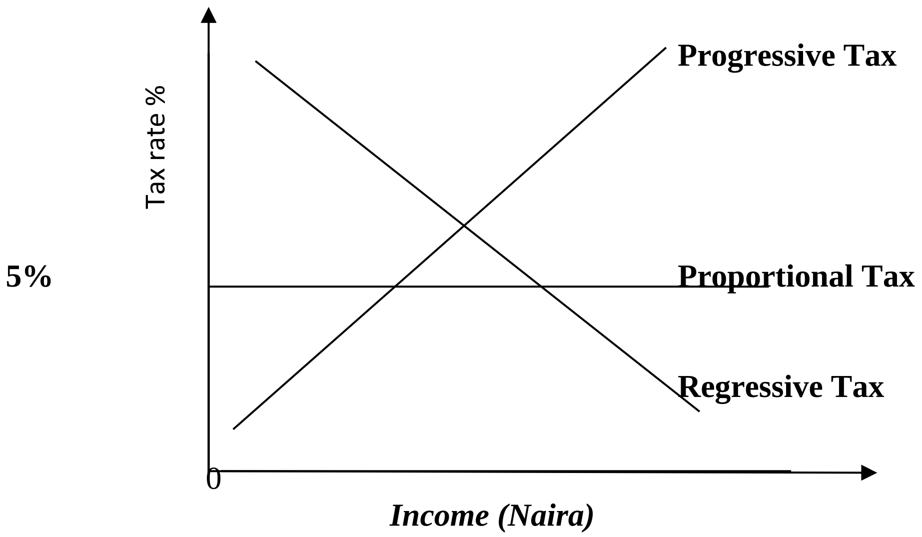


Figure 12.1: Progressive, Regressive, and Proportional Taxes

Note specifically that column 4 of Table 12.1 shows a proportional tax of 5 percent. All individuals pay the same percentage of income in tax, but the main amount increases as income increases.

12.4.5 Uses of Taxation

The various ways by which taxation can be used to further the growth and development processes, especially in a developing economy are outlined below:

(i) **To finance government expenditure:** The primary purpose of imposing taxes is to generate revenue for the financing of government activities including maintenance of administrative machinery of government and financing socio-economic infrastructures.

(i) **To manage the economy:** Government can grant tax concessions to local industries to stimulate production activities in the domestic economy during economic depression or raise personal income tax to lower aggregate demand during the period of inflation.

(iii) **To redistribute income and wealth:** Under a progressive tax system, more money is taken from the rich than from the poor. Such money is used to provide public goods that are equally beneficial to both the rich and the poor.

(ii) **To protect infant industries:** Import duties on imported goods that have local substitutes are raised to protect import substituting industries.

(iii) **To correct balance of payments deficit:** A tax on imports especially on non-essential items will also serve to reduce import volume and consequently reduce the deficits in the current account component of the country's overall balance of payments account.

(iv) **To discourage the consumption of certain goods:** High import duties on harmful goods will raise the price at which they are available and serve to discourage their consumption.

12.5 GOVERNMENT BUDGET

A national budget is a document containing estimates of expected government revenue and intended expenditure for the coming year. It usually consist of the review of the performance of the immediate preceding budget, objectives of the present budget, revenue projection, estimates of current and capital expenditures as well as policy measures to promote the achievement of the stated objectives.

12.5.1 Types of Budget

There are basically three types of budget.

a. ***Surplus budget:*** A surplus budget occurs when the government revenue is planned to exceed the proposed government expenditure. It can be achieved by reducing government expenditure or increasing taxation or both. A surplus budget is usually adopted to reduce inflationary pressures because it reduces aggregate effective demand in the economy.

b. ***Deficit Budget:*** A deficit budget occurs when the government revenue estimate is less than the proposed government expenditure. The fiscal deficit can be financed by raising loans from both internal and external sources. A deficit budget may be used to stimulate domestic production during economic recession or depression.

c. ***Balanced Budget*** : A government budget is balanced when its revenue estimate is equal to the proposed expenditure. It is also called neutral budget because it is usually adopted to keep the level of economic activities relatively stable as in the preceding year.

12.5.2 Sources of Finance for a Deficit Budget

The main sources of finance for government fiscal deficit are:

(i) ***Internal borrowing:*** This involves raising loans from the bank and non-bank public within the country. This could be through the sale of government securities.

(ii) ***External borrowing from Bilateral Creditors:*** A bilateral credit is provided by one government to another. Such credits are intended for development projects in the recipient country.

(iii) ***External borrowing form Multilateral Creditors***: This involves raising of loans from international institutions funded by member nations. They include the World Bank, International Monetary Fund (IMF), African Development Bank (ADB), etc.

(iv) ***External borrowing from Paris and London clubs:*** These are official and commercial creditors respectively. The Paris club is formed by governments of some advanced industrialized countries, while members of London Club are commercial banks mainly in industrialized countries.

(v) ***Drawing down on external reserves***: An external reserve is like saving of a country. The government may decide to draw from the external reserves to meet the discrepancy between revenue and expenditure.

(vi) ***Printing of currency:*** Instead of borrowing, a country may decide to print more currency notes and coins to finance fiscal deficit. But most countries rarely adopt this option because of its inflationary consequences.

12.6 PUBLIC DEBT

Public debt refers to the total outstanding debt obligations or accumulated borrowing of the government. Public debt is usually divided into two: domestic public debt is that which is owed by the government to its citizens, and external public debt which is the total money owed by the government to overseas government and residents. A government will resort to borrowing to finance its fiscal deficits.

12.6.1 Sources of Public Debt

Public debt may be contracted through the following sources:

a. ***Internal sources:*** Public debt can be procured within the country through the purchase of government securities by commercial and merchant banks, central bank, and non-bank private individuals and financial institutions who subscribe to instruments such as treasury securities bonds and development stocks.

b. ***External sources:*** Most countries have contracted external public debt through the following sources;

   i. ***Paris Club of Creditors:*** It represents only government guaranteed creditors. Membership includes the United States of America, United Kingdom, Federal Republic of Germany, France and Ghana who guarantee the export activities of their nationals through their Official Export Credit Agencies.

ii. ***London Club of creditors:*** These are mainly uninsured and unguaranteed debts extended by commercial banks in some industrialised countries to nationals of debtor nations.

iii. ***Multilateral creditors:*** These are international institutions funded by member nations. They include the World Bank Group, International Monetary Fund (IMF), African development Bank (ADB) Group, International Fund for Agricultural Development (IFAD), etc. These institutions provide credit for development purposes, balance of payments support and private ventures.

iv. ***Bilateral Creditors:*** A bilateral credit is provided by one government to another government. Bilateral credits are usually meant for developmental projects in the recipient country.

12.6.2 Economic Justifications for Public Debt

Government borrowing may be justified on the following grounds.

(i). ***Capital formation***: Debts can be translated into real capital stock which in turn enhance the growth of the economy.

(ii) ***Investment opportunities:*** The availability of public debt gives private investors, public corporation, state, and local government an opportunity to buy government securities which are virtually risk free (gilt-edge).

(iii) ***Stabilisation of the economy:*** A large public debt can serve as an automatic fiscal stabilizer. A good proportion of the public debt is by the banking system to control the supply of money.

(iv) ***Provision of development finance:*** Most development projects that are critical to the development of low income countries like those in West African sub-region e.g. dams, water supply etc. are financed by external loans.

12.6.3 Argument Against Public Debt

Public debt has several disadvantages such as:

(i) ***Problem of debt financing:*** If public debt is financed by selling bond to the public, it tends to crowd out private investment. This may lead to loss of employment opportunities and income.

(ii) ***Problem of debt servicing:*** Government may result to increasing taxation to be able to pay interest on the loan and the principal to the creditors. This may reduce work and investment incentives

(iii) ***Inflationary potential:*** The expectation that loan facilities are readily available may tempt the government into undertakings that are inflationary and economically unviable.

(iv) ***Distortion of income distribution:*** Debt services and positive rate of interest would enhance the economic status of bondholder. During the period of unanticipated inflation, government (as the debtor) tends to gain at the expense of the public holders of government securities.

12.7 FISCAL POLICY

Fiscal policy is the use of taxation and government expenditure to regulate economic activity. Fiscal policy can be employed to achieve macroeconomic objectives of full employment, economic growth, external balance, price stability, and equitable distribution of income and wealth.

For example, a period of economic recession or depression characterized by sluggish economic growth with rising unemployment would call for an increase in the level of government expenditure (especially to raise aggregate demand), as well as tax reliefs and concessions to local industries to stimulate domestic production. These measures are collectively referred to as expansionary fiscal policy.

On the other hand, to control inflation pressure would require contractionary fiscal measures such as curtailing the growth of government spending, and raising taxes to reduce disposable income and aggregate demand.

12.8 SUMMARY

In this chapter, we discussed sources of government revenue, pattern and growth of government expenditure, taxation, government budget, public debt and fiscal policy – all as vital components of the subject matter of public finance.

12.9 REVISION QUESTIONS

Multiple Choice Questions

1. Which of the following statements is/are not true?

    I. A major disadvantage of direct taxes is that they can be easily evaded.
    II. To protect infant industries requires lowering import duties.
    III. A deficit budget may be used to promote economic growth.

    A. I only
    B. II only
    C. III only
    D. I and II only
    E. I, II and III together

2. A surplus budget is best adopted during
    A. Economic recession
    B. War time
    C. Economic depression
    D. Unemployment crisis period
    E. Inflationary period

3. Which of the following sources of finance for government fiscal deficit has strong inflationary potential?

    A. Printing of currency notes and coins
    B. Sales of government securities
    C. Borrowing from IMF
    D. Borrowing from bilateral creditors
    E. Borrowing from World Bank

4. Which of the following statements is/are true of national budget?

    I. It is an estimate of government revenue and expenditure for the coming year
    II. It refers to accumulated borrowing of government
    III. It is an instrument of government economic policy

    A. I only
    B. II only
    C. III only
    D. I and II only
    E. I, II and III together

5. Which of the following statements is true of taxation?

I. A tax is progressive if the percentage of income paid in tax varies inversely with the level of income.
II. The tax base is the proportion of income paid in tax.
III. A regressive tax is a tax that takes a lower percentage of income as income rises.

A. I only
B. II only
C. III only
D. I and II only
E. I, II and III together

6. A progressive income tax implies that
A. The amount of tax falls with a rise in income
B. The rate of rises with a rise in income
C. Both (a) and (b)
D. The rate of tax decreases with a rise in income

7. The greater the elasticity of supply, the greater is
A. Incidence of tax on buyers
B. Incidence of tax on sellers
C. Impact of tax on sellers
D. Impact of tax on buyers

8. Public goods are those for which
A. External costs exist.
B. Individuals who do not pay cannot be excluded from consuming.
C. Individuals who do not pay can be excluded from consuming.
D. No external costs exist.

9. The following is a characteristic of indirect tax______
A. The impact and incidence are not on the same person.
B. It is levied on income.
C. Taxes are progressive in nature.
D. All of the above

10. Which of the following canon of taxation is given by Adam Smith
A. Canon of diversity
B. Canon of simplicity
C. Canon of economy
D. Canon of productivity

Solutions to Multiple Choice Questions

1. B
2. E
3. A
4. D
5. C
6. B
7. A
8. B
9. A
10. C

Short Answer Questions

1. The taxes levied on goods and services are called………………………
2. The aspect of economics that concerns with revenue raising and spending activities of the government is called………………………
3. The famous economist who first developed the principle of taxation usually referred to as cannons of taxation is ……………………..
4. A compulsory levy on individuals and business organisations by the government is……………………………
5. The government spending on developmental projects that enhance productive capacity of an economy is called…………..

Solution to Short Answers Questions

1. Indirect taxes
2. Public finance
3. Adam smith
4. Tax
5. Capital expenditure

Questions 12.1

1. (a) What is National Budget?

   (b) Discuss briefly the three types of national budget.

Solution

1 (a) A **National Budget** is a document showing estimates of expected government revenue and intended expenditure for the coming financial year. It usually consist of the review of the performance of the immediate preceding budget, objectives of the present budget, revenue projection, estimates of current and capital expenditures as well as policy strategies to promote the achievement of the stated objectives.

(b) The three types of budget are:

(i) **Surplus Budget:** A surplus budget occurs when the expected government revenue is planned to exceed the proposed government expenditure. It can be achieved by reducing government expenditure or increasing taxation or both. A surplus budget is usually adopted to reduce inflationary pressures because it reduces aggregate effective demand in the economy.

(ii) **Deficit Budget:** A deficit budget occurs when the government revenue estimate is less than the proposed government expenditure. The fiscal deficit can be financed by raising loans from both internal and external sources. A deficit budget may be used to stimulate domestic production during economic recession or depression.

(iii) **Balanced Budget:** A government budget is balanced when its revenue estimate is equal to the intended expenditure. It is also called a neutral budget because it is usually adopted to keep the level of economic activities stable as in the preceding year.

Questions 12.2

Highlight the usefulness of a public budget.

Solution

A public budget is a financial plan which indicates governments estimated incomes by sources and proposed expenditures on its various activities both within and outside in a specified period of time, usually a year.

The usefulness of public budget includes the following:

1. It is a means by which government describes its intentions and financial policies which it would want to embark upon in the coming year.
2. It is a means of communicating how the intentions and financial policies are to be achieved to the managers of various sectors of the economy.

3. It is a control device both in terms of accountability on the part of the people with authority to spend public funds and on the reactions of the economy to changes in major macroeconomic variables by comparing plans with results.
4. It is a means of expressing goals that must be achieved within the specified period of time.
5. It is a means through which the nations scarce resources are effectively utilized for optimum results.
6. It is a means by which the performance of a nation is measured.

Question 12.3

Outline the principal economic functions of the government of a given country.

Solution

The economic functions of any government include the following:

(a) Provision of legal framework and a social environment conducive to the effective operation of the price system.

(b) Creation and maintenance of social and economic infrastructures e.g. roads, electricity, hospitals etc.

(c) Redistribution of income e.g. through direct transfer payments or welfare programmes for the vulnerable members of the society.

(d) Reallocation of resources.

(e) Promotion and achieving macroeconomic objectives.

Practice Questions

1. Briefly discuss the following concepts.

(i) Surplus budget

(ii) Balanced budget

(iii) Deficit budget

2. Discuss possible hindrances to the implementation of budget in a developing economy like ours'

3. Highlight the attributes of a good tax system.

4. What factors could be adduced to rising government expenditures in your country

CHAPTER THIRTEEN

INFLATION AND UNEMPLOYMENT

13.0 LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- Define inflation
- Explain the two main theories of inflation: Demand Pull and Cost Push.
- Identify and explain the causes of inflation.
- Explain the effects of inflation.
- Explain how demand management policies and supply side policies could be used to control inflation.
- Explain the meaning of unemployment.
- Identify and explain types of unemployment.

13.1 INTRODUCTION

Inflation describes a persistent increase in the general price level. The inflation rate is measured as a percentage change in a price index, such as the consumer price index (CPI).

13.2 THEORIES OF INFLATION

13.2.1 Demand Pull Inflation: This describes a sustained increase in the general price level that is caused by a permanent increase in nominal aggregate demand. Simply, it can be viewed as an inflation that occurs as a result of increase in aggregate demand.

When aggregate demand exceeds aggregate supply at current prices, prices are pushed upwards to equilibrate aggregate supply and demand.

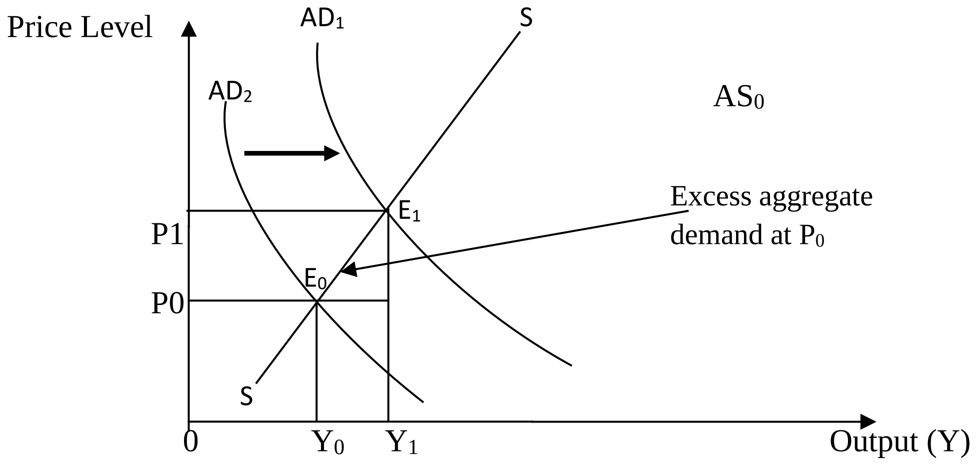


Figure 13.1: Demand Pull Inflation

In figure 13.1, an increase in aggregate demand from AD_o to AD_1 for given the aggregate supply ss creates excess demand at P_0. This causes price levels to increase from P_0 to $P_{1.}$ A new equilibrium is established at point E_1 with output at Y_1 and at a higher price level of $P_{1.}$ The continuous repetition of this process will lead to a sustained increase in the price level which characterizes demand-pull inflation.

13.2.1 Cost Push Inflation: It is a situation where the process of increasing price level is caused by increasing costs of production which push up prices.

Cost push inflation is also referred to as supply inflation. Price level in this case increases due to an increase in business costs e.g. wage increase, high interest rates, etc. These increases in prices occur in the face of high unemployment and slacken resource utilization. The increase in cost of production causes supply of final goods and services to fall. This creates excess aggregate demand and a new equilibrium is attained at a higher price level..

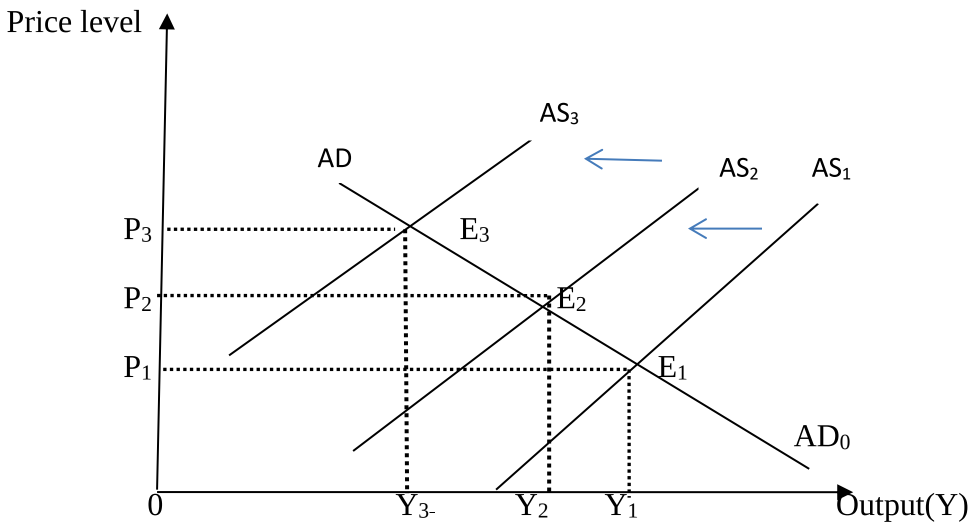


Figure 13.2 Cost-Push Inflation

Figure 13.2 illustrates the process of cost push inflation. The aggregate demand (AD_0) and aggregate supply (AS_1) curves intersect at point $\mathbf{E_1}$ and the general price level is P_1 and output is at $Y_{1.}$ Assuming there is an increase in cost of production via increased wages throughout the economy, the aggregate supply curve will shift upward from AS_1 to AS_2. The general price level will increase and output will fall from Y_1 to Y_2. If this process continues, it leads to another round of increase in cost of production. Aggregate supply falls from AS_2 to AS_3 and the general price level rises from P_2 to P_3 and Output will fall again to $Y_{3.}$

13.3 CAUSES OF INFLATION

(i) Excessive growth in wages relative to productivity can cause inflationary

pressures. This causes aggregate demand to increase relative to aggregate supply and pulls up the price level.

(ii) Increase in government expenditure can produce an increase in the price level in the economy via increased aggregate demand.

(iii) Price shocks: These are substantial increases in the prices of some items, for example, due to drought, floods, or massive oil price hike. These increases in the prices of these items may feed into cost of production. Aggregate output may fall and given the aggregate demand, the price level is pushed up.

(iv) Excessive growth in money supply relative to the level of production in the economy. This causes the level of aggregate demand in the economy to increase relative to aggregate output, shortages occur and the price level rises.

(v) Changes in exchange rate: If the external value of the domestic currency falls relative to other nations' currencies, this may be inflationary. Under this circumstance, imported goods become more expensive and this may add to domestic cost and price structure in the economy fuelling inflation.

(vi) Fall in Output: Due to war, natural disaster or even high cost, output can fall and supply constrained relative to demand.

13.4 EFFECTS OF INFLATION

(i) **On income Earners:** Those on fixed incomes or assets in nominal terms lose. However, those on incomes, which are directly related to the price level, real incomes may remain relatively unchanged or may even increase.

(ii) **On Profits:** Generally, profits increase when the inflation is the demand pull type and decline when the inflation is the cost push type. During demand pull inflation, the prices of final goods and services tend to be more flexible in an upward direction than many other prices.

(iii) **On Lenders and Borrowers:** Inflation tends to encourage borrowing and discourage lending. This is to because what is borrowed today which could have been used to purchase, say a bowl of gari today, would not enable the creditor to purchase the same bowl of gari when the loan is paid back. This is true only when nominal interest rate is fixed or rises at a lower pace than inflation.

(iv) **On Production:** Demand pull inflation may lead to inefficiency in production since competitive pressures to improve both product and performance will be greatly reduced. Cost push inflation, however, puts a premium on efficiency.

(v) **On Foreign Trade:** Rising domestic prices can hurt exports. If domestic prices are rising faster than the rest of the world prices, exports will fall and imports will tend to increase and this will invariably affect our net exports and may have devastating balance of payment implications.

13.5 CONTROL OF INFLATION

How inflation is controlled in an economy depends on the causes and the types of inflation the economy is experiencing.

13.5.1 Use of Fiscal Policy

Fiscal policy is one of the two main macroeconomic policies used to control aggregate demand and thereby achieve price stability. Fiscal measures relate to taxation, government expenditure and public debt management, which seek to influence the level of aggregate demand in an economy.

There are three main tools of fiscal policy: government spending (G), the income tax rate (t) and government transfer payments (Tr). In times of demand pull inflation these tools are used to reduce aggregate demand. All increase in tax rate, decrease in government expenditure and decline in government transfer payment will reduce aggregate expenditure in the economy. That is, there is contractionary fiscal policy.

13.5.2 Use of Monetary Policy

Monetary policy is that part of macroeconomic policy which regulates the changes in money supply in order to maintain price stability.

Tools of monetary policy are changing discount rate (d); changing required reserve ratio (rr), reduces the extent to which commercial banks create credit hence reduces money supply. When the discount rate is increased, short term interest rates increase and this discourages borrowing to finance investment spending. This invariably reduces aggregate demand. Central bank selling of its own government securities to the general public reduces money supply which reduces aggregate demand. Generally, there will be contractionary monetary policy.

We employ Figure 13.3 to illustrate how monetary and fiscal policies shift the aggregate demand curve.

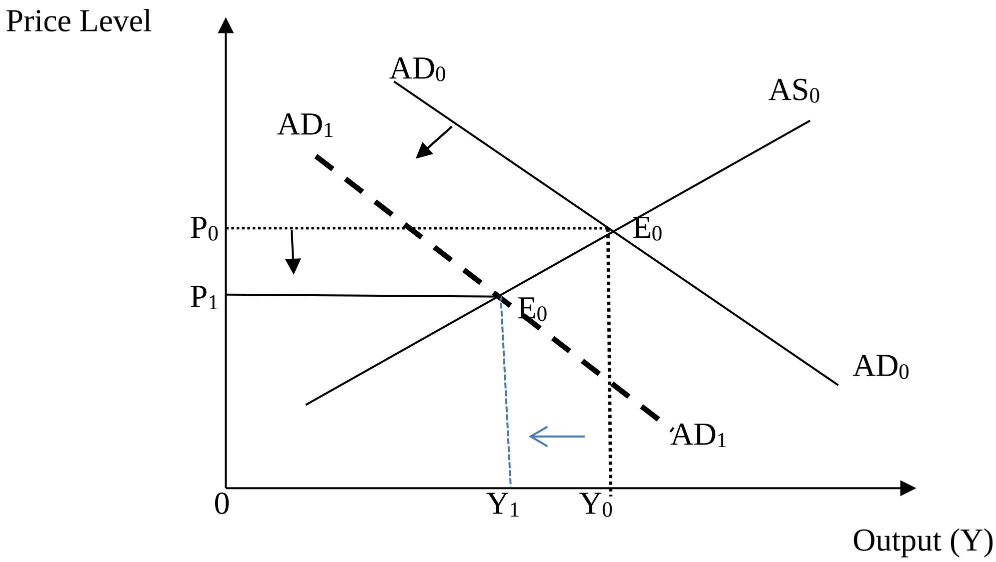


Figure 13.3: Effect of Monetary and Fiscal Policies on Aggregate Demand

In the mainstream macroeconomics, monetary policy shifts the aggregate demand curve of an economy.

In Figure 13.3, the equilibrium price level is P_0 and the equilibrium aggregate output is Y_0. If the central bank increases the discount rate (d) or engages in open market sales or increases the required reserve ratio, the AD-curve shifts to the left (aggregate demand falls) from AD_0 to AD_1 and the price level declines to P_1. This is known as restrictive monetary policy. The central bank in an attempt to fight inflation may embark on restrictive monetary policy.

Contractionary fiscal policy via reduction in government expenditure (G), decrease in transfer payments (Tr) and increase in the income tax rate (t), would also cause the AD_0 to shift to AD_1.

13.5.3 Income and Price Policy

Income Policy measures may take the form of wage freeze, linking wage increases to increase in productivity.

Price Policy may also be used. Maximum prices are used in this case. These prices are the highest possible legal prices for scarce goods. However, these prices may lead to queues, rationing and black marketing in scarce products.

13.5.4 Supply Side Policies

In addition to the demand management policies, supply side policies could also be used in controlling inflation. This, however, is a long-term measure. The following may increase aggregate supply; (i) Increasing productivity in all sectors of the economy. (ii) Increases in productivity may increase output, which will subsequently increase supply. This may be achieved by the retraining of labour, improving technology, removing all structural rigidities e.g. land tenure system, poor road infrastructure e.t.c.

13.6 UNEMPLOYMENT

13.6.1 Definition

Unemployment refers to a situation where people who are willing and able to work do not find jobs at the existing wage rate. For a person to be referred to as unemployed, he or she must be qualified for a job, willing to work at the current wage rate and unable to find a job.

13.6.2 Types of Unemployment

(a) **Frictional Unemployment**; This refers to unemployment caused by changes in individual labour markets. This is the type of unemployment resulting from people who have left jobs willingly and are searching for new employment or people who are either entering or re-entering the labour force to search for a job.

(b) **Structural Unemployment:** This is unemployment resulting from changes in the pattern of demand for goods and services or changes in technology. These changes may in turn alter the structure of the total demand for labour rendering some particular skill less in demand or may become obsolete. The demand for other skills however may expand. Unemployment in this case is the result of the composition of the labour force which does not respond quickly to new structures of job opportunities.

(c) **Cyclical Unemployment:** This is the type of unemployment resulting from decline in real aggregate output in the economy. It can also be defined as unemployment caused by deficiency of aggregate or total spending. This is sometimes referred to as deficient-demand unemployment.

(d) **Seasonal Unemployment:** This occurs as a result of seasonal fluctuations in employment. For example in the cocoa season – there will be demand for more farm hands. These farm hands are laid off after the cocoa season.

13.7 SUMMARY

Inflation describes a persistent and an appreciable increase in the general price level. The inflation rate is measured as a percentage change in a price index, such as the consumer price index.

Demand Pull Inflation describes a sustained increase in the general price level that is caused by a permanent increase in nominal aggregate demand. Cost Push or Supply Inflation is a situation where the process of increasing price level is caused by increasing costs of production which push up prices.

Unemployment refers to a situation where who are willing and able to work do not find jobs at the existing wage rate. For a person to be referred to as unemployed he or she must be qualified for a job, willing to work at the current wage rate and unable to find a job.

13.8 REVISION QUESTIONS

Multiple Choice Questions

1. The following are instruments of monetary policy except:

A. Cash reserve ratio
B. Taxation
C. Moral suasion
D. Discount rate
E. Selective credit control

2. Which of the following types of unemployment is caused by changes in the technology?

A. Frictional
B. Structural
C. Cyclical
D. Seasonal
E. Voluntary

3. When aggregate demand exceeds aggregate supply, the result is

A. cost push inflation
B. demand-pull inflation
C. imported inflation
D. spiral inflation
E. creeping inflation

4. The following are negative effects of inflation except:

A. Increase in real income
B. Discourages lending

C. Borrowers gain
D. Value of imports may increase
E. Inefficiency in production

5. Which of the following can be used to check inflation caused by excess demand?

A. Reduction in cash reserve ratio
B. Increase in government expenditure
C. Reduction in income taxes
D. Increase in discount rates
E. Purchase of treasury bills in open market operation

6. The kind of unemployment related to job search is__________unemployment

A. Frictional
B. Structural
C. Cyclical
D. Seasonal

7. If too much money is chasing too few goods, the resulting inflation is known as ___________.

A. Stagflation
B. Cost-push inflation
C. Demand-pull inflation
D. None of the above

8. The combination of stagnation and inflation is known as ______.

A. Stagflation
B. Cost-push inflation
C. Demand-pull inflation
D. None of the above

9. When inflation is a result of an increase in the price of factors of production, the result is

A. Stagflation
B. Cost-push inflation
C. Demand-pull inflation
D. None of the above

10. Supply-side policies are most effective for putting inflation in check in the short term.

A. True

B. False

C. Uncertain

D. None of the above

Solution to Multiple Choice Questions

1. B
2. B
3. B
4. A
5. D
6. A
7. C
8. A
9. B
10. B

Short Answer Questions

1. An inflation that occurs as a result of increase in aggregate demand is known as…………………………….
2. The term that describes the policy of reducing government spending and increasing the income tax is called………………………..
3. A situation where people who are willing and able to work at prevailing wage rate do no find jobs is called………………………..
4. Increase in price level caused by increasing costs of production is termed …………………….
5. Define Open Market Operation (OMO) .

Solution To Short-Answers Questions

1. Demand pull inflation
2. Contractionary or restrictive fiscal policy
3. Unemployment
4. Cost push inflation
5. Open Market Operation is the sale and purchase of government securities (Treasury bills).

Question 13.1

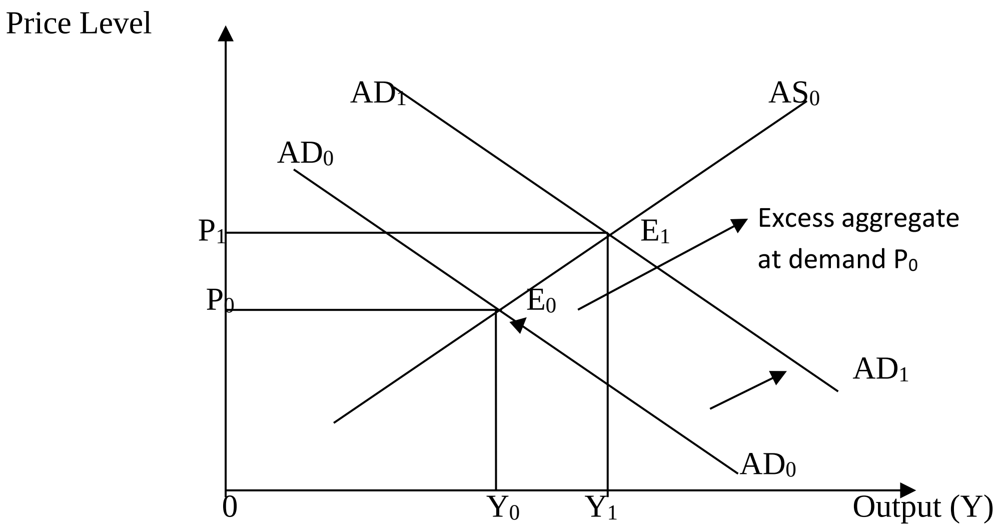
1. With the aid of diagrams, explain

   i. Demand-pull inflation

   ii. Cost-push inflation

Answer

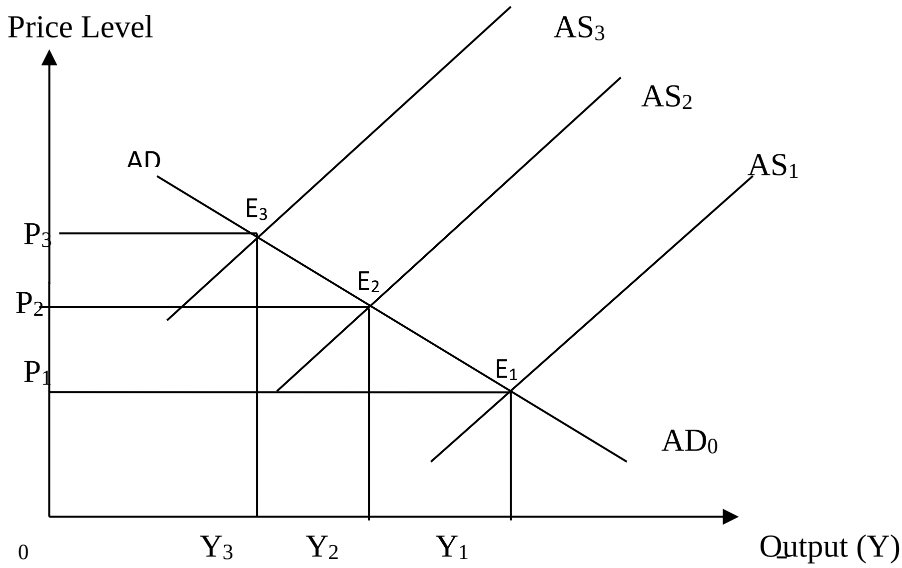
a. **Demand Pull Inflation:** It describes a sustained increase in the general price level that is caused by a permanent increase in nominal aggregate demand. Simply, is can be viewed as an inflation that occurs as a result of increase in aggregate demand.



In the above figure, an increase in aggregate demand from AD_0 to AD_1 given the aggregate supply creates excess demand at P_0. This causes price levels to increase from P_0 to P_1. A new equilibrium is established at point E_1 with output at Y^1 and at a higher price level of P_1. The continuous repetition of this process will lead to a sustained increase in the price level, which characterizes demand-pull inflation.

Cost Push or Supply Inflation: It is a situation where the process of increasing price level is caused by increasing costs of production which push up prices.

Cost push inflation is also referred to as supply inflation. Price level in this case increases due to an increase in business costs. These increases in prices occur in the face of high unemployment and slacken resource utilization. The increase in cost of production causes supply of final goods and services to fall. This creates excess aggregate demand and a new equilibrium is attained at a higher price level.



The Figure above illustrates the process of cost push inflation. The aggregate demand (AD_0) and aggregate supply (AS_1) curves intersect at point 'E_1' and the general price level is P_1 and output is at Y_1. Assuming there is an increase in cost of production via increased wages throughout the economy, the aggregate supply curve will shift upward from AS_1 to AS_2. The general price level will increase and output will fall from Y_1 to Y_2. If this process continues, it leads to another round of increase in cost of production. Aggregate supply falls from AS_2 to AS_3 and the general price level rises from P_2 to P_3. and Output will fall again to Y_3.

Question 13.2

(a) Explain briefly Demand Pull Inflation and Cost-Push Inflation.

(b) State and explain FOUR effects of inflation on an economy

Answer

a. **Demand Pull Inflation:** It describes a sustained increase in the general price level that is caused by a permanent increase in nominal aggregate demand. Simply, it can be viewed as an inflation that occurs as a result of increase in aggregate demand.

Cost Push or Supply Inflation: It is a situation where the process of increasing price level is caused by increasing costs of production which push up prices. Cost push inflation is also referred to as supply inflation. Price level in this case increases due to an increase in business costs. These increases in prices occur in the face of high unemployment and slacken resource utilization. The increase in cost of production causes supply of final goods and services to fall. This creates excess aggregate demand and a new equilibrium is attained at a higher level.

Two points to note about Demand Pull and Cost Push Inflation.

(i) It must be noted that in both processes, inflation is caused by excess demand. It is the cause of this excess demand that distinguishes one from the other.

(ii) Demand pull inflation may cause an increase in output up to the potential output level whilst cost push inflation causes supply (output) to fall and the economy declines further away from potential output.

(b) Any four of the following effects of inflation:

(i) On Income Earners: Those on fixed incomes or assets (fixed in nominal terms) lose. However, those on incomes, which are directly related to the price level, real incomes may remain relatively unchanged or may even increase.

(ii) On Profits: Generally, profits increase when the inflation is the demand pull type and decline when the inflation is the cost push type. During demand pull inflation the prices of final goods and services tend to be more flexible in an upward direction than many other prices.

(vi) On Lenders and Borrowers: Inflation tends to encourage borrowing and discourage lending. This is so because what is borrowed today which could have been used to purchase, say a bowl of gari today, would not enable the creditor to purchase the same bowl of gari when the loan is paid back. This is true only when nominal interest rate is fixed or rises at a lower pace than inflation.

(vii) On Production: Demand pull inflation may lead to inefficiency in production since competitive pressures to improve both product and performance will be greatly reduced. Cost-push inflation however, puts a premium on efficiency.

(viii) On Foreign Trade: Rising domestic prices can hurt exports. If domestic prices are rising faster than the rest of the world prices, exports will fall and imports will tend to increase and this will invariably affect our net exports and may have devastating balance of payment implications.

Question 13.3

a. Identify and explain three causes of inflation in your country.

b. Explain three measures your country can use to control inflation.

Answer

a. Any three of the following causes of inflation

i. Excessive growth in wages relative to productivity can cause inflationary pressures. This causes aggregate demand to increase relative to aggregate supply and pulls up prices level.

ii. An increase in government expenditure can produce an increase in the price level in the economy via increased aggregate demand.

iii. Price shocks: These are substantial increases in the prices of some items, for example, due to drought, floods, or massive oil price hike. These increases in the prices of these items may feed into cost of production. Aggregate output may fall and given the aggregate demand the price level is pushed up.

iv. Excessive growth in money supply relative to the level of production in the economy. This causes the level of aggregate demand in the economy to increase relative to aggregate output, shortages occur and the price level rises.

v. Changes in exchange rate. If the external value of the domestic currency falls relative to other nations' currencies this may be inflationary. Under this circumstance imported goods become more expensive and this may add to domestic cost and price structure in the economy fuelling inflation.

vi. Fall in Output. Due to war, natural disaster or even high cost, output can fall and supply constrained relative to demand.

b. Any three of the following measures to control inflation

i. Fiscal policy is one of the two main macroeconomic policies used to control aggregate demand and thereby achieve economic stability. Fiscal measures relate to taxation, government expenditure and public debt management, which seek to influence the level of aggregate demand in an economy. There are three main tools of fiscal policy: government spending (G), the income tax rate (t) and government transfer payment (Tr). In times of demand pull inflation these tools are used to reduce aggregate demand. An increase in tax rate, decrease in government expenditure and decline in government transfer payment will reduce aggregate expenditure in the economy.

ii. Monetary policy is that part of macroeconomic policy which regulates the changes in money supply in order to maintain price stability. Tools of monetary policy are changing discount rate (d); changing required reserve ratio (rr) reduces the extent to which commercial banks create credit hence reduces money supply. When the discount rate is increased, short term interest rates increase and this discourages borrowing to finance investment spending. This invariably reduces aggregate demand. Central bank selling of its own government securities to the general public reduces money supply which reduces aggregate demand.

iii. Income Policy**:** These measures may take the form of wage freeze, linking wage increases to increase in productivity.

iv. Price controls may also be used. Maximum prices are used in this case. These prices are the highest possible legal prices for scarce goods. However, these prices may lead to queues, rationing and black marketing in scarce products.

v. Supply Side Policies**:** In addition to the demand management policies, supply side policies could also be used in controlling inflation. This however is a long-term measure. The following may increase aggregate supply: increasing productivity in all sectors of the economy. Increases in productivity may increase output, which will subsequently increase supply. This may be achieved by the retraining of labour, improving technology, removing all structural rigidities e.g. land tenure system, poor road infrastructure etc.

Question 13.4

(a) What is meant by unemployment?

(b) Explain three types of unemployment?

Answer

(a) Unemployment refers to a situation where people who are willing and able to work do not find jobs at the existing *wage rate*. For a person to be referred to as unemployed he or she must be qualified for a job, willing to work at the current wage rate and unable to find a job.

(b) Any threeof the following types of unemployment:

i. Frictional Unemployment:- It refers to unemployment caused by changes in individual labour markets. This is the type of unemployment resulting from people who have left jobs that did not work out and are searching for new employment or people who are either entering or re-entering the labour force to search for a job.

ii Structural Unemployment: This is unemployment resulting from changes in the pattern of demand for goods and services or changes in technology. These changes may in turn alter the structure of the total demand for labour rendering some particular skill less in demand or may become obsolete. The demand for other skills however may expand. Unemployment in this case is the result of the composition of the labour force which does not respond quickly to new structures of job opportunities.

iii Cyclical Unemployment: This is the type of unemployment resulting from decline in real aggregate output in the economy. It can also be defined as unemployment caused by deficiency of aggregate or total spending. This is sometimes referred to as deficient-demand unemployment.

Question 13.5

(a) Who is an unemployed person?

(b) Explain the following types of unemployment.

i. Frictional

ii. Structural

iii. Cyclical

Answer

(a) For a person to be referred to as unemployed he or she must be qualified for a job, willing to work at the current wage rate and unable to find a job.

(b)

(i) Frictional Unemployment: It refers to unemployment caused by changes in individual labour markets. This is the type of unemployment resulting from people who have left jobs that did not work out and are searching for new employment or people who are either entering or re-entering the labour force to search for a job.

(ii) Structural Unemployment:- This is unemployment resulting from changes in the pattern of demand for goods and services or changes in technology. These changes may in turn alter the structure of the total demand for labour rendering some particular skill less in demand or may become obsolete. The demand for other skills however may expand. Unemployment in this case is the result of the composition of the labour force which does not respond quickly to new structures of job opportunities.

(iii) Cyclical Unemployment: This is the type of employment resulting from decline in real aggregate output in the economy. It can also be defined as unemployment caused by deficiency of aggregate or total spending. This is sometimes referred to as deficient-demand unemployment.

Practice Questions

1. Highlight any four causes of unemployment in your country.
2. Outline any two solutions to the unemployment problem in your country.
3. Distinguish the following concepts:
(i) Cost-push and Demand-pull inflation
(ii) Frictional and Cyclical unemployment
(iii) Income and Price policy measures for control of inflation.

CHAPTER FOURTEEN
INTERNATIONAL TRADE AND FINANCE

14.0 LEARNING OBJECTIVES

After studying this chapter, you should be able to:

- Explain reasons for International trade.
- Explain the theory of the Absolute Advantage
- Give a detailed account of the theory of Comparative Cost Advantage.
- Explain the advantages and disadvantages of international trade.
- Explain the Terms of Trade and Balance of Payments.
- Identify and explain trade barriers and its instruments.
- Explain methods of protecting international trade.
- Give an account of foreign exchange markets.

14.1 INTRODUCTION

International trade refers to the exchange of goods and services between countries. Goods sold to other countries are referred to as **exports** and goods bought from them are dubbed **imports** as International trade also involves movement of capital between countries.

14.2 BASIS OR REASONS FOR INTERNATIONAL TRADE

The underlining basis of trade is the same, whether trade takes place between individuals or between business enterprises, on a regional basis within a country or internationally between countries. Under this section we answer the question **"Why do nations trade?"** There have been various answers to this question, some of which are:

(i) **Differences in factor endowment:** Countries are endowed differently e.g. differences in climate and soil, differences in availability of natural resources, differences in capital endowment and differences in labour skills. These differences translate into differences in the abilities of countries to produce goods and services. Some countries, because of their factor endowments, can produce certain goods cheaper than other countries. For e.g. Nigeria is endowed with crude oil and natural gas. These can be produced cheaper in Nigeria than in Liberia.

(ii) Liberia, therefore, imports them from Nigeria. This is an example of International trade.

(iii) The need to satisfy certain wants:

Countries are faced with demand for goods and services that their factor endowment cannot produce. In order to satisfy these wants, they are sourced from foreign countries as imports. Nigeria imports capital equipment for its oil sector from the rest of the world. The rest of the world imports crude oil from Nigeria.

We acknowledge here that the bottom line for the existence of international trade is differences in cost of production across countries.

14.3. THE THEORIES OF INTERNATIONAL TRADE

Under this section, we develop the theories of Absolute Advantage and Comparative Cost Advantage.

14.3.1 The Theory of Absolute Advantage

Adam Smith postulated that each country should specialize in those commodities she can produce at the lower absolute cost than other countries. He made this assertion when he was writing about Division of labour and specialization in international trade in his "Wealth of Nations" in 1776.

Adam Smith argued for free trade by comparing nations to households. Since every household finds it prudent to produce only some of its needs and to buy others with products it can sell, the same should apply to nations.

Adams Smith, assuming a two - good and a two - country world, concluded that trade is mutually beneficial if one nation has an absolute advantage in the production of one good and the other nation has absolute advantage in the production of the second good.

Illustration of Absolute Advantage

Assume a two - nation (Nigeria and Ghana), a two good (Crude Oil and Cocoa) model. Assume again that only one factor of production (Labour) is used and each nation has the same amount of labour. Now, suppose that each nation devotes half of its limited resources (Labour) to the production of Crude Oil and the other half to the production of cocoa. The production totals without trade are shown in Table 14.1.

Table 14.1: Production and Consumption Totals Prior trade

Nation	Crude oil (units)	Cocoa Units
Nigeria	20	10
Ghana	10	20

In Table 14.1, Nigeria produces 20 units of Crude Oil combined with 10 units of cocoa. Ghana on the other hand, produces 10 units of Crude Oil combined with 20 units of Cocoa. From Table 14.1. Nigeria has an absolute advantage in Crude Oil production because given the same labour resources, more of crude oil is produced in Nigeria. Ghana has an absolute advantage in cocoa production; given the same resources more cocoa can be produced in Ghana than Nigeria.

According to the theory of Absolute Advantage, specialization and trade would be beneficial to Nigeria and Ghana. Nigeria should specialize completely in Crude Oil production whilst Ghana specializes completely in cocoa production. The production totals are depicted in Table 14.2

Table 14.2: Production after Specialization

Nation	Crude Oil (units)	Cocoa (units)
Nigeria	40	0
Ghana	0	40

Table 14.2 shows the production totals after specialization. Nigeria now produces 40units of Crude and Zero (0) unit of Cocoa. Ghana, after specialization, produces zero (0) crude oil and 40 units of cocoa. Total World Output increased after specialization based on the theory of absolute advantage. Gains from specialization based on absolute advantage are 10 units each of crude oil and cocoa. Some of the assumptions underlying the theory of Absolute Advantage are

1. Factors of production are perfectly mobile within each nation and they can be instantly switched between industries. However, factors are immobile between countries, though final goods and services can be traded.
2. There are constant returns to scale and constant average costs of production in both industries.
3. The limited resources and factors of production in each nation are fully employed.
4. There are no transport costs between the two countries.

5. The theory assumes value in real magnitude entirely different from monetary phenomenon i.e. in units of crude oil and cocoa.

14. 3.2 The theory of Comparative Cost Advantage

Adam Smith's theory of absolute advantage fails to explain the basis of trade in situation where a country has absolute advantage in the production of both goods.

David Ricardo in his "Principle of Political Economy and Taxation" published in 1817 proved that even if a nation has absolute advantage in the production of both commodities, it is still possible for mutual beneficial trade to exist between them. He pointed out that what was relevant therefore was comparative advantage and not absolute advantage.

According to Ricardo, absolute advantage is not a sufficient condition for mutually beneficial trade. According to him, the sufficient condition for mutually beneficial trade is a pattern of comparative advantage across nations.

According to the theory of comparative advantage, whether or not one of the two countries is in absolute terms more efficient in the production of every commodity than the other, if each specializes in the product in which it has a greater comparative advantage, trade will be mutually beneficial.

Illustration of Comparative Cost Advantage

From the previous example in Table 14.1. suppose that a nation becomes more efficient in both Crude Oil and Cocoa Production. Now if each nation devotes half of its resources to each good, the production totals are:

Table 14.3: Production and Consumption Totals without trade

Nation	Crude Oil (units)	Cocoa (units)
Nigeria	**30**	**15**
Ghana	**5**	**10**

Table 14.3 shows that Nigeria has an absolute advantage over Ghana in the production of both crude oil and cocoa. Both commodities can be produced more cheaply in Nigeria than in Ghana. In this case, the principle of absolute advantage fails to explain the reason for specialization and trade.

The principle of comparative cost advantage is needed here to explain the basis for specialization and trade. With given resources, more of each good could be produced in Nigeria than in Ghana. To determine which good Nigeria and Ghana should specialize in, we need to calculate the opportunity cost ratios as done in Table 14.4. below.

Table 14.4. Opportunity Cost ratio of Production

	Nigeria	Ghana
Opportunity cost of Producing one unit (1) Of crude oil in terms of Cocoa.	15/30 = ½ unit cocoa	10/5 = 2unit of cocoa
Opportunity Cost of Producing one unit (1) Of cocoa in terms of Crude oil	30/15 = 2 units of crude oil	5/10 = ½ unit of crude oil

In Nigeria, the opportunity cost of producing one unit (1) of crude oil in terms of cocoa is ½ unit of cocoa. This means that if Nigeria needs one more unit of crude oil, they must be prepared to reduce the production of cocoa by ½ units. It also means that a unit of crude oil in Nigeria costs ½ unit of cocoa. In Ghana, the opportunity cost of producing one unit (1) of cocoa in terms of crude oil is 2 units of cocoa. That is, in Ghana, the price of a unit of crude oil equals 2 units of cocoa.

Nigeria (which has the absolute advantage in both commodities) possesses a comparative cost advantage in crude oil production, whereas Ghana (with an absolute disadvantage in both) has comparative cost advantage in cocoa production. Nigeria specialises in crude oil and Ghana in cocoa.

14.4. ADVANTAGES AND DISADVANTAGES OF INTERNATIONAL TRADE

14.4.1. Advantages

(i) It leads to increase in total world production of goods and services. International trade based on comparative cost advantage allows countries to specialise in what they can do best. This allows for increase in output and invariably increases in the volume of total world output.

(ii) It leads to efficiency in use of world resources. International trade is based on specialization in what you can do best. This means that each country involved in international trade uses the resource available to her in the most efficient way and hence world resources are efficiently used.

(iii) It leads to availability of variety of goods and services. International trade makes citizens of nations to consume goods and services their resources cannot be used to produce.

(iv) International trade leads to economies of scale. International trade leads to increased output and firms involved in producing for exports may enjoy cost reducing advantages that go with increased output.

(v) International trade brings about interdependence. This, politically, may help a nation to be conscious of the existence of other nations. The interdependence of nations helps promote good neighbourliness.

14.4.2. Disadvantages

(i) It may lead to collapse of infant firms. These are young firms not enjoying economies of scale and producing at high unit cost. If International trade is allowed, cheap imports are brought in and these may lead to the collapse of infant firms.

(ii) International trade may lead to excessive interdependence. This may have negative effects on the Country in times of crises. For example in the face of crisis between Ghana and Nigeria, Nigeria may halt its exports of crude oil to Ghana.

(iii) It may lead to unemployment. If through international trade, infant firms collapse in a country, their employees will be laid off and this will create unemployment.

(iv) International trade may lead to dumping. Dumping occurs when goods are sold in foreign countries below their cost of production at home. This will under-cut competition in the foreign country and destroy local firms.

14.5 TERMS OF TRADE

There are various terms of trade; The commodity or net barter terms of trade, income terms of trade, single factorial terms of trade and double factorial terms of trade. We discuss here the commodity terms of trade.

The Commodity or Net Barter Terms of Trade is the rate at which a country's exports are exchanged for its imports for a given period of time. In other words, it is the ratio of the price index of the nation's exports (Px) to the price index of imports (Pm) multiplied by 100.

$$TOT_{2004} = \frac{\text{Index of export prices (Px)}}{\text{Index of import prices (Pm)}} \times \frac{100}{1}$$

For example, if we take 2005 as the base year, then TOT equals 100. Suppose that by the end of 2005 the nation's Px declined by 20% (to 80%), while its Pm rose by 10% (to 110%), then this nation's commodity or net barter terms of trade would be

$$TOT_{2005} = (80/110)\ 100 = 72.73$$

This means that between 2004 and 2005, the nation's export prices fell by 27.27% in relation to its Import prices. This also means that given the current export and import price indexes, the nation needs 27.27% more of its exports to buy the same volume of imports in 2005 as in 2004.

Variations in the terms of trade can be described as favourable/improvement or unfavourable/deterioration. In the example above, between 2004 and 2005, the nation's Terms of Trade deteriorated. We summarize the descriptions of the movements in the Terms of Trade below.

If (Px/Pm) increases, it implies improvement/favourable in Terms of Trade; and when (Px/Pm)declines, it depicts deterioration/unfavourable in Terms of trade

14.6. REASONS FOR TRADE PROTECTION

In this section we introduce the reader to various reasons for trade protection in spite of the benefits from free trade.

(i) **The protection of infant firms**: Infant industries are those firms which are young. The absence of economies of scale to them makes their unit cost of production higher than older and efficient firms in other countries. Protection may be justified during the early growth of an infant firm. As the infant firms grow, skills and productivity, as well as economies of scale will grow, so increasing the firms' relative competitive advantage.

(ii) **To protect domestic labour against cheap foreign labour**: The theory of comparative cost advantage assumes that factors of production are both fully employed and mobile within countries. If large-sale unemployment exists within a country, protection may be used to increase employment.

(iii) **Protection against dumping:** It could be looked at as the export of commodities priced below cost of production. Dumping is generally looked upon as an unfair trading practice and for that reason, industries fearing competition from dumped goods asks for tariffs to protect them. An export subsidy is a salient form of dumping. Export subsidies are direct payments made or the granting of tax relief and subsidized loans to the nation's exporters or potential exporters so as to stimulate the nation's exports. These make the nation's export price competitive on the international markets.

(iv) **National Security:** Some key industries such as agriculture and industries producing goods that are important for the defence of the country must be maintained. Countries therefore protect these industries.

(v) **To raise revenue:** Tariffs are sometimes justified as a means of raising revenue for the government, but in modern economies this is a comparatively unimportant source of government revenue.

(vi) Other reasons include the following:

- Conserve Foreign Exchange Resources
- Counteract Trade Barriers
- Economy Self-Reliant

14.7: TRADE BARRIERS

Trade barriers are legal measures assigned by the government to protect a country's economy by reducing the quantity of goods and services that can be imported. Trade barriers are government policies which place restrictions on international trade between countries (import and export). It can either make trade more difficult and expensive (tariff barriers) or prevent trade completely (e.g. trade embargo) and generally benefit governments, domestic producers, and national interests at the expense of consumers. The major aim of trade barriers is to promote domestic goods than exported goods, and there by safeguard the domestic industries.

Three methods have been noted to be very important for the protection of international trade. We will discuss three main methods.

(a) **Tariffs:** These are taxes imposed on traded commodities as they cross national boarders. There are two main types of tariffs. An import tariff which is a duty on an imported commodity and an export tariff which is a duty on exported commodity Tariffs may be specific, advalorem or compound (a combination of an ad valorem and specific tariff). The effect of a tariff on imports depends on its size and the elasticity of demand for the imported commodity. If demand for the imports is elastic, a tariff imposed will reduce imports by switching demand towards the domestically produced substitutes. Conversely, if demand for imports is price inelastic, the main effect of the tariff will be on import prices rather than on the quantity of imports.

(b) **Domestic Subsidies**: These may be provided in many forms to avoid dumping. They are subsidies provided to certain domestic industries as a means of protecting them from lower priced foreign goods. These subsidies reduce the prices of the domestic products and make them more price-competitive.

(c) **Quotas:** They are quantitative restrictions (non tariff restrictions) on imports and exports. They restrict the amount of commodities allowed to be imported or exported. It may also involve total ban of some products from being imported into the country.

Other forms of non-tariff barriers are voluntary export restrain (VER), technical, administrative and other regulations (these include safety regulation, health regulation, textaging, labelling requirement etc).

14.8. BALANCE OF PAYMENT

14.8.1 Meaning

Balance of payment is an account that summarizes a country's total payments and total receipts from international economic transactions within a specific period usually one year.

The main reason for compiling the balance of payments is to inform the government authorities in a particular country of the international position of the country. It also helps policy makers in taking decisions on monetary and fiscal policies on one hand, trade and payment policies on the other.

14.8.2. The Accounting Principle of the Balance of Payment

Under the balance of payments, international transactions are classified as either credit (positive) or debits (negative). A credit transaction involves the receipt of payment from a foreigner. A debit transaction is a transaction that involves the making of payment to a foreigner.

The export of goods and services, unilateral transfers (gifts) received from foreigners and capital inflows are recorded as credits (+). On the other hand, the import of goods and services, unilateral transfers (gifts) made to foreigners and capital outflows are recorded as debits (-).

14.8.3 The Accounts of the Balance of Payments

The Balance of payments has three main parts namely: the Current Account, the Capital account and the Official Reserves Account.

(a) The Current Account

The Current account is subdivided into three main items: merchandise imports and exports, services imports and exports and unilateral transfers. Merchandise imports and exports are also referred to as visible trade and services imports and exports and unilateral transfers dubbed invisible trade.

(i) **Merchandise Account or Visible Trade:** This records trade in merchandise, that is, export and import of goods. Visible goods are for example, crude oil, timber, cars, etc. The difference between merchandise exports and Merchandise imports is termed as the Balance of Trade. When merchandise exports exceed visible merchandise import, the country is said to have trade surplus. The country has a trade deficit if merchandise imports exceed merchandise exports.

(ii) **Services Accounts or Invisible Trade**

The second section consists of services. It records the services of shipping and civil aviation, insurance, dividends, profits, remittances, government services, travel and tourism, banking services, etc. This section also includes unilateral transfers (gifts), that is, money transferred to and from foreign countries without rendering any services.

Transactions on the current account except unilateral transfers are referred to as autonomous, meaning they are undertaken because of profit motive. The difference between invisible exports and invisible imports is called the balance of services. This is classified as favourable or unfavourable. When invisible exports exceed invisible imports we have favourable balance of services, other wise we have unfavourable balance of services.

The total of the current account is the sum of (1) merchandise trade account (2) services account and (3) unilateral transfers.

(b) **The Capital Account**

The capital account deals with long and short-term capital movement. These capital movements are referred to as autonomous because they take place for business or profit motive. Long-term capital movements are overseas investments in shares or long-term securities or from the establishment of factories in foreign countries or the reporting country. The short-term are usually portfolio investment.

The movement of capital to a country represents an inflow of foreign capital and there is a corresponding outflow when such funds are withdrawn. An inflow of funds represents credit while an outflow represents debit.

(c) Official Reserve Account

This part of the balance of payments informs us about how the balance of both current and capital accounts taken together is settled. Transaction in this section is called accommodating transactions. They are accommodating transaction because the funds are moved to make the balance of payments balance. When the net balance on the current and capital accounts is in deficit, the deficit must be settled with an equal net credit in the official reserve account. If on the other hand, a country has a surplus, the surplus must be used up to balance the balance of payments.

14.8.4. Balance of Payments Deficit and Surplus

(a) Balance of Payments Deficit: It refers to net deficit on current and capital accounts. Some possible causes of balance of payments deficit are:

(i) Declining export earnings either due to falling export volume or export price.

(ii) Rising import bills owing to rising import prices.

(iii) Rising domestic prices may discourage exports because our exportables will become non-price competitive in the world market. Also rising domestic prices may encourage imports because imports will become relatively cheap.

(iv) Overvalued currency: When a country's currency is overvalued, it encourages flight of capital and reduces the inflow of autonomous capital.

A deficit account may be financed by:

(i) Using a country's gold reserves and foreign currency reserves.

(ii) Increasing the assets of foreigners in the country.

(iii) Selling investment overseas.

(iv) Borrowing from foreign governments, banks or the IMF, etc.

(b) Balance of Payments Surplus: It occurs when the total receipts on the current and capital accounts exceed total payments on current and capital accounts. A surplus on the balance of payments accounts may be used in the following ways:

(i) To augment a country's foreign reserves.

(ii) As loans to other countries.

(iii) To invest in businesses in other countries.

(iv) Buying assets abroad.

14.9 FOREIGN EXCHANGE

14.9.1. Introduction

The foreign exchange market is an organizational setting within which individuals, business firms, banks etc buy and sell foreign currency. It has no centralised meeting place and not limited to one country.

The exchange rate is the price of a unit of foreign currency that may be bought for I unit of domestic currency. It is simply the price at which one currency can be traded for another.

If the US dollar sells for ₦9200, this defines the exchange rate between the US dollar and the Nigerian naira.

14.9.2 Exchange Rate Regimes

There are basically two types of exchange rate regimes fixed and flexible regimes**.**

(a) Fixed Exchange Rate Regime

In a fixed exchange rate regime, the external value a country's currency is determined by explicit government policy and fixed at a certain amount of the domestic currency per unit of foreign currency.

Periodic changes in the exchange rate by government are described as devaluation or revaluation. Devaluation refers to the deliberate reduction in the external value of a domestic currency. On the other hand, revaluation is a deliberate increase in the value of a country's currency relative to other currencies.

The main advantages of fixed exchange rate are: (i) It removes the uncertainty associated with the flexible exchange rate regime and brings stability. (ii) It also indirectly imposes some anti inflationary discipline on policy makers since there is need to maintain and defend the exchange rate.

In contrast, the main disadvantages are that the currency may stay overvalued or under valued: the system may create a parallel foreign exchange market referred to as black market**.**

(b) Flexible Exchange Rate Regime

Under the flexible or freely floating exchange rate regime, the external value of a country's currency is determined by the forces of demand and supply. The exchange rate for the country is the result of the interaction between demand and supply of foreign currency. Many countries of the world in recent times have adopted flexible exchange rate with some modifications.

In a flexible exchange rate regime, variations in the exchange rate are referred to as depreciation or appreciation. Appreciation means the value of a country's domestic currency has increased relative to foreign currencies. Depreciation refers to a fall in the value of a country's domestic currency relative to foreign currencies. Like appreciation, depreciation is used when a country operates a flexible exchange regime where the forces of demand and supply determine the external value of a country's currency.

The main advantages of flexible exchange rate are: Automatic stabilisation of the balance of payments. Under this regime any balance of payments disequilibrium is rectified by a change in the exchange rate and it prevents overvaluation and undervaluation of the domestic currency since its external value is determined by the forces of demand and supply.

The arguments against flexible exchange rate are: Some degree of uncertainty may be introduced into the economy since the value of the currency changes from day-to-day. It may also lead to speculation in the foreign exchange markets due to the day-to-day changes in the currency's value.

14.10 GLOBALISATION AND DEVELOPING COUNTRIES

Globalisation is multidimensional, affecting all aspects of life: economic, cultural, environmental and social including relations between nations of the world. However, the focus here is globalization from economic perspective.

(a) The Concept of Globalisation

From the economic perspective, globalization may be defined as the increasing interaction among, and integration of, the economic activities of nations around the world. Specifically, globalization is characterized by an intensification of cross-border trade and increased financial and foreign direct investment flows, promoted by rapid liberalization and advances in information technologies.

(b) Requirements for Globalisation

To participate in, and fully integrate into the global economy, developing countries need to do the following:

i. Intensify promotion of free trade by removing trade barriers, adopting appropriate exchange rate policies and diversifying into export of manufactured products.
ii. Promote increased inflow of financial and foreign direct investments by liberalizing investment laws, offering tax incentives, easing restrictions on entry and profit remittances,

strengthening the financial system and improving security system to protect lives and properties.

iii. Promote adequacy and upgrading of existing telecommunications and transportation infrastructures to ease and reduce costs of communication and transportation.

iv. Facilitate the movement of people across borders to promote integration through human migration.

v. Ensure good governance by promoting macroeconomic discipline, limitation of government's role in the economy, preventing and sanctioning all forms of official and business corrupt practices.

vi. Promote the understanding and use of information and communication technology (ICT) in international trade and payments system.

(c) Benefits from Globalisation

Developing countries can reap the following benefits if their economies are fully integrated with the global economy.

i. Access to larger markets resulting from widespread trade barriers. This would promote large scale production and economies of scale, especially in areas where they have comparative advantage.

ii. Increased employment opportunities as a result of the growth of local industries and access to foreign job opportunities.

iii. A steady inflow of foreign exchange from workers' remittances would boost the positions of developing countries in international trade, especially giving them access to foreign inputs required for rapid industrial growth.

iv. Contacts with developed nations would lead to acquisition of better skills, experience, and exposure to the latest technologies which are also relevant for economic growth.

To reap the benefits listed above, governments in developing countries must introduce comprehensive economic and political reforms that would prevent their economies from becoming dumping grounds for the goods of developed nations. In this way, the benefits associated with globalization would translate into sustainable economic growth and remarkable reduction in the incidence of poverty across developing economies.

(a) Disadvantages of Globalisation

Despite the discussed benefits of globalization, it has some downsides too. These downsides are listed below:

i. Globalisation causes labor influx which leads to job losses and lower wages for less-skilled labor in advanced nations and harms the nations of emigration through brain drain.

ii. Empirical evidence abound that suggest that unrestricted capital flows brought about by globalisation seem to lead to periodic international financial crises, such as the ones that started in Asia in 1997 and affected most other developing countries, and the subprime housing mortgage crisis that started in the United States in 2007 and affected the entire world in 2008 and 2009.

iii. Critics of globalisation fault the rapid pace at which financial markets in developing countries have been liberalized, because it has occurred without adequate supervision. Not only have banking systems been adversely affected by rapid increases and decreases in the availability of funds from abroad, but national governments of developing countries also face more constraints over the way they conduct macroeconomic policy.

iv. Ethical questions have also been raised about globalisation. Globalisation is blamed for many human, environmental and climate change issues documented in recent times. It is argued that the huge profits recorded by corporate multinationals came at the expense of the environment and climate.

v. Globalisation is also blamed for world poverty and child labor recorded in poor countries, and the job losses and lower wages in rich countries.

(b) Drivers of Globalisation

Globalisation is driven by a number of factors which were classified into five(5) different categories by Bauernfeind(2005). These globalization drivers are:

i) Technological drivers

Technology is a major driver that shaped and set the foundation for modern globalization. Innovations in the transportation technology revolutionized the industry. The most important developments among these are the commercial jet aircraft and the concept of containerisation in the late 1970s and 1980s. Inventions in the area of microprocessors and telecommunications enabled highly effective computing and communication at a low-cost level. Finally, the rapid growth of the Internet is the latest technological driver upon which global e-businesses and e-commerce thrive.

ii) Political drivers

Conscious policy efforts towards liberalized trading rules and deregulated markets have also led to lowered tariffs and allowed foreign direct investments in almost all over the world. The institution of GATT (General Agreement on Tariffs and Trade) 1947 and the WTO (World Trade Organization) 1995 were highly instrumental for these developments.

iii) Market drivers

As domestic markets become more and more saturated, the opportunities for growth and development are limited and global expanding is a way most multinational companies overcome this problem. Common customer needs and the opportunity to use global marketing channels and transfer marketing to some extents have also incentivized globalization.

iv) Cost drivers

The costs and efficiency associated with sourcing vary from country to country and global firms can take advantage of this fact to outsource to foreign markets more efficiently at lower costs. Other cost drivers to globalization are the opportunity to build global scale economies.

v) Competitive drivers

Due to the increasing interconnectedness between countries, global inter-firm competition increases and organizations are forced to "play" international. Strong interdependences among countries and high two-way trades and FDI actions also support this driver.

14.11 SUMMARY

International trade refers to the exchange of goods and services between countries. Goods sold to other countries are referred to as exports and goods bought from them are dubbed as imports. International trade also involves movement of capital between countries.

The bottom line for the existence of international trade is differences in cost of production across countries.

Balance of payments is an account that summarizes a country's total payments and total receipts from international economic transactions within a specific period usually one year.

The foreign exchange market is an organizational setting within which individuals, business firms, banks etc buy and sell foreign currency, It has no centralised meeting place and not limited to one country.

14.12 REVISION QUESTIONS

Multiple Choice Questions

1. The following are arguments for trade protections except:

   A. Prevent dumping
   B. Raise revenue for the government
   C. Protect the newly established industries
   D. To increase the import values
   E. Reduction of dependency on foreign nations

2. When the value of visible exports exceed the value of visible imports, we have balance of

   A. Payment surplus
   B. Services surplus
   C. Trade surplus
   D. Payment deficit
   E. Trade deficit

3. Under the flexible exchange rate regime, an increase in the value of a country's currency in relation to foreign currencies is called

   A. Revaluation
   B. Devaluation
   C. Depreciation
   D. Appreciation
   E. Nominal rate

4. Balance of payments deficit account may be financed by the following except

   A. Selling investment overseas
   B. Decreasing the assets of foreigners
   C. Borrowing from foreign government
   D. Using the country's foreign reserves
   E. Borrowing from IMF

5. Under the flexible exchange rate system, the exchange rate is determined by the

   A. Government fiat
   B. Forces of demand and supply
   C. Minister of finance
   D. Central bank governor
   E. Oil producing countries

6. Govt. policy about exports and imports is called:

A. Commercial policy
B. Fiscal policy
C. Monetary policy
D. Finance policy

7. Which of the following economists is credited for developing the theory of comparative cost advantage?

A. Adam Smith

B. Joseph Stiglitz

C. David Ricardo

D. Amartya Sen

8. The drivers of globalisation include the following except

A. Technology

B. Competition

C. Cost

D. Capital flows

9. Which of the following is not an argument against flexible exchange rate system?

A. It raises uncertainty

B. It fuels speculation

C. Loss of autonomy

D. None of the above

10. Which is not an argument against globalisation?

A. Ethical issues

B. Financial Crises

C. Higher incomes in globalised economies

D. None of the above

Solution To Multiple Choice Questions

1. D
2. C
3. D
4. B
5. B
6. A
7. C
8. D
9. D
10. C

Short-Answer Questions

1. The theory of comparative cost advantage in international trade was propounded by ………………………..

2. The exchange of goods and services between two countries is called………………..

3. The ratio of index of export prices to index of import prices expressed in percentage is referred to as…………………

4. The excess of exports value over imports value of visible goods of a country is called………………………..

5. Quantitative restrictions on imports and exports are referred to as ………………………….

Solution To Short Answers Questions

1. David Ricardo
2. Bilateral Trade
3. Commodity terms of trade
4. Balance of trade surplus
5. Quotas

Question 14.1

1. a) Explain any two (2) gains from International Trade.

b) Explain any three (3) reasons for imposing restrictions on International Trade.

c) Describe any two (2) measures used to restrict International Trade.

Answer

a. (any two points)

It leads to increased total world production of goods and services.
International trade based on comparative cost advantage allows countries to specialise in what they can do best. This allows for increase in output and Invariably increases in the volume of total world output.

- It leads to efficiency in use of world resources. International trade is based on specialization in what you can do best. This means each country involved in international trade uses the resources available to her in the most efficient way and hence world resources are efficiently used.
- It leads to availability of variety of goods and services. International trade makes citizens of nations to consume goods and services their resources cannot be used to produce.
- International trade leads to economies of scale. International trade leads to increased output and firms involved in producing for exports may enjoy cost reducing advantages that go with increased output.
- International trade brings about interdependence. This, politically, may help a nation to be conscious of the existence of other nations. The interdependence of nations helps promote good neighbourliness.

b. (any three points)

- **T**he protection of infant firms: Infant industries are those firms, which are young. The absence of economies of scale to them makes their unit cost of production higher than older and efficient firms in other countries. Protection may be justified during the early growth of an infant firm, As the infant firms grow, skills and productivity, as well as economies of scale will grow, so increasing the firm's relative competitive advantage.
- To protect domestic labour against cheap foreign labour. The theory comparative cost advantage assumes that factors of production are both fully employed and mobile within countries. If large-scale unemployment exists within a country, protection may be used to increase employment.
- Protection against dumping: It could be looked at as the export of commodities priced below cost of production. Dumping is generally looked upon as an unfair trading practice and for that reason industries fearing competition from dumped goods ask for tariffs to protect them. An export subsidy is a salient form of dumping. Export subsidies are direct payments made or the granting of tax relief and subsidized loans to the nation's exporters

so as to stimulate the nation's exports. These make the nation's exports price competitive on the international markets.

- National Security: Some key industries such as agriculture and industries producing goods that are important for the defense of the country must be maintained. Countries therefore protect these industries.
- To raise revenue: Tariffs are sometimes justified as a means of raising revenue for the government, but in modern economies this is a comparatively unimportant source of government revenue.

c. **(any two points)**

Tariffs: These are taxes imposed on traded commodities as they cross national boarders. There are two main types of tariffs. An import tariff is a duty on an imported commodity. Export tariff is a duty on an exported commodity.

- Tariffs may be specific, ad valorem or compound (a combination of an ad valorem and specific tariff). The effect of a tariff on imports depends on its size and the elasticity of demand for the imported commodity, If demand for imports is elastic, a tariff imposed will reduce imports by switching demand towards the domestically produced substitutes, conversely, if demand for imports is price inelastic, the main effect of the tariff will be on import prices rather than on the quantity of imports.
- Domestic Subsidies: These may be provided in many forms to avoid dumping. They are subsidies provided to certain domestic industries as a means of protecting them from lower priced foreign goods. These subsidies reduce the prices of the domestic products and make them more price-competitive.
- Quotas: They are quantitative restrictions (non tariff restrictions) on the imports and exports. They restrict the amount of commodities allowed to be imported or exported.

Question 14.2.

a) What is Balance of payment?
b) Describe the main components of a Balance of payments
c) Explain Balance of Payment Deficit.

Answer

a. It is an account that summarizes a country's total payments and total receipts from international economic transactions within a specific period usually one year.

b. **The current Account**

The current account is subdivided into three main items: merchandise imports and exports. Services imports and exports and unilateral transfers. Merchandise imports and exports are also referred to as visible trade and services imports and exports and unilateral transfers dubbed invisible trade.

The Capital Account

The capital account deals with long and short-term capital movement. These capital movements are referred to as autonomous because they take place for business or profit.

Long-term capital movements are overseas investments in shares or long-term securities or from the establishment of factories in foreign countries or the reporting country.

The movement of capital to a country represents an inflow of foreign capital and there is a corresponding outflow when such funds are withdrawn. An inflow of funds represents credit while an outflow represents debt.

Official Reserve Account

This part of the balance of payments informs us about how the balance of both current and capital accounts taken together is settled. Transaction in this section is called accommodating transaction. They are accommodating transaction because the funds are moved to make the balance of payments balance. When the net balance on the current and capital accounts is in deficit, the deficit must be settled with an equal net credit in the official reserve account. If on the other hand, a country has a surplus, the surplus must be used up to balance the balance of payments.

Question 14.3

3. The table below shows the Balance of Payments information for a hypothetical country:

	₦ Billion
Merchandise Exports	100
Merchandise Import	(-) 300
Export of Services	200
Import of services	(-) 300
Portfolio Investment	(-) 400
Direct Investment	450
Net Unilateral Transfer	100

Required:

- **a)** What is Balance of Payments?
- **b)** Compute this country's Current Account Balance
- **c)** Calculate this Country's Capital Balance
- **d)** Is this country running an overall Balance of Payments deficit or surplus? Explain your answer.

Answer

a.

BOP is an account that summarizes a country's total payments and total receipts from international economic transactions within a specific period usually one year.

b.

Item	Credit	Debit
Merchandise Exports	100	
Merchandise Imports		300
Export of Services	200	
Import of services		300
Net Unilateral Transfer	100	
Total	400	600
Current Account Balance = 400 – 600 = -200 (deficit)		

c.

Item	Credit	Debit
Direct Investment	450	
Portfolio Investment		400
Capital Account Balance = 450 – 400 = 50 (surplus)		

4. Overall Balance of Payments = -200 + 50 = -150 (deficit)

Question 14.4.

4. **a)** What is a foreign exchange market?
   b) What is meant by a fixed exchange rate regime?
   c) Explain two advantages of the fixed exchange rate regime.

Answer

a. The foreign exchange market is an organizational setting within which individuals, business firms, banks etc buy and sell foreign currency. It has no centralised meeting place and not limited to one country.

b. A fixed exchange rate regime is where the external value a country's currency is determined by explicit government policy and fixed at a certain amount of the domestic currency per unit of foreign currency.

Periodic changes in the exchange rate by government are described as devaluation or revaluation Devaluation refers to the deliberate reduction in the external value of a domestic currency. On the other hand, revaluation is a deliberate increase in the value of a country's currency relative to other currencies.

c.

- It removes the uncertainty associated with the flexible exchange rate regime and brings stability.
- It also indirectly imposes some anti inflationary discipline on policy makers since there is the need to maintain and defend the exchange rate.

Practice Questions

1. (a) what is globalization?
   (b) Explain THREE benefits and TWO disadvantages of globalization to your country.

2. (a) What is trade barrier?
   (b) Explain TWO arguments for and TWO arguments against trade barriers in your country.

3. (a) Outline the components of balance of payments.
   (b) What is the similarity between balance of payments and balance of trade?
   (c) How can a balance of payment disequilibrium be corrected?

CHAPTER FIFTEEN

INTERNATIONAL AND REGIONAL ORGANISATIONS

15.0 LEARNING OBJECTIVES

After studying this chapter, you should be able to understand the features, objectives and activities of each of the following organizations:

- The World Bank
- The International Monetary Fund (IMF)
- The African Development Bank (ADB) Group
- The European Union (EU)
- The Economic Community of West African States (ECOWAS)
- Organisation of Petroleum Exporting Countries (OPEC)
- United Nations Commission for Trade and Development (UNCTAD)
- World Trade Organisation (WHO)
- The African Continental Free Trade Area (AfCFTA)

15.1 INTRODUCTION

Following the serious economic conditions encountered worldwide during the Great Depression of 1930s, political leaders in both developed and less developed countries recognised that "no country is free from poverty until every country is free from poverty".

Therefore, the desire to promote economic well-being of their people coupled with the realization that trade and economic cooperation can be an important stimulus to rapid economic growth, has led to the establishment of a number of international and regional organizations immediately after the second World War (1939 – 1945).

In this chapter, we examine the main features and objectives of some of these organizations and especially their relevance to the development aspirations of their developing member-countries.

15.2 THE WORLD BANK GROUP

The World Bank Group comprises of the following four institutions:

(i) International Bank for Reconstruction and Development (IBRD)
(ii) International Finance Corporation (IFC)
(iii) International Development Association (IDA)
(iv) The Multilateral Investment Guarantee Agency (MIGA)

15.2.1 International Bank for Reconstruction and Development (IBRD)

The IBRD – the original organization of the World Bank group was established in 1945. The bank and the International Monetary Fund (IMF) were products of the articles of agreement signed by representatives of a group of 44 nations at the United Nations Monetary and Financial Conference held at Bretton Woods, New Hampshire, USA in July 1944. It was for this reason that both IBRD and IMF were usually referred to as Bretton Woods Institutions.

The membership of the IBRD which was 44 at its inception in 1945 reached 182 in 2000 including developing countries of the West African Sub-region.

The main objectives of the IBRD, also called the World Bank are:

i. To assist the economic development of member countries by providing loans, on reasonable terms, for the development of productive facilities and resources.
ii. To provide and coordinate staff training and technical assistance for member countries on investment projects in which they lack the requisite manpower and technical knowledge.
iii. To promote private foreign investment by guarantees or through participation in loans and other investments made in the private sector of the economies of member countries.
iv. To conduct project feasibility and evaluation studies and act as executing agency for development projects financed by the United Nations Development Programme (UNDP).
v. To promote balanced growth of international trade and the maintenance of viable balance of payments positions by member countries.

The IBRD derives its resources from capital subscribed by member countries, funds received in repayment of past loans, and borrowing in the world capital markets through the issuance and sales of bonds. Over the years, the IBRD has been more relevant in the development efforts of the developing member countries in the areas of:

i. Staff training and technical assistance, and
ii. Loan financing of projects in agriculture and rural development, energy, telecommunications, urban development, population programme, water supply, education, health and nutrition.

However, some points of criticism of the IBRD include that;

i. Its lending procedure is faulty because it lays emphasis on the repaying capacity of the borrowing country before granting any loan.

ii. The conditionalities attached to its loan facilities, especially Structural Adjustment Facility (SAF), Enhanced Structural Adjustment Facility (ESAF) were too harsh for developing member countries.

iii. The loans granted to developing countries so far have not been sufficient to meet their development financial needs.

15.2.2 International Finance Corporation (IFC)

The IFC is a member of the World Bank Group established in 1956 to promote the growth of productive private enterprises in the developing member countries. All member countries of World Bank are qualified to the membership of the IFC.

The objectives of the IFC are:

i. To provide loans and equity capital for private enterprises thereby complementing the resources of private investors.

ii. To bring together investment opportunities, by encouraging local and foreign private investors cooperate in joint ventures.

iii. To provide technical assistance for member countries on private investment projects so that their enterprises can be productive and financially sound.

iv. To stimulate and help create conditions conducive to the flow of private domestic and foreign capital into productive investments in member countries.

Although the IFC has been promoting productive private investments in developing member countries in line with the objectives of its establishment, however, the foreign capital flow into these countries have not been sufficient to make for impressive private sector performance.

15.2.3. The International Development Association (IDA)

The IDA was established as the soft loan window of the World Bank in September 1960. Its membership is open to all members of the World Bank.

The main objectives of IDA are:

i. To provide long-term soft loans to the governments of the world's poorest countries for poverty alleviation.

ii. To promote human capital development in the poorest countries.

To achieve these two objectives, the IDA has extended credits to the poorest member countries at concessional rates. Such loans, which are repayable over a period of 30 – 40 years and with a 10 year grace period, were meant for poverty-alleviation related projects e.g. population control, education and health, nutrition, social safety, environment security, etc.

15.2.4. The Multilateral Investment Guarantee Agency (MIGA)

MIGA was established in April 1988 to make the World Bank Group more relevant to the development aspirations of the member countries. The primary aim of MIGA is to encourage the flow of Foreign Direct Investment (FDI) into developing countries.

The principal objectives of MIGA are:

i. To provide insurance covers for investors against political and non-commercial risks e.g. war and civil disturbance, breach of contract by government, the danger involved in currency transfer and expropriation.

ii. To insure new investment, including the expansion of existing ones, and promote financial restructuring.

iii. To provide promotional and advisory services to the governments of developing member countries in their efforts to create enabling environment for local and foreign private investments.

iv. To establish credibility among investors, and higher credit rating among global banking and financial markets of its members.

Many developing member countries have been able to attract more foreign direct investment as a result of the insurance guarantee provided by the MIGA.

15.3. INTERNATIONAL MONETARY FUND (IMF)

The IMF, also referred to as The Fund, is an autonomous international financial institution established in 1945 under the Bretton Woods Agreement of 1944. Thus, it is a sister institution of the International Bank for Reconstruction and Development (IBRD).

The main objectives of the IMF, set out in article 1 of its articles of Agreement are:

i. To promote international monetary co operations through a permanent institution that provides the machinery for consultation and collaboration on international monetary problems.

ii. To facilitate the expansion and balanced growth of international trade, and to contribute thereby to the promotion and maintenance of high levels of employment and real income.

iii. To promote exchange rate stability, to maintain orderly exchange arrangement among members, and to discourage competitive currency devaluation.

iv. To assist in the establishment of a multilateral system of payment in respect of current transactions and in the elimination of foreign exchange restrictions which hamper the growth of world trade.

v. To help member countries overcome their balance of payment difficulties through the provision of short to medium term credit and technical guidance.

The IMF introduced the Special Drawing Rights (SDRs) in 1970 to facilitate the expansion and balanced growth of world trade. The SDRs is an international financial asset designed to supplement gold, dollars, and convertible currencies in settling international debt between countries. Most countries now use their allocation of SDRs (which are mere book entries) when they face balance of payment or reserve problems.

A member country that applies for IMF loan is expected to meet certain stipulated conditions, known collectively as *"IMF conditionalities*", before such facility is granted. The conditions stipulated for some developing member countries to be met to qualify them for the use of the Fund's financial resources have included devaluation of currency, removal of government subsidy on some products, reduction of public expenditure, trade liberalization, strengthening of the operational efficiency of revenue collection agencies, and reduction of grants and subventions to government parastatals.

The benefits derived by developing member countries, including West African countries, from their membership of the IMF include:

i. The signing of agreement with the Fund for stand-by facilities worth millions of dollars which boosted their credit worthiness in international trade.

ii. The use of SDRs allocation to solve their balance of payments and reserve problems.

iii. Manpower development efforts of member countries have been complemented by the Fund through training courses provided on economic and financial management.

iv. The Fund, on a regular basis, conducts studies on member countries economies and recommends necessary reform measures to improve growth performance.

15.4. THE AFRICAN DEVELOPMENT BANK (ADB) GROUP

The ADB Group is made up of the following institutions:

(i) African Development Bank (ADB)

(ii) African Development Fund (ADF)

(iii) Nigerian Trust Fund (NTF)

15.4.1. African Development Bank (ADB)

The ADB was established by the articles of Agreement signed in Khartoum, Sudan, by the Finance Ministers of 30 independent African countries on 4 August, 1963. It started business at its headquarters in Abidjan, Ivory coast (now Cote D'Ivore) in July, 1966. The member nations of the ADB include all independent African states and the non African members such as USA, Canada, Britain, France, Japan, etc. who were admitted following an amendment to its Charter in 1982.

The objectives of ADB are:

i. To finance investment projects and programmes of its members using its resources.

ii. To mobilize resources from outside Africa, especially from developed countries, for the financing of such investment projects and programmes.

iii. To undertake or participate in the selection, study and preparation of projects, enterprises and activities contributing to the development of its members.

iv. To provide technical assistance required in the selection, study, preparation and execution of development projects or programmes.

v. To promote investment in Africa of public and private capital projects or programmes designed to boost economic development or social progress of its members.

In pursuit of its policies of poverty alleviation and promotion of equitable growth in the continent, the ADB has granted loans to its African members, especially for projects and programmes which foster regional cooperation and integrated development within the member countries.

The problems of the bank in recent times have been identified as including:

i. The rapid decline in its financial resources due to increasing arrears on loan repayments from member countries.

ii. The continued concentration of its lending to a few member countries.

iii. Failure of member countries to pay their subscriptions timely and regularly

15.4.2 The African Development Fund (ADF)

The ADF was established in 1972 as an affiliate of the African Development Bank (ADB) to provide development finance on easier repayment and interest terms than the ADB. The loans of the ADF are granted at no interest, a service charge of 0.7 per cent, a 10-year moratorium and repayment period spanning another 40 years. Thus, the ADF can be described as the 'soft loan window' of the ADB group.

However, the ADF facility is specifically meant for poorer countries with per capita GNP of less than $510. About 34 African countries have qualified under that category in the past 20 years. The primary objective of the ADF is to promote the economic development and integration of its members.

15.4.3. The Nigerian Trust Fund (NTF)

The NTF was established by the federal government of Nigeria in April 1976 to assist the development efforts of the poorest and most indebted member countries of the ADB. The NTF is therefore a member of the ADB group – it is administered by the ADB in consultation with the Nigerian government.

The NTF started with an initial capital of $80 million which grew to about $350 million in 1988. The NTF loans are granted at a 4 per cent interest, grace period is 5 years, and the repayment period ranges between 15 and 25 years. Not less than 18 member countries of the ADB benefited from the NTF loan commitment. The loans were granted to finance projects in the social/educational, industrial and agricultural sectors in those countries.

15.5 THE EUROPEAN UNION (EU)

What is today known as the European union (EU) was originally established as the European Economic Community (EEC) on 25 March, 1957 by the Treaty of Rome agreed to by the governments of Belgium, France, the Federal Republic of Germany, Italy, Luxemburg and the Netherlands. The EEC came into operation on January 1958, and was renamed the EU in November 1993. By 2006, the membership has increased to 25 including the United Kingdom, Denmark, Ireland, Greece, Spain, Portugal, Sweden, Austria and Finland that joined between 1973 and 1995.

The economic objectives of the EU include the following:

i. To promote free trade between member countries through the removal of tariffs and other non-tariff barriers to free trade.

ii. To harmonize trade policies of members by ensuring that members impose tariffs on import from non member countries at the same rate.

iii. To guarantee common internal price levels and promote stabilizations of farmers' incomes by penalizing imported food items through a Common Agricultural Policies (CAP).

iv. To encourage free movement of factors of production, especially labour and capital, within the community.

v. To harmonize the tax systems of member countries with a view to removing any hidden barriers to trade.

vi. To integrate the monetary systems of member countries so as to facilitate the expansion of bilateral trades between member countries.

vii. To promote common regional policy through the establishment of a regional development fund. The EU is to ensure that no member nation is left to suffer economic depression.

viii. To develop common transport policy.

ix. To create new world economic order and agreement with developing countries.

A number of institutions, organizations and funds were established as well as common economic policies adopted to promote the realization of the above objectives.

The major achievements of the EU from the standpoint of the impact of the various actions taken, on the economies of the member countries include:

i. The EU promotes specialization among member countries such that each member tends to specialize in their line of comparative cost advantage. This leads to efficient utilization of productive resources, greater output and improved standards of living within the sub-region.

ii. The EU provides a large market for the products of member countries. This encourages large-scale production with its concomitant economies of scale and increased employment opportunities.

iii. The removal of quotas and tariffs leads to keener competition in the larger market. This leads to effective resources allocation as a result of which factors of production receive higher incomes.

The EU has been relevant to the development aspirations of countries in West African sub-region under the Yaounde and Lome Conventions in the following ways:

i. Financing rural-electrification projects.

ii. Providing grants to improve health facilities.

iii. Encouraging industrial cooperation through the transfer of technology, and funding research programmes to boost industrial activities.

Note that the Lome Convention is a series of trade and economic co-operations and agreements between the EU and countries from the African, Caribbean and Pacific states (ACP).

ECONOMIC INTEGRATION - MEANING AND LEVELS

Economic integration is the removal of discrimination between the economic agents of the member countries and the creation and implementation of common policies. Integration is a process of merger of economies of separate states into larger entities.

Integration is the process of the progressive removal of discrimination that exists along national borders. Integration is also the process of gradual elimination of economic frontiers.

Economic integration serves as a means of:

(i) Increasing members welfare

(ii) Obtaining efficiency in resource use

(iii) Eliminating discrimination

(iv) Freedom of movement of goods and Factors of production

(v) Achieving economic policy objectives in partnership than in autarky- unilateral isolation.

(vi) Consultation between different economies.

The major types of Regional Integration Arrangements are:

(1) Free Trade Area

When two or more states eliminate internal barriers to trade while keeping their own external tariffs against non-member states.

(2) Customs Union

This is an arrangement where two or more states eliminate internal barriers to trade while agreeing to a common external tariff as a union.

(3) Common Market

This is an arrangement of a customs union as well as the countries agreeing to remove the barriers to the movement of factors of production (capital and labour).

(4) Economic Union

This occurs when countries graduate beyond a common market, by agreeing to coordinate their economic policies such as interest rates, common policies on inflation and ultimately a single currency.

15.7 THE ECONOMIC COMMUNITY OF WEST AFRICAN STATES (ECOWAS)

ECOWAS was formed by 15 West African countries under the treaty of Lagos on 28 May, 1975. The community now has 16 members – The Republic of Benin, Ghana, Burkina Faso, Cape Verde, Guinea, Guinea – Bissau, Cote D'ivore, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra – Leone and Togo.

ECOWAS was established primarily to promote cooperation and development between member countries in all fields of economic activity. The main objectives of the Community are:

i. To promote free trade between member countries through gradual reduction of tariffs and other non-tariff barriers (NTBs).
ii. To eliminate obstacles restricting the free movement of persons, services and capital between member countries.
iii. To establish common tariff structure and commercial policy towards non-member countries.
iv. To harmonise the agricultural policies, and the promotion of common projects within the community, especially in the fields of marketing, research and agric business.
v. To promote joint development of transport, communication, energy and infrastructural facilities.
vi. To harmonise industrial and monetary policies of member countries.
vii. To establish fund for the purpose of promoting and financing development projects as well as to provide compensation to member states which may suffer losses as a result of trade liberalization within the Community.

Member countries of ECOWAS stand to derive benefits similar to those of EU if its objectives are vigorously pursued.

However, the Community is facing a number of problems which prevent it from making significant impact on the economies of the member countries. These include:

i. The low level of trade among member countries as a result of similarity of products. All countries in West Africa (except Nigeria, to some extent) depend heavily on their agricultural sector.
ii. Immobility of factors of production between the countries due to poor infrastructural facilities coupled with language barrier.
iii. Closer socio-economic ties with former colonial administrators. It is difficult for the Community to adopt discriminatory tariff policies that could have adverse consequences on the economies of such countries i.e. United Kingdom, France and Portugal.
iv. How to distribute benefits of integration and compensate countries for loss in revenue due to abolition of tariffs.
v. Differences in social, monetary and commercial policies of the member countries constitute a major obstacle to international trade and joint investment programmes.
vi. Disparities in the levels of socio-economic activities and fear of domination by some countries.

15.8. THE GENERAL AGREEMENT ON TARIFFS AND TRADE (GATT)

The GATT was a multilateral trade agreement signed originally by 96 governments at the Geneva Conference on October 30, 1947 and came into force on January 1, 1948. It was a forum where the contracting parties met from time to time to set out rules of conduct for international trade relations, and for multilateral negotiations regarding the solution of trade problems and to enlarge their trade.

The principal objectives of GATT are:

i. To promote free trade through the removal of the existing trade barriers, especially tariffs, quotas and embargo.
ii. To eliminate discriminations in international trade. To this end, every member nation is expected to have a single tariff rate on a particular item for all member nations.
iii. To prevent the establishment of further trade barriers by getting member nations to agree to consult together rather than take unilateral actions.

The ultimate aim of establishing liberal world trading system was to raise living standard, ensure full employment through a steadily growing effective demand and real income, develop fully the resources of the world, and expand the production and exchange of goods on global level.

The major rounds of GATT negotiations include the Kennedy Round (1964 – 1967), the Tokyo Round (1973 – 1979) and the Uruguay Round (1986 – 1994). Trade negotiations conducted under the auspices of GATT have resulted in significant reductions in the average level of world industrial tariffs, as well as directed special attention towards the trade problems of developing countries.

The major problems of GATT are:

i. Non-adherence to the principle of most favoured nations treatment.
ii. The exclusion of many developing countries from its membership as a result of which GATT is regarded as a rich countries' club.
iii. The Articles of Agreement has been waived on a number of occasions, to help members solve balance of payment difficulties e.g. American protection of her agricultural sector.

At the conclusion of the Uruguay Round in Marrakech, Morocco on 15th April 1994, the final Act of Agreement establishing World Trade Organisation (WTO) as successor to the GATT was signed by 111 countries.

15.9. WORLD TRADE ORGANISATION (WTO)

The WTO was established through the WTO Agreement which came into force on January 1, 1995. The WTO Agreement is in fact the Uruguay Round agreements whereby the original GATT is now a part of the WTO Agreement. It follows that the WTO is a successor to the GATT, it completely replaces it and has a legal status.

The main objectives of the WTO are:

i. To conduct its affairs in the field of trade and economic endeavor with a view to ensuring full employment of resources, large and steadily growing volume of real income and effective demand, expanding the production and trade in goods and services, and raising standards of living.
ii. To promote optimal use of the world resources in accordance with the objective of sustainable development.
iii. To make positive efforts designed to ensure that developing countries secure a share in the growth of international trade commensurate with the need of their economic development.
iv. To work towards substantial reduction of tariffs and other barriers to trade and the elimination of discriminatory treatments in international trade relations.
v. To ensure linkages between trade policies, environmental policies and sustainable development.

To achieve the above and other related objectives, the functions of the WTO include:

i. Facilitating the implementation, administration and operation of the objectives of the Agreement and of the Multilateral Trade Agreements.

ii. Providing the framework for the implementation, administration and operation of the plurilateral Trade Agreements relating to trade in civil aircraft, government procurement, trades in dairy products and bovine meat.

iii. Cooperating with the IMF and the World Bank and its affiliated agencies with a view to achieving greater coherence in global economic policy-making.

The organization of the WTO is headed by the Ministerial Conference of representatives of all member countries. It carries out the functions of the WTO. There is also the General Council of representatives of all member countries sitting in Geneva on a regular basis to oversee the operations of the WTO Agreements and Ministerial decisions.

The major criticism of the WTO is that the developing member countries have not succeeded in getting market access in developed countries. The opening of market since the WTO Agreement has been only in the developing countries.

15.10 UNITED NATIONS CONFERENCE ON TRADE AND DEVELOPMENT (UNCTAD)

UNCTAD, an organ of the general assembly of United Nations (UN) was first convened in 1964. All members of the UN are members of the Conference and it has a permanent executive organ and a permanent secretariat.

The major concern of UNCTAD has been to protect and champion the cause of developing countries against the restrictive trade policies of the developed countries, e.g. the Common Agricultural policy (CAP)of the European Union and the American Agricultural policy.

The main objectives of UNCTAD can be summarized as follows:

i. To promote easier access of the export of developing countries to the markets of developed countries.

ii. To increase the flow of financial resources into developing countries in order to boost their positions in world trade, and thereby reducing their external debt burden.

iii. To evolve an international debt strategy aimed at restoring debtor countries external viability.

UNCTAD’s major success has been in pressing successfully for the Generalised System of Preferences by means of which some exports from developing countries are given preferential access to the markets of industrial countries. However, there has been no appreciable increase in the prices of commodity exports as well as export volume of the developing countries due to the general reluctance of developed countries to accede to the various proposals of UNCTAD.

15.11 ORGANISATION OF PETROLEUM EXPORTING COUNTRIES (OPEC)

OPEC was formed in 1960 by 5 oil-producing countries, and it has its headquarters in Vienna, Austria. It is an organization consisting of some major oil-exporting developing countries acting as a cartel or oligopoly to promote their common interests. The membership of OPEC grew to 13 in 1973 but, following the withdrawal of Equador (1992) and Gabon (1996), the organization is now made up of 11 countries: Venezuela, Saudi Arabia, Iran, Kuwait, Libya (the founding members) as well as Nigeria, Qatar, United Arab Emirate, Algeria and Indonesia.

The principal objectives of OPEC are:

i. To promote oil price stability in international market through periodic review of members' oil – export volume (quota).
ii. To coordinate and unify the petroleum policies of member countries and determine the best means of safeguarding their interest individually and collectively.
iii. To provide an efficient economic and regular supply of petroleum to consuming nations.
iv. To guarantee a fair return on capital to those individuals and corporate bodies investing in the petroleum industry.
v. To provide financial assistance to poor non-oil producing countries so as to close the gap between the rich and the poor nations (OPEC special fund was established in 1976 in furtherance of this objective).

OPEC member countries including Nigeria have benefitted from their membership of the organization in the following ways:

i. Earning reasonable prices on per barrel of oil due to the regulation of their export volume by OPEC.
ii. Through research activities carried out at OPEC's headquarters in Vienna, modern technologies have evolved resulting in efficient exploitation and extensive exploration of oil.
iii. Enjoying increased revenue from sales of her crude oil, especially whenever her quota is increased by the organization.

The major problems of OPEC include:

i. Non-compliance of members to the export quota dictated by OPEC leading to over-production and the decline in prices and their revenues.
ii. The production and market strategies of independent non OPEC oil exporting countries have always tended to undermine OPEC's resolutions.

African Continental Free Trade Area

The African Continental Free Trade Area agreement was signed at the extraordinary African Union (AU) meeting held on the 21st of March, 2018 in Kigali, Rwanda. As of May, 2022, all the 55 AU member countries except Eritrea have signed the agreement establishing AfCFTA. Out of the 54 countries that have signed the AfCFTA agreement, 43 have ratified the AfCFTA agreement and deposited their instruments of ratification with the African Union Commission (AUC). The 43 countries listed chronologically in order of ratification are are Ghana, Kenya, Rwanda, Niger, Chad, Eswatini, Guinea, Côte d'Ivoire, Mali, Namibia, South Africa, Congo Rep., Djibouti, Mauritania, Uganda, Senegal, Togo, Egypt, Ethiopia, Gambia, Sahrawi Arab Democratic Rep., Sierra Leone, Zimbabwe, Burkina Faso, São Tomé & Príncipe, Equatorial Guinea, Gabon, Mauritius, Central African Rep., Angola, Lesotho, Tunisia, Cameroon, Nigeria, Malawi, Zambia, Algeria, Burundi, Seychelles, Tanzania and Cape Verde, DR Congo and Morocco.

The main objective of the AfCFTA is to reduce or eliminate tariff and non-tariff barriers amongst the bloc's 54 member countries by providing a single market for goods and services, facilitated by movement of persons in order to deepen the economic integration and prosperity of the African continent.

In addition, the agreement seeks to:

(i) lay the foundation for the establishment of a Continental Customs Union;

(ii) promote and attain sustainable and inclusive socio-economic development, gender equality and structural transformation of the State Parties;

(iii) enhance the competitiveness of the economies of State Parties within the continent and global market; and

(iv) promote industrial development through diversification and regional value chain development, agricultural development and food security, and resolve the challenges of multiple and overlapping memberships and expedite the regional

(v) and continental integration processes.

To ensure that the objectives of AfCFTA are achieved, Article 4 of the Agreement requires all member countries to:

(i) Progressively eliminate tariffs and non-tariff barriers to trade in goods;

(ii) Progressively liberalize trade in services;

(iii) Cooperate on investment, intellectual property rights and competition policy;

(iv) Cooperate on all trade-related areas;

(v) Cooperate on customs matters and the implementation of trade facilitation measures;

(vi) Establish a mechanism for the settlement of disputes concerning their rights and obligations; and

(vii) Establish and maintain an institutional framework for the implementation and administration of the AfCFTA.

15.13 SUMMARY

This chapter explored the feature, objectives/functions, performance and problems confronting a number of regional and international economic organizations. It was observed that most of these organizations have not been able to achieve their specified objectives because of the conflicting interests of the member nations.

15.14 REVISION QUESTIONS

Multiple Choice Questions

1. One of the main functions of the International Monetary Fund (IMF) is to

   A. Encourage member countries to engage in competitive currency devaluation.
   B. Facilitate the contraction of world trade.
   C. Provide financial assistance to member countries that have temporary balance of payment difficulties.
   D. Discourage rapid industrialization in the developing nations of the world.
   E. Discourage the maintenance of stable exchange rates.

2. A major reason for the establishment of the Economic Community of West African States (ECOWAS) was to

   A. Promote international monetary cooperation
   B. Promote the economic progress of member countries
   C. Monitor and control the outflow of foreign exchange in the region
   D. Help member countries overcome their balance of payment difficulties by providing financial assistance.
   E. To encourage member countries to pursue vigorously their independent trade policies

3. Which of the following is not an objective of the Organisation of Petroleum Exporting Countries (OPEC)?

   A. Stabilisation of oil prices
   B. Stabilisation of exchange rates of currencies of member countries
   C. Co-ordination and harmonization of oil policies of member countries
   D. Provision of financial assistance to poor non-oil producing countries
   E. Provision of relatively cheaper supply of oil to developed countries

4. A member of the World Bank Group established majorly to promote the growth of productive private enterprises in the developing countries is

   A. International Development Association (IDA)
   B. Multilateral Investment Guarantee Agency (MIGA)
   C. International Financial Corporation (IPC)
   D. International Monetary Fund (IMF)
   E. World Trade Organisation (WTO)

5. One main criticism of the World Trade Organisation (WTO) is that it is

A. Working towards substantial reduction of all forms of barriers to international trade.
B. Only the developed member countries have succeeded in getting market access in the developing countries.
C. Promoting optimal use of the world resources.
D. Discouraging discriminatory treatment in international trade relation.
E. Co-operating with the IMF and the World Bank for greater coherence in global economic policy-making.

6. Which of the following international organizations is responsible for developing and maintaining the system of international trade rules and dealing with trade disputes?
   A. The IMF
   B. The World Bank
   C. The UN
   D. The WTO

7. Economic integration occurs when____
   A. Countries are granted most favored nation status
   B. One country voluntarily agrees to reduce its exports to another country
   C. Two or more nations join to form a free-trade zone
   D. Countries develop an acquired comparative advantage that makes their industries more competitive in international markets

8. _______________ is an important reason for economic integration.
   A. totalitarianism
   B. democracy
   C. geographic proximity
   D. common law practice

9. In which of the following types of regional economic integration are internal tariffs eliminated with member countries levying a common external tariff on goods being imported from nonmembers.
   A. customs union
   B. free trade area
   C. common market
   D. complete economic integration

10. The main objective of the AfCFTA is to enhance tariff and non-tariff barriers amongst the bloc's 54 member countries by providing a single market for goods and services

    A. False

    B. Uncertain

    C. True

    D. Not sure

Soluions to Multiple Choice Questions

1. C
2. B
3. E
4. C
5. B
6. D
7. C
8. C
9. A
10. A

Short-Answer Questions

1. A member of the World Bank Group whose activities include provision of insurance services and private investment guarantee is __________________
2. An international financial asset introduced by the International Monetary Fund (IMF) to facilitate the expansion and balanced growth of world trade is called ___________________
3. An affiliate of the African Development Bank (ADB) established by Nigeria to assist the poorest and most indebted member countries is ____________________
4. A permanent organ of the United Nations established in 1964 principally to promote international trade between countries, especially for accelerating the economic development of less developed countries is _____________________
5. A permanent organization properly established to completely replace the General Agreement on Tariff and Trade (GATT) and promote a liberal world trading system is __________________

Solutions to Short Answer Questions

1. The Multilateral Investment Guarantee Agency (MIGA)
2. Special Drawing Rights (SDRs)
3. The Nigerian Trust Fund (NTF)
4. United Nations Conference on Trade and Development (UNCTAD)
5. World Trade Organisation (WTO)

Question 15.1

1. (a) Highlight the main objective of the African Development Bank (ADB)

   (b) What are the problems facing the African Development Bank (ADB) in the course of achieving the objectives for which it was established.

Solution

1(a) The main objectives of the African development Bank (ADB) are:

i. To finance investment projects and programmes of its members using its resources.
ii. To mobilize resources from outside Africa, especially from developed countries, for the financing of such investment projects and programmes.
iii. To undertake or participate in the selection, study and preparation of projects, enterprises, and activities contributing to the development of its members.
iv. To promote technical assistance required in the selection, study, preparation and execution of development projects or programmes.
v. To promote investment in Africa of public and capital projects or programmes designed to boost economic development or social progress.

(b) The problems of the ADB in recent times have been identified to include:

(i) The rapid decline in its financial resources due to increasing arrears on loan repayments from member countries.
(ii) Failure of member countries to pay their subscriptions timely and regularly
(iii) The continued concentration of its lending to a few countries.

Question 15.2

Write short notes on the following forms of economic integration. Illustrate your answers with appropriate examples.

(i) Free Trade Area (ii) Common market (iii) Monetary Union

Solution

(i) **Free Trade Area:** This is an arrangement whereby member countries maintain different external tariffs against non-member countries, while maintaining free internal trade within the association. Example of this arrangement is the Latin American Free Trade Association (LAFTA)

(ii) **Common Market:** This is a form of economic integration, whereby there exist common external tariffs, free internal trade, and free movement of the factors of production (capital, labour) among member countries. Example is the Central American Common Market (CACM).

(iii) **Monetary Union**: This is a form of economic integration whereby member countries share a common currency or alternatively where different currencies are convertible with an irrevocable fixed exchange rate. Example is the European Union (EU).

Question 15.3

(a) Enumerate any 3 African regional economic communities

(b) Explain 4 benefits which Nigeria stands to gain in ECOWAS

Solution

(a) African regional economic communities

1. African Union (AU)
2. Economic Community of West African States (ECOWAS)
3. East African Community (EAC)
4. South African Development Community (SADC)
5. Common Market of Eastern and Southern Africa (COMESA)

(b) Benefits Nigeria stands to gain in ECOWAS

1. Market: Being a member of ECOWAS as affords Nigeria a wide market, for the sale of its products, employment of its manpower resources etc.

2. Specialization: Nigeria derives economic advantage of specializing in the production of those goods and services in which it has comparative advantages in its transactions with member countries of ECOWAS.

3. Manpower: With free movement of labour across the region, Nigerians are everywhere across the region making their expertise and skills available to member nations and thus helping them drive their economies. Likewise, Nigeria is benefitting from the expertise of some citizens from other countries in the region.

4. Technical information: Nigeria benefits from technical information shared among member states.

Practice Questions

1. What is regional economic integration?
2. Highlight three (3) reasons countries engage in economic integration.
3. Give three (3) examples of regional economic integration arrangement in Africa.
4. State the advantages and disadvantages of Nigeria's membership of the Organization of Petroleum Exporting Countries (OPEC).

CHAPTER SIXTEEN

ECONOMIC GROWTH AND DEVELOPMENT

16.0 LEARNING OBJECTIVES

After studying this chapter, you should be able to

- Distinguish between economic growth and economic development
- Demonstrate good understanding of Development Planning
- Analyse the link between population and economic growth

16.1 INTRODUCTION

Under this section we introduce the reader to the concepts of economic growth and economic development. Understanding these concepts will help the reader appreciate the state of developing nations and the possible causes and the way forward.

16.2 ECONOMIC GROWTH AND ECONOMIC DEVELOPMENT

Generally, economic growth is defined as the expansion in a nation's real output. Some economists however, prefer to define economic growth as the expansion in a nation's capability to produce the goods and services its people want.

Economic Growth refers to an increase in real aggregate output (real GDP) reflected in increased real per capita income. A country is said to experience economic growth if overtime, its real output (real GDP) increases as well as its real per capita income.

The rate of economic growth is measured as the percentage increase in real GDP overtime. We need to distinguish between growth in real GDP and economic growth. Growth in real GDP refers to increase in real GDP on yearly basis. Economic growth on the other hand shows sustained increase in real GDP over a period.

Economic development is not the same as economic growth. Economic growth is a necessary condition for economic development. This presupposes that there is more to economic development. Economic development is a sustainable increase in real GDP that implies increased real per capita income, better education and health as well as environmental protection, legal and institutional reforms and an efficient production and distribution system for goods and services.

16.3 SOURCES OF ECONOMIC GROWTH

(i) **Human resources:** Investment in human capital is considered as an important factor for economic growth. This is done by increasing the quality of a nation's labour force through education and training in advance technology. It has also been proved that literacy not only improves productivity but also makes an individual more adaptable to new challenges.

(ii) **Natural resources:** Availability of natural resources (land and mineral) to a nation is also a vital source of growth. It is not only the availability of these resources but the extent to which they are exploited. It should be noted that for the exploitation of these resources, care should be taken not to sacrifice the environment. This means that growth through exploitation of these resources should be sustainable while maintaining good environmental quality.

(iii) **Capital formation:** Growth Economists believe that accumulation of capital is one main source of the growth of an economy. Emphasis is given to the accumulation of more capital per head (machines, factories, roads etc.). It should however be noted that mere accumulation of capital will not fuel growth. Unless there are areas of investment unexploited, productive capacity cannot be increased merely by increasing the stock of capital. Capital is also only one of the many productive factors of production. If it is increased relative to other factors of production its marginal efficiency falls.

(iv) **Technology:** Expansion of knowledge through science and engineering that leads to new inventions and innovations in production techniques play an important role in growth. Technology can either be developed internally or can be imported from other countries.

16.4 COMMON CHARACTERISTICS OF DEVELOPING COUNTRIES

This section introduces the reader to some common features exhibited by developing nations. Developing nations are nations in transition. A careful study of these nations will reveal the following characteristics:

(i) Low standards of living: In developing nations, general standards of living tend to be very low for the vast majority of the people. These low standards of living are manifested quantitatively and qualitatively in the form of low incomes (poverty), inadequate housing, poor health, limited or no education, high infant mortality, low life and work expectancy and sometimes a general sense of hopelessness. Income levels in Ghana and Nigeria are relatively low as compared to levels in the developed world. The distribution of GDP is also severely unequal.

(ii) Health and Life Expectancy: In addition to struggling on low income, many people in the developing nations fight a constant battle against malnutrition, disease and ill health. The average life expectancy in developing nations in 2003 was 57 years as compared to 74 years in developed nations. Infant mortality rate is approximately 73 (66 for Ghana). This compares poorly with 12 in developed nations. Medical care is an extremely scarce social service in many parts of the developing world.

(iii) Low levels of productivity: In addition to low standards of living, developing countries are characterized by relatively low levels of labour productivity. Throughout the developing world, levels of labour productivity (output per worker) are extremely low compared with those in developed countries. In crop production, rural small-scale farmers form the majority of the producers. Their productivity level is low due to the use of rudimentary tools (such as hoes, cutlasses and sticks) and simple and outmoded technology.

(iv) Dependence on agricultural production and primary product for exports. The external sector comprises Imports and Exports. Ghana shows dependence on a single crop, Cocoa, for export. In Ghana, the major exports including cocoa account for about 60 per cent of the total foreign exchange earnings of the country. Minerals in general earn on the average about 15 per cent of our total foreign exchange earnings. Normally, primary products in LDCs account for between 80-90% of export earnings but in the developed countries it is about 35 per cent. In Ghana, the primary sector accounts for on the average, about 80 per cent of our foreign exchange earnings implying that Ghana is more of a developing country than a developed country.

(v) Dominance, dependence and vulnerability in international relations. A greater volume of Ghana's exports comes from primary commodities like cocoa, timber and gold. The contribution from other sectors, for instance, manufacturing in terms of export is relatively insignificant. Since exports are mainly primary products, it is quite apparent that income from export will fluctuate. This stems from the fact that prices of primary raw materials fluctuate more than those of manufactured goods. It is therefore, inevitable that our revenue from export will fall because the terms of trade will be unfavourable and consequently, this will have adverse effect on our Balance of Payment (BOP).

16.5 Sustainable Development Goals (SDGs)

Sustainable development is defined as ''development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'' The concept of needs goes beyond simply material needs and includes values, relationships, freedom to think, act, and participate, all amounting to sustainable living, morally, and spiritually. Achieving sustainable development in the 2Ist Century led to the adoption of diverse programmes and policies which include agenda 21, millennium development goals (MDGs) which were not able to achieve their targets. The inability of MDGs to achieve the set targets led to adoption of Sustainable Development Goals (SDGs) which span 2015-2030. In 2015, the United Nations General Assembly adopted the Sustainable Development Goals (SDGs), which constitute the centerpiece of the 2030 Agenda for Sustainable Development. The agenda's 17 core goals are broken down into 169 associated targets to direct global development strategy until 2030. These goals and targets encompass economic, social, and environmental aspects of sustainable development in an unprecedented way.One outstanding principle of the 2030 Agenda is its indivisibility, i.e., the understanding that the development objectives formulated by the SDGs and their targets are fundamentally interdependent and interlinked.

The SDGs is built upon the achievements of the Millennium Development Goals (MDGs), which were adopted in 2000 and focused on improving living conditions in developing countries (UN 2016). The SDGs apply to all countries and many countries have already begun to disseminate data. The 17 goals are listed below:

SDG 1 is No poverty. It aims to end poverty in all its forms everywhere by 2030. Its objectives include ensuring that the entire population and especially the poorest and most vulnerable have equal rights to economic resources, access to basic services, property and land control, supporting communities affected by conflict and climate- related disasters, natural resources and new technologies. Some of its indicators include proportion of population living below the national poverty line, by sex and age, the proportion of population living in households with access to basic services.

SDG 2 is Zero Hunger. It focuses on finding sustainable solutions to stop world hunger. The goals of the Zero Hunger initiative are to end hunger and make sure that enough nutritious foods are available to people by 2030. It aims to end the world hunger by 2030. Hunger is not caused by food shortage alone, but by a combination of natural, social, and political forces. Some of its indicators are the prevalence of undernourishment. The goals of the Zero Hunger initiative are to end hunger and make sure that enough nutritious foods are available to people by 2030. Other aspects of the goal include ending all forms of malnutrition and promoting sustainable agriculture. Some of the indicators are prevalence of undernourishment, prevalence of stunting.

SDG 3 is good health and well-being. It seeks to ensure health and well-being for all by 2030, including a bold commitment to end the epidemics of AIDS, tuberculosis, malaria and other communicable diseases by 2030. It also aims to achieve universal health coverage, and provide access to safe and effective medicines and vaccines for all. The Goal addresses all major health priorities, including reproductive, maternal and child health; communicable, non-communicable and environmental diseases; universal health coverage; and access for all to safe, effective, quality and affordable medicines and vaccines. It also calls for more research and development, increased health financing, and strengthened capacity of all countries in health risk reduction and management. The indicators for SDG 3 include maternal mortality ratio, under-five mortality ratio.

SDG 4 is Quality Education. It aims at ensuring inclusive and equitable quality education and promote lifelong learning opportunities for all. This goal ensures that all girls and boys complete free primary and secondary schooling by 2030. It also aims to provide equal access to affordable vocational training, to eliminate gender and wealth disparities and achieve universal access to a quality higher education. Indicators include Proportion of teachers in: (a) pre-primary; (b) primary; (c) lower secondary; and (d) upper secondary education who have received at least the minimum organized teacher training.

SDG 5 is Gender Equality. *It* seeks to achieve gender equality and empower all women and girls by 2030. Gender equality and women's empowerment have advanced in recent decades. Women's and girls' access to education has improved; the rate of child marriage has fallen and progress has been made in the area of sexual and reproductive health and reproductive rights, including fewer maternal deaths. Nevertheless, gender equality remains a persistent challenge for countries worldwide and the lack of equality is a major obstacle to sustainable development, as gender and wealth disparities persist and obstruct universal access to a quality higher education. Indicators for SDG 5 include Proportion of time spent on unpaid domestic and care work, by sex, age and location, Proportion of women in managerial positions.

SDG 6 **is Availability and Sustainability of water and sanitation for all.** It aims to ensure availability and sustainable management of water and sanitation for all by 2030. Clean, accessible water for all is an essential part of the world we want to live in. There is sufficient fresh water on the planet to achieve this. However, every year millions of people, most of them children, die from diseases associated with inadequate water supply, sanitation and hygiene. Clean water, basic toilets and good hygiene practices are essential for the survival and development of children. Indicators for SDG 6 include proportion of wastewater safely treated, Change in water-use efficiency over time.

SDG 7 is affordable, reliable, sustainable and modern energy for all. *It* aims at ensuring access to affordable, reliable, sustainable and modern energy for all. Energy is central to nearly every major challenge and opportunity the world faces today. Sustainable energy is an opportunity to transform lives, economies and the planet. Still, one in five people lack access to electricity and, as demand continues to rise, there needs to be a substantial increase in the production of renewable energy across the world. The proportion of the world's population with access to clean fuels and technologies for cooking increased from 51% in 2000 to 58% in 2014, although there has been limited progress since 2010. Indicators include proportion of population with access to electricity, proportion of population with primary reliance on clean fuels and technology.

***SDG 8* promotes sustained, inclusive and sustainable economic growth,** full and productive employment and decent work for all. Roughly half the world's population still lives on the equivalent of about US$2 a day, and in too many places, having a job does not guarantee an escape from poverty. Slow and uneven progress in this area requires us to rethink and retool our economic and social policies aimed at eradicating poverty. A continued lack of decent work opportunities, insufficient investments and under-consumption lead to an erosion of the basic social contract underlying democratic societies: that all must share in progress. Sustainable economic growth will require societies to create the conditions that allow people to have quality jobs that stimulate the economy while not harming the environment. Indicators include annual growth rate of real GDP per capita, annual growth rate of real GDP per employed person.

***SDG 9* seeks to build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation by 2030.** This SDG encompasses three important aspects of sustainable development: infrastructure, industrialisation and innovation. Infrastructure provides the basic physical systems and structures essential to the operation of a society or enterprise. Industrialisation drives economic growth, creates job opportunities and thereby reduces income poverty. Innovation advances the technological capabilities of industrial sectors and prompts the development of new skills. Inclusive and sustainable industrial development is the primary source of income generation, allows for rapid and sustained increases in living standards for all people, and provides the technological solutions needed for environmentally sound industrialisation. Indicators include proportion of the rural population who live within 2 km of an all-season road, manufacturing value added as a proportion of GDP and per capita.

SDG 10 is reduce inequality within and among countries. It aims at reducing inequality within and among countries by 2030. This SDG calls for reducing inequalities in income as well as those based on age, sex, disability, race, ethnicity, origin, religion or economic or other status within a country. The goal also addresses inequalities among countries, including those related to representation, migration and development assistance. Indicators include labour share of GDP, comprising wages and social protection transfers, financial Soundness Indicators.

***SDG 11* is make cities and human settlements inclusive, safe, resilient and sustainable by 2030.** It focuses on cities, as more than half of the world's population lives in them. Cities are hubs for ideas, commerce, culture, science, productivity, social development and much more; they have enabled people to advance socially and economically. However, many challenges exist to maintaining cities in a way that continues to create jobs and prosperity without straining land and resources. Some of its indicators are ratio of land consumption rate to population growth rate, proportion of urban population living in slums, informal settlements or inadequate housing.

***SDG 12* aims at ensuring sustainable consumption and production patterns by 2030.** SDG 12 is about promoting resource and energy efficiency, sustainable infrastructure, and providing access to basic services, green and decent jobs and a better quality of life for all. Its implementation helps to achieve overall development plans, reduce future economic, environmental and social costs, strengthen economic \petitiveness and reduce poverty. Sustainable consumption and production aims at "doing more and better with less", increasing net welfare gains from economic activities by reducing resource use, degradation and pollution along the whole lifecycle, while increasing quality of life. Its indicators include food loss index and (b) food waste index, material footprint, material footprint per capita, and material footprint per GDP.

SDG 13 is to take urgent action to combat climate change and its impacts. Climate change is now affecting every country on every continent. It is disrupting national economies and affecting lives, costing people, communities and countries dearly today and even more tomorrow. People are experiencing the significant impacts of climate change, which include changing weather patterns, rising sea levels, and more extreme weather events. Greenhouse gas emissions from human activities are driving climate change and are continuing to rise. They are now at their highest levels in history. Without action, the world's average surface temperature is projected to rise over the 21st century and is likely to surpass 3ºC this century-with some areas of the world expected to warm even more. Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies is one of its indicators.

SDG 14 **pursues to conserve and sustainably use the oceans, seas and marine resources for sustainable development**. The world's oceans - their temperature, chemistry, currents and life - drive global systems that make the Earth habitable for humankind. Our rainwater, drinking water, weather, climate, coastlines, much of our food, and even the oxygen in the air we breathe, are all ultimately provided and regulated by the sea. They are particularly crucial for people living in coastal communities, who represented 37% of the global population in 2010. Oceans provide livelihoods and tourism benefits, as well as subsistence and income. They also help regulate the global ecosystem by absorbing heat and carbon dioxide from the atmosphere and protecting coastal areas from flooding and erosion. In fact, coastal and marine resources contribute an estimated $28 trillion to the global economy each year through ecosystem services.

SDG 15 **seeks to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.** Preserving diverse forms of life on land requires targeted efforts to protect, restore and promote the conservation and sustainable use of terrestrial and other ecosystems. Goal 15 focuses specifically on managing forests sustainably, restoring degraded lands and successfully combating desertification, reducing degraded natural habitats and ending biodiversity loss.

SDG 16 **promotes peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.** Peace, justice and effective, accountable and inclusive institutions are at the core of sustainable development. Several regions have enjoyed increased and sustained levels of peace and security in recent decades. But many countries still face protracted armed conflict and violence, and far too many people struggle as a result of weak institutions and the lack of access to justice, information and other fundamental freedoms.

SDG 17**seeks to strengthen the means of implementation and revitalise the Global Partnership for Sustainable Development.** A successful sustainable development agenda requires partnerships between governments, the private sector and civil society. These inclusive partnerships, built upon principles and values, a shared vision, and shared goals that place people and the planet at the centre, are needed at the global, regional, national and local levels.

16.6 ECONOMIC PLANNING

Economic planning involves the conscious allocation of resources by the government to the various sectors of the economy to promote rapid economic growth. This is done through development plans. There are three dimensions to development planning namely: resource accumulation, resource allocation and resource management.

A Development Plan is a document which contains a policy framework and programme of development for a time period for a country, usually five years. It sets out the general measures and programmes of actions arranged according to a set of stated goals or priorities.

1.6.6.1 Objectives of Planning

a) **To maximize the utilization of economic resources:** The resources of any nation are not always enough for her use. In this wise, resources must be allocated in such a way that they achieve maximum utilization of them. It is through the proper allocation of their resources that nations can accelerate their pace of economic development.

b) **To correct the imperfection of the market system:** The market system in reality is not perfect and therefore allocation of resources which occur under perfect competition model does not happen. There is therefore the need by government to interfere to ensure efficient allocation of resources

c) **To bridge the gap between private cost and social cost, and private benefit and social benefit:** Under perfect market, there may be a divergence between social and private cost on one hand and social and private benefit on the other. This occurs as a result of the existence of externalities (benefits provided to or costs imposed on third parties as a result of the production or consumption of goods or services). Because of external benefits many projects which are needed may not be profitable under pure market system in which all investment decisions are left to the private individuals. The level of investment may fall below the social optimum because private investors ignore external benefits and supplementary benefits of projects in calculating the prospective returns of their investment.

d) To ensure balanced growth: Planning may be used to ensure balanced growth for all sectors of the economy. By this there will be uniform growth and provision of complementary services and intra sectoral linkages.

e) To attract foreign investment – Developing Plans are used as a means of attracting foreign investment or foreign aid. Foreign government and international organizations giving grants and loans need to be satisfied that the finance they provide wil be put to good use. Private investment will also be encouraged by realistic plans showing the extent of economic growth that is expected to be attained. Donor countries are therefore interested in well coordinated plans to direct investment funds.

f) To match the available resources with the desired goals: The complementary nature of some investment decisions make for planning. The viability of one project may be conditioned upon another project. For example, the development of the agriculture sector may require setting up of irrigation projects and a special transport facility for carrying fresh vegetables, fish etc between the farms and the market places. In this wise, planning may be used to coordinate these activities.

1.6.6.2 Problems of Economic Planning

(i). **Lack of Data:** The basic limitation to economic planning in West Africa is lack of accurate, sufficient or detailed information on the economy. In the absence of adequate data, planning cannot be effectively done. There is the need to improve our database so as to enhance effective planning and implementation.

(ii). **Lack of coordination:** Planning involves coordination between various ministries. These bodies may become semi-autonomous and as such, coordination between them becomes very difficult. This may affect the formulation and implementation of economic development plans.

(iii). **Failures of Foreign Resources to Materialize:** To make supply to funds consistent with projected requirement, all foreign aids are specified in the Plan. This does not ensure that the level of foreign aid specified will materialize. In both the 5-year and the 7-year Development Plans in Ghana, the expected foreign investment and loans did not materialize. This affected the implementation of the 5yr as well as the 7yr development plans.

(iv). **Failure of Politicians to Follow the Plan:** Politicians at times may not subject themselves to the disciplines of planning even when actual projects contained in the plan had been launched. Crucial elements in the plan may be unpalatable to particular classes, groups, and tribes which have vested interest in the status quo within a country.

(v). **Political instability:** Historically, economic planning had been affected by political instability. Ghana's 7-year Development Plan was abandoned during the 1966 coup. These instabilities discourage investment since the safety of investors cannot be guaranteed.

(vi). **Shortage of Manpower:** The formulation and implementation of any economic development programme poses management problems. Without the right skilled personnel and properly structured management, an economic development plan cannot be effectively implemented. Availability of such skilled manpower is a problem in developing countries.

16.6 POPULATION

a. **Meaning:** Population refers to the total number of people living within a geographical area or a country.

b. **Population Census:** A population census is the head count of people living in a geographical area or in a country. A population census collects comprehensive data on people to know e.g. sex, age, educational and occupational backgrounds, religious affiliation, nationality etc.

c. **Importance of Population Census**

(i). It is used to determine the size and the growth rate of the population in a country. This helps the government in planning for education, transportation, health, etc.

(ii). It helps authorities to have adequate and relevant data. These data include the size, composition, distribution of population etc. These data aid the planners of the economy to forecast the future needs of the country.

(iii). Data provided by population census help in the allocation of resources to the various regions and states of the country.

(iv). It provides data for demographic studies.

d. **Problems of Census in West Africa**

(i). High Cost of Census: Censuses are supposed to be conducted at a 10 year interval. The high cost of conducting census has made it impossible for West African countries to conduct censuses at regular intervals.

(ii). Bad town planning and inaccessibility of some areas: In many developing countries, street and houses are not properly numbered. This makes it difficult for census officials to locate people for enumeration.

(iii). Shortage of census officers: In many developing countries there are very few qualified census officers. During census all kinds of people are used without any proper training. This makes census figures inaccurate.

(iv). Customary beliefs: Certain beliefs in West Africa work against census. In certain cultures people can not be counted.

(v) Suspicion of use of census data. There can be deliberate falsehood on number of people declared in order to get more resources.

16.7 SUMMARY

Economic Growth refers to an increase in real aggregate output (real GDP) reflected in increased real per capita income. A country is said to experience economic growth if overtime, its real output (real GDP) increases as well as its real per capita income.

Economic planning involves the conscious allocation of resources by the government to the various sectors of the economy to promote rapid economic growth. This is done through development plans. There are three dimensions to development planning namely: resources accumulation resource allocation and resource management.

A population census is the head count of people living in a geographical area or in a country. A population census collects comprehensive data on people to know e.g. sex, age, educational and occupational backgrounds, religious affiliation, nationality, etc.

16.8 REVISION QUESTIONS

Multiple Choice Questions

1. Which of the following best describes the concept of economic growth?

   A. Increase in the welfare of the citizens
   B. Increase in real per capita income
   C. Reduction in prices of goods and services
   D. Increase in the exchange rate of country’s currency
   E. Increase in industries established in a country

2. The following are problems associated with development planning in the less developed nations except.

   A. Inadequate statistical data
   B. Lack of proper co-ordination of various units in the system
   C. Political stability in the country
   D. frequent changes in socio-economic and political policies
   E. Shortage of skilled and technical manpower

3. Which of the following is not a common feature of developing countries?

   A. High level of industrial productivity
   B. High standard of living
   C. Dependence on agricultural production for export
   D. Advance level of technology
   E. High level of illiteracy

4. Which of the following does not stimulate the economic growth of a nation?

   A. Availability of skilled human recourses
   B. Accumulation of capital
   C. Expansion of the knowledge
   D. Depletion of the environmental quality
   E. Availability of mineral resources

5. The following are popular objectives of developing plans except

   A. To increase the unemployment rate
   B. To attract foreign investment
   C. Ensure balance growth of all sector in the economy
   D. Efficient utilisation of available resources
   E. Improve on the quality of existing infrastructural facilities
6. Economic development refers to
   A. Economic growth
   B. Economic growth accompanied by changes in output distribution and economic structure
   C. Improvement in the wellbeing of urban population
   D. Sustainable increases in GDP
7. Which of these constitute drivers of economic growth?
   A. Human resources
   B. Natural resources
   C. Technology
   D. All of the above
8. Economic Planners should regard census figures in their planning process as unimportant
   A. True

B. False
C. Uncertain
D. Not sure

9. Which is not one of the challenges facing developing countries?
   A. Food shortages
   B. Foreign debt
   C. Labour shortages
   D. Rapid population growth
10. Some of these are problems associated with census in West Africa except
   A. Accessibility and good planning
   B. High cost
   C. Shortage of officials
   D. Customary beliefs

Solutions to Multiple Choice Questions

1. B
2. C
3. D
4. D
5. A
6. B
7. D
8. B
9. C
10. A

Short-Answer Questions

1. A sustainable increase in the per capita income of a country is termed……………….
2. A document that contains a policy framework, development programmes and actions to achieve stated objectives is called……………………..
3. Mention any two characteristics of developing nations
4. For a country, the ratio of GNP to population for any given year gives………………..

5. An increase in real GDP coupled with sustainable general human well- being in a country is known as…………………..

Solution To Short Answers Questions

1. Economic growth
2. Development plan
3. Any two of the following
    i. Low standard of living
    ii. Low level of productivity
    iii. Dependence on agricultural
    iv. Low level of technology
    v. High level of illiteracy
    vi. High level of infant mortality
    vii. Low per capita income
4. Per capita income
5. Economic development

Question 16.1

1. a) Distinguish between economic growth and economic development.

   b) Identify and explain three sources of growth for your country.

Solution

a. Economic Growth refers to an increase in real aggregate output (real GDP) reflected in increased real per capita income. A country is said to experience economic growth if overtime, its real output (real GDP) increases as well as its real per capita income.

Economic development is a sustainable increase in real GDP that implies increased real per capita income, better education and health as well as environmental protection, legal and institutional reforms and an efficient production and distribution system for goods and services.

b. (any three points)

(i) Human resources: Investment in human capital is considered as an important factor for economic growth. This is done by increasing the quality of a nation's labour force through education and training in advance technology. It has also been proved that literacy not only improves productivity but also makes an individual more adaptable to new challenges.

(ii) Natural resources: Availability of natural resources (land and mineral) to a nation is also a vital source of growth. It is not only the availability of these resources but the extent to which they are exploited. It should be noted that for the exploitation of these resources care should be taken not to sacrifice the environment. This means that growth through exploitation of these resources should be sustainable while maintaining good environmental quality.

(iii) Capital formation: Growth Economists believe that accumulation of capital is one main source of growth of an economy. Emphasis is given to the accumulation of more capital per head (machines, factories, roads etc.). It should however be noted that mere accumulation of capital will not fuel growth. Unless there are areas of investment unexploited, productive capacity cannot be increased merely by increasing the stock of capital. Capital is also only one of the many productive factors of production. If it is increased relative to other factors of production its marginal efficiency falls (MEC).

(iv) Technology: Expansion of knowledge through science and engineering that leads to new inventions and innovations in production techniques play an important role in growth. Technology can either be developed internally or can be imported from other countries.

Question 16.2

2. Explain five features of less developing nations.

Solution

i. Low standards of living: In developing nations, general standards of living tend to be very low for the vast majority of the people. These low standards of living are manifested quantitatively and qualitatively in the form of low incomes (poverty), inadequate housing, poor health, limited or no education, high infant mortality, low life and work expectancy and sometimes a general sense of hopelessness. Income levels in Ghana and Nigeria are relatively low as compared to levels in the developed world. The distribution of GDP is also severely unequal.

ii. Health and Life Expectancy: In addition to struggling on low income, many people in the developing nations fight a constant battle against malnutrition, disease and ill health. The average life expectancy in developing nations in 2003 was 57 years as compared to 74 years in developed nations. Infant mortality rate is approximately 73 (66 for Ghana). This compares poorly with 12 in developed nations. Medical care is an extremely scarce social service in many parts of the developing world.

iii. Low levels of productivity: In addition to low standards of living, developing countries are characterized by relatively low levels of labour productivity. Throughout the developing world, levels of labour productivity (output per worker) are extremely low compared with those in developed countries. In crop production, rural small-scale farmers form the majority of the producers. Their productivity level is low due to the use of rudimentary tools (such as hoes, cutlasses and sticks) and simple and outmoded technology.

iv. Dependence on agricultural production and primary product for exports. The external sector comprises Imports and Exports, Ghana shows dependence on a single crop, Cocoa, for export. In Ghana, the major exports including cocoa account for about 60 per cent of the total foreign exchange earnings of the country. Minerals in general earn on the average about 15 per cent of our total foreign exchange earnings. Normally, primary products in LDCs account for between 80-90% of export earnings but in the developed countries it is about 35 per cent. In Ghana, the primary sector accounts for on the average, about 80 per cent of our foreign exchange earnings implying that Ghana is more of a developing country than a developed country.

v. Dominance, dependence and vulnerability in international relations. A greater volume of Ghana's exports comes from primary commodities like cocoa, timber and gold. The contribution from other sectors, for instance, manufacturing in terms of export is relatively insignificant. Since exports are mainly primary products, it is quite apparent that income from export will fluctuate. This stems from the fact that prices of primary raw materials fluctuate more than those of manufactured goods. It is therefore, inevitable that our revenue from export will fall because the terms of trade will be unfavourable and consequently, this will have adverse effect on our Balance of Payment (BOP).

Question 16.3

a) Give five reasons why you will classify your country as a developing nation.

Solution

Same as points for Question 16.2

Question 16.4

a) What is a development plan?

b) Explain three reasons for development planning.

Solution

a. A Development Plan is a document which contains a policy framework and programme of development for a time period for a country. It sets out the general measures and programmes of actions arranged according to a set of stated goals or priorities.

b. (any three points)

- To maximize the utilization of economic resources: The resources of any nation are not always enough for her use. In this wise, resources must be allocated in such a way that they achieve maximum utilization of them. It is through the proper allocation of their resources that nations can accelerate their pace of economic development.

- To correct the imperfection of the market system – The market system in reality is not perfect and therefore allocation of resources which occur under perfect competition model does not happen. There is therefore the need to interfere to ensure efficient allocation of resources

- To bridge the gap between private cost and social cost, and private benefit and social benefit. Under perfect market, there may be a divergence between social and private cost on one hand and social and private benefit on the other. This occurs as a result of the existence of externalities (benefits provided to or costs imposed on third parties as a result of the production or consumption of goods or services). Because of external benefits many projects which are needed may not be profitable under pure market system in which all investment decisions are left to the private individuals. The level of investment may fall below the social optimum because private investors ignore external benefits and supplementary benefits of projects in calculating the prospective returns of their investment.

- To ensure balanced growth: planning may be used to ensure balanced growth for all sectors of the economy. By this there will be uniform growth and provision of complementary services and intra sectoral linkages.

- To attract foreign investment – Developing Plans are used as a means of attracting foreign investment or foreign aid. Foreign government and international organizations giving grants and loans need to be satisfied that the finance they provide will be put to good use. Private investment will also be encouraged by realistic plans showing the extent of economic growth that is expected to be attained. Donor countries are therefore interested in well-coordinated plans to direct investment funds.

- To match the available resources with the desired goals: The complementary nature of some investment decisions make for planning. The viability of one project may be conditioned upon another project. For example, the development of the agriculture sector may require setting up of irrigation projects and a special transport facility for carrying fresh vegetables, fish etc between the farms and the market places. In this wise, planning may be used to coordinate these activities.

Question 16.5

a) What is a population census?

b) Explain three uses of population census

c) Identify and explain three problems of census in West Africa

Solution

A population census is the head count of people living in a geographical area or in a country. A population census collects comprehensive data on people to know e.g. sex, age, educational and occupational backgrounds, religious affiliation, nationality etc.

b. (any three points)

- It is used to determine the size and the growth rate of the population in a country. This helps the government in planning for education, transportation, health etc.
- It helps authorities to have adequate and relevant data. These data include the size, composition, distribution of population etc. These data aid the planners of the economy to forecast the future needs of the country.
- Data provided by population census help in the allocation of resources to the various regions and states of the country.
- It provides data for demographic studies.

c. (any three points)

- High Cost of Census: Censuses are supposed to be conducted at a 10 year interval. The high cost of conducting census has made it impossible for West African countries to conduct censuses at regular intervals.
- Bad town planning and inaccessibility of some areas: In many developing countries street and houses are not properly numbered. This makes it difficult for census officials to locate people for enumeration.
- Shortage of census officers: In many developing countries there are very few qualified census officers. During census all kinds of people are used without any proper training. This makes census figures inaccurate.
- Customary beliefs: Certain beliefs in West Africa work against census. In certain cultures people are not counted.
- Religious belief/Practice: Some people use religion, e.g. Islam to prevent

actual headcount which affect reliability of data provided.

Practice Questions

1. Distinguish between Economic Growth and Economic Development
2. Discuss any THREE reasons why a country would experience growth without development
3. Discuss the relevance of development plans to the economy of your country.