

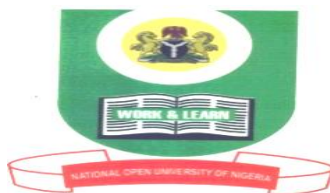


NATIONAL OPEN UNIVERSITY OF NIGERIA

SCHOOL OF MANAGEMENT SCIENCES

COURSE CODE: BFN 202

COURSE TITLE: MACROECONOMICS



NATIONAL OPEN UNIVERSITY OF NIGERIA

SCHOOL OF MANAGEMENT SCIENCES

COURSE DEVELOPMENT

Course Code: **BFN 202**

Course Title: **Macroeconomics Theory**

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MODULE ONE MEANING OF MACROECONOMICS

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UNIT 1 Definition of Macroeconomics

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1.0 Introduction

In this unit we will take a look at the meaning of macroeconomics and how it differs from microeconomics. But you may be thinking that macroeconomics is the study of the whole economy but it entails more than that, therefore let us define what macroeconomics is. Macroeconomics is that branch of economic theory which deals with the study of the economy in the aggregate with exact focus on unemployment, inflation, business cycles, growth, monetary and fiscal policies. Macro-economic policy is in fact, Keynesian approach to economic issues and it shows a clear cut departure from the classical economic thinking.

2.0 Objectives of the units

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

- Define and understand the meaning of Macroeconomics as a field of study
- Know the scope of Macroeconomics

3.0. Main Content

3.1 Definition of Macroeconomics

The term 'macro' is derived from the Greek word 'MAKROS' which means large. Macroeconomics is the study of economic system as a whole. It is the study of economy as a whole e.g. total production, saving, investment, consumption. It deals with national income, output, employment and the general price level, it is known as 'Aggregate Economics'. It deals with families, not with one firm but with all the firms in the economy. Macroeconomics deals with averages and aggregates of the system rather than particular units in it.

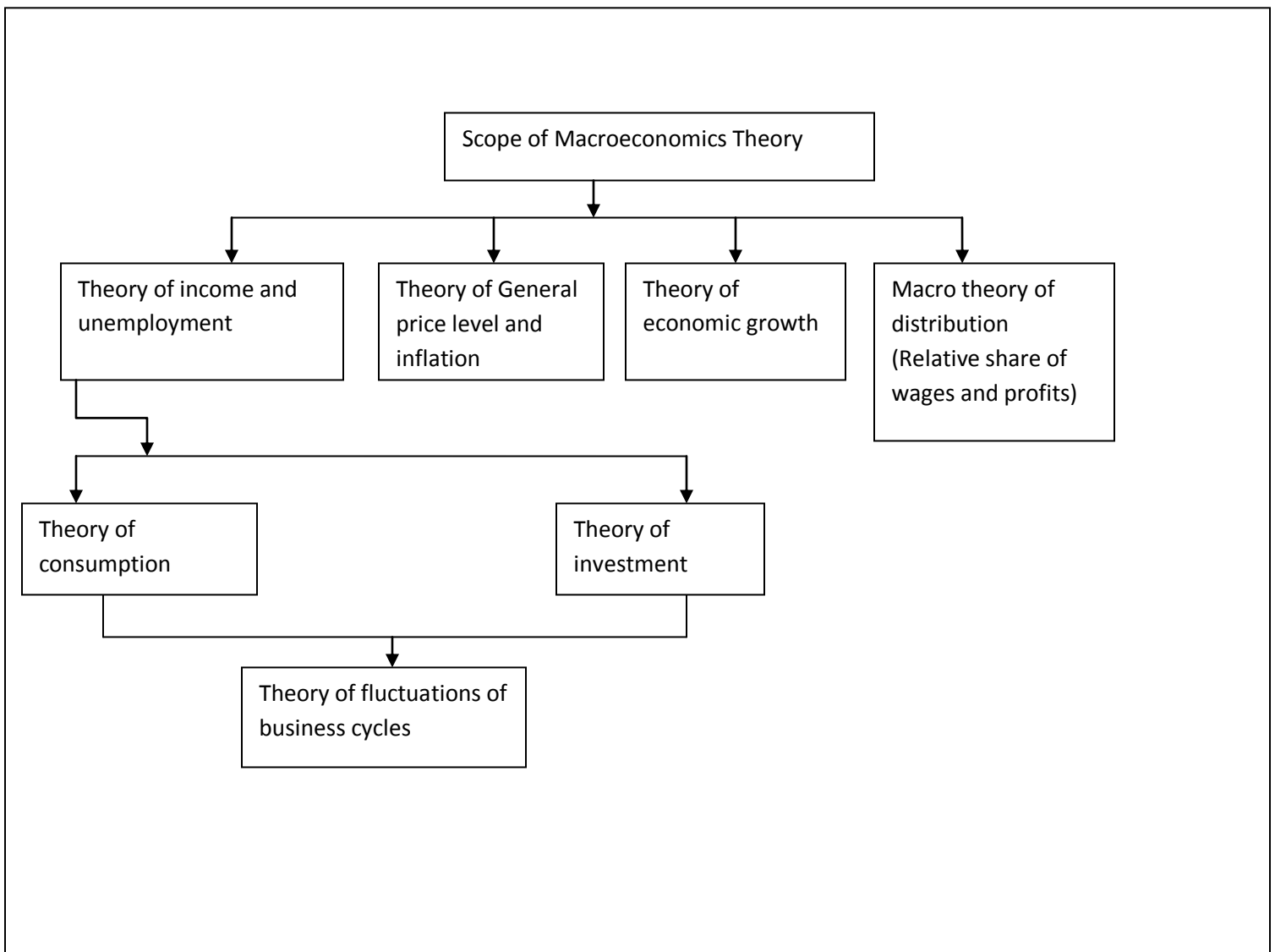
3.2. Scope of Macroeconomics

1. **Theory of National Income:** it is the concepts of national income, its different elements, methods of its measurement and social accounting.
2. **Theory of Employment:** it studies the problems of employment and unemployment. Different factors determining employment such as effective demand, aggregate demand, aggregate supply, total consumption, total savings and total investment.
3. **Theory of Money:** changes in the demand and supply of money have bearing on the levels of employment. Functions and theory of money, banks and financial institutions are studied.
4. **Theory of General Price Level:** problems concerning, inflation, deflation are part of the study of macroeconomics.
5. **Theory of Economic Growth:** macro economics also studies the problems concerning of economic growth or increase in per capita real income and the standard of living, besides the study of governments fiscal and monetary policies.
6. **Theory of International Trade:** it also studies the principles determining among different countries. Policies of free trade and protection, studies of its quota and foreign aid fall within the purview of macroeconomics.

7. **Macro Theory of Distribution:** it studies macro theory of distribution, how the share of different factors of production is determined in the national income.
8. **Theory of Trade Cycles:** it deals with the fluctuations in the level of employment, expenditure and general price level, and these business situations can be controlled.

The various aspects of macroeconomic theory are shown in the diagram below

Figure 1 Scope of Macro Economic Theory



4.0 Conclusion

In conclusion, we have learnt that Macroeconomics deals with the aggregate of the whole economy and it is seen as a branch of economics dealing with the performance, structure, behavior, and decision-making of an economy as a whole, rather than individual markets. This includes national, regional, and global economies.

5.0 Summary

In this unit, you have been able to learn what is the meaning of macroeconomics and the Scope of macroeconomics and I believe you must have learn a lot in this unit that will help you in course of the study.

Tutor-Marked Assignment

1. Discuss how Macroeconomics works in the economy.
2. List and Explain the scope of macroeconomics
3. Briefly discuss the

7.0 References/Further Readings

Sandaros, F. Y. (2010) *Introduction to Macroeconomics theory*, 2nd edition, Westpoint Press limited.

UNIT TWO: CONCEPT OF MACROECONOMICS

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- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Key Concept in Macroeconomics
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 Introduction

In this unit we will vividly look at the key concept of macroeconomics and at the end of this unit I believe you will have learnt a lot about the concept and this will go a long way to equip you in the course of this study.

2.0 Objectives of the units

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

- Understand the Concepts of Macroeconomics.
- Know how the usefulness of the key concept of macroeconomics.

3.0. Main Content

3.1 Scope of Macroeconomics

Macro-economic theory is the study of economic aggregates, wherein economic relations between various aggregates of an economy such as total employment, aggregate demand,

national income, total savings, total investment etc. are studied. This study is based on the principle of aggregates wherein aggregates of various units are expressed as a variable. The determination of level of employment and national income is a part of the subject matter of Macro Economics. In the words of Shapiro, "Macro Economics deals with functioning of the economy as a whole."

According to Prof. Boulding, "Macro Economics deals not with individual quantities as such but with aggregates of the quantities, not with individual incomes but with the national income, not with the individual prices but with the price level, not with the individual output but with the national output."

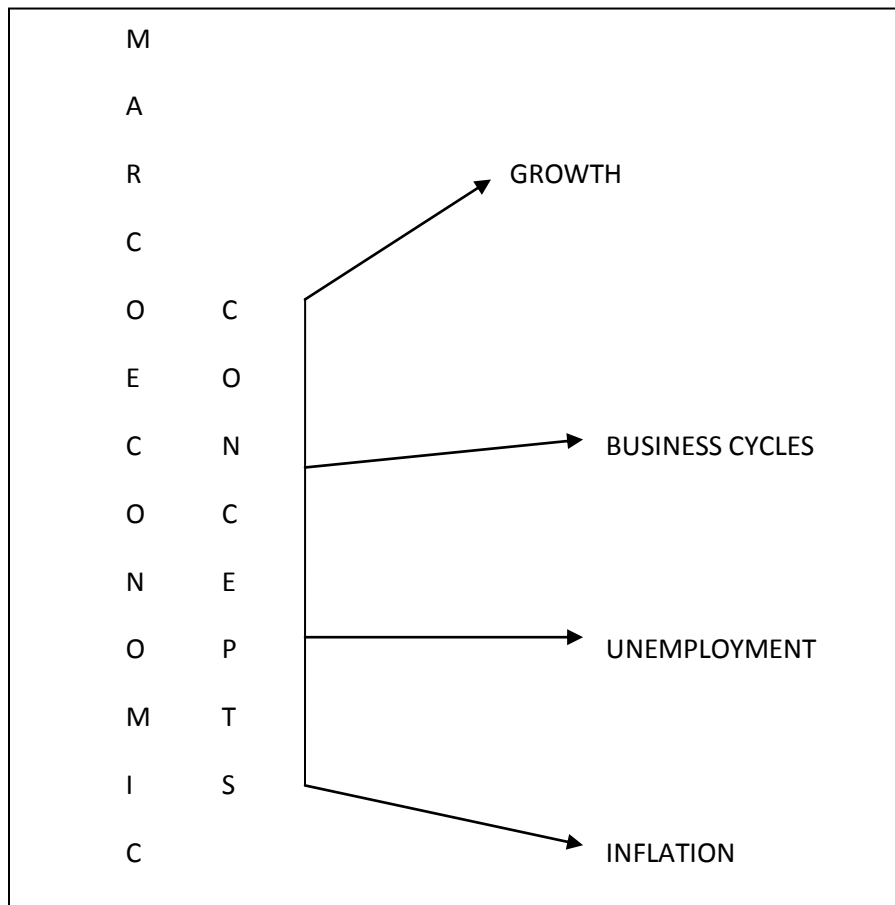
Therefore, as is clear from the above, the following issues/subjects define the scope of Macro Economics:

1. Aggregates of national income and its determination
2. Theories of Income and Employment.
3. Theory of Money and Banking.
4. Fiscal Theory.
5. Balance of Payment

3.1. KEY CONCEPT IN MARCOECONOMICS

Macroeconomics is the study of the aggregate mode of the economy, with specific focus on problems associated with those models, the problem of growth, business cycles, unemployment and inflation. The key macroeconomic concepts are growth, business cycles, unemployment and inflation. These are revealed in the chart below:

Figure 3.1 The Key Concept in Macroeconomics



Self Assessment Exercise

Discuss the concepts of Macroeconomics in detailed.

4.0 Conclusion

In conclusion, we have learnt that Macroeconomics deals with the aggregate of the whole economy and it is seen as a branch of economics dealing with the performance, structure, behavior, and decision-making of an economy as a whole, rather than individual markets. This includes national, regional, and global economies.

5.0 Summary

In this unit, you have been able to learn what is the meaning of macroeconomics and the Scope of macroeconomics and I believe you must have learned a lot in this unit that will help you in course of the study.

Tutor-Marked Assignment

1. Discuss how Macroeconomics works in the economy.
2. List and explain the scope of Macroeconomics.

7.0 References/Further Readings

Karl E. Case and Ray C. Fair (2005) *Principles of Economics*, Prentice Hall, 6th ed.

UNIT 3 USES AND LIMITATION OF MARCOECONOMICS

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- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Uses of Macroeconomics
 - 3.2 Limitations of Macroeconomics
 - 3.3 Differences Between Microeconomics and Macroeconomics
- 4.0 Conclusion
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- 7.0 References/Further Readings

1.0 INTRODUCTION

In this unit we are going to discuss the uses of macroeconomics and its limitations and at the end of this unit you should be able to understand and know how macroeconomics is useful in the economy and the rate of its limitations in the economy

2.0. Objectives

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

- Understand the uses of Macroeconomics in the economy.
- Understand the limitations of Macroeconomics in the economy.
- Differences between Microeconomics and Macroeconomics analysis.

3.0. Main Content

3.1 Uses of Macroeconomics

1. Helpful in understanding the functioning of an economy: it is only through macroeconomic analysis that we can have an idea of an economy's aggregate output, income, consumption, saving, employment and the like.
2. Helpful in the formulation and implementation of economic policies: macroeconomics is indispensable in the modern set up. Laissez-faire policy is no more a policy anywhere, it has become defunct now, and 'Maximum Social Welfare' is the sole objective of modern governments.
3. Study of Economic Development: Macroeconomics is of special importance for the capital poor countries in understanding their basic problems and in suggesting various ways and means to reach the destination of economic development.
4. Study of National Income: Macro economics has brought to light, a great value of the national and social accounting studies, without which no economic policy or plan can be formulated. The estimates of GNP provide economists with a most useful tool to analyze the performance of an economy; comparing the growth trends of the economy overtime. GNP also furnishes the information about the sectorial contribution to the national income estimate. It also informs us about economic growth trends during any given period of time.

3.2. LIMITATIONS OF MACROECONOMICS

Macroeconomics has some limitation too. These are given below:

1. Dependence on individual units: we know that Macro economics deals with aggregate and aggregates are the sum total of individuals. But the results of these aggregate are sometimes different from the individual behavior. This is also called as 'Macroeconomic paradoxes or Fallacies of composition'. For example, saving may be a virtue for an individual but becomes a vice for an economy as a whole. If a particular person withdraws his total money from the bank it hardly makes any difference but if there is 'Run on Banks' in general the total banking system would collapse.

2. Heterogenous Units: Marcoeconomics studies different units of goods as common. Different goods have their different measures. This is not possible to measure all goods have their different measure. This is not possible to measure all the goods with a common measuring rod.
3. Misleading Aggregates: the study of aggregates can be misleading also. For example, the constant national of an economy is not the guarantee of the fact that the income of nobody has either increased or decreased. The increase in the income of some individuals may have offset the fall in the income of some persons or firms, thereby keeping the national income constant.

3.3. DIFFERENCE BETWEEN MICROECONOMICS AND MACROECONOMICS

The main differences between Microeconomics and Macroeconomics are the following:

1. Importance of the letters 'I' and 'A', for aggregates is significant. Microeconomics deals with the economic behavior of individuals who are mortal, whereas, Macroeconomics gives a 'worm's eye view' or the 'microscopic view' of some specific component of the economy, whereas, Macroeconomics gives a 'bird's eye view' or the macroscopic view of the economy.
2. Difference in the Degree of Aggregation: Microeconomics studies the individual units of the economy like a firm. On the contrary, Macroeconomics deals with aggregate like national income, and total saving. Henceforth, microeconomics studies the tiny segments of the economy. That is why micro method is known as the 'Method of Slicing'. Macroeconomics on the other hand studies the larger parts of the economic system, therefore, macromethod is named as 'Method of Lumping'.
3. Fundamental Difference: Prof. G. Thimma named Microeconomics as price theory and Macroeconomics as Income-theory.
4. Difference in Methods of study: In Microeconomics, the assumption of 'other things being equal' or ceteris paribus' and the assumption of 'full employment' etc. are presumed, whereas theses assumptions have no relevance under Macroeconomies.
5. Difference in Subject Matter: The subject matter of Microeconomics deals with determination of price, consumer's equilibrium and welfare etc. on the other side, the

- subject matter of Macroeconomics is full employment, national income, general price level, trade cycles and economic growth etc.
6. Partial and General Equilibrium Analysis: Microeconomic method of study is known as the 'Partial equilibrium analysis' and Macroeconomic technique is called as 'General Equilibrium Analysis, because it deals with the aggregate of economic analysis
 7. Mortal and Immortal Subjects: Microeconomics deals with individuals and individuals are mortal. Man dies after passing some life time in the world. Therefore, tool of the study of microeconomics i.e man is mortal on the contrary, Macroeconomics is concerned with the aggregate. It studies the problems of the whole economy. The tools of its study is society. Society never ends. Man may come and man may go but the society remains forever. So Macroeconomics studies the immortal society
 8. Metaphor of Forest: Prof. Boulding has differentiated between these two types of economic analysis with the help of a metaphor of a forest. He said, "just as the forest consists of different trees, the society is also a group of individuals. The difference between the individual and the society is similar to the difference between a tree and forest."
 9. Paradoxes: sometimes there are paradoxes seen in Micro and Macro activities. It means that the act which is beneficial for an individual may prove harmful for the economy as a whole. In other words, the microscriptions which are virtues for individual supply become vices for the economy as of applied.
 10. Study of Price and Income Determination: As against price under Microeconomics income occupies the pivotal place in the study of macroeconomics. Macroeconomics is thus, variously called as 'income theory' as it analysis income levels. 'Employment theory' because it probes movements in employment and Monetary theory' for money plays an important roles in it.

Self Assessment Exercise

Discuss in detail uses and limitations of Macroeconomics analysis.

4.0 Conclusion

In conclusion, we have learnt that

5.0 Summary

In this unit, you have been able to learn what is the meaning of macroeconomics and the Scope of macroeconomics and I believe you must have learned a lot in this unit that will help you in course of the study.

6.0. Tutor-Marked Assignment

1. Discuss the uses of Macroeconomics analysis.
2. List and Explain the limitations of Macroeconomics.
3. Discuss the differences between Microeconomics and Macroeconomics.

7.0 References/Further Reading

Garros, J.J. (2009) *Introduction to basic Macroeconomics*, a broader perspective, 1st edition, Macgraw Publication limited.

MODULE TWO NATIONAL INCOME ACCOUNTING

- Unit 1 National Income Analysis
- Unit 2 Consumption, Savings and Investment
- Unit 3 Mathematical Calculation of National Income.

UNIT 1 NATIONAL INCOME ANALYSIS

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- 1.0 Introduction
- 2.0 Objectives
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 - 3.1 National Income Measurement
 - 3.2 Graph of Circular Flow of Income
 - 3.3 National Income Terms
 - 3.4 National Income Accounting
- 4.0 Conclusion
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- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 Introduction

A term used in economics to refer to the bookkeeping system that a national government uses to measure the level of the country's economic activity in a given time period. National income accounting records the level of activity in accounts such as total revenues earned by domestic corporations, wages paid to foreign and domestic workers, and the amount spent on sales and income taxes by corporations and individuals residing in the country.

National income accounting provides economists and statisticians with detailed information that can be used to track the health of an economy and to forecast future growth and development. Although national income accounting is not an exact science, it provides useful insight into how well an economy is functioning, and where monies are being generated and spent.

2.0 Objectives

At the end of this Unit, you should be able to

- Understand the meaning of National Income Measurement
- Understand the terms of National Income
- Understand the Importance of National Income.
- Know the different Method of National Income Accounting.

3.0 Main Content

3.1. National Income Measurement

The national income value can be measured using any of these methods:

1. Value-added (Out Put) method
2. Expenditure method
3. Factor-income method

3.1.1 Value-Added (output) Method

National Income can be measured by adding all the values of final good and services produced in the economy during the period and excluding the values of intermediate products to avoid double counting. On the other hand, it can be measured by estimating only the net values of output (value-added) at every stage of production in the economy during the course of the year.

3.1.2. The Expenditure Method

This method measures the total value of all, expenditures on goods and services by individual private businesses and public sector (governments) in a particular period of time. In order to avoid double counting, all expenditures on intermediate products should not include in the measurement.

This can be symbolically stated thus:

$$Y = C + I + G + (X - M)$$

OR

$$Y = C + I + G + X_n$$

Where

Y = The value of national income

C = Aggregate consumption expenditure

I = Private investment expenditure

G = Government expenditure

X = Exports expenditure

M = Imports expenditure

X = Net exports ($X_n \geq 0$)

<

Alternatively, national income may be computed using the output - expenditure method.

The output - expenditure method calculates the total expenditure required to purchase the nation's output. In a spend thrift economy (an economy where all income is spent on goods and services for current consumption and all current output is consumed) national income may be calculated via the output - expenditure approach by measuring the actual expenditure of households on currently produced goods and services.

3.1.3. The Income Method

The factor-income method calculates the value of all factor inputs.

For the factor income generated by the process of production), four main components of factor income are distinguished here:

Rents: These are rental incomes to persons (including royalties earned from patents and copyrights) or owners of landed properties.

Wages and Salaries: Payment for the services of labour.

Interest: This is earned by those who lend money to the firm (returns on capital).

Profits: These are earned by those who own the firm (returns on entrepreneurship)

The summation of these factor incomes gives the national income (using the factor-income approach).

$$Y = Y_r + Y_w + Y_i + Y_p$$

Where:

Y = National Income

Y_r = Income from rents

Y_w = Income from wages and salaries

Y_i = Income from Interest

Y_p = Income from profits

Test Assessment Exercise

Write briefly of the importance of Value added (output) method over the Expenditure approach Method.

3.2 GRAPH OF CIRCULAR FLOW OF INCOME (Spend Thrift Economy)

In a spend thrift economy, the value of output produced is equal to the value of income earned. Therefore, we can talk of national income or national product.

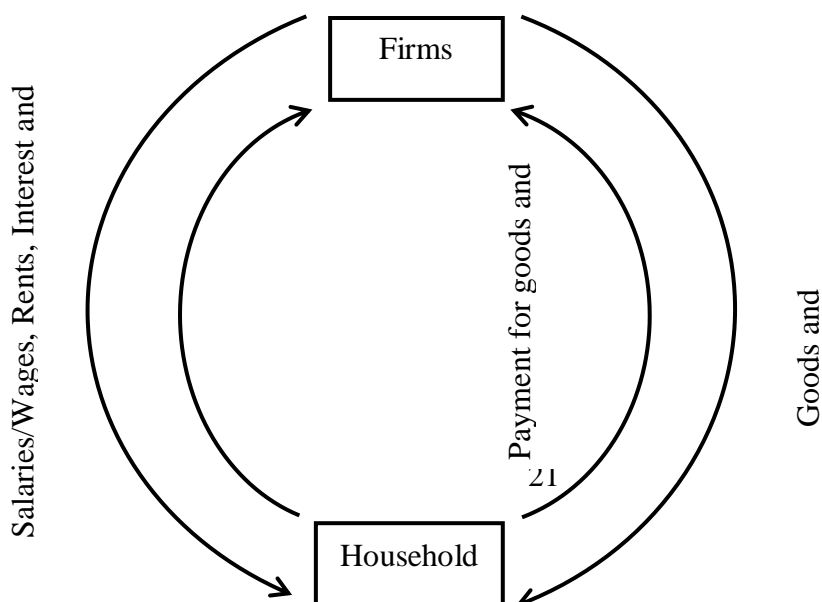
National income lays more emphasis on inputs (or factor income) aspect of production while national product emphasizes on the output side. Since we would arrive at the same total if we use interchangeably, the circular flow can be presented diagrammatically as follow:

Figure 1

**Factor-Income
Approach**

**Circular-Flow
Approach**

Output-Expenditure



Test Assessment Exercise

Explain in detailed the circular Flow from the Firm to the household.

3.3. NATIONAL INCOME TERMS

3.3.1. Gross Domestic Product (GDP)

The gross domestic product is the summation of all the values of goods and services produced in a country by the nationals and non-nationals. It does not include incomes and property earnings of the nationals abroad neither does it exclude the incomes and property earnings of the non-nationals in the country.

3.3.1.1 Problem of Computation of GDP

1. Problem of double counting or multiple counting: This problem when applying the output-expenditure method to estimating national income. If we add the market value of the output of all firms we would obtain a total that is greatly in excess of the value of output actually available to consumers (households). To avoid this difficulty, National income accountant use the value of the firm's output less the value of the inputs purchased from other firms Therefore, a firm's output is defined as the value-added. The summation of all the value added would give the value, if all the goods and services produced in the economy. This concept concepts us to differentiate between intermediate product and final product. Intermediate products are goods used as inputs in a further stage of production while final products are the outputs of the economy after eliminating double counting.
2. The problem of definition of conceptual variables That is, the problem ,of deciding what to include hi the national income accounting and what not to include. For example, the exclusion of the services of full housewives in shopping and performing other domestic works and the recognition given to it when performed by a paid house maid in national income accounting.
3. The problem of owner-occupier properties: This is somehow related to the second problem highlighted above in the sense that it bothers on what to include or not to include

in the national income estimate. The practice is to input a value representing the normal rent which the owner could have paid had the property been let.

4. The-distinction between receipts and payments of income and transfer payments.
5. Statistical problems - the problem of information or data collection, collation and analysis. Often inadequate information would lead to errors in national income accounts.
6. Problems of treating depreciation. The way depreciation is recognized and treated vary from one firm to other, because there are many methods of calculating this depreciation and all them give different values.

3.3.2 Gross National Product (GNP)

Gross national product can be defined as the addition of all the goods and services produced by only the nationals both within and outside the country. It can be defined as the GDP plus the incomes and property earnings of the nationals abroad less the incomes and property earning of the foreigners in the country. The GNP usually excludes the foreigner's earnings which in most cases are repatriated to their countries.

3.3.3 Net National Product (NNP)

The net national product is defined as the Gross National Product (GNP) less capital allowance (Depreciation).

That is $NNP = GNP - \text{Depreciation}$

Net National Product (NNP) is derived by subtracting capital consumption allowance (Depreciation) from the value of Gross National Product (GNP)

That is, $NNP = GNP - D$

From table: 1.5

$NNP = \text{₦ } 7,300\text{million} - \text{₦ } 260\text{million}$

$NNP = \text{₦ } 7,040\text{million}$

From the expenditure side, NNP can be defined as the summation of Net private investment (Gross private investment minus capital consumption allowance) and all other expenditures, Using figure in table 1.4

$$\text{NNP} = (1,000 - 260) + 4,500 + 600 + 1,200$$

$$\text{NNP} = \text{N7,040million}$$

National income is the Summation of all earnings accruable to all factor inputs -land, -labour, capital and entrepreneurship. The earnings accruable to these factor inputs are:

$$\begin{aligned} \text{Similarly, NI} &= \text{NNP} - t_b \\ &= 7,040 - 252 \text{ [where } t_b = 352 - 100\text{]} \\ &= \text{N6,788million} \end{aligned}$$

Whichever approach or method you use in computing the NI you must arrive at the same answer.

3.3.4. Disposable Income

This is the actual amount of money income that households have to spend or save. It is usually regarded as “take-home-pay”. That is, it is individual’s good earnings less deductions like taxes, union dues etc: symbolically written as:

$$Y_d = Y - T$$

Where:

$$Y_d = \text{Disposable income}$$

$$Y = \text{Gross Income}$$

$$T = \text{Tax}$$

3.3.5 Nominal GNP

This is the money value of Gross national Product (or GN.P at market) prices.

3.3.6 Real GNP

This is deflated GN.P. That is GN.P divided by the price index. It is the same thing as valuing the GN.P at constant price:

3.3.7 Per Capital Income

This is defined as the Gross National Product (GN.P) divided by the total population.

That is,

$$PCI = \frac{GNP}{POP} = \frac{Y}{N}$$

Where: Y = National income

N = Total Population

More so, Personal income can be defined as 'all incomes accruable to an individual. As we already know that not all incomes earned are received due to payments for N.L.S. T.F, NHF, etc. and there are some income not earned or worked for but are received such as payments made to compensate disaster victims. Therefore, personal income can be defined as the income that accrues to an individual after due adjustments in Income Earned but Not Received (IENR) and Income Received Not Earned (IRNE).

That is, $PI = NI - IERN + IRNE$

Similarly $PI = NI \text{ plus subsidies (transfer payments) minus N.I.S.T.F or NHF and company income tax, undistributed profits and withholding tax.}$

$$\begin{aligned} PI &= 6,788 + 100 - 300 - 200 - 180 - 400 \\ &= 6,888 - 1,080 \\ &= N5,808\text{million.} \end{aligned}$$

PI may be greater than, equal to or less than NI denuding on the value of transfer payments and the income earned but not received.

Disposable Income (Y_d)

Disposable Income (Y_d) is defined as an individual take-home-pa what is left in an individual's pocket after the deduction of personal income tax.

That is, $Y_d = PI - t_p$ [where t_p = personal income tax]

From our previous figures 1 he hypothetical economy we can derive disposable income as follow:

$$\begin{aligned} Y_d &= 5,808 - 250 \\ &= \text{N}5,558\text{million} \end{aligned}$$

Disposable income is the income that the individual uses in meeting his needs (consumption) and for savings.

Per Capita Income (PCI)

P.C.I.- = GNP

POP (income per head)

Suppose the population of our hypothetical economy is 10million people.

Therefore, P.C.I = GNP = 7,300
 POP 10 = ₦7,300

Worked Examples

Given the following data of the national income accounts of a hypothetical African economy;

Items	N'million
Consumption Expenditure	1,051.00
Gross private investment	320.00
Wages and Salaries	983.00
Income of self-employed	85.00
Government Subsidies	206.00
National Insurance and Security Trust fund	62.00
National Housing Fund	50.00
Rents	23.00
Exports	90.00
Imports	149.00
Personal income tax	165.00
Company income tax	56.00
Capital consumption allowance	163.00
Net income from abroad	48.00
Undistributed profits	64.00
Indirect business taxes	155.00
Government expenditure on goods and services	48.00

Dividends 60.00

You are required to determine:

1. GDP using expenditure method
2. GDP using the income approaches
3. GNP
4. NNP
5. NI
6. Personal income
7. Disposable income

Suppose the population of the country is put at 10 million people.

8. Determine the per capita income.

Solution

Factor - Income Method

S/n	Items	₦'m
1.	Wages and Salaries	983.00
2.	Income of self employed	85.00
3.	N.I.S.T.F.	62.00
4.	N.H.F.	50.00
5.	Rents	23.00
6.	Personal income tax	165.00
7.	Company income tax	56.00
8.	Capital consumption allowance	165.00
9.	Undistributed profits (u)	64.00
10.	Indirect business taxes	155.00
11.	Dividends	60.00
12.	Less Government Subsidies	(206.00)
	GDP at market prices	1,660.00

Expenditure Method

S/n	Items	N'm
1.	Consumption expenditure	1,051.00
2.	Gross private investment	320.00
3.	Exports	90.00
4.	Less Imports	(149.00)
	Net exports	(59.00)
5.	Government Expenditure	348.00
	GDP at market prices	1,660.00

3.	GNP	=	GDP plus Net income from abroad
		=	1,660 + 48
		=	N1,708million
4.	NNP	=	GNP minus capital consumption allowance
		=	1,708 163.00
		=	N1,545million
5.	NI	=	NNP minus indirect business taxes
		=	1,545 155.00
		=	N1,390million

Alternatively, NI can be obtained directly from GNP by subtracting depreciation and indirect business taxes components from the value of GNP, thus:

$$\begin{aligned}\text{NI} &= \text{GNP} - (\text{D} + \text{Tb}) \\ &= 1,708 - (163 + 155) \\ &= 1,708 - 318\end{aligned}$$

$$\text{NI} = \text{N1,390 million}$$

$$\begin{aligned}6. \quad \text{Personal Income} &= \text{National Income plus receive but not earned} \\ &\quad \text{less income earned but not received.}\end{aligned}$$

Where:

$$\begin{aligned}\text{Income received but not earned} &= \text{Government subsidies} \\ &= \text{N206 million}\end{aligned}$$

$$\begin{aligned}
&\text{Income earned but not received (IENR)} &= &\text{N.I.S.T} \\
&\text{Plus N.H.F} \\
&\text{plus undistributed profits plus company income tax} \\
& &= &62 + 50 + 64 + 56 \\
& &= &\text{N}232\text{million}
\end{aligned}$$

Therefore,

$$\begin{aligned}
&\text{Personal Income} &= &1,390 + 206 + 232 \\
& &= &\text{N}1,828\text{million}
\end{aligned}$$

7. Disposable Income (Yd) = Personal income less personal income tax
- $$\begin{aligned}
& &= &1,828 - 665.00 \\
& &= &\text{N}1,163 \text{ million}
\end{aligned}$$
8. Per capital income (PCI) = $\frac{\text{GNP}}{\text{POP}}$ = $\frac{1.708\text{million}}{10 \text{ million}}$

Test Assessment Exercise

Write short not on the following: (i) Gross Domestic Product (ii) Gross National Product (iii) Personal Income (iv) Net National Product.

3.4. National Income Accounting

The value of the Gross National Product (GNP) can be computed by using the Expenditure Approach or through the factor-income approach.

1. Expenditure Method

Table 1.1

S/n	Items	N'm
1.	Consumption Expenditure	xx
2.	Government Expenditure	xx
	Gross Capital formation	xx
	Work-in-progress (WIP)	xx
3.	Gross investment	xx
	Exports	xx

	Imports	xx	
4.	Net exports (Xn)	xx	
	GDP at current prices		xx
5.	Add Government subsidies		xx
6.	Less taxes on expenditures		(xx)
	GDP at factor cost		xxx
	GDP at current prices		xxx
	Property incomes of Nationals	xx	
	Less property incomes of Non-nationals	xx	
7.	Net property income from abroad	xx	xx
	GNP at current prices		xxx

Alternatively, the value of the Gross National Product can be computed as follows:

Table 1.2

S/n	Items		₦'m
1.	Consumption expenditure		xx
2.	Government expenditure		xx
3.	Gross private investment expenditure	xx	xx
4.	Exports	xx	
5.	Imports	xx	
6.	Net exports {(4)-(5)}	xx	xx
	GNP at market prices		xxx

2. Factor-Income Method

Table 1.3

S/n	Items		₦'m
1.	Salaries and wages		xx
2.	Self-employed		xx
3.	Dividends	xx	
4.	Undistributed profits	xx	
5.	Interest	xx	

	Returns on investment	xx	xx
6.	Rents		xx
7.	Depreciation (capital consumption allowance)		xx
8.	Indirect taxes	xx	
9.	Company income tax	xx	
10.	Withholding taxes	xx	
11.	Personal income tax (e.g. PAYE)		
	Tax (8 + 9 + 10 + 11)	xx	xx
12.	N.I.S.T.F., N.H.F., Etc		xx
13.	Subsidies		(xx)
	GNP at market prices		xxx

GNP of a Hypothetical Economy Expenditure Method.

Table 1.4

S/n	Items		₦'m
1.	Consumption expenditure	4,500	
2.	Government expenditure	600	
3.	Gross private investment expenditure	1,000	
4.	Exports	1,900	
5.	(Less) Imports	(700)	
6.	Net exports	1,200	1,200
	GNP at market prices	7,300	

3. Factor-Income Method

Table 1.5

S/n	Items		₦'m
1.	Salaries and wages	2,300	
2.	Self-employed		698
3.	Dividends	800	
4.	Interest	460	
5.	Undistributed profits	180	

	Returns on investment [(3) + (4) + (5)]	1,440	
6.	Rents		1,200
7.	Depreciation (capital consumption allowance)		260
8.	Indirect taxes	352	
9.	Company income tax	300	
10.	Withholding taxes	200	
11.	Personal income tax (e.g. PAYE)	250	
	Tax [(8) + (9) + (10) + (11)]		1,102
12.	N.I.S.T.F.,		400
13.	Less Subsidies		(100)
	GNP at market prices		7,300

3.4.1. Importance of National Income Accounts

1. It is important to have records of the transactions that take place in the economy as a whole for if appropriate classification is made, information can be derived about the annual income of that country, how it generated, distributed and expended, how the wealth of the nation is being built up, etc.
2. The information obtained in a national income account provides a basis for national economic policies. It will also help government in an attempt to maintain economic stability and prosperity and ensure an efficient distribution of economic resources as well as balanced growth.
3. The working of an economy Depends on the availability of data about aggregate transactions recorded in the national income recounts. National income accounts are designed to reveal the significant relationship between the aggregates of transactions, which play important roles in the theory of the determination of the level of economic activity such as consumption investment, general price level, etc.
4. It is useful in the study of business fluctuations and economic policies generally.
5. The analysis of a well prepared national income account will help in understanding the complex system in the economy like changes in the structure of assets and commodity prices.

6. National income account facilitates an insight into considering how and why an economy functions the way it does. This is considered important because it provides us with a greater insight into the interdependency of different sectors of the economy.
7. It is a good instrument for the policy makers both in the domestic and international sectors because decisions are usually based on past records. Any decision about the economy depends on the knowledge of the structure of the economy as its development.
8. Comparisons of the changes in the components of the economy over time and across the frontiers are made possible only by the estimates in the national income accounts.
9. Forecasts of any kind about the future events can only be made with the aid of the national income estimates. It can be used to analyse what changes are likely to occur in the economy either as a consignment of or independently of economic and political policies.
10. It was the objective of the pioneers of national income estimation to derive a measure of economic progress or economic welfare. Economic welfare and Progress to economists were matters of changes in the production and distribution of national income.

Test Assessment Exercise

Differentiate between Income-factor Method and Expenditure Method

4.0. Conclusion

The unit defines national income as the total value a country's final output of all new goods and services produced in one year. Understanding how national income is created is the starting point for macroeconomics. National income is a measure of the total value of the goods and services (output) produced by an economy over a period of time (normally a year). It also represents the total value of the primary incomes receivable within an economy less the total of the primary incomes payable by resident units. Economists have defined national income using some variations. For example, Alfred Marshall describes it as "The labour and capital of the country acting on its natural resources produce annually a certain net aggregate of commodities, material and immaterial, including services of all kinds. This is the net annual income or revenue of the country, or the national dividend"

5.0. Summary

Finally the unit concludes that national output, income and expenditure, are generated when there is an exchange involving a monetary transaction. However, for an individual economic transaction to be included in aggregate national income it must involve the purchase of newly produced goods or services. In other words, it must create a genuine addition to the 'value' of the scarce resources. For example, a transaction that involves selling a second-hand good, and which was new two years ago does not add to national income, though the original production and purchase does. Transactions which do not add value are called *transfers*, and include second-hand sales, gifts and welfare transfers paid by the government, such as disability allowance and state pensions.

6.0. Tutor-Marked Assignment

1. Discuss in detail the various method we can use to measure national income.
2. Differentiate between Gross national income and Gross domestic product, do you think there is similarities between them.
3. Explain the circular flow of income in a thrift economy.

7.0 References/Further Readings

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UNIT 2 CONSUMPTION, SAVINGS AND INVESTMENT ANALYSIS

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Consumption Analysis
 - 3.2 Theories of Consumption
 - 3.3 Relevance of the Study of Consumption to Business Decisions
 - 3.4 Savings Analysis
 - 3.5 Investment Analysis.
 - 3.6 Propensity to Consume and Save
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 Introduction

Savings according to Keynesian economics, the amount left over when the cost of a person's consumer expenditure is subtracted from the amount of disposable income that he or she earns in a given period of time.

By consumption we mean the satisfaction of our want by the use of commodities and services. When we use a commodity, we really use its want satisfying quality of utility. For example when we take a glass of water to quench our thirst we are said to consume water. When we are sitting on chair in the office, we are consuming the chairs. A person is sick, he calls in a Doctor, and he has consumed the Doctor's services. Thus, taking a glass of water means it is actual consumption of water but in case of chair and Doctor's Services, consumption refer to utilization of chair of Doctor's services, consumption refer to utilization of chair of Doctor's services.

Therefore consumption can be defined as to make use of any commodity or service for the satisfaction of our wants is called consumption, consumption means destruction of utility.

Finally, in economics, investment is related to saving and deferring consumption. Investment is involved in many areas of the economy, such as business management and finance whether for households, firms, or governments.

2.0 Objectives

At the end of this Unit, you should be able to

- Understand the meaning of Consumption and its Components
- Understand the meaning of Savings and its Components
- Understand the meaning of Investment and its Components.
- Know how to derive and calculate Consumption, Savings and Investment Function
- Know the meaning of Propensity to consume and Save with its Calculation.

3.0 Main Content

3.1 Consumption Analysis

This is the aggregate consumption and can be determined by subtracting aggregate savings from national income. The aggregate consumption in any economy depends on a number of factors. These include:

1. **Government fiscal policy:** A reduction in tax rate will increase disposable income and consequently the consumption of the people.
2. **Expected future change in income:** If the income level is expected to be higher in the future relative to the present income level, then people will tend to consume more out of their present income.
3. **Credit facilities:** This is the act of enjoying a particular commodity which is not outrightly or fully paid for but whose full payment can be made at a future time. The more readily available these facilities are, the higher will be the consumption level of the household.

4. **Inherited wealth:** The higher the environmentally inherited wealth by the community or society the wealthier it becomes and the higher will be their level of consumption all things being equal.
5. **Population distribution with respect to age:** The aged and the infants are prone to consuming more than the active and productive age of the population. Hence, the higher the population of the aged and the infants any society the higher will be their propensity to consume from their income.
6. **Societal attitudes towards current savings:** The more favourable disposed the society is towards present savings and investment, the lower will be the consumption level.

From the above stated factors determining consumption, it implies that consumption is dependent on disposable income. And that consumption has a positive correlation with income levels (that is the higher the disposable income the higher will be the consumption level all things being equal). Thus, consumption is the dependent variable, and disposable income is independent variable.

This can be symbolically written as:

$$C = f(Y_d)$$

$$C = b_0 + b_1 Y$$

$$b_0 > 0$$

$$b_1 > 0$$

f = Function income

Y_d = Disposable income

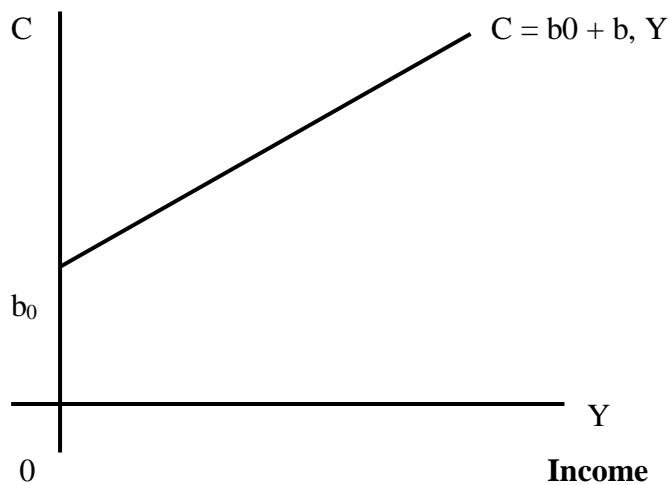
B_0 = Autonomous Consumption

b_1 = Marginal Propensity to Consume.

NOTE: b_0 and b_1 have values greater than zero.

Figure 2

A GRAPH SHOWING CONSUMPTION FUNCTION



3.2 Theories of consumption

There are four different theories that have attempted to understand consumption behaviour in the long and in the short run.

These are:

1. Absolute income hypothesis
2. Relative income hypothesis
3. Permanent income hypothesis
4. Life cycle hypothesis

The common feature of all these theories is that they seek to explain what determines consumption in both the long and short runs. And they try to also explain what happens to the consumer if his income changes. But this latter is common just to the first two theories.

1. Absolute income hypothesis

Aggregate consumption is determined by the aggregate absolute income. There is a positive correlation between income and consumption, i.e. the higher the income, the higher the consumption, and the lower the income, the lower will be consumption. It implies that total real

income is relative to people and time. What happens when income changes? There will be a positive movement of consumption as income increases/changes. The average propensity to consume (APC) is always positive. In most cases it is near one, e.g. 0.7 or 0.8 but in some cases it is one where money is not hoarded. Marginal propensity to consume (MPC) is the ratio of change in consumption. MPC decreases when income increases while marginal propensity to save (MPS) increases. In other words, MPC and MPS are the fraction of income that goes to consumption and saving respectively. If APC is 1, MPC may depend on the size of the income. The fundamental psychological law is that men are disposed, as a rule and on the average, to increase their consumption as their income increases, but not by as much as the increase in their income.

2. Relative income hypothesis

The earlier consumption theory was criticised on the ground that consumption does not depend absolutely on income; other factors can have an influence on it. The first attempt to develop a consumption theory to counteract the Keynesian absolute income hypothesis is the relative income hypothesis formulated by James Dusenberry. Dusenberry observed that differences in consumption behaviour as explained by Keynes on the basis of absolute income are not an exhaustive analysis. This is because such could be explained by differences in the level of relative income, i.e. income is related to what one is accustomed to. For instance, individuals always need to keep up with others. When their income reduces or increases, they still maintain their consumption, even if it would amount to consuming past saving or de- saving.

3. Permanent income hypothesis

The permanent income hypothesis was developed by the father of monetary economics, Milton Friedman. He considers income and consumption in two components, viz.

- i. Permanent income and permanent consumption
- ii. Temporary/Transitory income and temporary consumption

Permanent income is the income that the consumer is certain of getting. It is that income that depends on a particular period, e.g. weekly or yearly. Permanent consumption is that consumption that depends on permanent income. While temporary income is what comes in the

form of income apart from permanent income, i.e. unexpected income, transitory consumption is that consumption that depends on temporary income. According to Freidman, permanent income determines permanent consumption and temporary income determines transitory consumption.

4. Life cycle hypothesis

The theory was propounded by Ando and Modigliani. The theory explains changes in consumption in terms of age. At the age of 0-16, consumption is autonomous. At the age of 16-63, consumption increases due to biological factors and the fact that one is employed, i.e. one earns an income. Beyond the age of 63 consumption declines because people are out of job and biologically forced to consume less.

3.3. Relevance of the study of consumption to business decisions

The following may be regarded as some of the relevance of the study of consumption to the taking of business decisions:

1. Profit determination: Producers can use their knowledge of consumption to predict the general level of consumption of society and, hence, of their product; thereby predicting their level of profit indirectly.

2. Determination of level of output: The higher the consumption of a society, the higher the need for output for the society. Therefore the knowledge of consumption will help business decision makers to determine their level of output.

3. Determination of investment: If the aggregate consumption of a country is high, there is a need for higher investment in the country and vice versa.

Test Assessment Exercise

Define Consumption and discuss its implication on different household in the country.

3.4 Savings Analysis

This is income not spent on goods and services for current consumption. It is the act of abstaining from consumption. Savings can-be done by the keeping your money income in the bank (financial investment) or by the I/nspent money income to acquire stocks (real investment).

Aggregate savings can be defined as the summation of households savings (S_h) and firms savings (S_f) or undistributed profits of the firms (π_u)

Symbolically written as:

$$S = S_h + S_f \text{ or}$$

$$S = S_h + \pi_u$$

3.4.1. Determination of Savings function

Given national income as $Y = C + S$

and Consumption function as $C = b_0 + b_1 Y$

Therefore $S = Y - (b_0 + b_1 Y)$

$$S = Y - b_0 - b_1 Y$$

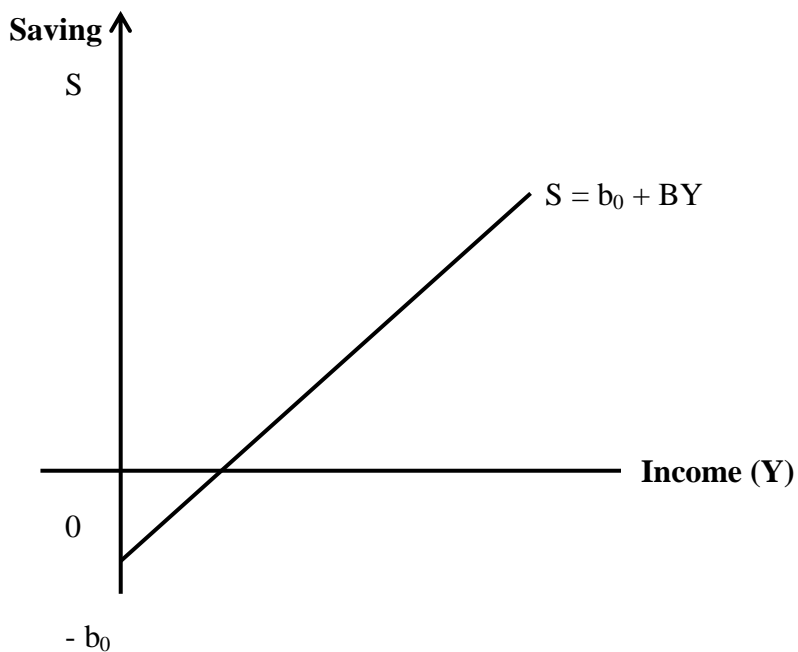
$$S = -b_0 + (1 - b_1) Y$$

$$S = -b_0 + BY$$

Where $[BY = (1 - b_1)]$

Figure 3

A GRAPH SHOWING THE SAVINGS FUNCTION



3.4.2. Determinants of Savings

1. **Income level:** The higher the levels of income the higher will be the amount of savings all things being equal.
2. **Interest rate:** the higher the interest rate the more people will be willing and attracted to save. This factor is a very strong determinant to the interest paid on money saved is the opportunity cost of the money spent.
3. **Government fiscal policy:** The fiscal policy of the government of the affect the disposable income of the people. If, for example, there, is an increase in taxation, it will lead to a decrease in people's disposable income and consequently leads to a reduction in the level of savings (people will be constrained from saving because of the smaller income at their disposal)
4. **Habits and environmental factors:** Some people save out of habit cultivated in saving towards certain ceremonies or occurrence like burial ceremonies or children's school fees. The efficiency of the banking institutions can equally encourage savings. Savings and income are positively correlated, that is $S = -a + bY$ (where $b > 0$).

Test Assessment Exercise

Define Savings, list and explain all the determinant of Savings.

3.5. Investment

Investment in economics can be defined as the act of producing capital goods which are not for immediate consumption. It may be defined as net additions to stocks.

3.5.1. Types of investment

1. **Autonomous investment:** This is an exogenously determined investment, that is $I = I_0$
2. **Induced investment:** This is an endogenously, determined investment, that is $I = I_0 + vY$ defining investment as a function of income
3. **Net investment:** Defined as the gross investment that occurs in an economy less capital consumption allowance (depreciation).

3.5.2 Determinants of Investment

1. **Level of national income:** Income and investment are positively related.

2. **Cost of funds (lending rate or interest rate):** The higher the cost of funds (interest rate) the lower the volume of investment in an economy
3. **Technical progress (technological changes):** The higher the rate of technological progress the more profitable it becomes to undertake more investment in order to produce new types of goods by using new and more economical production techniques.
4. **Government fiscal policies in respect of minimum wages and salaries, and taxes:** The volume of new investment undertaken in an economy will be determined by the policy of the government regarding these costs.
5. **Business climate:** In the view of the business investors, if the climate is perceived hostile no matter how low the lending rate (cost of funds) investment level may not appreciate.

3.5.3. MARGINAL EFFICIENCY OF INVESTMENT

Where MEI = Marginal Efficiency of Investment The MEI is the Investment demand function that shows the relationship between interest rate and investment decision. It reveals that investment.

Figure 4

A GRAPH SHOWING THE RELATIONSHIP BETWEEN INTEREST RATE AND INVESTMENT DEMAND

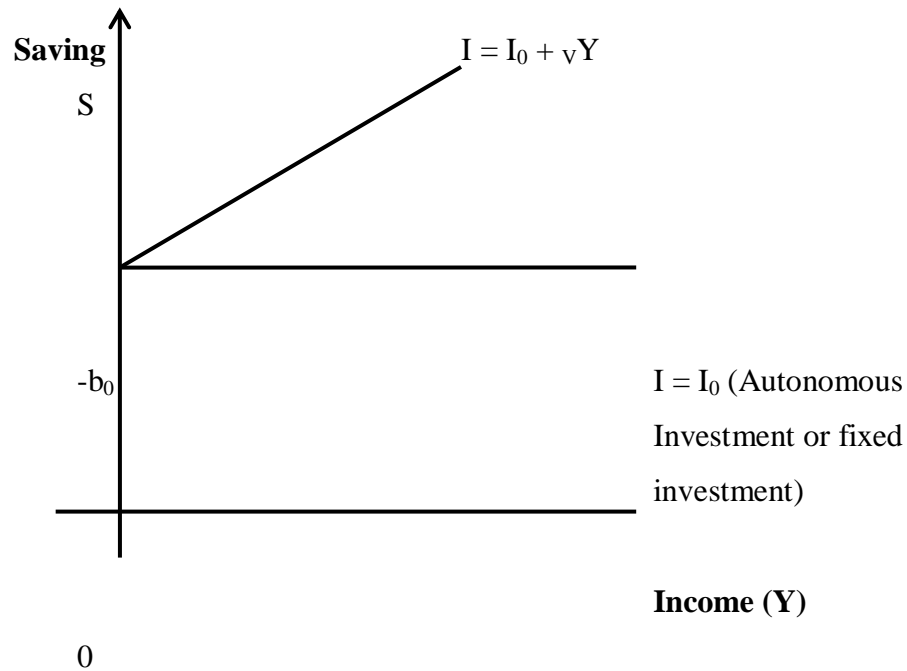
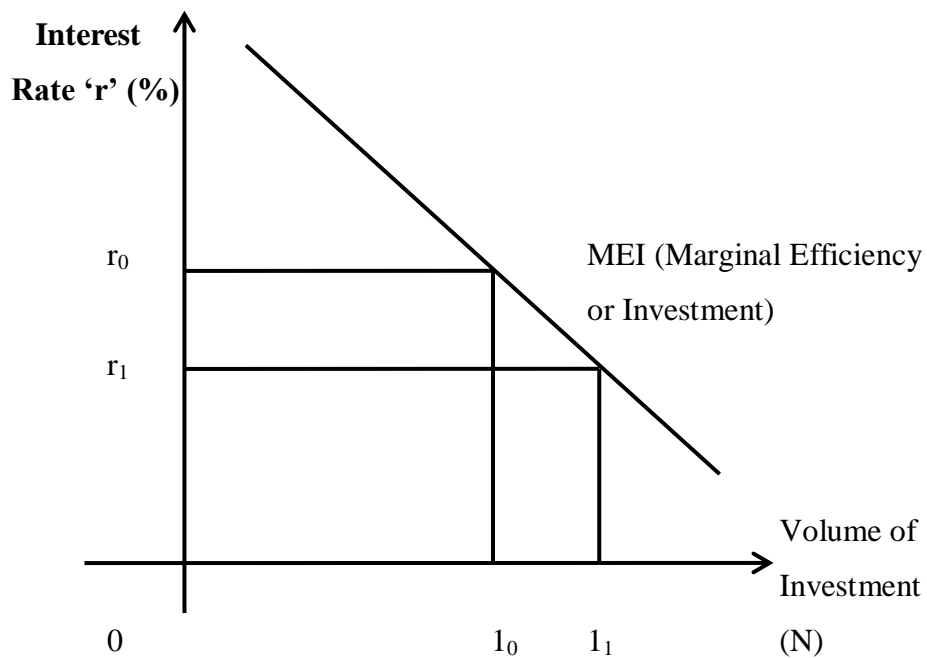


FIGURE 5

A GRAPH SHOWING THE INVESTMENT DEMAND (MEI) AND INTEREST RATE



Volume of investment is inversely related to interest rate.

That is, $MEI = I$

This means that as interest rate falls, the demand for investment increase and vice versa, *ceteris paribus*.

Test Assessment Exercise

Define Investment and discuss the analysis of investment.

3.6. PROPENSITY TO CONSUME AND SAVE

Propensity to consume, in economics, the proportion of total income or of an increase in income that consumers tend to spend on goods and services rather than to save. The ratio of total consumption to total income is known as the average propensity to consume; an increase in consumption caused by an addition to income divided by that increase in income is known as the marginal propensity to consume. Because households divide their incomes between consumption expenditures and saving, the sum of the propensity to consume and the propensity to save will always equal one.

3.6.1 Average Propensity to Consume (APC)

This is defined as the proportion of given total income consumed by the society. Simply put, it is defined, as the ratio of consumption to income.

That is,

$$APC = \frac{C}{Y}$$

$$0 < APC < 1 \quad (\text{provided } 0 < C < Y)$$

$$APC = 1 \quad (\text{as } C = Y),$$

$$APC < 1 \quad (\text{as } C > Y) - \text{dissaving}$$

Under normal circumstance, the Average Propensity to consume ranges between zero and unitary.

3.6.2 Average propensity to save (APS)

The proportion of the given income saved by the populace. It can be defined as the ratio of savings to income level. That is,

$$APS = \frac{S}{Y}$$

$$0 < APS < 1 \text{ (provided } 0 < S < Y \text{)}$$

$$APS = 1 \text{ (as } S=Y \text{)}$$

$$APS = 0 \text{ (as } S = 0 \text{) - zero savings}$$

3.6.3 Marginal Propensity to Consume (MPC)

Marginal Propensity to consume is defined as the ratio of the change in consumption to the change in income that necessitated it. That is,

$$MPC = \frac{\Delta C}{\Delta Y} \text{ or } MPC = \frac{dC}{dY} \text{ (infinitesimal change).}$$

Where

$$\Delta C = \text{Change in consumption}$$

$$\Delta Y = \text{Change in income}$$

$$0 < MPC < 1 \text{ (Marginal Propensity to consume ranges between zero and unitary)}$$

3.6.4 Marginal propensity Save

Marginal propensity to Save is the ratio of the change in savings change in income that necessitated it. It is the fraction of an increase income that is saved..

$$MPS = \frac{\Delta S}{\Delta Y} \text{ or } MPS = \frac{dS}{dY} \text{ (Infinitesimal change)}$$

Where

$$\Delta S = \text{Change in savings}$$

$$\Delta Y = \text{Change in income}$$

$$0 < MPS < 1 \text{ (MPS ranges between zero and unitary)}$$

$$MPS + MPC = 1$$

$$MPS = 1 - MPC$$

Test Assessment Exercise

Briefly write short note on the following: (i) Average and Marginal Propensity to Save, (ii) Average and Marginal Propensity to consume.

4.0 Conclusion

Savings is the Process of setting aside a portion of current income for future use, or the resources accumulated in this way over a given period of time. Savings may take the form of bank deposits and cash holdings or securities. However, Consumption is a major concept in economics and is also studied by many other social sciences. Economists are particularly interested in the relationship between consumption and income, and therefore in economics the consumption function plays a major role. Finally, investment is an asset or item that is purchased with the hope that it will generate income or appreciate in the future. In an economic sense, an investment is the purchase of goods that are not consumed today but are used in the future to create wealth.

5.0 Summary

Consumption, savings and investment are three key terms in national income accounting and they vividly take into consideration all the day to day activities of different household because everyone in an household consume, invest and also save for present and future uses.

6.0 Tutor-Marked Assignment

1. Differentiate between Consumption, Investment and Savings
2. List and explain all the determinant of Savings and Investment.
3. Write short note on the following;
 - i. Marginal investment of Capital
 - ii. Induced Investment
 - iii. Propensity to Consume.

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UNIT 3 MATHEMATICAL CALCULATION OF NATIONAL INCOME

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 National Income of Determination of Aggregate Demand.
 - 3.1.1 Withdrawal – Injection Approach
 - 3.2 Aggregate Demand Vs Aggregate Supply
 - 3.3 Mathematical Determination of Equilibrium of National Income
 - 3.3.1 Open Economy (Economy with External Sector)
 - 3.3.2 Theory of Multiplier
 - 3.3.3 The Multiplier Process (Closed Economy)
 - 3.4 Acceleration Principle
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 Introduction

A variety of measures of national income and output are used in economics to estimate total economic activity in a country or region, including gross domestic product (GDP), gross national product (GNP), net national income (NNI), and adjusted national income (NNI adjusted for natural resource depletion). All are specially concerned with counting the total amount of goods and services produced within some "boundary". The boundary is usually defined by geography or citizenship, and may also restrict the goods and services that are counted. For instance, some measures count only goods and services that are exchanged for money, excluding bartered goods, while other measures may attempt to include bartered goods by imputing monetary values to them.

2.0 Objectives

At the end of this Unit, you should be able to

- Understand the meaning of National Income Determination of Aggregate Demand
- Understand the concept of Aggregate Demand and Supply Method National Income
- Understand the Mathematical Calculation of Equilibrium of National Income
- Know the meaning of Acceleration Principle

3.0 Main Content

3.1 National Income Determination of Aggregate demand

The demand for goods and Services provided in an economy is regarded as the aggregate demand, that is, the national expenditure on goods services produced in a Country. This national expenditure consists of private consumption expenditure (C), government .consumption expenditure and investment expenditure on capital goods (I).

Symbolically written as:

$$Y = C + I + G \text{ (aggregate demand)}$$

When the economy is in equilibrium, the aggregate demand must be equal to the aggregate supply of goods and services. When this happens aggregate supply of final goods and services will equally be Y (national income). Let us look at it again from the income earned Side.

$$Y = C + S + T$$

Where

$$\begin{aligned} S &= \text{Total savings in the economy} \\ YC &= S = I \end{aligned}$$

Therefore

$$\begin{aligned} T &= \text{Net tax receipts} \\ C &= \text{Consumption of final products} \end{aligned}$$

That is, the national income is spent on consumption, saving and taxes.

Therefore,

$$Y = C + I + G - C + S + T \dots\dots\dots (1)$$

This means that the aggregate demand by expenditure on final goods and services is equal to the incomes earned and spent.

FIGURE 6

A GRAPH SHOWING THE COMPONENTS OF AGGREGATE DEMAND

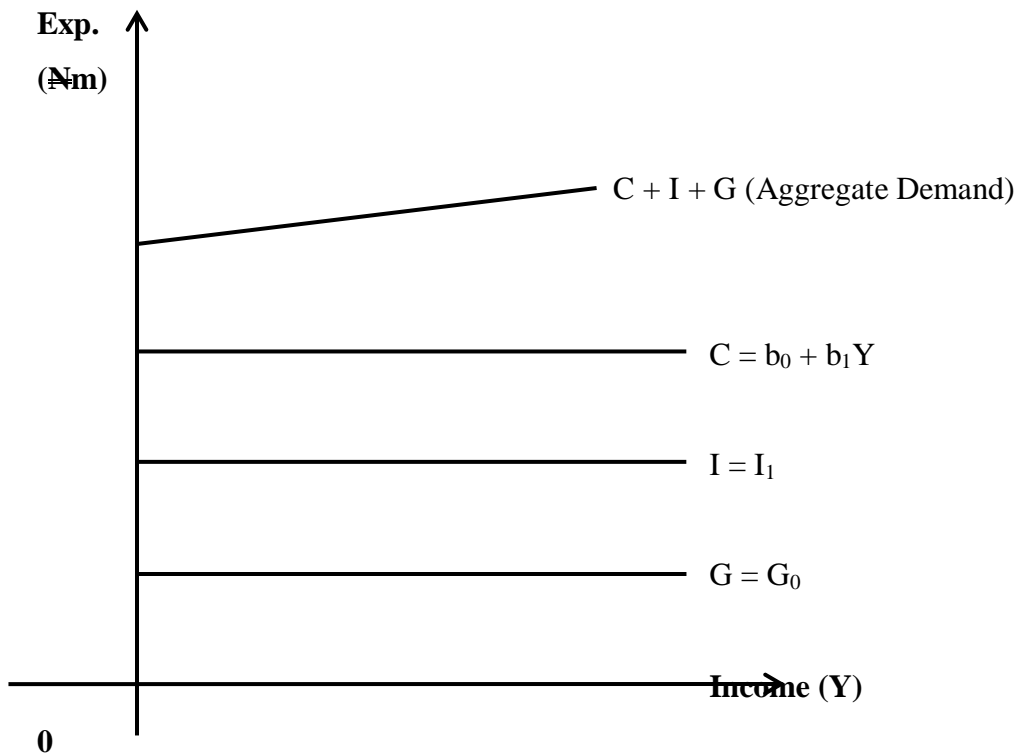
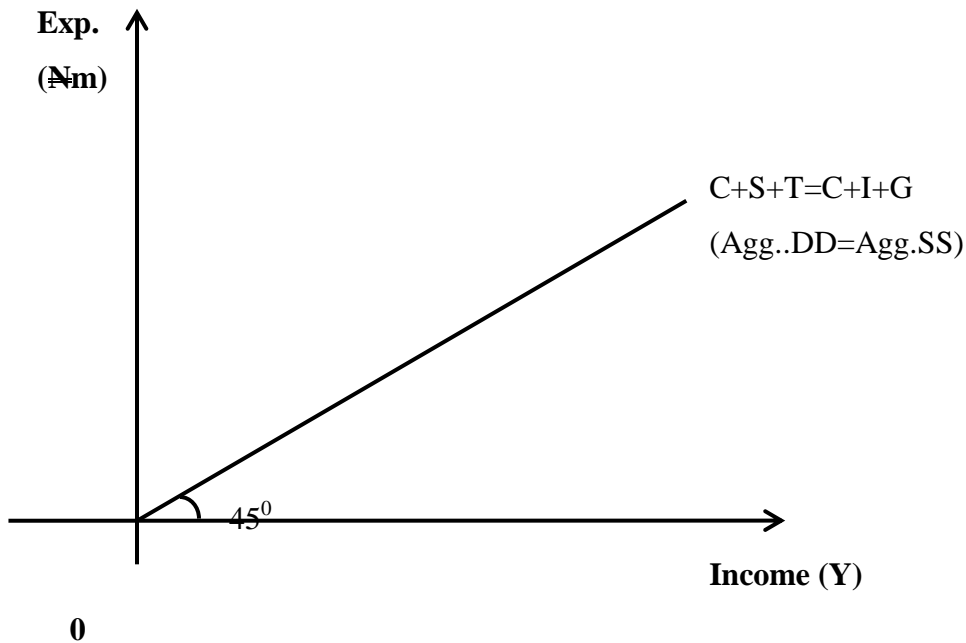


FIGURE 7

A GRAPH SHOWING THE AGGREGATE DEMAND AND SUPPLY EQUALITY



3.1.1. Withdrawal-Injection approach

Under full employment condition, the volume of savings is always equal to investment for the economy to be at equilibrium.

Proof; From equation (I) above

$$C + I + G - C + S + T - C$$

$$I + G = S + T$$

Suppose government expenditure is entirely financed by, taxes collected then

$$G = T$$

Therefore,

$$S = I \text{ (Savings - Investment identify)}$$

Alternatively, it can be proved using the structural equation of economy (closed economy) without government sector.

$$Y = C + I$$

$$Y - C = I$$

Also

$$Y = C + S \quad .$$

$$Y - C = S \quad \text{That is } I=S$$

Also;

$$C + S = C + I + G$$

$$S = I + G$$

Similarly, $S = Y - C$

Therefore $Y - C = I + G$

Given $C = b_0 + b_1 Y$

$$I = I_0 + vY$$

$$G = G_0$$

$Y = C + I + G$ becomes

$$Y - (b_0 + b_1 Y) = I_0 + vY + G_0$$

$$Y - b_0 - b_1 Y = I_0 + vY + G_0$$

$$Y - b_1 Y - vY = b_0 + I_0 + G_0$$

$$Y (1 - b_1 + v) + b_1 + I_0 + G_0$$

$$Y_{eq} = \frac{b_1 + I_0 + G_0}{1 - b_1 - v}$$

$$Y_{eq} = \frac{1}{1 - b_1 - v} [b_1 + I_0 + G_0]$$

Where:

$v =$ marginal propensity to invest, that is, the rate at which investment grows as Income Increases.

$b_1 =$ marginal propensity to consume (MPC)

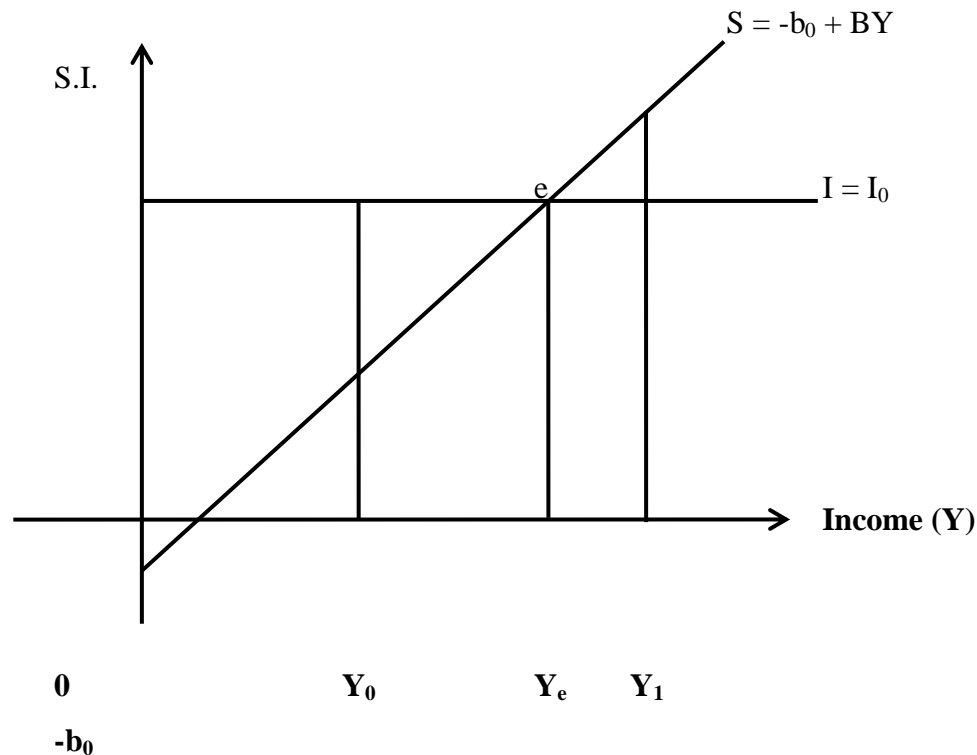
$(b_1 + v) =$ marginal propensity to spend (MPS)

$$\frac{1}{(1 - b_1 + v)} = \frac{1}{1 - MPS} = \text{value of income multiplier (k)}$$

FIGURE 8

A GRAPH OF WITHDRAWAL EQUAL TO INJECTION

W=J Approach



From the above figure, national income is at equilibrium where savings curve intersects the investment curve (point 'e'). At this point where saving is equal to investment national income is determined at equilibrium (Y_e).

This is stable position for the economy and no other income levels will yield more stability in the system. For example, at income level (Y_1) investment is greater than savings which implies that there is more consumption of goods and services than actually produced, hence firms will invest more and employ more leading to an increase in income and savings until the equilibrium income level is attained. On the other hand, if the economy is on income level (Y_2) firm, will reduce their production and employment leading to a reduction in national income until the stable equilibrium level (Y_e) is reached. In summary therefore, we can state specifically that the only equilibrium level of national income is where saying is equal to investment (Y_e).

3.2. Aggregate Demand -Aggregate Supply Method

The Keynesian cross shows:

- That production always generates an equivalent amount of income.
- That planned expenditure may exceed or be less than income.

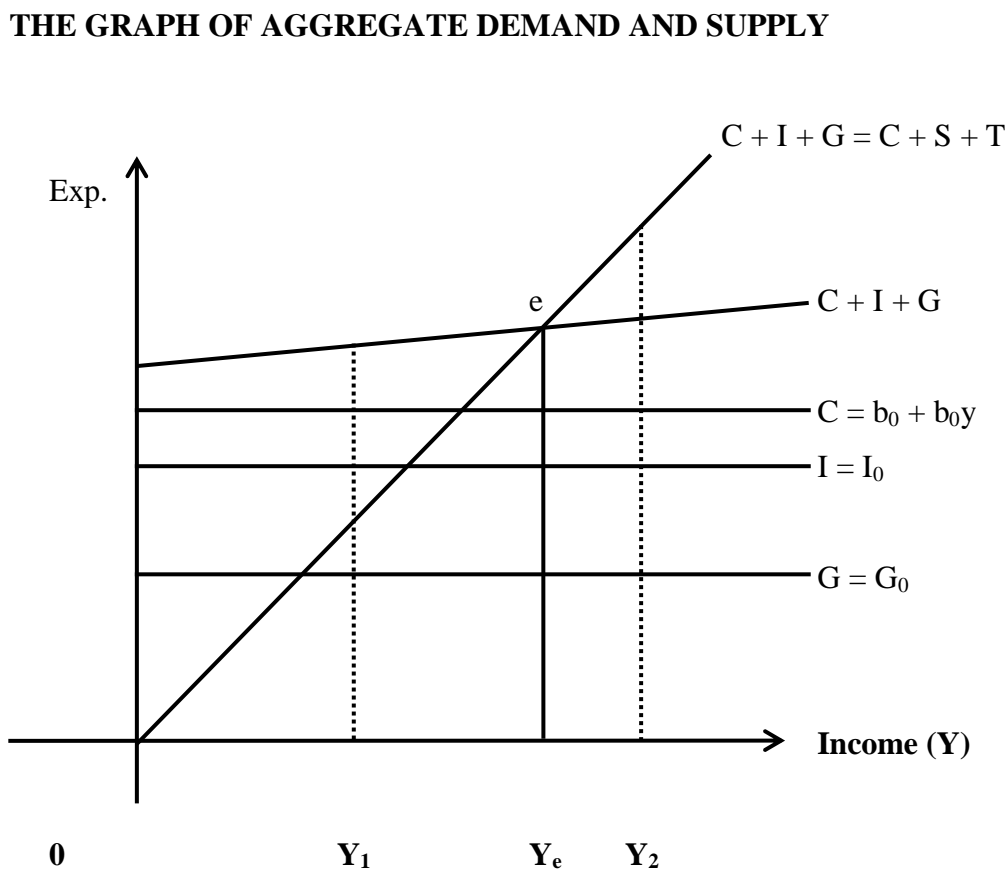
In a closed economy where the total value of production or expenditure is the summation of consumption expenditure 'C', government expenditure 'G' and investment expenditure 'I'

$$Y = C + I + G \dots\dots\dots (1)$$

Given that the total expenditures must be equal to the total income generated in the economy, that is,

$Y = C + S + T \dots\dots\dots (2)$, therefore, the sum of consumption, savings and taxes must always be equal to the sum of consumption expenditure, government expenditure and actual investment expenditure. That is, $Y = C + I + G - C + S + T$

FIGURE 9



The intersection between aggregate demand and aggregate supply yield a stable equilibrium income in the economy. For any income level below 'Ye' such as 'YI' aggregate demand exceeds the total goods or planned expenditure in the economy which implies that there is excess supply of money - given the excess demand, price will start to rise and hence investors will increase their output of goods and services in the economy. This will eventually lead to increase in national income until the equilibrium level 'Ye' is attained. Of course, the reverse holds when the income level is at Y₂ (aggregate demand is less than aggregate supply). The income level Ye is the only level of income that equates aggregate demand to aggregate supply hence it is the stable equilibrium nation income.

3.3. Mathematical Determination of Equilibrium of National income

The equilibrium national income can be established in a general form by considering a simple macro model of a Keynesian economy involving the consumption function and investment function as follow:

$$Y = C + I$$

$$C = b_0 + b_1 Y$$

$$I = I_0$$

Where $I = I_0$ an autonomous investment which is independent of disposable income.

To solve for the equilibrium national income in this model we have to construct the reduced form of the model as follow:

$$Y = C + I$$

$$Y = b_0 + b_1 Y + I_0$$

$$Y = b_1 Y + b_0 + I_0$$

$$Y (1 - b_1) = b_0 + I_0$$

$$Y_e = \frac{b_0 + I_0}{1 - b_1}$$

$$I - b_1$$

$$= \frac{1}{1 - b_1} [b_0 + I_0]$$

$$I - b_1$$

Where the equilibrium national income that will keep the economy stable is

$$\left(\frac{1}{1 - b_1} \right)$$

($b_0 + I_0$),

Where $\left(\frac{1}{1 - b_1} \right)$ = the income multiplier (k)

$$1 - b_1$$

$$I - b_1$$

Withdrawal = Injection (W=J) Approach

$$Y = C + S$$

$$Y - C = S \text{ (Where } S = I_0 \text{)}$$

$$C = b_0 + b_1 Y$$

$$Y - b_0 - b_1 Y = I_0$$

$$Y (1 - b_1) = b_0 + I_0$$

$$Y_{eq} = \frac{1}{1 - b_1} [b_0 + I_0]$$

$$I - b_1$$

Numerical Example

Given a simple macro-economic model of the form

$$Y = C + I$$

$$C = 100 + 0.60Y$$

$$I = \text{N}200 \text{million.}$$

Determine the equilibrium national income

Solution

$$Y = C + I$$

$$Y = 100 + 0.60Y + 200$$

$$Y - 0.60Y = 100 + 200$$

$$(1 - 0.60) Y = 300$$

$$Y_{eq} = \left(\frac{1}{1 - 0.60} \right) 300 = \left(\frac{1}{0.40} \right) 300$$

$$Y_{eq} = 2.5(300) = \text{N}750 \text{million}$$

This income level that keeps the economy stable is N750million (which is the equilibrium national income). Now let us relax some of the assumptions of the Keynesian model by allowing investment to grow as a function of income and incorporating government sector into the closed economy model.

$$Y = C + I + G$$

$$C = b_0 + b_1 Y -$$

$$I = I_0 + vY$$

$$G = G_0$$

To determine the equilibrium national income we follow the following steps:

$$Y = C + I + G$$

$$Y = b_0 + b_1 Y + I_0 + vY + G_0$$

$$(1 - b_1 - v) Y = b_0 + I_0 + G_0$$

$$Y_{eq} = \frac{1}{(1 - (b_1 + v))} [b_0 + I_0 + G_0]$$

Question

Consider the model with the following structural equations:

$$Y = C + I + G$$

$$C = b_0 + b_1 Y_d$$

$$Y_d = Y - \pi_u - T$$

$$\pi_u = \pi_{uo}$$

$$T = T_0$$

$$I = I_0$$

$$G = G_0$$

Determine:

1. The equilibrium national income of the economy, and
2. The income multiplier.

Solution

To determine the equilibrium national income we observe the following steps:

$$Y = C + I + G$$

$$Y = b_0 + b_1 Y_d + I + G$$

$$\begin{aligned}
Y &= b_0 + b_1 [Y - \pi_u - T] + I + G \\
Y &= b_0 + b_1 [Y - \pi_{uo} - T_0] + I_0 + G_0 \\
Y &= b_0 + b_1 Y - b_1 \pi_{uo} - b_1 T_0 + I_0 + G_0 \\
Y - b_1 Y &= b_0 - b_1 \pi_{uo} - b_1 T_0 + I_0 + G_0 \\
(1 - b_1) Y &= b_0 - b_1 (\pi_{uo} + T_0) + I_0 + G_0 \\
Y_{eq} &= \frac{1}{1 - b_1} [b_0 - b_1 (\pi_{uo} + T_0) + I_0 + G_0]
\end{aligned}$$

Interpretation of Results

The equilibrium equation shows that the national income equilibrium is inversely or negatively related to business savings (undistributed profits ' π_u ') and taxes because they have reducing effects on disposable income.

But autonomous investment 'I₀' and government expenditure 'G₀' are both positively related to the equilibrium national income showing (that as government expenditure and investment increases, equilibrium income will also increase. The magnitude of the increase in equilibrium national income depends on the value of a nation's income multiplier (k).

3.3.1. Open Economy (Economy with external sector)

The major contribution of the Keynesian theories was the role given to government to maintain the aggregate demand through the use of government expenditure (injections) and taxes (withdrawals or leakages).

In this model the sum of income that is available to the whole economy is equal to the sum of expenditures in the economy

Symbolically written as:

$$Y = C + I + O + X - M$$

Where:

$$\begin{aligned}
X &= \text{Volume of exports} \\
M &= \text{Volume of imports} \\
(X - M) &= \text{Net export (X M } \geq 0 \text{ as } \leq M)
\end{aligned}$$

Given the structural form of an open economy

$$Y = C + I + G + X - M \dots\dots\dots (1)$$

$$X = b_0 + b_1 Y_d \dots\dots\dots (2)$$

$$Y_d = Y - \pi_u - T \dots\dots\dots (3)$$

$$\pi_u = \pi_{u0} \dots\dots\dots (4)$$

$$T = T_0 + t_Y \dots\dots\dots (5)$$

$$I = I_0 + vY \dots\dots\dots (6)$$

$$G = G_0 \dots\dots\dots (7)$$

$$X = X_0 \dots\dots\dots (8)$$

$$M = M_0 \dots\dots\dots (9)$$

The equilibrium national income can be determined by substituting equations (2) to (9) into equation (1) and evaluating-the reduced form:

$$Y = C + I + G + X - M$$

$$Y = b_0 + b_1 Y_d + I + G + X - M$$

$$Y = b_0 + b_1 (Y - \pi_u - T) + I + G + X - M$$

$$Y = b_0 + b_1 (Y - \pi_u - tY) + I + G + X - M$$

$$Y = b_0 + b_1 Y b_1 \pi_{u0} b_1 T_0 b_1 tY + I_0 + vY + G_0 + X_0 - M_0$$

$$Y = b_1 Y b_1 tY + vY = b_0 b_1 \pi_{u0} b_1 T_0 + I_0 + vY + G_0 + X_0 - M_0$$

$$Y b_1 Y + b_1 tY + vY = b_0 b_1 \pi_{u0} b_1 T_0 + I_0 + G_0 + X_0 - M_0$$

$$(I - b + b_1 - v) Y = b_0 b_1 \pi_{u0} b_1 T_0 + I_0 + G_0 + X_0 - M_0$$

$$Y_{eq} = \frac{1}{[I - b_1 (I - t)v]} [b_0 b_1 \pi_{u0} b_1 T_0 + I_0 + G_0 + X_0 - M_0]$$

$$\text{The value of income multiplier (k)} = \frac{1}{[I - b_1 (I - t)v]}$$

Interpretation of Results

This result shows that equilibrium national income is negatively related to business savings (undistributed profits) and taxes because they reduce disposable income. But investment and government expenditure are positively related to national income showing that as investment and

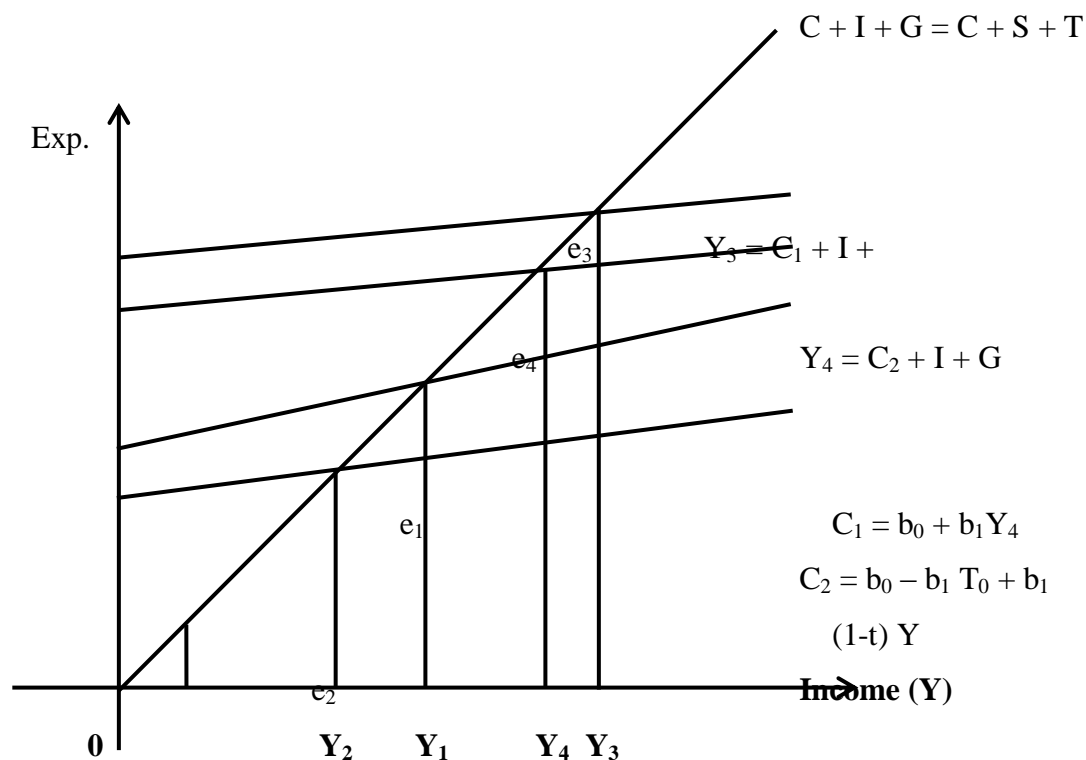
government expenditure increase equilibrium national income will also increase by the magnitude of the income multiplier.

The net effect of changes in government expenditure and investment on national income depends on whether government expenditure (G_0) exceeds (or falls below) taxes (T).

Furthermore, it shows that an income tax imposed on both individuals and business (even though a function of income) will reduce the consumption level of the economy and hence tax is spent by the government. This can be demonstrated graphically as following:

FIGURE 10

GRAPH SHOWING THE EFFECT OF INCOME TAX ON CONSUMPTION



The figure above shows the effect of income tax on consumption and income. The level of consumption without any income tax is represented by the consumption line $C_1 = b_0 + b_1 Y_d$. Given this level of consumption and subsequent investment and government expenditure we have an aggregate demand $Y_3 = C_1 + I + G$, so that the new equilibrium national income is Y_3 .

Some government cannot undertake any expenditure without imposition of tax that yields tax revenue, the national income equilibrium level Y_3 unattainable, consequently, government imposes an income tax which affects the consumers disposable income and hence the level of consumption.

It is as a result of this income tax that the consumption level now falls to $C_2 = b_0 - b_1 T_0 + b_1 (I - t)$ Y which is less than the consumption level C_1 . With additional investment and government expenditure the new aggregate demand stands at $Y_4 = C_2 + I + G$ and hence the new equilibrium national income from Y_3 to Y_4 is due to leakages in the economy as a result of income tax.

3.3.2. Theory of Multiplier

The multiplier is defined as the ratio of the change in national income to the change in the expenditure that necessitated it. The change in expenditure may come, for example, from new government spending arises in exports or from households consumption expenditure accompanied by a reduction in household savings. All these may necessitate a change in national income.

The multiplier may be defined as amplified effect of a change in autonomous expenditure on national income. Its value shows how a national income will be increased as a result of an increase in, for example, autonomous investment.

The multiplier process is a change in any of the component of aggregate demand which sets in motion a process that further increase aggregate demand; It is a process where aggregate demand is multiplied over several times. The value of the multiplier depends on the values of the Marginal Propensity to Consume (MPC) and the Marginal Prop to Save (MPS).

Symbolically, the multiplier is defined thus:

$$K = \frac{\Delta Y \text{ (necessitated by autonomous investment)}}{\Delta I}$$

or

$$K = \frac{\Delta Y}{\Delta G} \text{ (necessitated by government expenditure)}$$

Where:

K = the multiplier

The multiplier can be obtained by taking, the reciprocal of the marginal propensity to save (MPS), that is.

$$K = \frac{1}{I - \Delta C} = \frac{1}{MPS} \quad \text{OR}$$

$$K = \frac{1}{I - \Delta C} = \frac{1}{I - B} \quad (\text{Where: } \Delta C = B) \quad \Delta Y$$

The value of the multiplier is always greater than unitary, because value of the marginal propensity to save is always less than one, that is, $K > 1$ as $0 < MPS < 1$.

The smaller and the larger the-Marginal Propensity to Save (MPS) and Marginal Propensity to Consume (MPC) are respectively the bigger the value of the multiplier (K).

3.3.3 The Multiplier Process (Closed Economy)

Given a simple macro-economic model of a closed economy as:

$$Y = C + I + G$$

$$C = 20 + 0.8Y$$

$$I = \text{N}40\text{million}$$

$$G = \text{N}80\text{million}$$

Suppose investment expenditure increased by 50 percent. That multiplier effect will this change in autonomous investment have on the national income.

Solution

$$Y = C + I + G$$

$$Y = 20 + 0.8Y + 40 + 80$$

$$Y = 0.8Y + 140$$

$$Y - 0.8Y = 140$$

$$(1 - 0.8)Y = 140$$

$$Y = \frac{1}{1 - 0.8} (140)$$

$$= \frac{1}{0.2} (140)$$

$$= 5(140)$$

₦700 million

$$\text{The Multiplier (K)} = \frac{1}{1 - 0.8} = 5$$

The process of multiplier in this economy is that a one naira increase in autonomous expenditure will result in a five naira increase in the national income.

Therefore when the autonomous investment expenditure increased by 50 percent (N20million) the resultant multiplier effect on the national income is that income will be increased by N100million. (That is, N20million multiplied by five). Determine thus:

$$Y = 20 + 0.8Y + 60 + 80$$

$$Y = 0.8Y + 160$$

$$Y - 0.8Y = 160$$

$$Y(1 - 0.8) = 160$$

$$Y = \frac{1}{1 - 0.8} (160)$$

$$Y = \frac{1}{0.2} (160)$$

$$Y = 5 (160) = \text{N800million}$$

Income increased from N700million to N800million as a result of N20million increase in investment expenditure via the multiplier.

Worked Example

Given:

$$Y = C + I + G$$

$$C = 20 + 0.6 Y_d$$

$$Y_d = Y - T$$

$$T = 10 + 0.2Y$$

$$I = \text{N}5\text{million}$$

$$G = \text{N}80\text{million}$$

Required

- Determine the equilibrium national income.
- Determine the income multiplier
- What is the value of the tax multiplier?
- What effect will a 50 percent increase in government spending have on the national income?
- Suppose the government pursues a balanced budget, What effect will this policy have on the equilibrium national income?

Solution

$$Y = C + I + G$$

$$Y = 20 + 0.6Y_d + I + G$$

$$Y = 20 + 0.6(Y - T) + I + G$$

$$Y = 20 + 0.6(Y - 10 + 0.2Y) + I + G$$

$$Y = 20 + 0.6(Y - 10 + 0.2Y) + 50 + 80$$

$$Y = 0.6Y + 0.12Y + 12 \quad Y = 20 - 6 + 50 + 80$$

$$(1 - 0.6 + 0.12) Y = 144$$

$$Y_{eq} = \frac{1}{1 - 0.6 + 0.12} (144)$$

$$Y_{eq} = \frac{1}{1 - 0.4 + 0.12} (144)$$

$$Y_{eq} = \frac{1}{0.52}(144)$$

$$Y_{eq} = \text{N}276.48 \text{ million}$$

b. Income multiplier (K) = $\frac{1}{0.52} = 1.92$

c. Tax multiplier = $\frac{-b}{1 - b + bt} = \frac{-0.6}{1 - 0.6 + 0.12}$
 $= \frac{-0.6}{0.52}$
 $= -1.15$

d. Government expenditure multiplier = $\frac{1}{0.52} = 1.92$

Therefore a N40million (50% of N80million) increase in government spending will cause a 40 X 1.92 (N76.8 million) increase in national income. That is, national income will be increased by N76.8million.

Mathematically it can be calculated as follows:

$$Y = 20 + 0.6Y - 6 - 0.12Y + 50 + 120$$

$$Y - 0.6Y + 0.12Y = 20 - 6 + 50 + 120$$

$$(1 - 0.6 + 0.12) Y = 184$$

$$\text{New } Y_{eq} = \frac{1}{1 - 0.6 + 0.12} (184)$$

$$\text{New } Y_{eq} = \frac{1}{0.52} (184)$$

$$\text{New } Y_{eq} = 1.92 (184)$$

$$\text{New } Y_{eq} = \text{N}353.28\text{million}$$

The increase in equilibrium national income due to a 50 percent increase in government expenditure is given but the different between the old equilibrium national income level and the new level of income.

$$\text{N}353.28 - 276.48\text{million} = \text{N}76.8\text{million}$$

e. If government pursues balanced budget it means that

$$\Delta Y = T - \dots\dots\dots (1)$$

Since

$$\Delta G = \text{N}40\text{million}$$

Therefore

$$\Delta T = \text{N}40\text{million}$$

From equation (1)

$$\Delta Y = \Delta G - \Delta T = 0$$

$$\Delta Y = 40 - 40 = 0$$

This means a balanced budget financed entirely by the volume of tax revenue will neither increase nor reduce the equilibrium level of national income.

3.4. Acceleration Principle

The principle of acceleration states that a change in consumption will necessitate a more than proportionate change in production or capital stock (capital goods) required for the production of the consumer goods.

The principle assumes a given ratio between the level of consumption at anytime 'tr and capital good required to produce the consumer goods 'Kt'.

Let us assume this ratio to be 'B'

Therefore, the relationship can be symbolically written as:

$$K_t = B C_t$$

If there is a change in consumer goods, say, $\sim C$ then, the volume of capital goods required to produce it will be changed by $J3$ times the change in consumption. That is,

$$\Delta K_t = B \Delta C_t$$

The change in capital stock can be regarded as the new investment induced within the period.

$$\Delta K_t = I_t$$

Therefore,

$$I_t = B \Delta C \text{ (where } B > 0 \text{)}$$

This equation shows that, so long as the production of consumer goods there will be a greater increase in the volume of investment (capital stock) that necessitated it over the period of time.

Test Assessment Exercise

Briefly discuss the principles of acceleration.

2.0 Conclusion

In this unit we have learnt that acceleration principle is an increase or decrease in the demand for consumer goods will cause a greater increase or decrease in the demand for machines required to make those goods. In other words, there is a direct relationship between the rate of output of an economy and the level of investment in capital goods.

3.0 Summary

We have learnt in this unit that if demand for consumer goods increases, then the percentage change in the demand for machines and other investment necessary to make these goods will increase even more (and vice versa). In other words, if income increases, there will be a corresponding but magnified change in investment.

6.0 Tutor-Marked Assignment

1. Given $Y = C + I + G + X - M$

$$C = 100 + 0.6Y_d$$

$$Y_d = Y - \pi_{u0} - T$$

$$\pi_u = N40 \text{ million}$$

$$T = 60 + 0.1Y$$

$$I = 50 + 0.2Y$$

$$G = 100\text{million}$$

$$X = \text{N}80\text{million}$$

$$M = 50\text{million}$$

Required:

- a. Determine the equilibrium national income.
 - b. Determine the income multiplier
 - c. What is the value of the tax multiplier
 - d. Find the value of the export multiplier .
 - e. Suppose government imposes more tariffs on importation which leads to a 25 percent reduction in the total volume of imports into the country. What consequential effect will this fiscal policy have on the national income level?
2. Given the following statistics of the national income of a hypothetical African Country:

	₦ million
Consumption	5,255.00
Government Expenditure	1,740.00
Salaries	4,915.00
Government Transfer Payments	1,030.00
Company Income Taxes	280.00
Net Income from abroad	240.00
Gross Domestic Investment	1,600.00
Capital Consumption Allowance	815.00
Indirect Business Taxes	775.00
Personal Income Taxes	825.00
National Providence Fund	310.00
Undistributed Profits	320.00
National Education Fund	250.00
Rents	115.00
Exports	450.00

Imports	745.00
Dividend	300.00
Income of individual businessmen and women	425.00

You are required to compute:

- a. GDP by income method;
 - b. GDP by expenditure method;
 - c. GNP by expenditure approach;
 - d. NNP;
 - e. National Income;
 - f. Personal Income;
 - g. Disposable Income; and
 - h. Per Capital Income assuming population is 20 million people.
3. What are the shortcomings of using the per capital income index in comparing the standard of living among nations of the world?
 4. National income accounting is to the nation while financial accounting is to the individual business. Discuss.
 5. Write short notes on the following:
 - a. Marginal Efficiency of Investment (MEI)
 - b. APC and APS
 - c. MPC and MPS
 - d. Income Multiplier
 - e. Accelerator Principle

7.0 References/Further Readings

Saweya, D.D. (1999) *Macroeconomics theory*, 2nd edition, Melt point Press limited.

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MODULE THREE CLASSICAL, NEO-CLASSICAL AND KEYNESIAN

THEORY OF MONEY

UNIT 1 Classical Theory

UNIT 2 Neo-Classical Theory

UNIT 3 Keynesian Theory

UNIT 1 CLASSICAL THEORY

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Analysis of Classical Theory.
 - 3.2 The graph of Classical Theory.
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0. Introduction

In this unit we will try to do a critical analysis of the classical theory of money and the rate of interest. However, it should be noted that the classical theory belief that the economy is so regulated and that the economy can achieve real Gross domestic product.

2.0. Objectives

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

- Understand the concept of Classical theory.
- Know and understand the graph Classical theory.

3.0. Main Content

3.1 Analysis of Classical Theory

The fundamental principle of the classical theory is that the economy is self-regulating. Classical economists maintain that the economy is always capable of achieving the natural level of real GDP or output, which is the level of real GDP that is obtained when the economy's resources are fully employed. While circumstances arise from time to time that cause the economy to fall below or to exceed the natural level of real GDP, self-adjustment mechanisms exist within the market system that work to bring the economy back to the natural level of real GDP. The classical doctrine that the economy is always at or near the natural level of real GDP—is based on two firmly held beliefs: Say's Law and the belief that prices, wages, and interest rates are flexible.

Say's Law. According to Say's Law, when an economy produces a certain level of real GDP, it also generates the income needed to purchase that level of real GDP. In other words, the economy is always capable of demanding all of the output that its workers and firms choose to produce. Hence, the economy is always capable of achieving the natural level of real GDP.

The achievement of the natural level of real GDP is not as simple as Say's Law would seem to suggest. While it is true that the income obtained from producing a certain level of real GDP must be sufficient to purchase that level of real GDP, there is no guarantee that all of this income will be spent. Some of this income will be saved. Income that is saved is not used to purchase consumption goods and services, implying that the demand for these goods and services will be less than the supply. If aggregate demand falls below aggregate supply due to aggregate saving, suppliers will cut back on their production and reduce the number of resources that they employ. When employment of the economy's resources falls below the full employment level, the equilibrium level of real GDP also falls below its natural level. Consequently, the economy may not achieve the natural level of real GDP if there is aggregate saving. The classical theorists'

response is that the funds from aggregate saving are eventually borrowed and turned into investment expenditures, which are a component of real GDP. Hence, aggregate saving need not lead to a reduction in real GDP.

Consider, however, what happens when the funds from aggregate saving exceed the needs of all borrowers in the economy. In this situation, real GDP will fall below its natural level because investment expenditures will be less than the level of aggregate saving. This situation is illustrated in Figure.

Self Assessment Exercises

Discuss in detail the Classical theory.

3.2. The Graph of Classical Theory

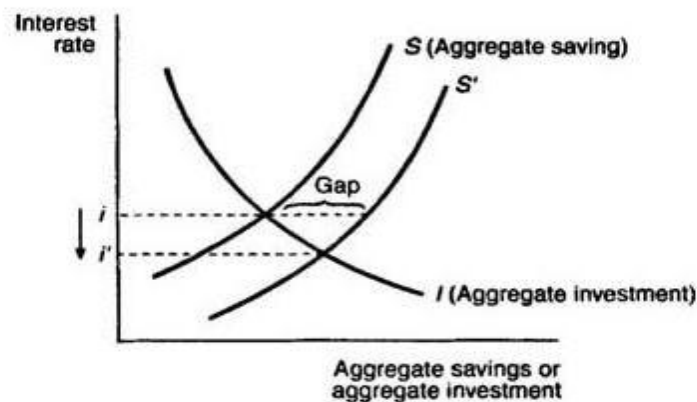


Figure 1 Classical theory of interest rate adjustment in the money market

Aggregate saving, represented by the curve S, is an upward-sloping function of the interest rate; as the interest rate rises, the economy tends to save more. Aggregate investment, represented by the curve I, is a downward-sloping function of the interest rate; as the interest rate rises, the cost of borrowing increases and investment expenditures decline. Initially, aggregate saving and investment are equivalent at the interest rate, i . If aggregate saving were to increase, causing the S curve to shift to the right to S' , then at the same interest rate i , a gap emerges between

investment and savings. Aggregate investment will be lower than aggregate saving, implying that equilibrium real GDP will be below its natural level.

Flexible interest rates, wages, and prices. Classical economists believe that under these circumstances, the interest rate will fall, causing investors to demand more of the available savings. In fact, the interest rate will fall far enough—from i to i' in Figure —to make the supply of funds from aggregate saving equal to the demand for funds by all investors. Hence, an increase in savings will lead to an increase in investment expenditures through a reduction of the interest rate, and the economy will always return to the natural level of real GDP. The flexibility of the interest rate as well as other prices is the self-adjusting mechanism of the classical theory that ensures that real GDP is always at its natural level. The flexibility of the interest rate keeps the money market, or the market for loanable funds, in equilibrium all the time and thus prevents real GDP from falling below its natural level.

Similarly, flexibility of the wage rate keeps the labor market, or the market for workers, in equilibrium all the time. If the supply of workers exceeds firms' demand for workers, then wages paid to workers will fall so as to ensure that the work force is fully employed. Classical economists believe that any unemployment that occurs in the labor market or in other resource markets should be considered voluntary unemployment. Voluntarily unemployed workers are unemployed because they refuse to accept lower wages. If they would only accept lower wages, firms would be eager to employ them.

Graphical illustration of the classical theory as it relates to a decrease in aggregate demand. Figure considers a decrease in aggregate demand from AD_1 to AD_2 .

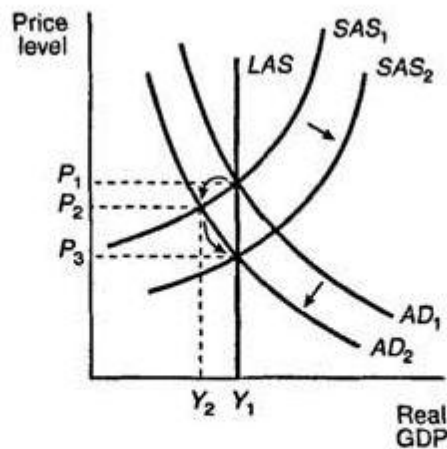


Figure 2 Classical theory of output and price level adjustment during a recession

The immediate, short-run effect is that the economy moves down along the SAS curve labeled SAS_1 , causing the equilibrium price level to fall from P_1 to P_2 , and equilibrium real GDP to fall below its natural level of Y_1 to Y_2 . If real GDP falls below its natural level, the economy's workers and resources are not being fully employed. When there are unemployed resources, the classical theory predicts that the wages paid to these resources will fall. With the fall in wages, suppliers will be able to supply more goods at lower cost, causing the SAS curve to shift to the right from SAS_1 to SAS_2 . The end result is that the equilibrium price level falls to P_3 , but the economy returns to the natural level of real GDP.

Test Assessment Exercises

Make a clear distinction between the graph of trade-off between interest rate and aggregate supply or aggregate investment.

4.0 Conclusion

In conclusion, we can conclude that the classical theory talk about the relationship between the interest rate and aggregative supply and aggregate investment. So I hope you must have learnt about the classical theory of money.

5.0 Summary

In this unit, you have been able to learn the views of classical theory and the trade-off graph between the interest rate and aggregate supply and investment with the price level and real GDP.

6.0 Tutor-Marked Assignment

1. Discuss in detail the Classical theory of Money
2. With the aid of a diagram explain the classical theory of Money

7.0 References/Further Reading

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UNIT 2 NEO- CLASSICAL THEORY

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Analysis of Neo-Classical Theory.
 - 3.1.1 Free Market Theory
 - 3.1.2 Say's law
 - 3.1.3 Quantity Theory of Money.
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0. INTRODUCTION

In this unit the neo-classical theory of money will be discussed and the free market theory, say's law and the quantity theory of money will be discussed.

2.0. Objectives

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

- Know and Understand the Free Market Theory.
- Understand the Say's law and the quantity theory of money.

3.0. Main Content

3.1 Analysis Neo-Classical Theory

Neoclassical economics is a term variously used for approaches to economics focusing on the determination of prices, outputs, and income distributions in markets through supply and

demand, often mediated through a hypothesized maximization of utility by income-constrained individuals and of profits by cost-constrained firms employing available information and factors of production, in accordance with rational choice theory.

Neoclassical economics dominates microeconomics, and together with Keynesian economics forms the neoclassical synthesis which dominates mainstream economics today. Although neoclassical economics has gained widespread acceptance by contemporary economists, there have been many critiques of neoclassical economics, often incorporated into newer versions of neoclassical theory.

Classical theories revolved mainly around the role of markets in the economy. If markets worked freely and nothing prevented their rapid clearing then the economy would prosper. Any imperfections in the market that prevented this process should be dealt with by government. The main roles of government are therefore to ensure the free workings of markets using 'supply-side policies' and to ensure a balanced budget. The main theories used to justify this view were:

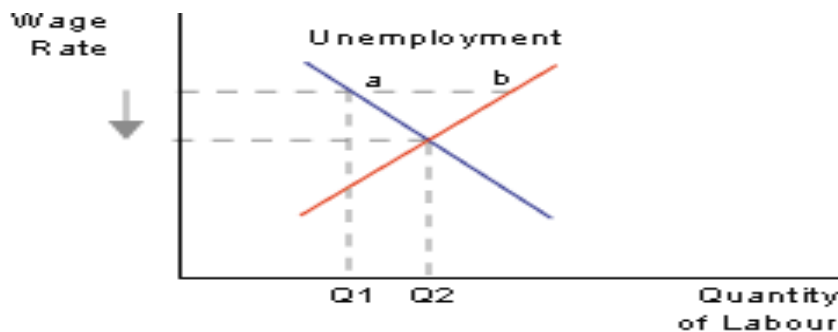
- Free market theory
- Say's Law
- Quantity Theory of Money

3.1.1 Free market theory

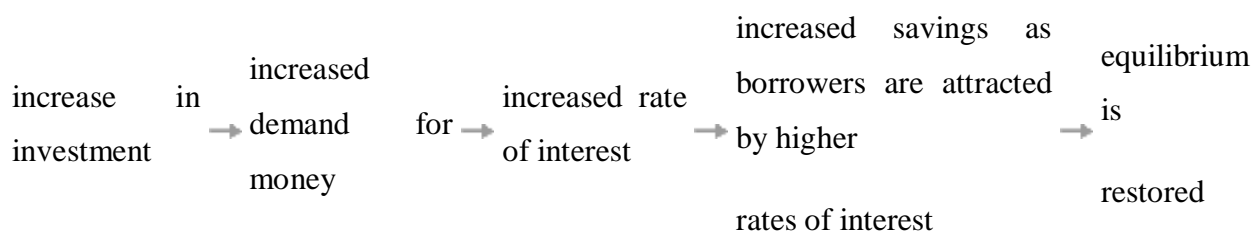
The Classical economists assumed that if the economy was left to itself, then it would tend to full employment equilibrium. This would happen if the labour market worked properly. If there was any unemployment, then the following would happen:

unemployment (a surplus of labour) → fall in wages → increased demand for labour → equilibrium restored at full employment

This can be shown on a diagram of the labour market. Wages are initially too high and there is unemployment of ab . This causes wage rates to fall and employment increases as a result from $Q1$ to $Q2$. Any unemployment left in the economy would be purely voluntary unemployment - people who have chosen not to work at the going wage rate.



The same would also be true in the 'market for loanable funds'. If there was any discrepancy between savings and investment the equilibrium would change in the market. This would again require a free market and flexible prices. In this market the price is the rate of interest. Say, for example, investment increased, then the following process would occur to restore equilibrium:



3.1.2. Say's Law

Say's Law is imaginatively named after an economist called Say. Jean Baptiste Say was an economist of the early nineteenth century that: 'Supply creates its own demand.'


This once again provides a justification for the Classical view that the economy will tend to full employment. This is because, according to this law, any increase in output of goods and services (supply) will lead to an increase in expenditure to buy those goods and services (demand). There will not be any shortage of demand and there will always be jobs for all workers - full employment. If there was any unemployment it would simply be temporary as the pattern of demand shifted. However, equilibrium would soon be restored by the same process as shown above.

3.1.3 Quantity Theory of Money

In monetary economics, the quantity theory of money states that money supply has a direct, proportional relationship with the price level. For example, if the currency in circulation increased, there would be a proportional increase in the price of goods.

The theory was challenged by Keynesian economics, but updated and reinvigorated by the monetarist school of economics. While mainstream economists agree that the quantity theory holds true in the long run, there is still disagreement about its applicability in the short run. Critics of the theory argue that money velocity is not stable and, in the short-run, prices are sticky, so the direct relationship between money supply and price level does not hold.

Alternative theories include the real bills doctrine and the more recent fiscal theory of the price level.

The classical economists view of inflation revolved around the Quantity Theory of Money, and this theory was in turn derived from the Fisher Equation of Exchange . This equation says that:

$$MV = PT$$

where: M is the amount of money in circulation V is the velocity of circulation of that money
P is the average price level and T is the number of transactions taking place.

Classical economists suggested that V would be relatively stable and T would (as we have seen above) always tend to full employment. Therefore they came to the conclusion that:

$$\uparrow M \rightarrow P \uparrow$$

In other words, increases in the money supply would lead to inflation. The message was simple: control the money supply to control inflation.

Test Assessment Exercise

Discuss in detail the analysis of Neo-classical theory.

4.0 Conclusion

In this unit, we conclude that the neo-classical theory lean on the basis of price, outputs and income distribution in the market, so the theory developed itself from the classical theory.

5.0 Summary

In this unit, you have been able to learn the views of neo-classical economists about the economy in large dimension. Therefore, I belief that you must have gain a lot from this lecture on neo-classical theory.

6.0 Tutor-Marked Assignment

1. Critically explain the theory of neo-classical theory.
2. Differentiate between free market theory and Say's law
3. Explain the term “quantity theory of money”.

7.0 References

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UNIT 3 KEYNESIAN THEORY

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Keynesian Theory
 - 3.2 Wages and Spending
 - 3.3 Excessive Saving
 - 3.4 Keynesian Vs Classical.
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0. INTRODUCTION

In this unit, we will discuss the Keynesian theory in detailed and we will also look at view on wages and the controversy between Keynes and the classical theory of money.

2.0. Objectives

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

- Understand the Keynesian Theory.
- Understand the analysis of Wages and Spending.
- Know and understand the excessive saving.
- Understand the controversy between Keynesian view and the Classical view on Money.

3.0. Main Content

3.1 Keynesian Theory

Keynesian economics is the view that in the short run, especially during recessions, economic output is strongly influenced by aggregate demand (total spending in the economy). In the Keynesian view, aggregate demand does not necessarily equal the productive capacity of the economy; instead, it is influenced by a host of factors and sometimes behaves erratically, affecting production, employment, and inflation.

The theories forming the basis of Keynesian economics were first presented by the British economist John Maynard Keynes in his book, *The General Theory of Employment, Interest and Money*, published in 1936, during the Great Depression. Keynes contrasted his approach to the aggregate supply-focused 'classical' economics that preceded his book. The interpretations of Keynes that followed are contentious and several schools of economic thought claim his legacy.

Keynesian economists often argue that private sector decisions sometimes lead to inefficient macroeconomic outcomes which require active policy responses by the public sector, in particular, monetary policy actions by the central bank and fiscal policy actions by the government, in order to stabilize output over the business cycle. Keynesian economics advocates a mixed economy – predominantly private sector, but with a role for government intervention during recessions.

Keynesian economics served as the standard economic model in the developed nations during the later part of the Great Depression, World War II, and the post-war economic expansion (1945–1973), though it lost some influence following the oil shock and resulting stagflation of the 1970s. The advent of the global financial crisis in 2008 has caused a resurgence in Keynesian thought.

Keynes argued that the solution to the Great Depression was to stimulate the economy ("inducement to invest") through some combination of two approaches:

1. A reduction in interest rates (monetary policy), and
2. Government investment in infrastructure (fiscal policy).

By reducing the interest rate at which the central bank lends money to commercial banks, the government sends a signal to commercial banks that they should do the same for their customers.

Investment by government in infrastructure injects income into the economy by creating business opportunity, employment and demand and reversing the effects of the aforementioned imbalance. Governments source the funding for this expenditure by borrowing funds from the economy through the issue of government bonds, and because government spending exceeds the amount of tax income that the government receives, this creates a fiscal deficit.

A central conclusion of Keynesian economics is that, in some situations, no strong automatic mechanism moves output and employment towards full employment levels. This conclusion conflicts with economic approaches that assume a strong general tendency towards equilibrium. In the 'neoclassical synthesis', which combines Keynesian macro concepts with a micro foundation, the conditions of general equilibrium allow for price adjustment to eventually achieve this goal. More broadly, Keynes saw his theory as a general theory, in which utilization of resources could be high or low, whereas previous economics focused on the particular case of full utilization.

The new classical macroeconomics movement, which began in the late 1960s and early 1970s, criticized Keynesian theories, while New Keynesian economics has sought to base Keynes's ideas on more rigorous theoretical foundations.

Some interpretations of Keynes have emphasized his stress on the international coordination of Keynesian policies, the need for international economic institutions, and the ways in which economic forces could lead to war or could promote peace.

Test Assessment Exercises

Discuss in detail the Keynesian theory of money

3.2. Wages and spending

During the Great Depression, the classical theory attributed mass unemployment to high and rigid real wages.

To Keynes, the determination of wages is more complicated. First, he argued that it is not real but nominal wages that are set in negotiations between employers and workers, as opposed to a barter relationship. Second, nominal wage cuts would be difficult to put into effect because of laws and wage contracts. Even classical economists admitted that these exist; unlike Keynes, they advocated abolishing minimum wages, unions, and long-term contracts, increasing labour market flexibility. However, to Keynes, people will resist nominal wage reductions, even without unions, until they see other wages falling and a general fall of prices.

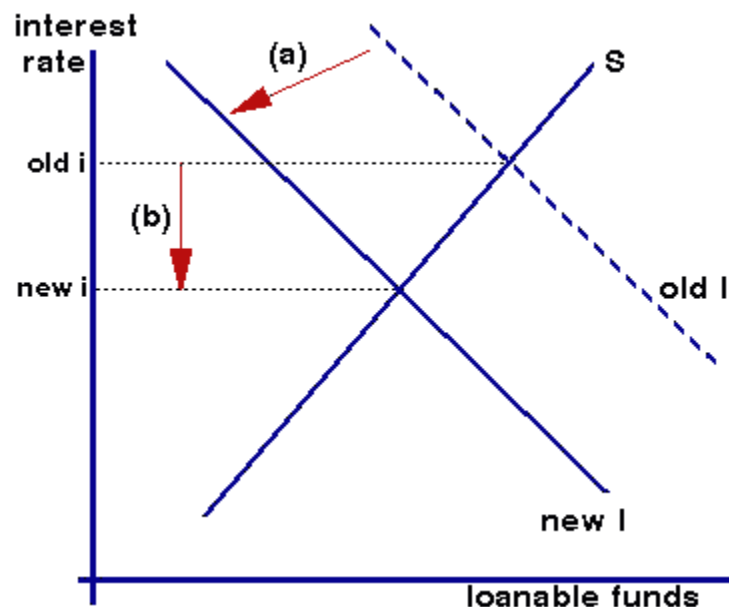
Keynes rejected the idea that cutting wages would cure recessions. He examined the explanations for this idea and found them all faulty. He also considered the most likely consequences of cutting wages in recessions, under various different circumstances. He concluded that such wage cutting would be more likely to make recessions worse rather than better.

Further, if wages and prices were falling, people would start to expect them to fall. This could make the economy spiral downward as those who had money would simply wait as falling prices made it more valuable – rather than spending. As Irving Fisher argued in 1933, in his Debt-Deflation Theory of Great Depressions, deflation (falling prices) can make a depression deeper as falling prices and wages made pre-existing nominal debts more valuable in real terms.

Test Assessment Exercises

Differentiate between wages and Expending

3.3. Excessive saving



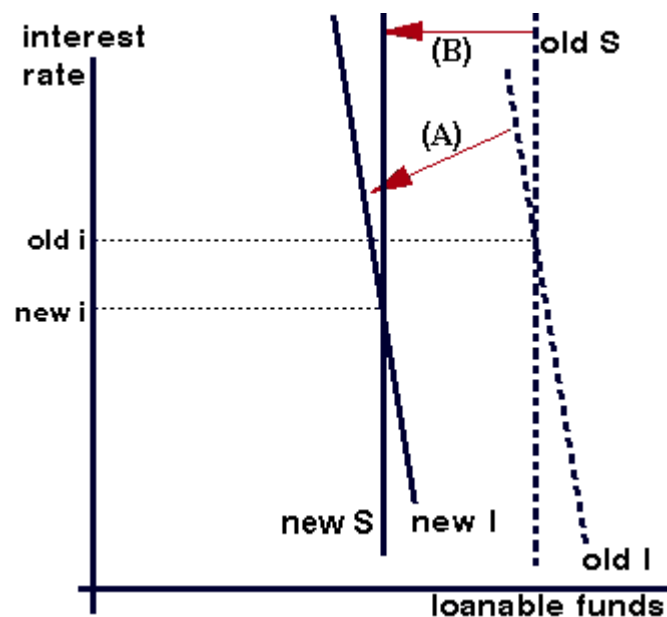
To Keynes, excessive saving, i.e. saving beyond planned investment, was a serious problem, encouraging recession or even depression. Excessive saving results if investment falls, perhaps due to falling consumer demand, over-investment in earlier years, or pessimistic business expectations, and if saving does not immediately fall in step, the economy would decline.

The classical economists argued that interest rates would fall due to the excess supply of "loanable funds". The first diagram, adapted from the only graph in *The General Theory*, shows this process. (For simplicity, other sources of the demand for or supply of funds are ignored here.) Assume that fixed investment in capital goods falls from "**old I**" to "**new I**" (step **a**). Second (step **b**), the resulting excess of saving causes interest-rate cuts, abolishing the excess supply: so again we have saving (**S**) equal to investment. The interest-rate (**i**) fall prevents that of production and employment.

Keynes had a complex argument against this laissez-faire response. The graph below summarizes his argument, assuming again that fixed investment falls (step **A**). First, saving does not fall much as interest rates fall, since the income and substitution effects of falling rates go in conflicting directions. Second, since planned fixed investment in plant and equipment is based

mostly on long-term expectations of future profitability, that spending does not rise much as interest rates fall.

So **S** and **I** are drawn as steep (inelastic) in the graph. Given the inelasticity of both demand and supply, a large interest-rate fall is needed to close the saving/investment gap. As drawn, this requires a negative interest rate at equilibrium (where the **new I** line would intersect the **old S** line). However, this negative interest rate is not necessary to Keynes's argument.



Third, Keynes argued that saving and investment are not the main determinants of interest rates, especially in the short run. Instead, the supply of and the demand for the stock of money determine interest rates in the short run. (This is not drawn in the graph.) Neither changes quickly in response to excessive saving to allow fast interest-rate adjustment.

Finally, Keynes suggested that, because of fear of capital losses on assets besides money, there may be a "liquidity trap" setting a floor under which interest rates cannot fall. While in this trap, interest rates are so low that any increase in money supply will cause bond-holders (fearing rises in interest rates and hence capital losses on their bonds) to sell their bonds to attain money (liquidity).

In the diagram, the equilibrium suggested by the new I line and the old S line cannot be reached, so that excess saving persists. Some (such as Paul Krugman) see this latter kind of liquidity trap as prevailing in Japan in the 1990s. Most economists agree that nominal interest rates cannot fall below zero. However, some economists (particularly those from the Chicago school) reject the existence of a liquidity trap.

Even if the liquidity trap does not exist, there is a fourth (perhaps most important) element to Keynes's critique. Saving involves not spending all of one's income. Thus, it means insufficient demand for business output, unless it is balanced by other sources of demand, such as fixed investment. Therefore, excessive saving corresponds to an unwanted accumulation of inventories, or what classical economists called a general glut.

This pile-up of unsold goods and materials encourages businesses to decrease both production and employment. This in turn lowers people's incomes – and saving, causing a leftward shift in the **S** line in the diagram (step B). For Keynes, the fall in income did most of the job by ending excessive saving and allowing the loanable funds market to attain equilibrium. Instead of interest-rate adjustment solving the problem, a recession does so. Thus in the diagram, the interest-rate change is small.

Whereas the classical economists assumed that the level of output and income was constant and given at any one time (except for short-lived deviations), Keynes saw this as the key variable that adjusted to equate saving and investment.

Finally, a recession undermines the business incentive to engage in fixed investment. With falling incomes and demand for products, the desired demand for factories and equipment (not to mention housing) will fall. This accelerator effect would shift the **I** line to the left again, a change not shown in the diagram above. This recreates the problem of excessive saving and encourages the recession to continue.

In sum, to Keynes there is interaction between excess supplies in different markets, as unemployment in labour markets encourages excessive saving – and vice-versa. Rather than prices adjusting to attain equilibrium, the main story is one of quantity adjustment allowing recessions and possible attainment of underemployment equilibrium.

Test Assessment Exercise

With the aid of diagram differentiate between excess saving and Loanable fund.

3.4. Keynesian Vs Classical View of Money

Keynes' theory of money and his attack on the classical model has been a long standing one. Keynes criticized the self-correcting model of the British orthodoxy along two separate lines. In the first, in which Keynes' theory of money was crucial, he took the institutional variables as given and examined the functional relationships. Keynes' burden was to undermine what he termed the "classical dichotomy," where money was a veil, playing no role in determining output and employment. Two key features of the orthodox model were loanable funds and quantity theories, and Keynes' theory of money emerged from the rejection of these theories. The key to his attack on the classical dichotomy was the speculative demand for money, which he presented as an indirect, unstable function of the interest rate. Hence, Keynes linked money demand to the interest rate. The interest rate was thus determined by monetary variables rather than real factors, contrary to British orthodox opinion. Keynes then demonstrated that intended investment and saving need not be equal at full employment equilibrium.

Test Assessment Exercise

Discuss in detail the controversy between the Keynesian and Classical View of Money

4.0 Conclusion

In conclusion, we can vividly say that the classical theory, neo-classical theory and the Keynesian theory of money has been discussed in detailed in this module and we conclude that the theory is one of those theory that gives us some of the rudimentary of monetary issue in the economy.

5.0 Summary

In this unit, you have been able to learnt about the classical, neo-classical and Keynesian theory of money. Therefore, the unit has put you through and exposed you to all this theories that will be your guild as you go on in the course of this study.

6.0 Tutor-Marked Assignment

1. Define and explain the basic attribute of good money.
2. Discuss in detailed the classical, neo-classical and Keynesian theory of money.
3. Discuss in the debate between the Keynesian theories on money.

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MODULE FOUR PUBLIC FINANCE

Unit 1 Analysis of Public Finance

Unit 2 Government Expenditure

Unit 3 Government Revenue

UNIT 1 ANALYSIS OF PUBLIC FINANCE

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Analysis and Definition of Public Finance
- 4.0 Government Intervention in Business
- 5.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 Introduction

In a free enterprise system, in which there is the least interference by the government, the consumers move to maximize their incomes and are free to choose the use of their pattern of their resources. The producers move to maximize their profits or private gains and are free to choose the type of goods and services they want to produce. The consumers, the household, and the producers try maximize their choices without the least interference by the government.

However, it is not always the case, even in a free enterprises system, let the state controlled economies. The government can enact laws prohibiting the sale and consumption of certain

goods, limit the growth of monopolies, can prevent the entry of some firms to particular industries and can nationalize industries for national interest. It also formulates and implements economic policies such as fiscal, monetary or credit policies, exchange control policy etc, the growth of government economic activities can be reflected in the growth of government expenditure and taxation, in the increasing share of national income devoted to transfers income support payments and by the sharp increase in regulation of economic life.

2.0 Objectives:

At the end of this Unit, you should be able to

- Understand the meaning of Public Finance
- Know the reason of Government Intervention in Business
- Know the in-depth knowledge of analysis of public Financing.

3.0 Main Content

3.1 Analysis and Definition of Public Finance

The emergence of financial public relations has provided the focus for a wide-ranging discourse concerning the role of financial institutions in imparting adequate knowledge to the public, not only in developed economies but also in developing nations.

The starting point for the acceptance of the new field of Mass-communication as part of public relations functions is the greater awareness that financial institutions have roles to play in reaching the public at establishing or retaining their confidence for reciprocal appreciation and beneficial relationship.

It is discovered that while financial institutions have a range of services to offer, little is known because no effort is made at getting the public well informed on those services. Often times, there is need to refute insinuations, correct misrepresentations and wrong impressions.

The public finance institution as a sensitive agent of government has tremendous responsibilities at addressing fiscal and monetary policies as they affect the citizenry, through a simple,

unambiguous term that could easily be deciphered by all. Their various publics, including financial institutions, government agencies and the citizens, need to be adequately informed about the emerging trends in the economy which has direct impact on the lives of the society, since macro-economy is defined as a “broad aggregate such as total employment, national income, total volume of savings, investment, consumption, expenditures and money supply” (Aiyedun 1998). Like with other financial institutions, statements and expressions are more often than not measured in figures and laced with financial terms, which may be too technical to the understanding of a large section of the public.

As is widely held, financial system consists of a network of financial links between economic units, while financial institutions deal in or trade on the use of money. This will clearly differentiate, for instance, the government institutions dealing with the economy from other financial institutions which are profit-making and issue financial instruments of their own aimed at acquiring funds from savers and allocating accumulated services to firms in the form and amount suitable to them. The purpose of public relations practice, where the financial public relations emerged, is to establish a two-way communication at seeking common grounds or areas of mutual interests and to establish an understanding based on truth, knowledge and full information (Sam Black). Financial public relations as a subject in communication, therefore, can be vividly comprehended by juxtaposing financial system/institutions with public relations.

Hence, public finance can be seen as that aspect of economics which leads with government economic activities and expenditures and the ways and means by which it generate funds to carry out these activities, that is, in taxing money away from the people and businesses and spending it to redirect production into different channels, that is, away from private objectives, towards objectives, chosen by the government.

Public finance is the study of the role of the government in the economy. It is the definitive branch of Economics which assesses the Government revenue and Government expenditure of the Public Authorities and the adjustment of one or the other to achieve desirable effects and avoid undesirable ones.

However, a question may be ask that Why Government Intervention?. The proper role of government provides a starting point for the analysis of public finance. In theory, under certain

circumstances, private markets will allocate goods and services among individuals efficiently (in the sense that no waste occurs and that individual tastes are matching with the economy's productive abilities). If private markets were able to provide efficient outcomes and if the distribution of income were socially acceptable, then there would be little or no scope for government. In many cases, however, conditions for private market efficiency are violated. For example, if many people can enjoy the same good at the same time (non-rival, non-excludable consumption), then private markets may supply too little of that good. National defense is one example of non-rival consumption, or of a public good.

However, Government can pay for spending by borrowing (for example, with government bonds), although borrowing is a method of distributing tax burdens through time rather than a replacement for taxes. A deficit is the difference between government spending and revenues. The accumulation of deficits over time is the total public debt. Deficit finance allows governments to smooth tax burdens over time, and gives governments an important fiscal policy tool. Deficits can also narrow the options of successor governments.

Tutor-Marked Assignment

Critically examine the definition of Public finance in relation to Public expenditure and Public Spending of Government.

3.2 Government Intervention in Business

Government increasing intervention in economic activities arose out of the failure of free enterprise system to fulfill the expectation of the society. These reasons are discussed below

1. **Business Fluctuations:** A free enterprise system breeds inflation, recession, unemployment, etc. The free enterprises system might take care of these fluctuations in the long-run, it certainly is not able to control or step into correct these fluctuations especially in the short-run.
2. **Income inequality:** The gap between the rich and the poor is more pronounce in a free economic system. In fact, it has contributed to the differences of wealth by giving more to those

who are rich and giving little to the poorer. That is, the rich get richer while the poor get poorer. Hence, the government had to intervene to correct this inequality and close the gap.

3. Uneven development: The motivating force for private enterprises is profit, hence investors invest only in areas where their profitability is highest. They then tend to concentrate on some industries while other industries, which are essential in nature and are of strategic importance to the national economy are left alone. This can result in uneven development of the national economy.

4. Public Utilities: There are some services that are very important to the nation which the rich, the poor and the average man should enjoy. These utilities include medical care, education, electricity, railways, airways, water, post and communication, etc. Though the private investors invest in these areas, they nevertheless invested very little capital when it requires huge capital outlay. The rate of returns is slow in coming and the exclusion principle is not applicable. Moreover, the pricing system of the private investors will only make it available to the rich and well to do, neglecting the majority who are poor. Hence government intervention.

5. Externalities: This is a situation where the 'spill-over cost' and 'spill-over benefits' of some economic activities accrue to the society as a whole rather than to a particular individual. The exclusion principle, where those who do not pay for good, apply which will not make the free-market mechanism function efficiently.

6. Monopoly: Government intervention is necessary in the market to help curb monopolistic tendencies that result from the imperfection of the market. Perfect competition requires equality between competitors, but two firms are hardly equal in efficiency, hence the competition generally becomes imperfect. This leads to the growth of monopolies quite often than not have a tendency to mis-allocate resources.

7. Defence: The free market cannot produce some public goods such as defence which is best handled by the government.

Tutor-Marked Assignment

List and explain the reasons why Government intervenes in Business.

4.0 Conclusion

"Market failure" occurs when private markets do not allocate goods or services efficiently. The existence of market failure provides an efficiency-based rationale for collective or governmental provision of goods and services. Externalities, public goods, informational advantages, strong economies of scale, and network effects can cause market failures. Public provision via a government or a voluntary association, however, is subject to other inefficiencies, termed "government failure."

Therefore, Government intervenes in business sometimes to regulation and control the situations in the market.

3.0 Summary

Public finance is the study of the role of the government in the economy. It is the definitive branch of Economics which assesses the Government revenue and Government expenditure of the Public Authorities and the adjustment of one or the other to achieve desirable effects and avoid undesirable ones.

The purview of public finance is considered to be threefold: governmental effects on (1) efficient allocation of resources, (2) distribution of income, and (3) macroeconomic stabilization.

However, "Market failure" occurs when private markets do not allocate goods or services efficiently. The existence of market failure provides an efficiency-based rationale for collective or governmental provision of goods and services.

4.0 Tutor-Marked Assignment

1. Critically access the important of Public Finance issue in an underdeveloped country.
2. Discuss the reason why 'Market failure' exists in an economy.

3. List and explain the reason why Government intervenes in business in an economy.

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UNIT 2 GOVERNMENT EXPENDITURE

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- 2.0 Objectives
- 3.0 Main Content
 - 3.1 The budget
- 3.2 Budget Concepts
 - 3.2.1 Government Expenditure
 - 3.2.2 Reasons for Increase in Government Expenditure
 - 3.2.3 How Government Expenditure is Financed
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 Introduction

Government expenditure is a term used to describe money that a government spends. Expenditure occurs on every level of government, from local city councils to federal organizations. There are several different types of government expenditure, including the purchase and provision of goods and services, investments, and money transfers.

In a free market economy, not all basic needs are generally met by the private sector. Some goods or services may not be produced at all, while others may be not be produced in enough quantity or at an affordable rate for all citizens. Much of government expenditure is involved in the creation and implementation of these goods and services. This type of government spending is referred to as government final consumption.

Some examples of government final consumption include the creation and maintenance of the military, police, emergency, and firefighting organizations. These are funded by federal and

regional governments, in order to provide for both the safety of the country from attack, and the safety of citizens from crime and disasters. Others examples include programs such as health care, food stamps, and housing assistance for disabled or severely low-income citizens. Public education and public transportation infrastructure are other main categories of this form of government expenditure.

2.0 Objectives:

At the end of this Unit, you should be able to

- Understand the meaning of Government Expenditure
- Know the reason for increase in Government Expenditure
- Know how Government Expenditure is Financed.

3.0 Main Content

3.1 The Budget

This is a financial statement of the sources and uses (i.e. Revenue and expenditure) of the government. It is “a financial plan of the projected expenditures and revenues of a unit of government for the ensuing fiscal period”. It is “basically a tool for selecting a particular mix of public and private goods and services.”

Budget is needed to perform some allocative function just as the price mechanism performs in the private sector. Management uses budget as a tool for direction and control of work programme. In Nigeria, the budget is initiated by the executive through the Ministry of Finance. It is presented to the Senate and House of Representatives for debate and adoption.

There are four characteristics of budget. They are:

- i. Equilibrium:** there must be a balance between the revenue and Expenditures;
- ii. Comprehensiveness:** It must take care of all facets of the economy;
- iii. Unity:** All fiscal operations are spelt out in the budget; and
- iv. Periodicity:** The Nigerian budget is usually read at the beginning of every year.

The budget is an important economic, document of a country. It reveals the state of the economy and what future trends the country will follow. The budget is always presented like a balance sheet in a tentative form after all ministries have submitted their input. It is then sent to the congress, that is, Senate and House of Representatives to be adopted as a final budget. The Legislative bodies will scrutinize, adjust or delete or ask the executive to modify some portion of the budget. Once the budget is passed by the house it becomes Operational In a democracy, no government can spend money without the approval of the parliament. Hence, the executive can only operate the budget after it has been adopted by the house. The executive can either operate a surplus budget, that is, when the revenue to be generated is forecasted to .be greater than expenditure, or it can operate a deficit budget where expenditure is greater than revenue. A balanced budget is where the government intends to spend the actual money it received. That is, the revenue equals expenditure. At the end of the accounting year, the executive including its various ministries and parastatals must account to the whole country how money was realised and spend.

3.1.1 Budget Concepts

Recurrent expenditure: These are costs known as running cost, which the government undertakes in its day-to-day activities. These costs include wages -and salaries, national debt interest, etc.

Recurrent revenue: These are receipts of monies from fines, taxes, fees, etc. by the government.

Capital expenditure: These are expenditures on capital projects. Such projects include, provision of hospitals, roads, defense, social and community services, etc.

Capital receipts: These are loans, aids, grants, etc. made to the government by foreign governments or international organizations. Other arms of government can extend such facilities.

Tutor-Marked Assignment

List and explain all the characteristics of a good budget.

3.2 Government Expenditure

Since the beginning of the 70's, every category of Nigerian government expenditure has increased more rapidly than envisaged. This, primarily, can be attributed to the discovery of crude oil and the upsurge in the prices of crude petroleum that brought in more revenue to the government than it has ever generated.

Government expenditure can be classified under the following headings:

General Administration: This includes:

Cost of running the entire civil service;

- i. **Defence:** This is given priority as it affects the territorial security of the country.
- ii. **Internal security:** This includes spending- on the police, law enforcement agents, fire brigade, etc.

Social and community responsibilities: These are expenditure made on public housing, hazards of sickness, unemployment, benefits, spending on education and health care, pensions, etc. These expenditures are necessary to promote social and community development.

Economic development: This includes expenditures for national resource development programmes to assist business, labour and agriculture; expenditures on various kinds of research and technological development programmes and programmes designed to aid growth in the economy, that is, agriculture, communication, trade, industry, etc..

Growth in interest expenses: There have been rapid growth in the interest expenditure of the country since the early 80's when the country began to experience -a steady rise in government debt. Presently, Nigeria's debt is put at \$29 billion and the interest servicing alone gulp billion dollars every year. It is one of the largest growing category of government spending.

Miscellaneous: This includes all transfer payments like unemployment benefits, pension payments, aid-to other countries, etc. Expenditures are also made on transports - highways, airports, harbors, mass transit as, etc. Foreign relations and foreign aids have also increased over years.

3.2.1. Reasons for increase in government expenditure

The following reasons can be adduced for the increase in government expenditure overtime.

Defence: Over the years, expenditures on defence have been on the increase in most African countries. The need for a strong and well-armed force necessitates the building of additional barracks, purchase of military armaments and other military equipments. Wars and frictions in most African countries have, made such governments to increase expenditures on defence.

Population: Population In most African countries has been increasing. Nigeria's population was 63 million in the 1963 census, but the 1991 census put the country at 88.5 million, while latest estimate put the country at over a 100 million people as population increases more amenities would have to be provided, more schools have to be built, hospitals, etc.

Development projects: After independence, most countries in West Africa embarked on-development projects. They began building airports, refineries, hospitals, etc. These involved huge cost and consequently increases government expenditure.

Depreciation and devaluation of currency: Over the years most West African countries have either devalued their currencies or allowed it to depreciate. This act only result in high prices of goods and services which in turn increases the expenditure of the government.

Interest on debt: The public debts of most West African countries have been on the increase over the years. Likewise the servicing of the debt have also been on the increase and this have gone to increase government expenditure.

3.2.2. How government expenditure is financed

Government generates income through various means to finance its expenditures, Some of the means are as follows: Rents, royalties and profits: These includes revenue from mining rights, rent from the use of government properties, profits from all government businesses, etc.

Taxation: This one of the ways government expenditure is financed by imposing different tax on the citizen.

Fines, fees and special charges: This intrudes tines on default, traffic offences, etc., income derived from fees such as motor vehicle licenses, water rate, toll gate, etc.

Loans: This takes the form of:

- a. **Short-term loans:** These are obtained through the sale of treasury Bills and Certificate to members of the public.
- b. **Medium and long-term loans:** These include long term stocks sold also to the public.
- c. **Foreign loans:** These are loans obtained from I.M.F. World Bank, Paris Club, etc.

Tutor-Marked Assignment

Do you think Government Expenditure in Nigeria has improved the Economy? Discuss. Note: Detailed explanation is required.

4.0 Conclusion

Public expenditure is spending made by the government of a country on collective needs and wants such as pension, provision, infrastructure, etc. However, until the 19th century, public expenditure was limited as laissez faire philosophies believed that money left in private hands could bring better returns. Moreover in the 20th century, John Maynard Keynes argued the role

of public expenditure in determining levels of income and distribution in the economy. Since then government expenditures has shown an increasing trend.

5.0 Summary

In this unit we analyse that Government spending (or government expenditure) includes all government consumption and investment but excludes transfer payments made by a state. Government acquisition of goods and services for current use to directly satisfy individual or collective needs of the members of the community is classed as government final consumption expenditure. Government acquisition of goods and services intended to create future benefits, such as infrastructure investment or research spending, is classed as government investment (gross fixed capital formation). Government expenditures that are not acquisition of goods and services, and instead just represent transfers of money, such as social security payments, are called transfer payments.

Finally, the first two types of government spending, final consumption expenditure and gross capital formation, together constitute one of the major components of gross domestic product.

6.0 Tutor-Marked Assignment

1. List and explain all the concepts of a good Budget.
2. Make clear differences between recurrent expenditure and revenue.
3. Critically discuss the reason for increase in Government expenditure and how Government expenditure is financed.

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UNIT 3 GOVERNMENT REVENUE

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1.0 Introduction

Government revenue is the income available to fund the activities of a government. Running a country can be very expensive, and governments have a wide range of responsibilities, such as operating the various departments, maintaining an armed force, investing in development, and the alleviation of poverty. Every country has a fixed method of revenue generation that varies

from control of a country's physical resources to taxation of the country's citizenry. Many governments tax citizens directly, based on each household's individual income. In addition to direct taxes, there are also numerous indirect taxes on government services, financial transactions, and commercial activity that also generate revenue.

From the early days of civilization, those in power have always relied on taxation as a method to generate income. In areas ruled by a monarch or dictatorship, most of the income was used at the discretion of the sole ruler. Today, however, government revenue is spent on the operation of the government and for development of the nation. Some governments, particularly those that have high-valued deposits, such as oil or precious metals, rely primarily on natural resources and monopolize the extraction of these resources to generate income. Others generate revenue by directly taxing citizens on items such as income, everyday purchases, and business profits.

2.0 Objectives:

- At the end of this Unit, you should be able to
- Understand the meaning of Government Revenue
- Know the different types of Taxation as a source of Government Revenue
- Know the use of attribute or Principles of Taxation

3.0 Main Content

3.1 Taxation

A tax is a compulsory levy imposed by the government on individuals and business firms as it relates to the incomes, consumption, and production of goods and services. Such levies are made on personal income, this consist of salaries (Pay-As You Earn), business profits interest income on dividends, royalties; and also on company profits, petroleum profits, capital gains, etc. However, the resultant benefit from such levies does not necessarily correspond in magnitude to the amount of tax paid by the various sectors. It should be noted however that:

- i. The payment of tax is a compulsory obligation which is enforced by law by the government who ensures penalty is given to defaulters;

- ii. The government alone can levy tax which it does through such agencies like Customs and Exercise Department, Internal Revenue Department, Inland Revenue Division, etc.

3.1.1 Reasons why government levy taxes

Revenue generation: this is one of the main sources of government revenue. Government imposes taxes to raise money to finance its expenditure. Raising taxes is an unpopular decision and government must be able to mould and feel the pulse of the citizenry or they may express their displeasure at the next general election.

Re-distribute income: Taxes are levied to achieve greater equality in the distribution of wealth and income. Where there are great disparities of income, aggregate demand falls, hence government can introduce a progressive tax system which will take more money from the rich than poor. The revenue generated will be used to further invest in projects that will be beneficial to both the poor and rich alike.

Exercise control of the economy: Taxation can be used to regulate inflation and deflation in an economy. A higher tax will reduce disposable income, hence aggregate demand, while a lower tax will increase disposable income thereby stimulating aggregate demand. It is used also to achieve the objective of full employment.

Modifying the influence of the price system: By protecting infant industries, developing vital industries, increasing trade with regional trading partners like ECOWA, etc and improving the terms of trade. This is done by government levying import duty on goods whose supply is less than demand for them.

To discourage 'certain' consumption: There are some goods which are socially undesirable as a result of the danger to health, that is, alcohol and cigarettes, danger to environment, that is, pollution emitting cars, etc. government can impose heavy taxes on sales and high import duties on such cars to discourage their consumption. If the goods are fairly elastic, quantity demanded will fall. To promote export: deduction in tax on exported goods (i.e. reducing export duty) will serve as incentives to exporter to export more goods.

Promote economic growth and development: Such as granting tax holidays, tax concessions to some companies over a period of time. Taxed profits could be reinvested at lower rate and generous investment allowance should be given.

To promote balance of payment by imposing duties to restrict imports.

3.1.2 Types of Taxes

There are two types of tax - direct and indirect.

Direct taxes: This is a tax levied directly on the incomes or individuals and business firms. The incidence of tax falls directly on the payer since it is not possible for the person who pays the tax to shift the burden to someone else, hence, each individual or business firm's liability is assessed separately.

Under direct taxes, we have:

- a. **Income tax:** This is a tax levied on individual's incomes usually at a standard rate. Personal allowances on family and other responsibilities are allowed before the tax is levied on the remainder called taxable income. The incidence of taxation is certain as the individual cannot shift the burden of taxation. It is based on the Pay As You Earn (PAYE) system.
- b. **Corporation or company tax:** This is a tax levied on the profit of the company after all expenses have been deducted. The incidence of tax is uncertain because it is possible for a company to shift the tax burden to the consumers. The ability to shift or not depends on the elasticity of the products of the company.
- c. **Property tax:** This is a tax levied on the property of the individual. These taxes include tenement rates, etc.
- d. **Capital gains tax:** This is a tax levied on capital gains (or appreciated value) realised on all assets usually at a flat rate. Owner occupied houses, cars, goods and chattels sold in excess of their original value (i.e. appreciated value) are taxed.
- e. **Poll tax:** This is a flat rate levied on every individual in a country. This type of tax ensures everybody pays tax in the country.

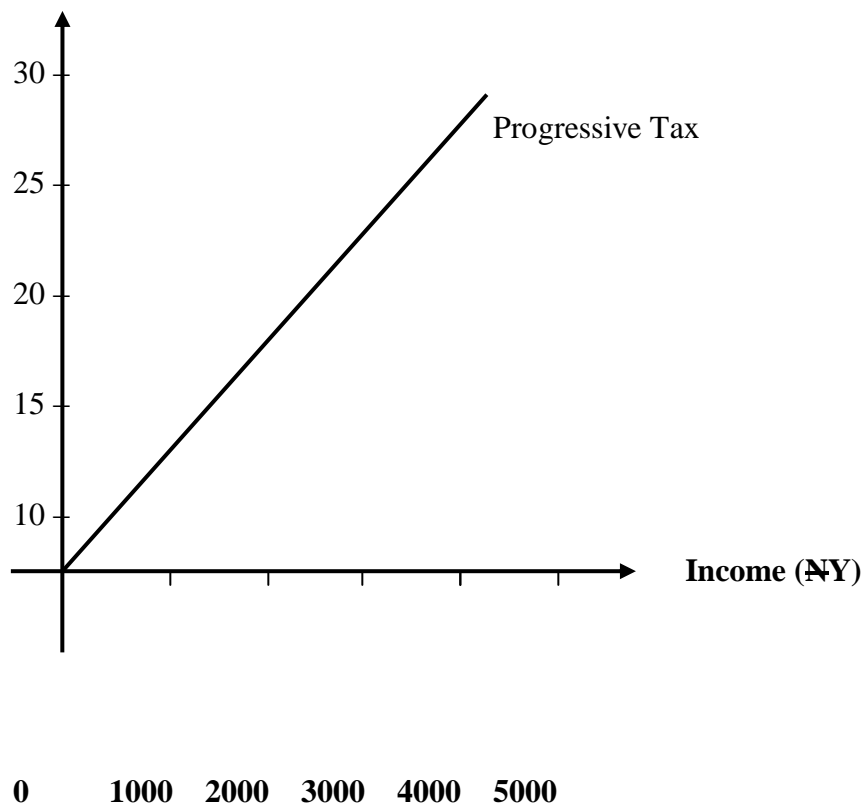
- f. **Estate duty:** This is a tax payable on the estate of a deceased person. Rate charged are progressive depending on the value of the building.
- g. **Other taxes:** This includes motor vehicle duties, stamp duties, land tax and mineral-rights duties, Petroleum income tax, capital transfer tax, etc.

3.1.2.1 Forms of Direct Taxes

- i. **Progressive tax:** This is a situation where tax rate increases as the size of income increases, that is, the higher the tax base (taxable income), the higher will be the tax rate. These types of tax reduce income inequality and increase aggregate demand. It is non-inflationary and yields more revenue to the government. A major disadvantage is that it becomes a disincentive to work as the payer pays more as he earns more income. Graphically, the tax behaves in this form.

Figure 1

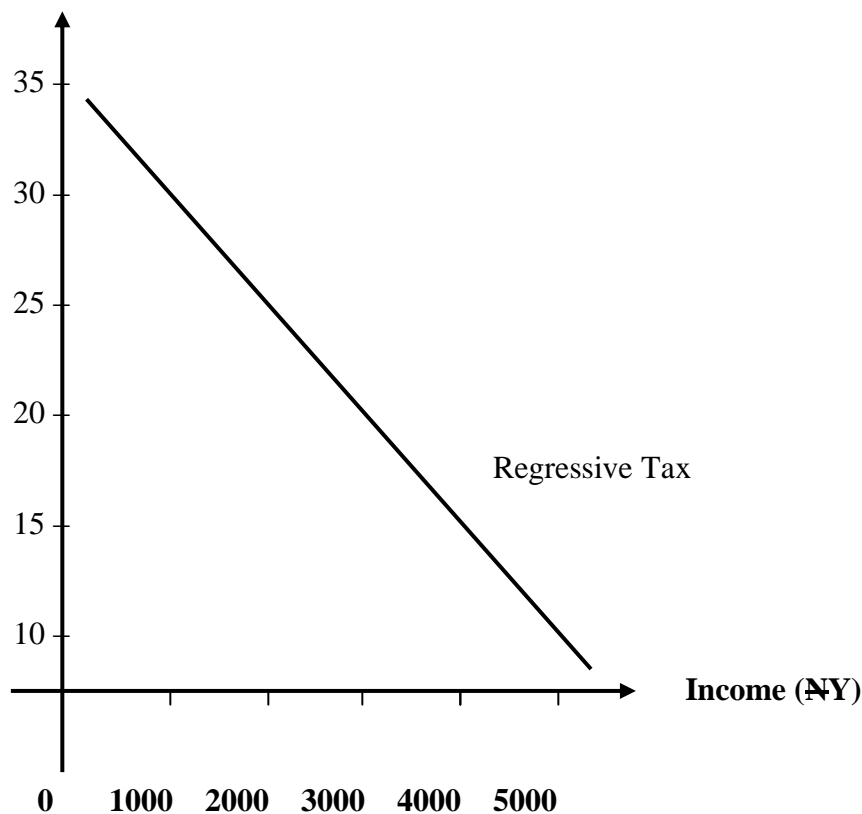
A GRAPH SHOWING THE PROGRESSIVE TAXATION



- ii. **Regressive tax:** This is a situation where tax rate reduces as the size of income increases. It is hardly used in real life as it tends to widen the inequality of income between the rich and the poor (which is not good for development) and it results in a fall in aggregate demand and lower yield of revenue to the government. Though it has the advantage of creating incentive to work as the more you earn, the lower will be the tax deducted from your income. Diagrammatically, it is represented below:

Figure 2

A GRAPH SHOWING THE REGRESSIVE TAXATION

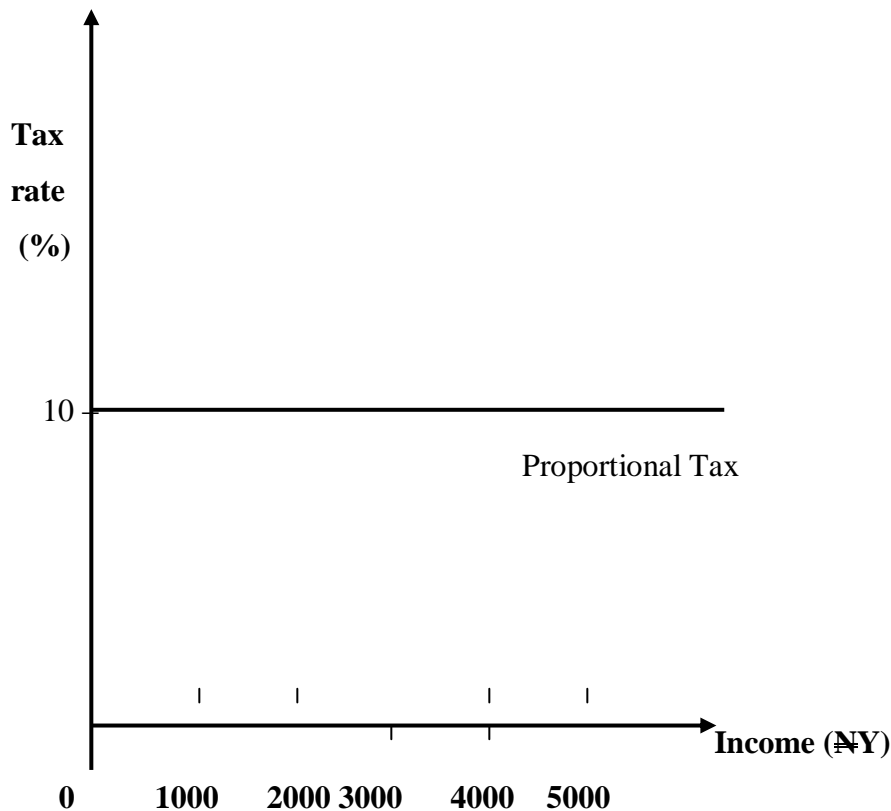


- iv. **Proportional (neutral) tax:** This has a constant rate. The tax levied is proportional to the tax base or income of the individual. It does not take into account the economic situation of the tax payer either he is rich or poor. This tax is impartial

but it is insensitive to the economic situations of the payer. Proportional tax is represented below?

Figure 3

A GRAPH SHOWING THE PROPORTIONAL TAXATION



3.1.2.2 Advantages of Direct Taxes

High yield: Direct taxes have the advantage of high yields at a low cost of collection. Employers are required to deduct the tax each week or month from the employees' pay-packet. An increase in tax guarantees higher revenue to the government.

Convenience: Tax deducted under the PAYE system enables the burden of tax to be spread over the year instead of being paid lump-sum. The tax payer would have conditioned his mind to giving out a determined amount each month rather than pay in lump-sum at the end of the year which can become burdensome for him.

Certainty: The tax payer knows-for certain how much will be deducted from his income as tax and when he is to pay it. It enables him to plan on his income even before he receives it. Moreover, it is difficult to evade direct tax as it is deducted from source that is PAYE, dividends and it.

Equity: Direct taxes ensures in that the rich are made to pay according to their earnings and the poor according to their earning. Allowances are usually given for family and other responsibilities which are deducted from gross income to arrive at taxable income or tax base. Furthermore, a progressive sur tax is added when income reaches a certain level.

Redistribution of income: Direct taxes help redistribute income and wealth more equally. The progressive nature of the tax enables the finance generate more revenue from the rich which it can use to finance investment beneficial to both the rich and the poor.

3.1.2.3 Disadvantages of Direct Taxes

Act as disincentive to work: High tax rate can cause disincentive to work. People may prefer to go for leisure (which is not taxed) rather than go for work (which is taxed) they feel that they are not getting enough from the extra work they are putting in as it is heavily tax. Though this is not always the general view, while some might not want to put in extra efforts would because of the interest they have on the job.

It encourages tax avoidance: Though PAYE system ensures that every employee pay taxes, tax payer might be forced to falsify their family and other responsibility allowances to get lower tax base when tax is high.

It encourages efficiency: Individuals an arid business firm tends to become less efficient where there is high tax rate to be paid by them. A situation where firm ply 45 percent of profit as tax and workers pay more in tax will result in the unwillingness of the firms to take further role to expand and for the workers to perform effectively.

It repels foreign capital: Investors come to invest in countries where they hope to enjoy higher returns-Jon capital. Consequently, any increase hi tax payable on their return which persists will discourage them and they might move their investment to a higher yield, lower tax countries.

Reduce plough back profit: Most firms plough back certain percentage of their profit in other to expand and venture into new areas. Where tax rate imposed on the firm is high, it reduces the funds in the hands of the companies and ultimately hinders the firms' desired growth.

Reduce savings: High tax rate may sometime reduce savings. Small companies or sole proprietors and workers rely on a fat salary or profit to enable them save part of it for 'rainy1 day. But where high tax rate is applied, there will be little or nothing to save after other expenses have been taken care of.

3.1.3 Indirect Taxes

These are taxes levied on goods and services indirectly by the government which is collected through the importers, manufacturers or other intermediary. The incidence of tax is, as far as possible, .shifted on to the consumer by including the duty in the final selling price of the good. When an importer pays tax (import tax) or a manufacturer pays tax (excise duty) on goods imported or produced locally, depending on the elasticity of the good, the importer or manufacturer adds the tax to the cost of the goods which it passes to the consumer who ultimately pays the tax.

However, it is possible to avoid indirect taxes because it is payable only if a consumer buys the good on which tax is levied. There are two types of indirect tax. They are:

Specific: This is a fixed sum irrespective of the value of the good. For example, if a sum of ₦20.00 is fixed on a shirt, then the fixed tax of ₦20.00 is the specific tax.

Advalorem: This is a given percentage of the value of the good. For example, if a machine tool is N1, 000,00 and an ad valorem tax of 7 percent is imposed, then tax paid is N70.00.

Under indirect tax we have:

Custom duties: This refers to export and import duties.

- a. **Export duties:** these are taxes imposed on all exports from the country. They constitute a source of revenue of most African countries that rely much on income from their primary products exported. They are easy to collect.
- b. **Import duties:** These are taxes levied on all import into the country. They are usually levied at the point of entry of the goods and constitute a source of revenue in most less developed countries. The government uses it sometimes to discourage consumption of certain products or to promote domestic production.

Excise duties: These are taxes on home-produced goods such as petrol, cigarettes, beer and whisky, milo, etc. Higher tax rate on locally manufactured goods discourages domestic production which may make the domestic goods costlier than imported goods.

Purchase tax: This is an ad valorem tax imposed on goods at various percentages and which is generally collected at the wholesale point. It is imposed on a wide range of products that is, confectionery, clothing, household equipment etc.

3.1.3.1 Advantages of Indirect Taxes

Convenience: The consumer is able to spread the payment of the tax burden as and when he actually make purchases since the tax is payable only at the wholesale stage. Most buyers of the goods are not aware that they are even paying taxes on goods purchased. This helps to reduce the resentment they may have on the tax.

Reduces imposition of high direct taxes: Since taxes are one of the main sources of government revenue, the high yield of indirect taxes has made the government not to excessively increase direct taxes to source for funds.

Certain and immediate yield: Yield from indirect taxes especially on fairly demand are certain since the consumer has little alternative to the product. Any increase in tax produces extra income with little time-lag as far as the elasticity of the product remains inelastic.

It does not disturb initiative and enterprise: Unlike direct tax which the worker sees, because it is deducted from his earnings directly, indirect taxes on the other hand fall on spending. It will not lead to disincentive to work. In fact, it may lead to incentive to work as the worker may work more hours to enable him maintain his lifestyle being eroded by increase in price.

It can be used to discourage consumption: If the government's aim is to discourage consumption of certain goods, or to help promote home made goods, this is done by imposing high tax rate on the products to make it expensive. This will reduce the purchase of this good by the consumers. It serves as automatic stabilizer of the economy: The government can heavily tax home-made goods and imported luxuries with high income elasticity, such that as income increases, the yield from indirect taxes also increases. The increase in revenue from this tax helps to stabilize the economy in periods of inflation.

3.1.3.2. Disadvantages of Indirect Taxes

Double taxation: To an individual, he is made to pay Income tax at rates of his own, known and he also pays indirect taxes through purchases he made at rates unknown to him likewise, and producers pay income tax as individuals and also pay company tax and as applicable import or export duties. This double taxation may discourage production. It is regressive: If the rich and the poor buy the same goods, then they are liable to pay the same amount of tax levied on the goods. This is regressive and it undoes some of the redistributive effects of direct taxation. However, imposing ad valorem tax instead of specific tax may lessen the effect on the poor.

Discourages domestic production: High excise duties make domestic manufactured goods more expensive than imported goods. Moreover, when import duties on such goods are low, it will encourage importation of such goods rather than promote growth in domestic production.

It can create inefficient industries: Import duties and subsidies are intended to give special assistance to an industry. But if prolonged over a period of time, government may be protecting inefficient industry. Moreover, the government might find strong opposition if it wants to remove the protection e.g. the fertilizer subsidy in Nigeria.

It may have inflationary influence: When indirect taxes are imposed, it is reflected in high prices on the goods. Where this increase is general on all goods, a strong labour might agitate for higher wages which may put the government into difficulties of controlling inflation.

3.1.4. Direct and Indirect Taxes Compared

- i. Some direct taxes, that is, on petty traders, self-employed, professionals, etc. are difficult to compute and collect because it is difficult to know their income, but indirect taxes are paid once you consume the goods.
- ii. The incidence of tax can be shifted more readily under an indirect tax hence people are more willing to pay, but it cannot be shifted in a direct tax which makes the payer wants to dodge tax. Thus it is common to see people evade and avoid taxes under direct tax than indirect tax.
- iii. People are more sensitive to increases in direct taxes as they are to indirect tax. Direct tax has direct effects on their disposable income which reduces their purchasing power. But they rarely notice the increase in indirect tax except when the prices y f goods are very high.
- iv. As a fiscal tool, indirect taxes are more effective than direct taxes. However, objective being pursued by the government and the responsiveness of quantity demanded to price changes also play an important part.
- v. Indirect taxes involve little administrative costs than direct fees.

Tutor-Marked Exercise

Discuss in detail the role of taxation in national development in an underdeveloped country.

3.2 Attributes or Principles of Taxation

Economic Principle: A good tax system must ensure it does not make the economic .situation of the tax payer worse off. The administration must see the payer as an investor, consumer and saver and should ensure it does not adversely affect the payers' contributions to those areas.

Production of revenue: The cost of collection should at least be less than the yield from the tax. It is unwise and uneconomical to spend too collection of tax.

Certainty: The tax must be certain and the payer must know exactly when and where he has to pay his tax. He should find it difficult to evade payment

Equity: Tax implementation must not be arbitrary or vindictive. Persons of the same tax base should be made to pay the same amount as tax. For example if Mr. Olu and Mr. Ade earn the same income., the same family size and other things equal, then they must pay the same amount as tax.

Conveniences: Tax payment should relate to how people receive and spend their incomes. It will be out of place to ask for tax from a farmer whose harvest yet to come. But a PAYE system is convenient to salary earner while import duties imposed at the port is convenient to the payer.

Neutral: A good tax system should not dislocate or distort the relative prices in an economy.

Adjustable or flexible: It should be capable of variation as an economic tool of control, to change in policy. Import duties aimed to protect infant industry always becomes difficult to remove or lower when the infant becomes dependent on the protection.

It should not be harmful to enterprise and initiative: When tax rate is high up to a point, it becomes less exiting to work. This can induce the tax payer seek for leisure instead of striving harder for promotion or overtime.

It must be consistent with government policy: Individual taxes must be constantly reviewed to see how they could be used to promote government policy or to prevent their working out of harmony with it.

Acceptability: In a democracy, people respond to bad government policies through general elections, government must ensure that its tax system is politically acceptable to the people who will pay it or they might respond unfavourably to it at the next general elections.

3.2.1 Tax Evasion

This is a deliberate attempt by a taxpayer not to pay tax. It is a criminal act. Petty traders, self-employed, etc. always try to evade payment of tax.

3.2.2 Tax Avoidance

This is an intentional or deliberate act of exploiting the loopholes in the tax regulations to manipulate his economic situation in order to pay lower tax. Example is when a taxpayer claims he has children or aged parents to get tax relief when actually he has none.

3.2.2 Tax Incidence

This refers to the bearer of the burden of the tax.

As disclosed above, there are two types of taxes - direct and indirect taxes. Direct taxes, as we said, are progressive. They fall heavily on the rich than on the poor, while indirect taxes are regressive as the poor pays more tax than the rich. But this is only the formal incidence of tax. The economist is concerned with the effective incidence, that is, how the real burden of a tax is distributed between the producers and the ultimate consumers; and to show the no effects of such taxation on output and price.

But it is in the indirect taxes that the effective incidence can be analyzed more precisely.

According to Musgrave and Musgrave, the effect of indirect taxes and savings is comparatively less retarding at least for two reasons.

First, the incidence of indirect taxes, unlike the direct taxes tends to be regressively distributed.

The regressive nature of indirect taxes is based on the decreasing marginal propensity to consume as income rises.

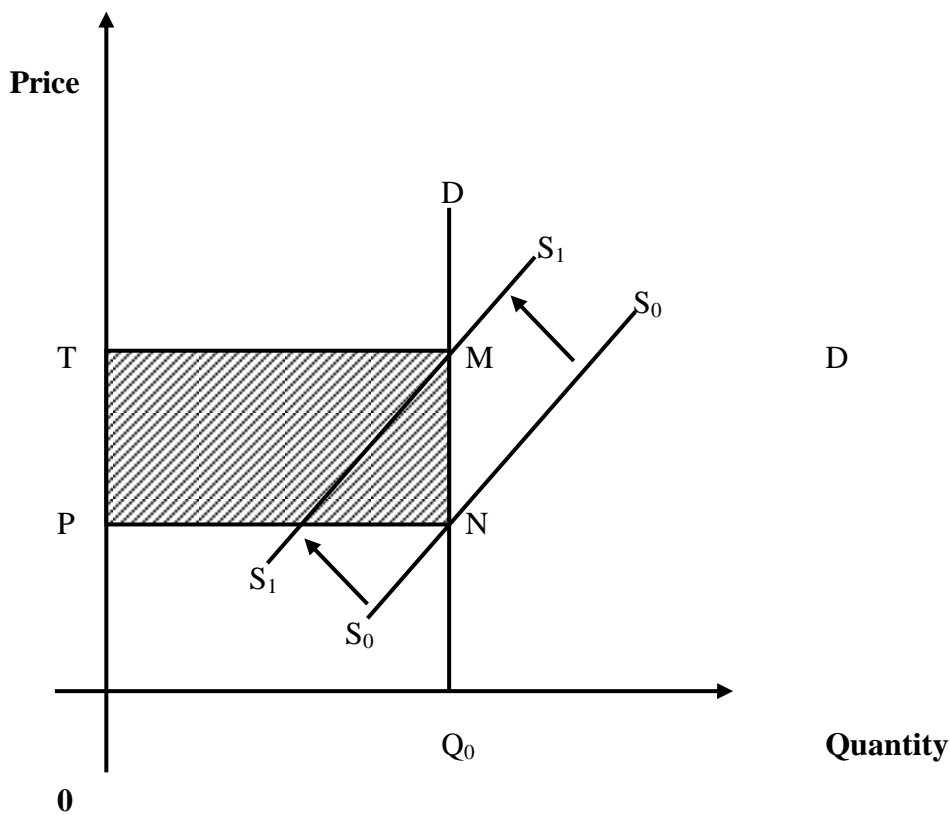
Second, “consumption tax (or commodity tax) does not reduce the rate of return on savings and therefore avoids the substitution effect of the income tax, which is averse to saving.” That is why

it is generally suggested that the developing countries should adopt commodity' taxation for mobilizing resources for rapid economic growth.

The main question to ask in the matter of tax incidence is “How will the burden of an indirect tax are ultimately distributed between producers and consumers?” We will use the elasticity of demand to determine this distribution. Hence, for different elastics will be used to illustrate this:

Figure 4

A GRAPH SHOWING THE INCIDENCE OF A TAX WHEN DEMAND IS PERFECTLY INELASTIC.



In figure above, the price OP , without tax, OQ_0 quantity was demanded and the revenue of producers is OQ_0NP_0 . Assume a specific tax is imposed on a commodity with a zero elasticity of demand; price rises from P_0 to P_1 , while quantity demanded is constant at Q_0 . The supply curve shift upward from S_0S_0 to S_1S_1 . The revenue of the producer still remains OQ_0NP_0 but the full amount of tax - P_0TMN (or the shaded area) is borne fully by the consumers. Thus it is possible for the producer, under a perfectly inelastic demand, to pass on the-full amount of the tax to the consumers. Analysis of the graph:

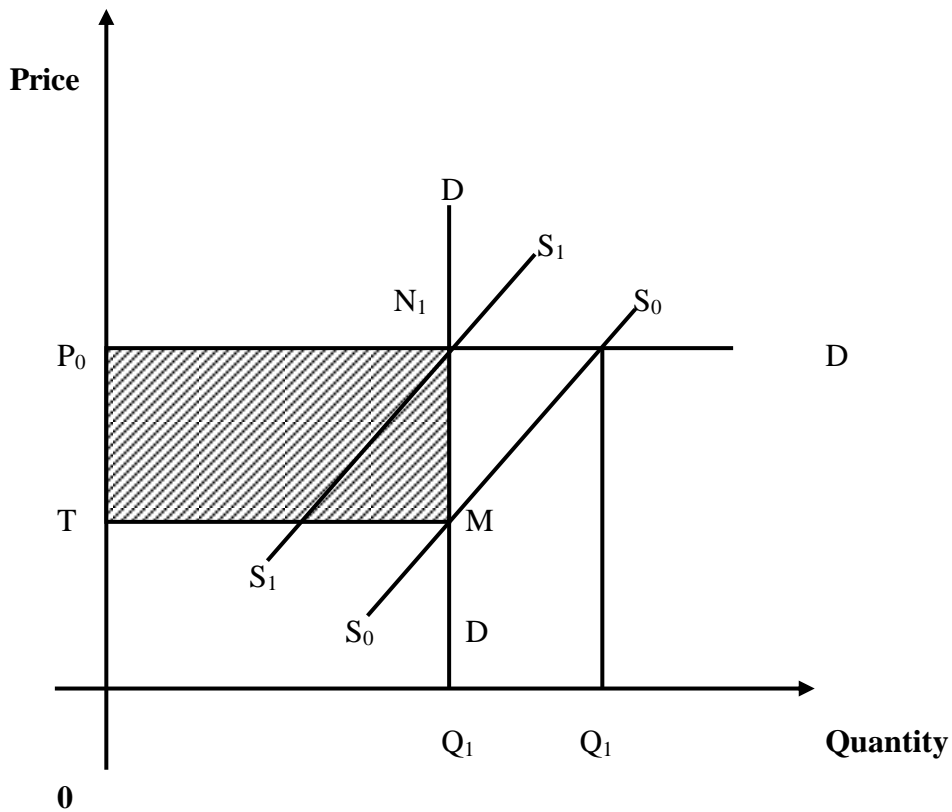
- a. There is a rise in price equivalent to the full amount of the tax i.e. OP_0 to OT .
- b. There is no change in quantity demand as a result of the price change.
- c. Government realizes a high revenue i.e. P_0TMN .
- d. The tax incidence is completely borne by the Consumers i.e. P_0TMN .

Perfectly elastic demand

From figure 4, the initial price before tax was imposed is OP , while output is OQ_0 . Revenue to producer is OQ_0NP_0 , when a tax is imposed, the demand for the commodity falls from Q_0 to Q_1 , while the supply curve - shifts from $S_0 S_0$ to $S_1 S_1$. The consumers buy the good at the same price but they pay fees for it. Revenue of the producer falls from OQ_0NP_0 to $OQ_1N_1P_0$

Figure 5

A GRAPH SHOWING THE INCIDENCE OF A TAX WHEN DEMAND IS INFINITELY ELASTIC.



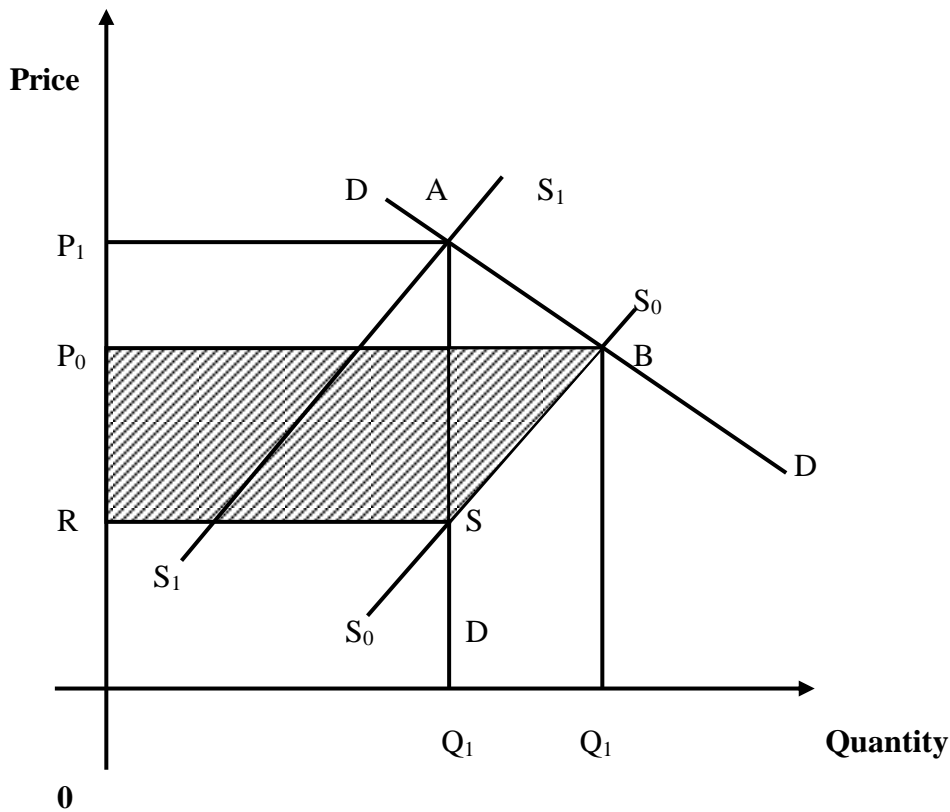
The tax of P_0N_1MT is borne fully by the producer.

Highlights

- a. Price remains unchanged at OP_0
- b. Quantity demanded fall from Q_0 to Q_1
- c. Government tax revenue is P_0N_1MT
- d. The full burden of tax P_0N_1MT being borne by the producer.

Figure 6

A GRAPH SHOWING THE INCIDENCE OF A TAX WHEN DEMAND IS FAIRLY INELASTIC.



Tutor-Marked Exercise

Define taxation? List and explain the attribute or principles of a good tax system.

4.0 Conclusion

In this unit, we have can conclude that government revenue is revenue received by a government. It is an important tool of the fiscal policy of the government and is the opposite factor of government spending. Revenues earned by the Government are received from sources such as Taxes levied on the incomes and wealth accumulation of individuals and corporations and on the goods and services produced, exported and

imported from the country, Non-taxable Sources such as Government-owned corporations' incomes, Central bank revenue and Capital receipts in the form of external loans and debts from international financial institutions.

5.0 Summary

Aid interventions in revenue can support revenue mobilization for growth, improve tax system design and administrative effectiveness, and strengthen governance and compliance. However, the best aid modalities for revenue depend on country circumstances, but should aim to align with government interests and facilitate effective planning and implementation of activities under an evidence-based tax reform. Lastly, she found that identifying areas for further reform requires country-specific diagnostic assessment: broad areas for developing countries identified internationally (e.g. IMF) include, for example property taxation for local revenues, strengthening expenditure management, and effective taxation of extractive industries and multinationals

6.0 Tutor-Marked Assignment

1. Differentiate between Government revenue and Government expenditure.
2. Do you think Direct tax is better to Indirect tax in an economy?
3. Good budgets bring Economic development in an economy. Discuss.
4. Public Finance is a good instrument for improving an economy, especially underdeveloped countries. Discuss.

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MODULE FIVE ECONOMIC GROWTH AND DEVELOPMENT

- Unit 1 Analysis of Economic Growth and Economic Development
- Unit 2 Measurement of Economic Growth
- Unit 3 Measurement of Economic Development

UNIT 1 ANALYSIS OF ECONOMIC GROWTH AND DEVELOPMENT

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Economic Growth and Economic Development
 - 3.1.1 Why Economic Growth may not promote Economic Development.
 - 3.2 Inadequate Growth in Comparism with Population.
 - 3.3 Development Objectives
 - 3.4 Common Characteristics of Development Nations.
- 2.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 Introduction

The aftermath of the Second World War, generated the interest of economists to the study of economic development. However, the need on the part of many nations to address the slogan that

poverty anywhere is a threat to prosperity everywhere further strengthened the interest on the subject matter.

Development, being an embodiment- of many indicators is difficult to define precisely. To buttress this statement, Todaro (1977) argues that development is not purely an economic phenomenon because it encapsulates (comprises) more than material and financial side of people's lives. Further, he stressed that development is a multidimensional process involving re-organization and reorientation of entire economic and social systems.

2.0 Objectives:

At the end of this Unit, you should be able to

- Understand the meaning of economic growth economic development
- Know why Economic Growth may not promote Economic Development
- Know the objectives Economic Development
- Know the characteristics of developing Nations

3.0 Main Content

3.1 Economic Growth and Economic Development

The terms growth and development are often misused by laymen to mean the same thing. But this is not so. The summary below ' focuses on the distinction between growth and development.

Fashola (1998) argues that economic growth is an aspect of economics that deals with national income objectives; whereas development incorporate other objectives such-as: equitable welfare distribution, national self reliance, balance sectorial development, balanced, regional development, ecological balance, social and environmental stability, among others.

Todaro (1977) contends that growth stimulates improvement in incomes and output while development involves radical changes in institutional, social and administrative structure, as well as in popular attitudes and sometimes even customs and beliefs.

Schumpeter (1934) stresses that growth is a gradual and steady change in the long run which comes about by a general increase in the rate of savings and population. Development on the other hand is a discontinuous and spontaneous change in the stationary, state which forever alters and displaces the equilibrium state previously existing.

Maddison (1970) was of the opinion that the raising of the income levels in rich countries is economic growth. But the achievement of the same objective in underdeveloped countries is economic development.

Kindleberger (1952), advances that economic growth means more output while development implies both more output and changes technical and Institutional management by which it is produced and distributed.

Bakare (1999) perceives development as the process of optimizing the resources of a nation to meet the needs of the people and their enlightened aspiration and endowing them with the capacity To sustain their achievement It need be stated that growth is a necessary but not a sufficient condition for attaining development. Without growth there cannot be development. But without development, there can be growth.

It is also necessary to say that the existence of growth in a country may not lead to development in a situation where: there is growing income; inequality which can strengthen abject poverty. More so, Inter-sectorial imbalance will not promote development because an increase in national output not accompanied by equitable distribution of income will create setback for sectors such as housing, utilities, health "Services, food production, transport and communication. As such development cannot be sustained because diseases, mortality rate, starvation, misery, and industrial inefficiency cannot be eradicated.

Other reasons why economic growth may not lead to development can be attributed to environmental degradation, moral, intellectual and spiritual decadence.

3.1.1 Why Economic Growth may not Promote Economic Development

According to Bakare (1998), economic development is a gradual process and as such one can discuss it in terms of relativity, it is on this basis that countries over the world are classified into developed, developing or Less Developed Countries (LDC).

The circumstances or situation whereby economic growth win fail to promote economic development can be stated and explained below:

1. Inadequate growth in comparison with population.
2. Widening inequality in the distribution of income.
3. Imbalance in inter-sectorial development.
4. Environmental degradation and ecological disturbances,
5. Moral, intellectual, spiritual and social decadence.
6. Economic dependence.

Tutor-Marked Exercise

Differentiate between Economic growth and Economic development, do you think there is difference between them, if yes or No, Disc

3.2 Inadequate Growth in Comparison with Population

If economic growth is not growth significantly relative to population, it may fail to promote economic development For example, an economic growth of 3 - 4% in comparison with population growth of 10% due to relaxation of immigration law may not enhance development. Summarily;

$G(\text{GNP}) > G(\text{POP}) = \text{Development}$

$G(\text{GNP}) = G(\text{POP}) = \text{No Development}$

$G(\text{GNP}) < G(\text{POP}) = \text{Under Development}$

Where:

G = Growth

GNP = Gross National Product

POP = Population
 > = Greater than
 < = Less than

Income Distribution: Even if the growth in GDP exceed the population growth and income is not well distributed, the unequal income distribution will lead to widening gap between the rich and the poor, therefore, violating one of the objectives of economic development.

Hypothetically, let us assume that the richest people in an economy constitute 10% of the whole population and their income can be increased' by 50%. If the economy grows at 7% P. A., the growth rate in the income of the majority can be calculated using the formula below:

$$g = w_1g_1 + w_2g_2$$

Where:

g = Economic growth
 w₁ = Proportion of population of the rich
 w₂ = Proportion of population of the poor
 g₁ = Growth in the income of the rich
 g₂ = Growth in the income of the poor
 $g = \frac{7}{100} = 0.07$
 $w_1 = \frac{10}{100} = 0.1$
 $w_2 = 10.1 = 0.9$
 $g_1 = \frac{50}{100} = 0.5$
 g₂ = ?

$$0.07 = (0.1)(0.5) + 0.9 (g_2)$$

$$0.07 = 0.05 + 0.9 (g_2)$$

$$0.07 - 0.05 = 0.9 (g_2)$$

$$g_2 = 0.07 - 0.05$$

$$0.9$$

$$g_2 = 0.022$$

i.e. 2.2%

Thus, the income of the majority will just be growing at 2.2%

Tutor-Marked Exercise

Do you think there are similarities between Growth and Population? Discuss

3.3 Development Objectives

The development objectives popularly pursued by most countries are:

Growth in income: The growth in income will be desirable if it ranges between 6-7 per cent than the national income will double. At 10 per cent, the average income will double, but this is not sustainable.

Equitable distribution of income: The income generated should be equitably distributed to every region, sector, classes, etc. This should aim at bridging the gap between the poor and the rich. Otherwise, there will be deepening poverty which may cause violence, unrest, conflict, civil war, etc.

Employment promotion: There must be provision of jobs for the skilled, semi-skilled and unskilled labour to reduce the incidence of social menace (e.g. armed robbery) in the society.

Self reliance: There must be improvement in balance of payment (BOP), external economy, food, security, reduction in stock of external debt. This also extends to strategic needs such as energy, security, defense, etc. (to protect territorial integrity).

Price stability: There should be negligible inflation. No price fluctuation. The prices of goods and services should be stable over a period of time.

Balanced development: There must be balance in the nation, in the sectorial units, there must be balance. Not necessarily at the same rate but it should meet the need for development requirement. There should be regional balance to reduce rural-urban migration.

Environmental preservation and maintenance of ecological balance: These imply that residential environment must be free of oil spillage, air pollution, etc. The drainage system must also be efficient to prevent flooding of water.

Tutor-Marked Exercise

List and explain in detail the various development objectives.

3.4 Common Characteristics of Developing Nations

The common characteristics of developing nations could be discussed under the following six sub-headings, which are: low levels of living, low level of productivity, high rates of population growth and dependency burdens, high and rising levels of unemployment and underemployment, substantial dependence on agricultural production and primary products 'exports', and dominance, dependence and vulnerability in international relations. These are discussed below.

Low levels at livings: In developing nations, general-levels of sayings tend to be very low for the vast majority of people. This is true not only in relation to their counterparts in rich nations but often also in relation to small elite groups within their own societies. These low levels of living are manifested quantitatively and qualitatively in the form of:

- a. Low income (poverty);
- b. Inadequate housing;
- c. Poor health;
- d. Limited or no education;
- e. High infant mortality;
- f. Low life and work expectancy; and
- g. In many cases a general sense of malaise and hopelessness.

The gross national product (GNP) per capital tends to be very low for most developing countries. It is often used as a summary index of the relative economic well beings of the people in different nations. The GNP itself is the most commonly used measure of the overall level of economic activity.

Also there is relative slower growth rate in the GNP per capita of developing countries when compared to their developed counterpart. Not only have these, the absolute income gapped between rich and a poor nation continues to widen.

Low level of productivity: In addition to low levels of living, developing, countries are characterized by relatively low levels of labour productivity. The levels of labour productivity (i.e. output per worker) are extremely low compared with those in developed countries.

To raise productivity, domestic savings and foreign finance must be mobilized to generate new investment in physical capital goods and also to build up the stock of human capital (e.g. management skills) through investment in education and training .

High rates of population growth and dependency burdens

The population rate of developing nations is high when compared to the developed nations. This could be accounted for by low birth rate and a striking increase in crude birth rate for developing countries.

Death rates in the third world countries are also high relative to the more developed nations' but because of the improved health conditions and the control of major infectious diseases, the less developed countries death rates differences are substantially small than the corresponding differences in birth rates.

The major implication of high less developed countries birth rates is that children under the age 15 are more less, developed countries, than in developed countries. Therefore most active labour in less developed countries has to support children more than in developed countries. On the other hand, the proportions of people over the age 65 and above are more in developed countries. Older people as well as children are often referred to as an economic/dependency burden in the sense that they are non-productive members of the society and therefore must be supported financially by a country's labour force.

The overall dependency burden is, more in less developed countries than in developed countries. Therefore, the less developed countries would not only contend with high rates of population growth but they also must struggle with greater dependency burden than the rich nations.

High and rising levels of unemployment and under-employment: One of the principal manifestations of and factors contributing to the low levels of living in 'developing nations is their relatively inadequate or inefficient utilisation of labour in comparison with the developed nations.

Under-utilisation is manifested in two forms; first, it occurs as under-employment of those people who are working less than they could. Under-employment also include those who are normally working full time but whose productivity is so low that a reduction in hours would have a negligible impact on total output.

The second form is open unemployment of those who are able and often eager to work but for whom no suitable jobs are available. Substantial dependence on agricultural production and primary products exports: The vast majority of people in third world nation's lives and work in rural areas. Almost 80 per cent are rural based, compared with less than 35 per cent in economically developed nations. Similarly, 66 per cent of the labour forces is engaged in agriculture, compared with only 21 per cent in developed nations. Agriculture contributes about 32 per cent of the GNP of developing nations versus only 8 per cent of the GNP of developed nations.

The basic reason for the concentration of people and production in agricultural and other primary production activities in developing countries is the simple fact that at low level of income the first priorities of any person are food, clothing and shelter.

Agricultural productivity is low not only because of large numbers of people in relation to available land but also because less developed countries agriculture is often characterised by primitive technologies, poor organisation and limited physical inputs.

PRODUCTION = Limited Land + Capital + Primitive Technology+ Poor Organisation

Tutor-Marked Exercise

Discuss in detail the characteristics of developing nations in the world.

4.0 Conclusion

Economic growth is the increase in the amount of the goods and services produced by an economy over time. It is conventionally measured as the percent rate of increase in real gross domestic product, or real GDP. Growth is usually calculated in real terms, i.e. inflation-adjusted terms, in order to obviate the distorting effect of inflation on the price of the goods produced. In economics, "economic growth" or "economic growth theory" typically refers to growth of potential output, i.e., production at "full employment".

5.0 Summary

Economic development generally refers to the sustained, concerted actions of policymakers and communities that promote the standard of living and economic health of a specific area. Economic development can also be referred to as the quantitative and qualitative changes in the economy. Such actions can involve multiple areas including development of human capital, critical infrastructure, regional competitiveness, environmental sustainability, social inclusion, health, safety, literacy, and other initiatives. Economic development differs from economic growth. Whereas economic development is a policy intervention endeavor with aims of economic and social well-being of people, economic growth is a phenomenon of market productivity and rise in GDP.

6.0 Tutor-Marked Assignment

1. Differentiate between Government revenue and Government expenditure.
2. Do you think Direct tax is better to Indirect tax in an economy?
3. Good budgets bring Economic development in an economy. Discuss.

4. Public Finance is a good instrument for improving an economy, especially underdeveloped countries. Discuss.

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UNIT 2 MEASUREMENT ECONOMIC GROWTH

CONTENTS

- 1.0 Introduction
- 2.0 Objectives
- 3.0 Main Content
 - 3.1 Analysis of Economic Growth
 - 3.1.1 Theories of Growth
 - 3.2 Mathematics of Growth
 - 3.2.1 Growth Rates
 - 3.2.2 Average Growth Rate.
- 4.0 Conclusion
- 5.0 Summary
- 6.0 Tutor-Marked Assignment
- 7.0 References/Further Readings

1.0 Introduction

Economic growth concerns the relative change in the real value to volume of goods and services produced by a country for final demand (i.e. demand by households, consumers, governments, capital formation and net exports); represent the national product, national output, or national income. At market value, national output represents revenue or earnings by the business (or production) sector. Such earnings are ultimately income to the factors of production, namely; wages to labour, rent to land and real estate interest to capital and profit to entrepreneurship or the business. So output in monetary value in income, it is in this that national product (output) in the things same and national income.

2.0 Objectives:

At the end of this Unit, you should be able to

- Understand the meaning of economic growth.

- Understand how to calculate Mathematics of Growth
- Know how to calculate the Growth Rate
- Know the impact of Average Growth rate through the calculation of Growth.

3.0 Main Content

3.1 Analysis of Economic Growth

In precise terminology, we speak of Gross Domestic Products (GDP) and Gross National Products (GNP) in volume of national income. GDP refers to the market disposable value of output produced within the country i.e. produced domestically. On the other hands, GNP refers to total income accruing to the nation or at the disposal of the nation. Therefore, to obtain the GNP, we subtraction GDP, all incomes that are repatriated abroad to foreign owned factors of production (such as interest on foreign loan, dividends to foreign shareholders, and part salaries repatriated abroad on account of expatriate personnel) and add all incomes from abroad on account of the citizens of or residents in the country. What is subtracted is referred to as factors payments to abroad (FP) and what is added is referred to as factors income (FI).

The difference between factor payments to and incomes from abroad is the net factor payments (NFP). Net factors payments is almost always positive for developing countries on account or substantial foreign investment, foreign equity ownership, and-management by expatriates of the modern sector of their economies.

Thus we can state:

$$\begin{aligned}\text{GNP} &= \text{GDP} - \text{FP} + \text{FI} \\ &= \text{GDP} - (\text{FP} - \text{FI}) \\ &= \text{GDP} - \text{NFP}\end{aligned}$$

GNP is almost always significantly smaller than GDP.

GNP is more relevant than GDP for measuring economic growth since GNP IS the1 nationally available income to the people and hence more. I related to their material welfare as opposed to GDP which is income generated within the country but partly belonging to the people of other countries who partly own the resources employed in generating the GDP. Since the average

income of the people is more significant than total income, as far as economic welfare is concerned, GNP per head of the population is preferred total GNP for the purpose of measuring economic growth.

Other measures of economic growth are the volume of electricity generated per head, -total energy consumed per head, and index of industrial production net of population growth. These measures may be more reliable than per capital GNP, because the internal measurement is compounded by the changing price levels which have to be estimated and adjusted for in evaluating the real GNP or GDP at constant prices of a given year.

3.1.1 Theories of Growth

Contemporary studies have shown that theories of growth commended since the mid 1800's. Conceptually, the theory is classified into three. These are:

(Approach I)

1. Barter → Money → Credit (**Approach I**)
2. Hunting → Nomadic → Agric → Commerce → Industry (**Approach II**)
3. Household Economy → Village Economy → Town Economy → National Economy → International Economy → (**Approach III**)

APPROACH ONE

Barter: This was the period when the economic system was highly primitive and rudimentary. This form of economic system was problematic because of the need to search for someone who wants what one has and who has what one needs, (This is known as double coincidence of wants.) The system is disadvantageous on the following ground.

- i. It is time consuming
- ii. It creates the problem of divisibility
- iii. It discourages large scale production..

Money: The inadequacy of barter later brought about the development and introduction of a better means of exchange called money. In this case, the problem of double coincidence of want was completely eradicated because money facilitates quicker means of exchange.

Credit: This is the next stage of growth of exchange after the introduction of money. It developed on the need to provide remedy for safety and risk of transacting business with physical cash. In fact, it marked the beginning of advancement in information technology in the formal and informal sector.

APPROACH TWO

Hunting and Pastoral Stage: Under this stage, people hunted for animal and later developed the act of domestication. This is popular among the Arabians. Consequently, nomadic life developed as these animals were later reared in large scale.

Agricultural and Commerce Stage: This stage expanded both agricultural and trade sector through improvement in mechanized farming (i.e. use of tractors, harvesters, fertilizer, machine plough) and monetary system respectively.

Industrial Stage: It marked the emergence of industrial-growth with the production of varieties of products for private consumption and exportation.

APPROACH THREE

Household Economy: This is the smallest unit of the economic arrangement. Under this system, production was greatly subsistence, that is, people only produce for their own need/consumption.

Village Economy: It is an extension of household economy because it encouraged diversification of activities. People in this economy specialized in activities such as handcraft, fanning, weaving, among others. However, specialization got to higher stage which encouraged optimal production efficiency.

Town Economy: At this level specialization expanded together with transportation. More so, effective marketing of products developed as different town produced varieties of products.

National Economy: The national economy encouraged trade among all regions and sections of the economy based on specialization.

International Economy: This encourage improvement in trade level when two countries or among more countries of the world additionally, the remarkable, growth in global trade level in recent time have been attributed largely to progress in communication, technology, transportation among others. .

Tutor-Marked Exercise

Briefly analyse the level of economic growth in Nigeria for the past five (5) years, and discuss the theories of growth in detail.

3.2 Mathematics of Growth

It is a common practice amongst development economists to use GNP per head to measure growth rather than total GNP. GNP per head is obtained by dividing GNP by total population.

Therefore, given that

$$Y = \text{GNP} \dots\dots\dots (1)$$

$$N = \text{Population} \dots\dots\dots (2)$$

Then GNP per capita (per capita income) denoted by y is:

$$Y = \frac{\text{GNP}}{\text{Population}}$$

$$\therefore y = \frac{Y}{N} \dots\dots\dots (3)$$

3.2.1 Growth Rates

The growth rate of y defined as the percentage change is a common indicator of economic growth popularly used by international bodies such as United Nations and World Bank. Symbolically,

g_y = Growth rate of per capita GNP

g_y = growth rate of GNP

g_N = Growth rate of per population.

Therefore, the growth of per capital GNP can be symbolically expressed as:

$$g_y = g_y - g_N \text{ (approximate value) } \dots\dots\dots (4)$$

Alternatively,

$$1 + g_y = \frac{1 + g_y}{1 + g_N} \text{ (Exact Value) } \dots\dots\dots (5)$$

Illustration I

Given that the growth of GNP and that of population respectively are 7% and 3%, what is the per capita income?

$$g_y = 7\%$$

$$g_N = 3\%$$

$$g_y = ?$$

$$g_y = 7\% - 3\%$$

$$g_y = 4\%$$

$$1 + g_y = 1 + g_y$$

$$1 + g_N$$

$$1 + g_y = \frac{1 + g_y}{1 + g_N}$$

$$1 + 0.07$$

$$1 + g_y = \frac{1.07}{1.03}$$

$$1.03$$

$$g_y = \frac{1.07}{1.03} - 1$$

$$= 0.039$$

$$= 0.039 - 0 - 0$$

$$g_y = 0.039$$

$$g_y = 3.9\%$$

3.2.2 Average Growth Rate

In order to measure average growth rate over a period of years, the exponential (Geometric) growth formula is usually employed i.e.

$$Y_t = Y_0 (1 + g_y)^t$$

Y_t = GNP for year t (new year),

Y_0 = GNP for year 0 (initial year)

g_y = Average growth rate

t = time

Illustration 2

Given that GNP in 1979 and 1989 are: 125 and 155 respectively. What is the growth rate of GNP?

Solution

Using the formula

$$Y_t = Y_0 (1 + g_y)^t$$

Where

$$Y_t = 155$$

$$Y_0 = 125$$

$$t = 10$$

$$g_y = ?$$

$$155 = 125 (1 + g_y)^{10}$$

Divide both side by 125

$$155 = 125 (1 + g_y)^{10}$$

$$\frac{155}{125} = \frac{125}{125} (1 + g_y)^{10}$$

$$155 = (1 + g_y)^{10}$$

$$125$$

Multiply both power by 1/10

$$(155)^{10} = (1 + g_y)^{10/10}$$

$$125$$

$$(155)^{1/10} = (1 + g_y)$$

$$125$$

$$(155)^{1/10} - 1 = 1 + g_y$$

$$125$$

$$(1.24)^{0.1} - 1 = g_y$$

$$1.022 - 1 = g_y$$

$$g_y = 0.022 \times 100$$

$$g_y = 2.2\%$$

Tutor-Marked Exercise

If the population of a country is 3% and the growth rate of the national income is 5%, calculate the growth of the per capital income.

4.0 Conclusion

Economic growth is the increase in a country's productive capacity, as measured by comparing gross national product (GNP) in a year with the GNP in the previous year.

Increase in the capital stock, advances in technology, and improvement in the quality and level of literacy are considered to be the principal causes of economic growth. In recent years, the idea of sustainable development has brought in additional factors such as environmentally sound processes that must be taken into account in growing an economy.

5.0 Summary

The term “economic growth” has two distinct meanings. Sometimes it refers to the growth of that thing we call the economy (the physical subsystem of our world made up of the stocks of population and wealth; and the flows of production and consumption). When the economy gets physically bigger we call that “economic growth”. Finally, Economic Growth is a narrower concept than economic development. It is an increase in a country's real level of national output which can be caused by an increase in the quality of resources (by education etc.), increase in the quantity of resources & improvements in technology or in another way an increase in the value

of goods and services produced by every sector of the economy. Economic Growth can be measured by an increase in a country's GDP (gross domestic product).

6.0 Tutor-Marked Assignment

1. GDP at 1984 factor cost was N79.3 billion in 1987 and N103.3 billion in 1995. What is the average annual growth between 1987 and 1995?

At such a trend growth rate and assuming a trend population growth rate of 1.5%, how long will it take Nigeria to increase her per capita GDP tenfold, if this will remove her from the circle of poorest nations?

2. How long will it take Nigeria to reach a level of income per head of Sweden assuming the GNP at 5% and population is growing at 2% given that Sweden per capita is N15,690 and Nigeria is N370.

3. How fast would GDP grow to double National income in 10 years?

4. At a GDP growth rate of 3.3% per annum and a population growth rate of 2% per annum, how long will it take Nigeria to join the committee of industrialised countries?

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UNIT 3 MEASUREMENT ECONOMIC DEVELOPMENT

CONTENTS

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1.0 Introduction

Economists used to measure development by the growth rate of per capita GNP over a long period. The weakness of this indicator soon became obvious when many developing countries deemed to have experienced growth in per capital GNP failed to solve or reduce their problems of poverty, disease, illiteracy, foreign debt and excessive economic dependence.

2.0 Objectives:

At the end of this Unit, you should be able to

- Understand the meaning of economic growth economic development
- Know why Economic Growth may not promote Economic Development

- Know the objectives Economic Development
- Know the characteristics of developing Nations

3.0 Main Content

3.1 Analysis of Economic of Development

Per capita GNP is inadequate as a measure of development because of the following major deficiencies particularly in less developed countries. These are:

1. It is subject to an uncontrollable margin of error because of difficulties in estimating changes in general price level to deflate nominal GNP due to statistical and political constraints.
2. It does not reflect the objective of equitable income or welfare distribution, among the people and regions.
3. It does not take care of desirable sectorial distribution of economic activities that crucially affect national welfare, self reliance and survival.
4. Environmental and ecological problems cannot be addressed, using this method.
5. Non-material concerns, such as employment, morality, criminality and social justice are not taken into consideration.

Development economists and the United Nations now approach the measurement of development through socio-economic indicators or development indicators. The methodology of formulating the development indicators is to state the social concerns or development objectives of the people. Then we select some aspects of the social concerns that are measurable and are veritable in the sense that such aspects reflects the general progress in the social concern or development objective. For instance, suppose food and nutrition is a social concern, a measurable aspect of it is the calorie in-take per person per day. If calorie in-take increases, then the food and the nutrition is getting solved.

Another indicator for food and nutrition is protein intake per person per day. So we set out below some development objectives or social concerns relevant to Nigeria and the corresponding socioeconomic indicators.

Table 1**Social Concern and Socio-economic Indicators**

Development Objectives/Social Concern	Socio-economic Indicators
National income and Economic growth	Per capita GNP; Per capita energy output; Index of industrial out per head.
Equitable income distribution	Ginni co-efficient; Percentage share of national income of the poorest 40% of the population.
Employment	Percentage of people seeking job in total labour force; Percentage of people seeking wage employment in the total wage employment.
Food and Nutrition	Calorie intake per person per day; Protein intake per person per day; Infant mortality.
Education	Literacy rater percent; Combined primary and Secondary enrolment in total primary and secondary schpol age children.
Health	Death rate; Life expectancy; Infant mortality per thousand.
Self reliance	Debt ratio of export araings; Balance of payment food production, level of technology Development.
Housing	Average number of persons per room; Percentage of households having access toelectricity and pipe borne water supply.
Security to life and property	Crime rater per thousand; probability pf being a victim of violent assault; accident rate per thousand.
Freedom	No of persons detained for more than 24 hours per thousand per year; No of political prisoners per thousand per year.

Environmental Protection And Ecological balance	Level of toxic material in their air or sea; Amount of carbon dioxide in a cubic meters in the air.
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Source: United Nations (1992)

3.1. Employment and Unemployment Issue

Persons who are employed full-time or part-time during a specified payroll period. Temporary employees and those on paid-leave are included.

However, by employment is meant an engagement of a person in some occupation, business, trade or profession, etc. The nation of desiring to be employment can be explained by taking three established facts: working hours per day, wage rate, a man's state of health.

Total number of able men and women of working age seeking paid work. Unemployment statistics vary according to how unemployment is defined and who is deemed to be part of the workforce. Traditional methods for collecting unemployment data are based, typically, on sampling or the number of unemployment benefit requests. International labor organization (ILO) computes unemployment on the basis of number of people who have looked for employment in the last four weeks and are available to start work within two weeks, plus those who are waiting to start working in a job already obtained.

However, full employment is a situation in which all available labor resources are being used in the most economically efficient way. Full employment embodies the highest amount of skilled and unskilled labor that could be employed within an economy at any given time. The remaining unemployment is frictional.

Full employment in microeconomics is when the economy is employing all of its available resources. This simply means that the capital goods and capital resources are at their highest and most efficient within the economy.

3.2 Theories of Development

Modern literature categorises the theory of development into three which areas:

1. Rostow Linear stages theory
2. Neo classical theory of development
3. International dependence Model

3.2.1 Rostow Linear stages theory

The most prominent of linear theory was propounded by W. Rostow. In his exposition, he divided the phases of development into 5 evolutionary stages.

1. Primitive stage
2. Pre-condition to development
3. Take off to development
4. Drive to maturity
5. High mass consumption.

1. Primitive Stages

This stage marked the beginning of traditional business such as: blacksmith, farming, subsistence market economy, among others. The technology adopted at this stage was simple and the size of the market was relatively smaller.

2. Pre-condition to development

This stage of development deals with the breakdown of tradition and cultural rigidities that could militate against development e.g. superstition, ethnic war, intolerance, human sacrifices, indiscipline, corruption, et cetera. This implies that for development to be achieved, there must be exchange of ideas, inter ethnic marriage, sharing of assets particularly land, exchange of goods and services, mobilization of resources from areas of surpluses to areas of shortages.

3. Take off to development

This is the stage where infrastructures such as effective and efficient communication system: transportation system, health facilities, portable water supply, among others are laid down, coupled with high investment value which must range between 10% and 15% of national income.

4. Drive to maturity

In this case, development has become internalized. This implies that some investment activities in a country have become improved thereby generating high level of return (profit).

5. High mass consumption

This stage encourages large scale production facilitated by improvement in the level of a nation's technology. It involves allocation of huge amount of money for nations' research institutes to develop her technological resource base as a means of meeting up the primary needs of the society and international demands.

3.2.2 Criticism of Rostow's Theory of Development

1. Traditional society is not an essential requirement for development. For instance, countries such as US, Canada New Zealand, among others, were born free of traditional societies and they derived pre-condition from Britain a country already developed.
2. Rostow only observed successful counties that passed through development stages.

In conclusion, Nigeria performed well in the first three stages of development enunciated by Rostow between 1970s and late 1980s but unable to mono to maturity and high mass consumption stage largely due to:

1. Enormous income inequality distribution
2. Mismanagement on the part of government officials
3. Adoption of more cultural technology
4. Poor mail Configuration structures among others.

3.2.3 Neo Classical Theory of Development

Some of the notable writers among the Neo-classicists are-

1. Chenery and Taylor Theory
2. Simon Kuznet Theory

The summary of their contribution to theories of development is considered below.

1. Chenery and Taylor Theory

They observed that development is affected by a number of factors such as:

1. Size of a country
2. Industrial and economic development process
3. Natural resources endowment
4. Investment ratio of income
5. Per capita income

In explaining the size of a country, Chenery and Taylor classified countries into two; large countries and small countries. According to them, a country is said to be large when it has a population of above 15 million while a small country is characterized by less than 15 million people. In their exposition, it was believed that large countries have the potential to mobilize large resources from foreign environment to their non-country of nationality in order to expand the investment climate. For example, Nigerian Stock Exchange is a giant exchange market-catering for the interest of numerous investors from different parts of the country. For smaller countries, the ability to mobilize, finance resources from areas of surplus to develop their business environment is very weak. Another example of this is Ghanaian Stock Exchange Market.

As per industrial and economic development process, some industries contribute, to development at different stages. These industries are the early industries, medium industries and late industries. At low level of development the early industries emerge. At this level, technology is simple and there is high level of demand for consumer products because of the elastic nature of such products. The need to meet the growing need of the society will necessitate the emergence of, medium industries. The medium industries improve on the technology of the early ones. The late industries arises largely due to the need to embark on large scale production with greater efficiency, effectiveness and the need to meet up the growing need of the teeming population of their original country of operation and the rest of the world.

According to the studies carried out by Chenery and Taylor, some countries with abundant resources are slow at development relative to countries with the little resources. For instance, Nigeria has surplus, resources but corruption; mismanagement, lack of accountability,

transparency and visionary leaders has deprived her of shooting to the path of development. Up till now, her economy is still largely import dependent thereby worsening her balance of payment position. This kind of economic practice will not promote development. Contrary to this, countries such as Japan and Germany do not have much resources have succeeded in expanding their technological base.

Chenery and Taylor also assessed development from the angle of proportionate of investment ratio to income. A country is classified as developed when the investment ratio to income is 50% and above. Examples are countries such as Japan, America, and Britain among others. But for countries with less than investment ratio of 50%, they are developing countries.

Finally, per capita income was also used as an indicator for measuring development. Countries with higher per capita income are usually regarded as developed countries while the reverse is the case for developing countries.

2. Simon Kuznet Theory

In an empirical structural change model, Simon Kuznet observed that when development occur, the share of manufacturing sector will' grow, the share of primary sector falls and the share of services sector increases. However, factors that promote manufacturing sector contributes less than 20% to national income, primary sector contributes0 over 60% to National income while service sector account for less than 20% of Gross Domestic Product (GDP).

3.2.4 International Dependence Model

According to Todaro (1977), this model is divided into two.

1. The classical dependence model
2. Political economy of international dependence model.

1. Classical Dependence Model

It is believed that the economic change in third world countries depends on industrial activities of the advanced countries. Basically, the interaction between the less developed countries and the developed countries exist in terms of laws deliberately set up by the colonial imperialist to render

the third world countries highly import, technological, economical, political and culturally dependent. In this wise, the survival of the less developed countries since the colonial era to date is still largely tied to the control of the developed countries of the world.

Weisskopf (1992) a political economist contends vigorously that the symbiotic relationship between countries such as U.S. A., Britain, France, etcx and Nigeria, Gambia, etc. has impoverished the latter. According to him, he articulated the effect of such relationship as follows:

1. Factor bias effect
2. Capital flight syndrome
3. International demonstration effect
4. Brain drain effect

1. Factor bias effect: Majority of the less developed countries are -still technologically dependent on the advanced countries of the world." This technology is not only bias to our resource endowment, but it is also too capital and foreign exchange intensive thereby lacking the potential to provide employment for the qualified labour force in less developed countries.

2. Capital flight: The developed countries make huge, profit from less-developed countries. But such returns over the years have not had prolonged benefit to long term investment in less developed countries because the multinational remit their gains to their countries of nationality as soon as they make it thereby reducing the investment activities in less developed countries (LDC).

3. International demonstration effect: The less developed countries in their consumption and production behaviour copy the advanced countries of the world. However, these technologies are not sustainable and economical to our culture.

The less developed countries up till now are yet to develop their own consumption, production and cultural ideas. We are still largely dependent on the imperialist especially on their products, ideas, culture, among others.

Consequently, this attitude is very dangerous to the promotion of development of less developed countries because it worsen the balance of payment position.

4. Brain drain effect: The symbiotic relationship between developed countries and less developed countries has made the latter lost many of their skilled and semi-skilled labours to the developed nation. The developed nation knowing-fully-well that the less developed nations largely depend on them for the economic, social and political survival packages "enticing programmes" that will pull labours of less developed nations out of the countries. Examples of these are: American Visa Lottery, Canadian Programme, etc.

5. Political Economy of International Dependence Model

Johan Gaining (1993) advanced that the economic exploitation of the third world countries by the western colonies is deliberate and facilitate by the social, technological,' political and economic supremacy. For instance, they fix the prices of our primary products because of its price inelasticity and add value to the raw materials only to be sold at expensive prices in our local markets.

In fact, the developed countries are located at the centre of development having dominance over economic policies of less developed countries (e.g. SAP, IMF etc.) cultural communication system (e.g. CNN, BBC, etc). For instance, Structural Adjustment Programme was initiated and packed by the developed countries to further subjugate the interest of the less developed countries to their .control knowing-fully-well that the economic policy will not work in African environment Apart from this, the developed countries have effective network which monitor day to day activities of less developed countries.

In conclusion, for the less developed countries to be: liberated from western dictatorships some or all of the following recommendation must be adopted.

1. We must be tolerant, loyal, discipline, transparent compassionate and Perseverance
2. We must have a politically stable atmosphere.

3. We must tap our local resources and develop it optimally.
4. We must reduce importation of products to avoid persistent balance of payment.

3.3 Factors Determining Economic Development

From various theories of economic growth and development considered above and lessons of experience, the following factors stand out generally as major determinants of economic development and these are discussed below:

1. Appropriate and adequate capital formation: For development to occur in a nation, there must be appropriate and enough Capital formation in terms of sustainability of its production and maintenance, the optimality of its factor proportions, that is, the labour intensity foreign exchange content and its consistency with natural resource endowment and the local reliant balanced economic development, investment expenditure is essential for increase output through mass production or economic of scale and through technological advancement. For investment rate to make significant impact on economic development however, it must be substantial in order to provide relatively large economy of scale essential for internationally competitive production. So capital formation must not proceed at a slow rate, it must exceed 10% of nation 181 income.

2. Appropriate infrastructural foundation: By infrastructural foundation we mean laying general foundation to facilitate industrial production. Private, investment cannot be efficient and made significantly positive impact on the economy without adequate and efficient national infrastructure. Infrastructural investment is a collective or social responsibility which the government has to undertake so that the zeal for industrial and social development should take place. It is also essential that infrastructural inputs (including especially electricity, gas and water, transport and communication) must be supplied at the lowest possible cost to the industrial and agricultural sectors so that they can have a cost structure that will make them internationally competitive.

3. Technological Progress: In the long run, technological progress will determine the economic development of a nation, for it creates an environment of decreasing costs or increasing returns to scale which offset resources constraints and raise productivity and income per head. It is essential that a self reliant technology (or sustainable technology) must be adopted through appropriate technology political and research and development policy that is consistent with national resource endowment, and which promotes industries with competitive advantages or having lowest opportunity costs among in internationally traded commodities.

4. Sound Agricultural Foundation: It is a common saying among agricultural economist that a nations that desires economics development must first ensure it lays sound agricultural foundation as a necessary condition for viable and sustainable industrial development and socio-economic stability. Third world country which are mostly tropical countries have to take advantage of their rich forest resources and agricultural favourable climate through specialization and diversification in agricultural sector in shingling problems, of poverty directly through the abundant provision food crops and forestry products for housing and transportation facilities.

5. Favourable Social Order: Favourable social order comprises law and order, security to life and property, security of livelihood, even behaviour and functional democratic institutions among others. It is obvious that industrial investment will be hampered by lack of security to life and property. Absence of law and order which promotes unscrupulous business practices and national economic sabotage undermines economic and political stability thus jeopardizing all development efforts. Crime rate is aggravated by inadequate law and order and insecurity of livelihood. Extreme inequality in welfare and income instability directly, democratize institutions such as independent judiciary, free press and house of representatives or parliament, promote accountability and critical assessment of government policies than actions in a manner that benefits the whole nation rather than sectional interests and in a manner that benefits long term national development rather than short term interest of particular regime and not in a manner that promotes discontinuity and instability characteristics of authoritarian regimes and military dictatorships rampant in third world countries.

Tutor-Marked Exercise

Without Growth there is no development, critically analyse this statement with the theories of development.

4.0 Conclusion

Economic development is a normative concept i.e. it applies in the context of people's sense of morality (right and wrong, good and bad). The definition of economic development given by Michael Todaro is an increase in living standards, improvement in self-esteem needs and freedom from oppression as well as a greater choice. The most accurate method of measuring development is the Human Development Index which takes into account the literacy rates & life expectancy which affects productivity and could lead to Economic Growth. It also leads to the creation of more opportunities in the sectors of education, healthcare, employment and the conservation of the environment. It implies an increase in the per capita income of every citizen.

5.0 Summary

Economic development generally refers to the sustained, concerted actions of policymakers and communities that promote the standard of living and economic health of a specific area. Economic development can also be referred to as the quantitative and qualitative changes in the economy. Such actions can involve multiple areas including development of human capital, critical infrastructure, regional competitiveness, environmental sustainability, social inclusion, health, safety, literacy, and other initiatives. Economic development differs from economic growth. Whereas economic development is a policy intervention endeavor with aims of economic and social well-being of people, economic growth is a phenomenon of market productivity and rise in GDP. Consequently, according to the economist “economic growth is one aspect of the process of economic development.

6.0 Tutor-Marked Assignment

1. State and explain some of the differences between growth and development.
2. Explain the circumstances why economic growth may not promote development.
3. If the richest people in an economy constitute 20 per cent of the,

population and their income can be increased by 65 percent; given that the economy grows at 6 percent. Determine the growth rate of income of the majority.

4. If the growth in population of a country is 4 per cent and the growth[^] rate of national income is 6 per cent. Determine the growth rate of the capital income.
 - b.) How long will it take Nigeria to reach a level of income/head of Canada assuming GNP at 5 percent and population is growing at 3 per cent given that Canadian per capita income is and 400?

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MODULE SIX INFLATION OUTPUT AND EMPLOYMENT

Unit 1	Inflationary Rate
Unit 2	Unemployment
Unit 3	Calculation and Measurement of inflationary Rate.

UNIT 1 Inflationary Rate

CONTENTS

1.0 Introduction
2.0 Objectives of the unit
3.1 Meaning of inflation
3.2 Aspects of inflation
3.3 Causes of inflation
3.4 Effects of inflation
3.5 Control of inflation
4.0 Conclusion
5.0 Summary
6.0 Tutor-marked assignment
7.0 References and other resources

1.0 Introduction

The theory of inflation is the analysis of one of the major economic problems (i.e. a rise in the general prices of goods and services). Inflation as a phenomenon is a product of price instability. It represents a counterproductive phenomenon whereby the rise of prices serves as a disincentive to consume, which consequently affects the level of re-investment and generally the performance of business firms. The knowledge of inflation, its causes, types and consequences will enable managers to appreciate the existing relationship between inflation and the level of business operation as it affects demand as well as supply by influencing the level of investment. For instance, since 1997, the prices of garri and other goods in Nigeria have been increasing every year. What is the meaning of this, and how can one tackle the situation so as to mitigate its effects?

2.0 Objectives

By the end of this unit, you are expected to understand inflation and all its attributes. Specifically the unit is aimed at equipping you with the following:

- To know what inflation means
- To know the types of inflation.

3.0. Main Content

3.1 Meaning of inflation

Inflation refers to a rise in the general price level of goods and services. Alternatively it means a decline in the purchasing power of a unit of money. The general price level therefore varies inversely with the purchasing power of a unit of money. For example, if the price level doubles, the purchasing power decreases by one half ($1/2$). It is a condition in which the volume of the purchasing power is persistently running ahead of the output of goods and services, so that there is a continuous tendency for prices both of commodities and factors of production to rise because the supply of goods and services and factors of production fails to keep pace with the demand for them. Inflation is also associated with increases in money supply. Changes in money supply,

however, may and may not affect prices. If an increase in money supply is accompanied by a proportional increase in the quantity of goods and services available for purchase, then the general price level will remain unchanged.

3.2 Aspects of inflation Rate of inflation

Inflation can occur in different economies at different rates. Two types of rates can be distinguished.

1. Creeping inflation

That is a situation in which prices are rising very gently. But creeping inflation can become chronic inflation like the one experienced in Chile and Brazil at the rate of 20 to 90 per cent and which has gone on decade after decade.

2. Hyperinflation or galloping inflation:

This is a situation in which increases in prices become a signal for an increase in wages and costs in an economy. This sends prices up, and the process continues. Such a rapid rise in prices is termed hyperinflation. An example of hyperinflation is the inflation that was experienced in Germany between 1920 and 1923.

3.3 Causes of inflation

1. The demand-pull theory.

The proponents of this theory hold that the existence of excess demand for final goods and services would cause their prices to rise. Profits would improve as a consequence; hence firms would be induced to expand demand for the various factors such as labour whose prices would themselves be bid up. This theory argues that inflation would be caused by an excess demand for goods and services, which would in turn, lead to rising wages. In other words, aggregate demand equals aggregate supply.

2. The wage cost-push theory

The proponents of this theory argue that inflation would be caused by increases in factor payments, especially in the prices of labour. Any increase in wages would cause firms to raise

the prices of final goods and services in an attempt to protect their profit levels. These would occur irrespective of whether or not excess demand for goods and services is in existence at the time, although the extent to which firms would be able to pass on wage increases to the consumer is partly determined by market conditions. The theory argues that inflation begins with rising wages or payments made to factors of production (which lead to a rise in the prices of final goods and services). This is possible because of the ability of organised labour to press for more wages even in unfavourable circumstances. In this theory, labour unions demand for increases in wages when there is no excess demand for labour. When such increased wages are achieved, producers pass the increased wage costs on to the consumer through higher prices of goods and services.

3. The price-push theory.

This theory is similar to the wage cost-push theory. The theory predicts the same sequence of events as the cost-push theory, with firms rather than unions as the main causative agents. The theory maintains that sellers have monopoly power and would like to raise prices, but are prevented from doing so by their fear of anti-monopoly laws, adverse public opinion or regulatory review of their prices. Under these circumstances, cost increases could provide the necessary excuse for price increases. During wage negotiations, sellers grant wage increases and then use such as an excuse to raise prices by more than is required to offset the rise in wage costs.

4. Structural rigidity theory The structural rigidity theory of inflation assumes that resources do not move quickly from one use to another and that it is easy to increase wages and prices, but difficult to decrease them. Given these conditions, when patterns of demand and costs change, real adjustments occasionally vary slowly. Shortages of goods appear in potentially expanding sectors and prices rise because the slow movement of resources prevents those sectors from expanding rapidly enough. Contracting sectors keep factors of production on part-time employment or even in full employment, because mobility is low in the economy. Because their prices are rigid, there is deflation in these potentially contracting sectors. Thus, the mere process of adjustment in an economy with structural rigidities causes inflation to occur. Prices in the expanding sectors rise and prices in the contracting sectors remain the same. On the average, therefore, prices rise.

5. Expectation theory

The expectation theory of inflation depends on a general set of expectations of price and wage increases. Suppose, for example, that both unions and firms expect that a 10% inflation will occur next year. Unions will tend to start negotiations from a base of a 10% increase in money wages. They will argue that firms will be able to meet the extra 10% on the wage bill out of the extra revenues that will arise because product prices will go up by 10%. Starting from this base, unions will then negotiate over how much of an increase in real wages they can obtain. Firms will also be inclined to begin bargaining by conceding at least a 10% increase in money wages since they expect that the prices at which they sell their own products will rise by 10%. The danger of expectation over inflation is that it may cause a demand- pull or any other kind of inflation that has gone on for several years to persist long after its original causes have been removed. It is unlikely that expectation inflation will break out by itself because expectations of continuing inflation do not arise just like that. What is likely, however, is that expectation inflation may take over from a demand-pull inflation after the excess demand is removed or eliminated. If, for example, the government has been generating a demand-pull inflation of 15% per year for 2 or 3 years as a result of too much spending and creating new money to finance its budget deficit, firms and unions expect this rate to continue. Suppose the government eliminates its budget deficit and stabilises the money supply but the expectations of 15% inflation persist. Wage and price increase of at least 15% will occur in the expectation of continuing inflation. At this point demand-pull inflation becomes expectation inflation.

3.4 Effects of inflation

The effect of inflation is of dual appearance in the sense that it has a dual effect on any economy in which it exists. For example, a general rise in the prices of all goods and services represents an incentive for the producers to produce and sell at higher prices, which may encourage further investment. On the other hand with inflation in the economy, there would definitely be a fall in the standard of living of the people by way of reducing their purchasing power. This would create more serious hardship for the masses and the economy in general. In general terms, inflationary tendencies always go with a number of advantages and disadvantages and studies have shown that in any direction, always the negative tendencies do outweigh the positive ones. So, it can be concluded that inflation is more negative than positive.

3.5 Control of inflation

Inflation can be controlled according to its type. A demand-pull inflation can be eliminated in an economy through the use of appropriate fiscal and monetary policy measures. Since inflation is caused by the existence of excess demand, by a fiscal policy, government can reduce its expenditure or increase taxes so as to eliminate the inflationary gap that exists in the economy. That is, an inflationary gap can be removed by an appropriate decrease in expenditure or increase in tax rates. Through the use of monetary policy, inflation can also be removed. By using a monetary adjustment mechanism, we can lower aggregate expenditure and remove the inflationary gap that causes prices to rise. The monetarists maintain that monetary constraint is necessary to stop any existing inflation. The central bank must then hold the nominal money supply constant. Therefore, money supply control is necessary and sufficient to control inflation.

Other theorists have argued that if inflation is wage-cost push, attempts to control it by controlling the money supply will lead to levels and durations of unemployment that are politically quite unacceptable. If on the other hand inflation is cost-push, some ways must be found of controlling wages. Legal constraints of wage control can be used, or income policies that persuade labour to reduce their wage demands can be induced. In other words, government can freeze wages so as to stop further wage increase. Price-push, expectation and structural rigidity types of inflation can also be controlled in a similar way as the wage cost-push inflation. Other possible measures that can be taken here include price control. By this measure, the government can fix a price ceiling that is the highest price which all prices of factors of production should not pass, particularly wages. A ceiling can also be put on the prices of commodities. Another measure to be taken is foreign exchange control. This will stabilise the prices of imported products. But when the exchange rate is allowed to be flexible it will continue to change overtime, which will affect the prices of imported raw materials. Tariffs can be reduced so as to reduce inflation in an economy. Higher tariffs increase the prices of imported consumer goods and producer goods. This measure can also reduce imported inflation. Lastly, productivity should be increased in the economy. This is because higher output is always associated with lower prices. If, however, inflation is imported, the country should stop buying from countries experiencing inflation. It will have to look for other trading partners whose domestic price levels are stable. Tariffs can also be reduced on imports.

4.0 Conclusion

From this theory, it can be concluded that inflation is a bad phenomenon that has a number of effects on any economy. Business firms, therefore, should take caution when designing their policies. Managers who run these businesses should have knowledge of this subject to help them in their decision making processes, so as to design more viable and concrete productive policies for overall organizational development.

5.0 Summary

We have just studied inflation as well as measures to control it. The unit has considered the causes from the perspective of a number of theoretical positions, ranging from the demand-pull theory to the expectation theory. In the course of considering the causes of inflation, various theories have been given, but particular attention should be paid to the demand-pull and cost-push theories. In controlling inflation, it has been made known that it is only possible to control inflation when the causes are known. Fiscal, monetary and physical measures that can be used to combat inflation have been discussed. The conclusion reached is that inflation can be both good and bad. But its negative effects outweigh its positive effects.

6.0 Tutor -marked assignment

1. Identify three theories of inflation and explain them.
2. What are the effects of inflation, and how can they be controlled?

7.0 References/ Further Reading

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Unit 2 Unemployment

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1.0 Introduction

Unemployment is socially 'bad' just as much as output is socially 'good'. The harm caused by unemployment (especially involuntary unemployment) is measured in terms of the output cost to the whole economy and the harm done to the individuals who are affected. Unemployment is the result of the balance of two continuous flows: the inflow of potential workers into unemployment (leaving employment but not seeking work, or seeking work but not finding employment) and the outflow of workers from unemployment (finding jobs, or withdrawing from paid employment). Unemployment affects the business environment in a negative direction as it represents a fall in the productivity level of the economy. In other words, a rise in the level of a country's unemployment means a fall in the level of the country's expected production level, hence, a fall in the level of business operations. This unit explains what constitutes

unemployment, its causes and types as well as a superficial analysis of some of its control measures. Suppose your uncle, who has sponsored three of his children through the university, gets up every morning only to see them at home unemployed. He feels quite bad about the situation, especially when two of his nephews who had been working in Lagos, have come to join him in his house, on the ground that they have lost their jobs. He calls on you to educate him on this subject matter, especially on the Nigerian economic situation. What would you tell him?

2.0 Objectives of the unit

At the end of the unit, you are expected to be able to explain:

1. What unemployment is all about?
2. Types of unemployment.
3. Causes of unemployment.
4. Solutions to the problem of unemployment.

3.0 MAIN CONTENT

3.1 The concept of unemployment

Unemployment refers to a situation whereby factors of production are not utilised in productive activities. With respect to labour, when a person is willing and able to work and cannot get a suitable paid job, he is said to be unemployed. Unemployment can be voluntary or involuntary. Voluntary unemployment occurs when there is a job available but the unemployed person is not willing to accept the job at the going wage rate; while involuntary unemployment occurs when a person is willing to accept a job at the going wage rate but cannot get a job. For easy understanding, our concern here will be mainly with involuntary unemployment.

3.2 Types and causes of unemployment

Many economists have endeavoured to outline and explain 'types' and causes of unemployment. You should understand that workers could be unemployed for one or a combination of many factors. The following types and causes of unemployment have been identified:

1. Frictional unemployment

This is unemployment that is associated with the normal turnover of labour. It occurs where there are as many job vacancies as there are job seekers. Lack of adequate information on the part of the job seekers largely explains the friction. People leave jobs for different reasons and it takes time before they find new ones. Frictional unemployment is inevitable in every country. Thus, the national income theory seeks to explain the causes and control of unemployment in cases of frictional unemployment.

2. Structural unemployment

Structural changes in an economy can cause unemployment. A change in the technology of production or any other changes in the economy may shift the demand schedule for labour. This is because such changes require considerable readjustments which do not occur fast enough. As a result, a great deal of unemployment occurs in industries and occupations in which the demand for factors of production is falling faster than the supply. In most cases, jobs may be available but job seekers do not possess the required skill. Therefore, this type of unemployment occurs when there is a mismatch between the unemployed and the available jobs in terms of regional location, required skills or any other relevant requirement. One distinction between frictional and structural unemployment is that structural unemployment is long- term frictional unemployment.

3. Deficient demand unemployment

This unemployment occurs due to insufficient aggregate expenditure needed to purchase all of the output of a fully employed labour force. A decline in the demand for the products of a firm will bring about a reduction in the factors of production, hence unemployment. During periods of heavy unemployment, frictional, structural and deficient demand causes may all be operative. It is difficult to say that a single worker is unemployed due to deficient demand and another for

structural reasons. Rather, all the three causes can operate and contribute to the total volume of unemployment.

4. Search unemployment

It occurs when someone refuses to accept the available job and remain unemployed in order to search for a better one. In one sense they can be said to be voluntarily unemployed because they can find some jobs. But in another sense they can be said to be involuntarily unemployed because they have not yet succeeded in finding the job which they are ready to accept somewhere in the economy. Those in search of employment can be said to be frictionally unemployed if they find a job in a short time; but they may be classified under structural unemployment if a long search reveals that there are no longer enough jobs to employ everyone with their particular training and experience. How long it pays to remain in search unemployment depends on the economic costs of being unemployed.

5. Seasonal unemployment

Labour employed in economic activities such as farming and fishing usually become unemployed when bad weather prevents the continuation of such work. As such it can be said that such persons that are temporarily employed when there is a job and discharged when the job is completed are seasonally employed.

3.3 Effects of unemployment

There are two main effects of unemployment, which make policy makers very much worried. First, is that it produces economic waste of labour. When labour is unemployed it constitutes an economic waste in an economy. Otherwise, it would have been put to use in practical activities. Secondly, unemployment can cause human suffering. It can cause severe hardship and misery when the period is long. During the period of heavy long-term unemployment, the social and economic effects can be felt by everyone including those who remain employed or self-employed. Furthermore, heavy and prolonged unemployment among youths can cause major social upheavals.

3.4 Control of unemployment

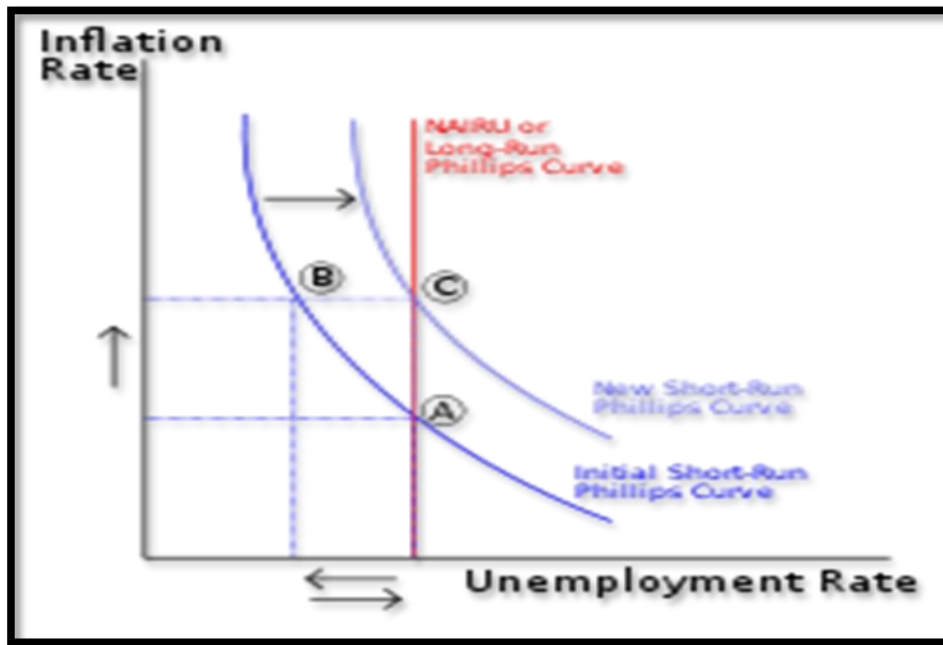
Unemployment can be controlled according to its type. For example, frictional unemployment can be controlled according to the nature of the economy. Policy measures that make movement of labour between jobs easier and quicker can reduce the volume of frictional unemployment. Structural unemployment, however, can be attacked by policies for retraining and relocating labour as part of a general attempt to facilitate the adjustment of labour supply to changing demand. Workers can also be persuaded to accept changes that maintain the competitive position of an industry and as such protect the remaining jobs in that industry.

Increasing aggregate demand can control unemployment that results from deficient aggregate demand. This could be through the use of expansionary fiscal and monetary policies. Through fiscal policy measures, government expenditure can be increased on currently produced goods and services. If this is not followed by a change in tax rates, it will provide a net addition to the aggregate demand. Using monetary policy measures, government can increase aggregate demand by increasing money supply.

3.5 Philips' curve

It is a curve that shows the inverse relationship between inflation and unemployment.

The Phillips Curve showing the relationship between inflationary rate and Unemployment rate.



Expansionary aggregate demand policies tend to produce inflation unless they take place when the economy is at a high level of unemployment. On the other hand, a long period of low aggregate demand tends to reduce the inflation rate and increase unemployment. The costs of inflation are just as serious and obvious as those of unemployment. Philips' curve exposes the inverse relationship between inflation and unemployment. This has played a key role in macroeconomic policy, since Prof. A.W. Philips established it in 1958. Philips' curve shows that high rates of inflation are accompanied by low rates of unemployment and vice versa. The curve also suggests that less unemployment can be attained only by having more inflation, and that the inflation rate can always be reduced by increasing unemployment. In other words the curve shows that there is a trade-off between inflation and unemployment. Therefore, to curb the problem of unemployment, policy makers have to take into consideration the inverse relationship between inflation and unemployment. In a nutshell, the type of solutions provided for meeting the problems of unemployment must be related to the factors that brought about the unemployment. In this way, one or a combination of the following could be adopted to solve the problem of unemployment:

1. Increased production via restructuring the economy such that there is reduced reliance on imported raw materials and spare parts, as well as prudent use of available foreign exchange resources, and intensified efforts to promote exports to earn increased foreign exchange.
2. Training and staff development.
3. Improved labour market information.
4. Diversified productive activities.

4.0 Conclusion

Going by the analysis in this unit, it can be concluded that unemployment constitutes a serious economic problem that adversely affects business and the economy generally. To combat the detrimental effects of unemployment, there is a need to develop measures such as monetary and fiscal policies which, when successfully implemented, can adequately overcome the effects of unemployment.

5.0 Summary

The unit has dealt with the analysis of unemployment, its causes and how it affects the economy generally, i.e. the consequences of unemployment.

A detailed analysis has been made of its effects on business firms, as well as possible control measures of the trend, i.e. policy instruments needed to address the problem have been highlighted.

6.0 Tutor -marked assignment

1. What is unemployment?
2. Explain any 5 types of unemployment.

7.0 References/Further Reading

Lipsey, R.G. and K.A. Crystal (1997) *An Introduction to Positive Economics*, Oxford:
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UNIT 3 CALCULATION AND MEASUREMENT OF INFLATIONARY RATE

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1.0 Introduction

2.0 Objectives of the unit

3.1 Calculation of Inflationary Rate

3.2 Issues in Measuring

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1.0 Introduction

Because inflation in simple terms is defined as the increase in prices or the purchasing power of money the most common way to calculate the inflation rate is by recording the prices of goods and services over the years (called a Price Index), take a base year and then determine the percentage rate changes of those prices over the years. There are different Price Indices that can be used, the most popular are:

- Consumer Price Index (CPI) – measure the price of a selection of goods and services for a typical consumer.
- Commodity Price Index – measure the price of a selection of commodities with. It is a weighted index (in other words, some commodities are more important than others in determining price changes).

- Cost of Living Index (COLI) – measure the cost to maintain a constant standard of living. In other words, what would it cost you from year to year to live exactly the same.
- Producer Price Index (PPI) – measures the prices for all goods and services at the wholesale level. It is like the consumer price index but it is measuring the prices the producers have to pay.
- GDP Deflator – measures the prices of all goods and services (GDP).

The price index on its own does not give the inflation rate but it can be used to calculate the inflation rate. Let's use the Consumer Price Index as an example as is the most often used index to calculate the inflation rate. An example of how this works is below. Keep in mind that although I have simplified the process by using only 1 item in the basket of goods the process of calculating the inflation rate is the same.

2.0 Objectives of the unit

At the end of the unit, you are expected to be able to:

1. Know how to Calculate Inflationary Rate?
2. Understand the issue in measuring inflationary rate.

3.0 MAIN CONTENT

3.1 Calculation of Inflationary Rate

The inflation rate is widely calculated by calculating the movement or change in a price index, usually the consumer price index. The consumer price index measures movements in prices of a fixed basket of goods and services purchased by a "typical consumer". The inflation rate is the percentage rate of change of a price index over time. The Retail Prices Index is also a measure of inflation that is commonly used in the United Kingdom. It is broader than the CPI and contains a larger basket of goods and services.

To illustrate the method of calculation, in January 2007, the Nigerian Consumer Price Index was 202.416, and in January 2008 it was 211.080. The formula for calculating the annual percentage rate inflation in the CPI over the course of 2007 is

$$\left(\frac{211.080 - 202.416}{202.416} \right) \times 100\% = 4.28\%$$

The resulting inflation rate for the CPI in this one year period is 4.28%, meaning the general level of prices for typical Nigerian consumers rose by approximately four percent in 2007

Other widely used price indices for calculating price inflation include the following:

- **Producer price indices** (PPIs) which measures average changes in prices received by domestic producers for their output. This differs from the CPI in that price subsidization, profits, and taxes may cause the amount received by the producer to differ from what the consumer paid. There is also typically a delay between an increase in the PPI and any eventual increase in the CPI. Producer price index measures the pressure being put on producers by the costs of their raw materials. This could be "passed on" to consumers, or it could be absorbed by profits, or offset by increasing productivity. In India and the United States, an earlier version of the PPI was called the Wholesale Price Index.
- **Commodity price indices**, which measure the price of a selection of commodities. In the present commodity price indices are weighted by the relative importance of the components to the "all in" cost of an employee.
- **Core price indices**: because food and oil prices can change quickly due to changes in supply and demand conditions in the food and oil markets, it can be difficult to detect the long run trend in price levels when those prices are included. Therefore most statistical agencies also report a measure of 'core inflation', which removes the most volatile components (such as food and oil) from a broad price index like the CPI. Because core inflation is less affected by short run supply and demand conditions in specific markets, central banks rely on it to better measure the inflationary impact of current monetary policy.

Other common measures of inflation are:

- **GDP deflator** is a measure of the price of all the goods and services included in gross domestic product (GDP). The US Commerce Department publishes a deflator series for Nigerian GDP, defined as its nominal GDP measure divided by its real GDP measure.

- **Regional inflation** The Bureau of Labor Statistics breaks down CPI-U calculations down to different regions of Nigeria.
- **Historical inflation** Before collecting consistent econometric data became standard for governments, and for the purpose of comparing absolute, rather than relative standards of living, various economists have calculated imputed inflation figures. Most inflation data before the early 20th century is imputed based on the known costs of goods, rather than compiled at the time. It is also used to adjust for the differences in real standard of living for the presence of technology.
- **Asset price inflation** is an undue increase in the prices of real or financial assets, such as stock (equity) and real estate. While there is no widely accepted index of this type, some central bankers have suggested that it would be better to aim at stabilizing a wider general price level inflation measure that includes some asset prices, instead of stabilizing CPI or core inflation only. The reason is that by raising interest rates when stock prices or real estate prices rise, and lowering them when these asset prices fall, central banks might be more successful in avoiding bubbles and crashes in asset prices.

3.2. Issues in measuring

Measuring inflation in an economy requires objective means of differentiating changes in nominal prices on a common set of goods and services, and distinguishing them from those price shifts resulting from changes in value such as volume, quality, or performance. For example, if the price of a 10 bottle of coke changes from N500 to N501 over the course of a year, with no change in quality, then this price difference represents inflation. This single price change would not, however, represent general inflation in an overall economy. To measure overall inflation, the price change of a large "basket" of representative goods and services is measured. This is the purpose of a price index, which is the combined price of a "basket" of many goods and services. The combined price is the sum of the weighted prices of items in the "basket". A weighted price is calculated by multiplying the unit prices of an item by the number of that item the average consumer purchases. Weighted pricing is a necessary means to measuring the impact of individual unit price changes on the economy's overall inflation. The Consumer Price Index, for example, uses data collected by surveying households to determine what proportion of the typical consumer's overall spending is spent on specific goods and services, and weights the

average prices of those items accordingly. Those weighted average prices are combined to calculate the overall price. To better relate price changes over time, indexes typically choose a "base year" price and assign it a value of 100. Index prices in subsequent years are then expressed in relation to the base year price. While comparing inflation measures for various periods one has to take into consideration the base effect as well.

Inflation measures are often modified over time, either for the relative weight of goods in the basket, or in the way in which goods and services from the present are compared with goods and services from the past. Over time, adjustments are made to the type of goods and services selected in order to reflect changes in the sorts of goods and services purchased by 'typical consumers'. New products may be introduced, older products disappear, the quality of existing products may change, and consumer preferences can shift. Both the sorts of goods and services which are included in the "basket" and the weighted price used in inflation measures will be changed over time in order to keep pace with the changing marketplace.

Inflation numbers are often seasonally adjusted in order to differentiate expected cyclical cost shifts. For example, home heating costs are expected to rise in colder months, and seasonal adjustments are often used when measuring for inflation to compensate for cyclical spikes in energy or fuel demand. Inflation numbers may be averaged or otherwise subjected to statistical techniques in order to remove statistical noise and volatility of individual prices.

When looking at inflation, economic institutions may focus only on certain kinds of prices, or *special indices*, such as the core inflation index which is used by central banks to formulate monetary policy.

Most inflation indices are calculated from weighted averages of selected price changes. This necessarily introduces distortion, and can lead to legitimate disputes about what the true inflation rate is. This problem can be overcome by including all available price changes in the calculation, and then choosing the median value. In some other cases, governments may intentionally report false inflation rates; for instance, the government of Argentina has been criticized for manipulating economic data, such as inflation and GDP figures, for political gain and to reduce payments on its inflation-indexed debt.

3.2.1. General Effects

An increase in the general level of prices implies a decrease in the purchasing power of the currency. That is, when the general level of prices rise, each monetary unit buys fewer goods and services. The effect of inflation is not distributed evenly in the economy, and as a consequence there are hidden costs to some and benefits to others from this decrease in the purchasing power of money. For example, with inflation, those segments in society which own physical assets, such as property, stock etc., benefit from the price/value of their holdings going up, while those who seek to acquire them will need to pay more for them. Their ability to do so will depend on the degree to which their income is fixed. For example, increases in payments to workers and pensioners often lag behind inflation, and for some people income is fixed. Also, individuals or institutions with cash assets will experience a decline in the purchasing power of the cash. Increases in the price level (inflation) erode the real value of money (the functional currency) and other items with an underlying monetary nature.

Debtors who have debts with a fixed nominal rate of interest will see a reduction in the "real" interest rate as the inflation rate rises. The real interest on a loan is the nominal rate minus the inflation rate. The formula $R = N - I$ approximates the correct answer as long as both the nominal interest rate and the inflation rate are small. The correct equation is $r = n/i$ where r , n and i are expressed as ratios (e.g. 1.2 for +20%, 0.8 for -20%). As an example, when the inflation rate is 3%, a loan with a nominal interest rate of 5% would have a real interest rate of approximately 2% (in fact, it's 1.94%). Any unexpected increase in the inflation rate would decrease the real interest rate. Banks and other lenders adjust for this inflation risk either by including an inflation risk premium to fixed interest rate loans, or lending at an adjustable rate.

3.2.2. Negative Effects

High or unpredictable inflation rates are regarded as harmful to an overall economy. They add inefficiencies in the market, and make it difficult for companies to budget or plan long-term. Inflation can act as a drag on productivity as companies are forced to shift resources away from products and services in order to focus on profit and losses from currency inflation. Uncertainty about the future purchasing power of money discourages investment and saving. And inflation

can impose hidden tax increases, as inflated earnings push taxpayers into higher income tax rates unless the tax brackets are indexed to inflation.

With high inflation, purchasing power is redistributed from those on fixed nominal incomes, such as some pensioners whose pensions are not indexed to the price level, towards those with variable incomes whose earnings may better keep pace with the inflation. This redistribution of purchasing power will also occur between international trading partners. Where fixed exchange rates are imposed, higher inflation in one economy than another will cause the first economy's exports to become more expensive and affect the balance of trade. There can also be negative impacts to trade from an increased instability in currency exchange prices caused by unpredictable inflation.

4.0 Conclusion

In this unit we can conclude that inflation in simple terms is defined as the increase in prices or the purchasing power of money the most common way to calculate the inflation rate is by recording the prices of goods and services over the years (called a Price Index), take a base year and then determine the percentage rate changes of those prices over the years.

5.0 Summary

The unit has dealt with the calculation of inflationary rate, issues in measuring inflationary rate, and General and negative effect of measuring inflationary rate.

6.0 Tutor -marked assignment

1. Briefly explain the step you will take in calculating inflationary rate?
2. Discuss in detail the effect of measurement of inflationary rate in the economy.

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**MODULE SEVEN: INTERNATIONAL TRADE, BALANCE OF PAYMENT
AND EXCHANGE RATE SYSTEM**

Unit 1: International Trade and Protectionism

Unit 2: Balance of Payment

Unit 3: Exchange Rates

Unit 1 International Trade and Protectionism

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3.7 Advantages of free trade

3.8 Methods of controlling international trade

4.0 Conclusion

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6.0 Tutor-marked assignment

7.0 References and other resources

1.0 Introduction

This unit examines the subject of international trade and studies the existing differences between international and domestic trade, and the pattern of world trade especially as it affects the less developed economies. Some classical theories of trade and the gains from trade, problems of trade and the reasons for protecting national boundaries are also considered. Equally in this unit the different methods employed by countries to control trade are discussed. The arguments for protectionism are analysed. Managers of business firms are expected to be exposed to this aspect of macroeconomics, because the external environment has a direct implication for their business decisions. Sometime in year 2003, the US increased their tariff on steel by over 8% to 30%. In the same year also, Nigeria did a similar thing on cars. What do you think this can do to trade?

2.0 Objectives

This unit studies the external sector of the national economy. Specifically, it focuses on interdependence among countries. At the end of the unit you are expected to:

1. Appreciate the differences between international and regional or domestic trade.
2. Explain the reasons for international trade.
3. Explain the theoretical background of free trade.
4. Outline reasons and measures of trade protectionism.
5. Be able to establish the relationship between the external environment and business firms' operations.

3.0 Main Content

3.1 Definition of international trade

International trade can be defined as the exchange of goods and services between one country and others throughout the world. It is also known as foreign trade. International trade first began because some countries could produce goods which others, on account of differences in climate and other factors (which will be discussed later), could not.

3.2 Differences between domestic and international trade

International trade is an issue in every nation's daily life. Nigerians use Japanese cars, Americans buy Nigeria's oil, while Germans drink French wine. International trade is therefore defined as trading between one country and another. The term also refers to all such exchanges of goods and services that take place across international boundaries. For example, trade between Nigeria and China or trade between France and Italy

Domestic trade on the other hand is the trading of goods within the boundaries of a particular country among the citizens of that country. An example of domestic trade is trade between a businessman in Kano and a businessman in Lagos. The following differences exist between international trade and domestic trade:

1. In domestic trade, factors of production are more mobile than they are in international trade. This implies that, in internal trade, the same kinds of labour will obtain the same reward, while this is not likely to be the case in international trade.
2. Usually, the distance between two regions of a country engaged in international trade will be less than the distance between two countries engaged in international trade. The longer the distance, the greater the freight charges, the greater the risk, and so the greater the insurance costs. Thus international trade is more expensive than internal trade.
3. Differences in national policies. Since internal trade does not involve movement of goods and services across national boundaries, it is not subject to differences in policies with respect to wages, prices and other business regulations, all of which affect international trade. It may also

become necessary, because of the local needs of the different countries, to introduce such restrictive measures as tariffs, quotas, and even outright prohibitions, all in the form of commercial policies which affect international trade, but not internal trade.

4. One major difference between foreign trade and domestic trade is the fact that different countries use different currencies. In Nigeria for example, the naira is the legal means of exchange. However the same naira will not be acceptable to firms and households in Germany. If an importer in Nigeria wishes to purchase German goods, he cannot pay for them in naira, instead he will have to obtain the German currency (the deutschmark) first.

5. Also, there is the issue of dealing with different government systems in international trade, as opposed to dealing with one government system in domestic trade.

6. Language differences make international trade differ from domestic trade. Despite the differences highlighted above, international and domestic trade is similar in some ways. The similarities include the following:

1. In a country, for example, trade takes place between one region and another mainly because the regions are mutually dependent. One region has something to offer which the other needs, and has a need which can be obtained from the other. The same thing happens in international trade.

2. Both domestic and international trade involves the use of money as a medium of exchange.

3. They are also similar in that they both involve a degree of specialisation between the trading partners, since specialization causes exchange. Their basis for trade is thus the same.

3.3 Necessity for international trade Countries trade with one another essentially for the following reasons:

1. Uneven distribution of natural resources. It is obvious that resources have been distributed haphazardly over the earth's surface. Such has resulted in a situation in which a country may have an excess of one mineral, while totally lacking in another. Nigeria, for instance, has an abundant supply of petroleum while lacking in diamonds. Sierra Leone, though having no

petroleum, has plenty of diamonds. It is therefore only sensible that the two countries should engage in trade to exchange their products.

2. Differences in climate. Different countries of the world fall into different climatic zones. This has a lot of influence on trade especially trade in agricultural products. International trade becomes necessary if the products from different climatic regions are to be found in different parts of the world where there is a demand for them.

3. International trade increases the chances of a peaceful world.

4. It widens the market and thus increases the inducement to save and invest, which in turn, makes for greater economic development.

5. International trade enables developing countries to learn from the experiences of developed countries.

6. It also leads to the efficient allocation of resources in the participating countries.

3.3.1 Demerits of international trade

1. International trade leads to the movement of capital from the developing to developed countries (known as capital flight).

2. It creates unemployment as a result of the replacement of human labour with capital.

3. It reduces capital formation.

4. It leads to unfavourable terms of trade.

3.4 Free trade and protectionism

The argument in this unit up to this point seems to support uninterrupted trade between nations. It has been shown, for example, that free trade increases a country's span of goods and has numerous advantages. Yet countries impose restrictions on some of their imports. Reasons for these are given in subsequent sections.

3.5 Theories of international trade

Experts who have studied international trade have come up with a number of theories. A few of these theories are discussed below.

3.5.1 Absolute advantage theory

The principle of absolute advantage is usually attributed to Adam Smith. In his book, *The Wealth of Nations* (1776), he said that a country might possess natural or other resources (climate, minerals, skills and so on) that simply are not available in some other countries. This would enable the country to produce certain products absolutely cheaper than they could have been produced in other countries when cost is measured in terms of the physical amount of labour or other input required to produce a unit of output. Hence, the principle of absolute advantage states that a country's export will consist of goods that it can produce with fewer resources per unit of output than its trading partners. Similarly, it will import those goods that its trading partners can produce with fewer resources per unit of output than it can produce.

3.5.2 Theory of comparative advantage

A renowned economist, David Ricardo, propounded this theory. According to Ricardo, countries differ with respect to the productivity of the resources used in producing goods and services. These differences in productivity give rise to differences in the real cost of production. It is the existence of this real cost difference, which constitutes the basis for mutually beneficial trade. According to this theory, benefits will accrue to countries if they only produce those goods in which they have a comparative cost advantage, while they import goods which they don't have a comparative advantage of producing.

3.6 Problems of international trade

1. Language barrier

Since international trade is trade that involves two or more countries, it is very rare for those countries to have the same language. For example, a Nigerian businessman importing or exporting goods from or to Germany must employ an interpreter to enable him to communicate

effectively in order to carry on the trade. As a result of this, a lot of time might be wasted which may likely affect the business in one way or the other.

2. Greater transaction cost

International trade, especially intercontinental trade which covers a long distance is very costly. Transport expenses are often very high because of the distance. As a result, prices of some goods that are either imported or exported become high.

3. Use of different currencies.

The fact that international trade is trade between countries makes it involve the use of different currencies. This is because every sovereign nation has its own currency. For example, a Nigerian businessman who wishes to import goods from the United States of America has to use the dollar. If he deals with India, he must deal with the Indian currency (rupees), while if he deals with British businessmen or companies, he must pay them in pounds.

4. Artificial barrier to movement of goods and services.

In international trade, for a variety of political reasons, countries erect barriers against the movement of goods across national boundaries. Such devices include tariffs, import duties, quotas, licences and exchange rate control. These barriers make international trade difficult and sometimes hinder trading completely.

3.7 Advantages of free trade

The theory of comparative costs, in essence, justifies free trade among countries; that is, free movement of goods among countries without restrictions. It shows how every country can enjoy a higher standard of living when each applies the principles of division of labour to the production of goods. Theoretically, it seems to follow that trade should be as free as possible, for only then can maximum specialization according to the law of comparative advantage be achieved. In practice, however, we find that all countries follow policies which, to varying degrees, prevent goods moving freely according to differences in relative prices.

The following is a summary of reasons why a government may impose restrictions on its trade with other countries:

1. To raise revenue.
2. To protect local industries.
3. To keep employment and incomes high.
4. To prevent a deficit in the balance of payments.

3.8 Methods of controlling international trade

1. Customs duties.

Customs duties are a common example of tariffs which are goods bear a higher rate of tax than similar home produced goods. However, it should be noted that import duties have their limitations in terms of the desired result. If demand is inelastic, the increase in price resulting from a customs duty will have little effect on the quantity imported.

2 Quotas.

Quotas are restrictions on the maximum quantity of imports. Governments apply this to restrict the import of goods to a definite quantity. 3. Exchange control. This refers to a deliberate attempt by government to regulate the flow of foreign exchange to overseas exporters. A higher check on the amount spent on imported goods can be achieved if quotas are fixed in terms of foreign currency. This necessitates some form of exchange control. All earnings in foreign currency or claims to foreign currency may have to be handed over to the government and goods can be imported only under licence. Thus, the government, not the free market, determines what should be imported.

3. Subsidies.

Apart from restrictions on imports, a country can also utilise subsidies as a commercial policy to boost exports. This can vary from giving outright subsidies in order to keep down cost of production or by exemption from certain domestic taxes.

4.0 Conclusion

Having examined the various issues relating to international trade in this unit, it is logical to conclude that the external environment has an influence on the performance of the national economy. When international trade favours a country its business performance will improve. Government should be very much careful in its commercial policies for better results.

5.0 Summary

This unit has made a summary of various issues concerning international trade, starting from differences between international and regional or domestic trade down to protectionism, i.e. the policy of trade restriction and its economic justification. Two prominent theories of trade have also been discussed.

6.0 Tutor-marked assignment

1. Explain any two theories of international trade.
2. Make a case for trade liberalization.

7.0 References and other resources

Lipsey, R.G. and K.A. Crystal (1997) *An Introduction to Positive Economics*, Oxford:
Oxford Press.

Dwivedi, D.N. (1987) *Managerial Economics*, New Delhi: Vikas Publishing House Pvt
Limited.

Unit 2 Balance of payments

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1.0 Introduction

International trade involves payments and receipts resulting from international transactions. A country earns money when it exports goods to the rest of the world and makes payments when it imports goods from other countries. Hence, international trade gives rise to indebtedness among countries. The balance of payments shows the relationship between a country's payments to other countries and its receipts from them. The balance of payments is thus a statement of income and expenditure on international account. Before we go ahead, consider whether you can reconcile the fact that Nigeria imports capital goods and consumer goods from other countries; yet it exports so little especially when the monetary values are considered.

However, the balance of payments accounting technique is basically that of simple double entry bookkeeping. If a transaction involves the purchase of foreign currency, thereby reducing the foreign exchange holdings of a country, it is a debit transaction; for example imports. Where a transaction leads to foreign countries buying the country's goods, and so raises the foreign exchange holdings of a country, then it is a credit transaction; for example, exports. Like other accounts, balance of payments accounts could either be a plus or minus. Here, a plus item is called a credit and a minus is called a debit.

2.0 Objectives

The objectives of this unit are that you should be able to:

1. Define balance of payments concepts.
2. Identify the various components of balance of payments.
3. Explain the causes of and solutions to balance of payments problems.
4. Discuss the effects of balance of payments on business decisions.

3.0 Main Content

3.1 Components of balance of payments Current account

It shows all transactions in goods and services, which include both visible and invisible goods. Visible goods are goods like foodstuffs, cars, computers, iron, etc. that can be seen when they cross international borders. Invisible goods are services like tourism services and freight haulage. Another important item among the invisible items in the current accounts is the receipts of interest and dividends on loans and investments in foreign countries. A Nigerian resident, for instance, who holds shares in Elf, will receive dividend payments in US dollars, if he wishes. Such foreign loans and investments thus provide foreign exchange and are entered as credit items.

3.1.1 Capital account

Whereas the current account covers income earning and spending in the course of trade, capital account deals with movement of long- and short-term capital. A Nigerian investor, who wishes to invest abroad by lending money to a British industry, is exporting capital from Nigeria to Britain. Furthermore, a Nigerian investor who wishes to buy bonds being sold in the United States by an expanding firm, say, in New Jersey, is also exporting capital to the United States. To do so, the investor needs to obtain dollars. He has to buy dollars with the naira.

3. 2 Equilibrium, deficit and surplus in the balance of payments

3.2.1 Equilibrium

Equilibrium in the balance of payments is said to exist when the values of the credit items in the balance of payments account exactly match the value of the debit items. That is to say, the country's receipts and payments with the rest of the world are equal. It should be noted that the balance of payments equilibrium is not always possible. A balance of payments surplus, as we shall see in unit 3.2.2, arises when the items on the credit side are greater than the debit items. This means that the country's reserves are increasing. A deficit in the balance of payments account (see also unit 3.2.3) arises where the items on the debit side are greater than the items on the credit side. This means that the nation is spending more than it is earning. A deficit means the reserves of the central bank are running down or its foreign indebtedness is rising.

3.2.2 Balance of payments surplus

A balance of payments surplus means that the flow of resources into the country from the rest of the world is greater than the outflow of resources from the country in the period under consideration. It can be regarded as a situation in which the country exports more than she exports during a given period.

A balance of payments surplus is always a thing of joy to a country because it implies that citizens of the country would be better off. A balance of payments surplus often brings about the following economic effects to a country and her citizens:

1. Greater net income
2. Debt retirement
3. Quickening of economic activities
4. Inflationary tendency

3.2.3 Balance of payments deficit

A balance of payments deficit means a country is importing more than she is exporting, implying that more resources go out of the country than come into the country during the period under consideration. It is clear that a balance of payments deficit does not augur well for the economy of a country. As a result, once a deficit occurs in the balance of payments, the government quickly takes a number of measures to rectify the deficit. Some of these measures are discussed in unit 3.4.

3.3 Causes of balance of payments deficit

1. Loss of market. Since the balance of payments is the relationship between receipts and payments of a country, a fall in the level of the country's exports will lead to poor export earnings, with a negative impact on the balance of payments.
2. Excessive visible imports over invisible imports. Any time there is a rise in the level of imports without a corresponding increase in exports, a balance of payments deficit will likely occur. This was evident in Nigeria in the early 80s when excessive importation led to the country experiencing balance of payments disequilibrium.
3. Exchange rate. A country with an over-valued currency will likely import more and export less and vice versa. This would lead the country to pay more than it is receiving and as a result, experience a balance of payments deficit.
4. Level of domestic prices. A country with a high level of inflation is most likely to have balance of payments disequilibrium. As a result, its exports will fall and its imports will rise.

5. Interest rate. A high interest rate attracts foreign capital and, hence, a favourable balance of payments. However, low rates of interest could lead to capital flight and this would cause a state of disequilibrium.

6. Income growth. An increase in a nation's income will usually cause increased demand for imports. This would adversely affect the balance of payments.

3.4 Measures of correcting balance of payments deficit

Countries normally aim at a surplus balance. A deficit is a matter of concern. However the effect of a deficit depends partly on its cause. If it is due to loans or investment overseas, it may mean that the country is increasing its wealth abroad and so strengthening its future current account through the resulting inflow of interest and profits. On the other hand, deficits on current account mean that the nation is spending more than it is earning abroad. This is similar to an individual living beyond his income.

Balance of payments deficits, especially if persistent, stand to be a greater threat to a country, especially a developing country. A country with a balance of payments deficit can either adopt temporary measures which are aimed at arresting the deteriorating situation, or look for long-term solutions, which involve the overhauling of the whole economy.

Temporary measures

1. Borrowing.

A country with a deficit, as part of temporary measures, can borrow to finance the deficit. This entails borrowing from the IMF, international credit organisations (London Club or Paris Club), or from other wealthy countries (US, Germany, France, etc.). Equally, a country can raise domestic loans denominated in foreign currencies.

2. Reducing imports.

The country can also reduce imports, especially if the deficit is in the current account. This can be done by the use of tariffs or quotas on imports, thereby restoring balance of payments equilibrium.

3. Controlling the flow of capital.

If a deficit in the balance of payments is reducing the nation's reserves, this may be relieved by government restrictions on investment and other capital flow abroad. However, this measure can only be used when the deficit is in the capital account. In any case, restricting the flow of capital does nothing to relieve a deficit on current account, the crucial part of balance of payments.

4. IMF loan.

The country can equally seek assistance from the International Monetary Fund (IMF) through the special facilities normally given by the fund to countries with balance of payments deficits.

Long-term measures

1. Expanding exports.

Export expansion is the ideal solution to a current account deficit since it avoids the need to cut back on imports. Direct government subsidies to exporters may be given to encourage firms to export, for instance, by giving them tax incentives. The government could also try to assist exporters by helping to promote and advertise their products through trade fairs, exhibitions, providing information about overseas markets, arranging loans on favourable rates of interest, and so on. In Nigeria, the Nigerian Export Promotion Council was established as part of this measure.

2. Deflation.

This can be achieved through a tight monetary policy to retard inflation and drive up interest rates (at least in the short run). The tight monetary policy can reduce the country's rate of inflation and thereby lower its prices relative to those in other countries. This would make its exports relatively cheaper than they were before (if other nations did not enact a tight monetary policy), promote exports and discourage imports, as well as generate a flow of investment funds into the country since interest rates are higher.

3. Devaluation.

This is seen as the last resort, which means a reduction in the value of a nation's currency (that is, the rate at which it can be changed into other currencies). Suppose the rate of exchange between the naira and the dollar was originally \$1 = N100, an American product priced at \$100 would then sell in Nigeria for N10,000 (assuming that there are no transport costs). Now suppose the dollar is devalued to N50 a dollar. The same product would now cost N5,000 in Nigeria. By devaluing a currency, countries make their products cheaper to foreigners and so encourage their exports. Similarly, devaluation makes imports more expensive, since it makes the local currency cheaper, so that the citizens of other countries will give less of their currencies to purchase goods from the country with a devalued currency.

3.5 Problems of devaluation

1. The success of devaluation depends on how foreign demand responds to cheaper export prices. In the language of economics, it is necessary for demand to be elastic. Similarly, if the demand for imported goods is price inelastic, devaluation will not work because it will not succeed in reducing imports.
2. Devaluation when used to correct a balance of payments deficit makes imports very expensive. So, it raises the cost of living especially in a country that depends on imports for essential items like foodstuffs. It also makes people worse off by diverting goods from the home market to export.
3. Inflation. By making imports very expensive, devaluation leads to a rise in the cost of machines and raw materials used by domestic industries. This forces manufacturers to increase their prices, thereby causing inflation.
4. Devaluation leads to a fall in government revenue as a result of the decrease in imports.
5. Devaluation also leads to deterioration in the country's terms of trade since a country that devalues its currency will receive less for its exports and pay more for its imports.

4.0 Conclusion

Every country is striving to maintain at least a balance in its balance of payments account. This is because of its impact on business activities in the economy. Therefore countries adopt the measures we have highlighted above to ensure a favourable balance of payments. The success of each measure, as we have seen, depends on the circumstances of the problem.

5.0 Summary

The balance of payments is the record of what comes into a country in the form of receipts and what goes out as payments abroad. It has been defined in the unit. Different components of balance of payments like current account, capital account and reserve asset account have been explained. The unit has also dealt with the causes and corrective measures to solve balance of payments problems. It has been shown that a balance of payments analysis is very relevant to business decisions.

6.0 Tutor -marked assignment

Briefly explain:

1. Devaluation
2. Surplus balance of payments
3. Current account

7.0 References and other resources

Lipsey, R.G. and K.A. Crystal (1997) *An Introduction to Positive Economics*, Oxford:

Oxford Press.

Lipsey, R.G. and K.A. Crystal (1987) *Economics*, London: Harper and Row Publishers.

Dwivedi, D.N. (1987) *Managerial Economics*, New Delhi: Vikas Publishing House Pvt Limited.

Unit 3 Exchange rates

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1.0 Introduction

In the foreign exchange market, currencies of different nations are traded. In the course of exchanging one currency for another, an exchange rate is established. This exchange rate determines how much of one country's currency should be exchanged for that of another. This activity is of particular interest to the government of every nation and to the business community, especially those that deal with the international market. Based on this, business managers would be able to design better policies for their firms when they possess knowledge of the exchange rate. In this section of the work, we will be examining the concept of exchange rate and the types of exchange rates. Now if, in considering the movement in the exchange rate of the naira against foreign currencies, your friend asks you, 'When does a currency gain value or lose value in the exchange market?' What would be your reply?

2.0 Objectives

By the end of this unit, the student is expected to:

1. Understand the concept of exchange rate.
2. be able to appreciate the implication of this rate for the business environment.

Main Content

3.1 Concept of exchange rate

Exchange rates have a number of concepts. In this section we are going to consider the most salient ones.

3.2 Definition of exchange rate

The exchange rate is simply the price of one currency in terms of another. That is to say, how much of one currency can be given up to obtain another (e.g. \$1 = N100). Here, we can say that the exchange rate of the US dollar in Nigeria is \$1 to N100.

3.3 Types of exchange rate

The following are the types of exchange rates commonly used around the globe:

3.3.1 Flexible exchange rate

This is a system whereby exchange rates are determined by the forces of demand and supply. Since the forces of demand and supply purely determine the exchange rate under this system, there is no government intervention in the market.

The demand for US dollars and supply of the naira are linked, as are the demand for the naira and supply of US dollars. Suppose an American wants to buy Nigeria's groundnuts, before he purchases Nigerian groundnuts, he must buy the naira, hence the naira is demanded. But the American will buy the naira with dollars; that is, he supplies dollars to the foreign exchange market in order to demand Nigeria's naira. We then conclude that the American's demand for Nigerian goods has led to a demand for the naira and to a supply of U.S. dollars in the foreign exchange market. The process is the same if a Nigerian importer wants to buy goods from the U.S. He must buy dollars first, hence U.S. dollars are demanded. He buys the dollar with the

naira. It can be concluded that the Nigerian's demand for American goods has led to the demand for U.S. dollars and to the supply of the naira in the foreign exchange market. At the equilibrium exchange rate, the demand for dollars equals the supply of the naira. There is no shortage or surplus of dollars. At any other exchange rate, however, either an excess demand for the dollar or excess supply of the naira exists. The factors that can cause a change in the equilibrium flexible exchange rate include a difference in income growth rates, differences in the relative inflation rate, and change in real interest rates.

3.3.2 Fixed exchange rate

This is a system where a nation's currency is set at a fixed rate relative to all other currencies and central banks intervene in the foreign exchange market to maintain the fixed rate. The major alternative to the flexible exchange rate system is the fixed exchange rate system. This system works the way it sounds: exchange rates are fixed or pegged; they are not allowed to fluctuate freely in response to the forces of supply and demand.

For instance if the naira price of dollars is above its equilibrium level (which, for example, is the case at the official price of \$1 = N100), the naira is said to be overvalued. It follows that if the naira is overvalued, the dollar is undervalued. Similarly, if the naira price of the dollar is below the equilibrium level, the naira is undervalued. It follows that if the naira is undervalued, the dollar must be overvalued.

A nation that persistently has a deficit or a surplus in its combined current and capital accounts has several options under a fixed exchange rate system. These options include devaluation and revaluation, protectionist trade policies and change in macroeconomic policies.

3.3.3 Managed floating system

A managed flexible rate system is that in which nations now and then intervene to adjust their official reserve holdings and to moderate major changes in the exchange rate. Today's international monetary system is best described as a managed flexible exchange rate system. Sometimes it is referred to more casually as a managed float. It is a kind of compromise between the fixed and flexible exchange rates. Nations now and then intervene to adjust their official

reserve holdings to moderate major swings in exchange rates. Buying up or supplying foreign currency at the market price does this.

Proponents of the managed float system stress the following advantages:

1. It allows nations to pursue independent monetary policies. Under a (strict) fixed exchange rate system, fixed either by agreement or by gold, a nation with a merchandise trade deficit might have to enact a tight monetary policy in order to retard inflation and promote its export. This would not be the case with a managed float system.

2. It solves trade problems without trade restrictions. As we have stated earlier, to solve trade imbalances. For example, a nation in deficit can impose tariffs or import quotas so that import and exchange rate trade imbalances are solved through changes in the exchange rate.

3. It is 'flexible' and therefore can easily adjust to shocks. In 1973/74 the OPEC nations dramatically raised the price of oil, which resulted in many oil-importing nations running trade deficits. A fixed exchange system would have had a hard time accommodating such a major change in oil prices. The managed floating system has little trouble, however:

The disadvantages of the managed floating system include the following:

1. It promotes inflation. For example, a nation with a deficit is somewhat restrained from changing the exchange rate because this will worsen the deficit problem, as it will make its goods more expensive.

2. It promotes exchange rate volatility and uncertainty, and results in less international trade than would be the case under a fixed exchange rate system.

3. Changes in exchange rates alter trade balances in the desired direction only after a long time. In the short run, depreciation in a currency can make the situation worse instead of better.

4.0 Conclusion

The significance of exchange rates to business decisions cannot be ignored. Firms and their managers as well as government representatives must be informed of changes in the foreign exchange market so as to reap maximum benefits from this variable.

5.0 Summary

This unit has examined exchange rates and has tried to link up the analysis to business firms. Managers with knowledge of the exchange rate may have an upper hand among competitors in making business decisions.

6.0 Tutor -marked assignment

1. What are exchange rates?
- 2 Explain in detail how flexible and managed exchange rates function.

7.0 References and other resources

Lipsey, R.G. and K.A. Crystal (1997) *An Introduction to Positive Economics*, Oxford, Oxford Press.

Lipsey, R.G. and K.A. Crystal (1987) *Economics*, London: Harper and Row Publishers.

Dwivedi, D.N. (1987) *Managerial Economics*, New Delhi: Vikas Publishing House Pvt Limited.