NATIONAL OPEN UNIVERSITY OF NIGERIA

SCHOOL OF ART AND SOCIAL SCIENCE

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COURSE TITLE: DEVELOPMENT ECONOMICS I

COURSE GUIDE

ECO 347
DEVELOPMENT ECONOMICS I

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INTRODUCTION

Development Economics is a branch of economics which deals with the efficient allocation of scarce resources. Its major concern is the sustenance of economic growth over time in order to improve the standard of living of the masses that live in poverty especially in the developing countries. In order to achieve this purpose, one of the main goals of development economics is the formulation of public policies designed to bring about sustainable economic growth and development. This course material has been prepared to facilitate an intelligent grasp of the subject matter and would aid you in having a broad knowledge on problems affecting the less-developed countries and some possible solutions to these problems.

WHAT YOU WILL LEARN IN THIS COURSE

In this course, you will be introduced to the discipline of development economics and you will be exposed to the basic understanding of the concepts of development economics that are relevant for understanding development problems of Less Developed Countries (LDCs). You will be taught why these countries are poor. The development and growth theories designed by renowned economists and their implications to the LDCs will also be taught and you will learn how best these countries can achieve sustainable development.

COURSE CONTENT

This course will expose you to the structure and problems of less-developed countries (Nigeria inclusive) in the world. It builds on the foundation of elementary economics in understanding real life situations faced by these countries. The topics covered include: the concepts and determinants of economic growth and development; structural diversities and common characteristics of LDCs and; the theories of growth and development.

COURSE AIMS

The aim of this course is to give you a better understanding of development economics. The aims will be achieved by:

- introducing you to the basic concepts of economic development and growth
- teaching you what determines growth i.e. why some countries are developed and others are not
- exposing you to the structural differences and the basic common characteristics of the less-developed countries

- bringing to your knowledge some growth and development theories and models as well as how relevant they are in breaking the hold of poverty in the less- developed countries.

COURSE OBJECTIVES

To achieve the aims set above, there are overall objectives which the course is out to achieve, though there are set out objectives for each unit. These objectives are included at the beginning of a unit; you should read them before you start working through the unit. You may want to refer to them during your study of the unit to check on your progress. The objectives serve as guides, such that you could know if you are able to grasp the knowledge of each unit through the sets objectives.

Below are the wider objectives of the course as a whole. By meeting these objectives you should have achieved the aims of the course.

On successful completion of the course you should be able to:

- define the concept of economic growth and economic development as scholarly established
- enumerate the importance of the study of economic growth
- describe how economic growth is measured
- differentiate between economic growth and economic development
- explain why there can be growth without development
- list and explain the common characteristics of the less-developed countries
- mention and explain the differences between the less-developed countries
- state the different indicators of underdevelopment
- identify the obstacles to development
- describe how sustainable development can be achieved
- analyse modern economic growth
- state some of the theories and models of growth and development, and also know their applicability and limitations to a country like Nigeria.

WORKING THROUGH THIS COURSE

You have to work through all the study units in the course. There are four modules and 16 study units in all. To successfully complete this course, you are required to read the study units, referenced books and other materials on the course. Each unit contains self-assessment exercise. At some points in the course, you will be required to submit

assignments for assessment purposes. At the end of the course, there is a final examination. This course should take about 15 weeks to complete and some components of the course are outlined under the course material subsection.

COURSE MATERIALS

Major components of this course are:

1. Course Guide
2. Study Units
3. Textbooks
4. Assignment File
5. Presentation Schedule

STUDY UNITS

The breakdown of the four modules and 16 study units are as follows:

Module 1 Concepts and Determinants of Economic Growth and Development

Unit 1 Concept of Economic Growth
Unit 2 Determinants of Growth
Unit 3 Concept of Economic Development
Unit 4 Sustainable Development

Module 2 Diversity in Structures and Common Characteristics of Less-Developed Countries

Unit 1 The Less-Developed Countries
Unit 2 Common Characteristics and Structural Diversity of Less Developed Countries
Unit 3 Major Obstacles to Economic Development
Unit 4 Meaning and Characteristics of Modern Economic Growth

Module 3 Survey of Some Selected Theories of Economic Development

Unit 1 Adam Smith's Theory
Unit 2 W.W. Rostow's Stages of Economic Growth
Unit 3 The Marxian Theory
Unit 4 Lewis' Theory of Unlimited Supplies of Labour
Unit5 Balanced and Unbalanced Growth Theories

Module 4 Some Economic Growth Models

Unit 1 Harrod-Domar Growth Model
Unit 2 The Solow Model
Unit 3 The New Endogenous Growth Theory

Each study unit will take at least two hours, and it include the introduction, objective, main content, self-assessment exercise, conclusion, summary and references. Other areas border on the Tutor-Marked Assignment (TMA) questions. Some of the self-assessment exercise will necessitate discussion, brainstorming and argument with some of your mates. You are advised to do so in order to understand and get acquainted with historical and current economic events as well as notable periods and dates.

There are also textbooks under the reference and other (on-line and off-line) resources for further reading. They are meant to give you additional information, if you can lay your hands on any of them. You are required to study the materials; practice the self-assessment exercise and tutor-marked assignment (TMA) questions for greater and in-depth understanding of the course. By doing so, the stated learning objectives of the course would have been achieved.

TEXTBOOKS AND REFERENCES

Every unit contains a list of references and further reading. Try to get as many as possible of those textbooks and materials listed. The textbooks and materials are meant to deepen your knowledge of the course. The following materials are recommended:

Agenor, P. & Montiel, P. J. (2008). *Development Macroeconomics.* (3rd ed.). Princeton: Princeton University Press.

Brundtland Report (1987). *Towards Sustainable Development in Our Commomn Future.* United Nations World Commission on Environment and Development. Oxford: Oxford University Press. pp. 43 – 66.

Fashola, M. A. (2001). *Macroeconomics Theory Highlights and Policy Extensions for Less-Developed Economies.* (3rd ed.). Lagos: Concepts Publishers Ltd.

Friedman, J. (1972). "General Theory of Polarised Development." In: N. M. Hansen (Ed.), *Growth Centres in Regional Economic Development*. New York: The Free Press.

Goldsteinin, J. S. (1985). "Basic Human Needs: The Plateau Curve." *World Development,* Vol. 13.

Haller, A. P. (2012). "Concepts of Economic Growth: Challenges of Crisis and of Knowledge." *Economy Trans-disciplinary Cognition,* Vol. 15, Issue 1/2012.

Hicks & Streeten (1979). "Indicators of Development: The Search for a Basic Need, Yardstick, World Development*." Elsevier*, Vol.7(6).

Jhingan, M. L. (2007). *The Economics of Development and Planning*. (39th ed.). Delhi: Vrinda Publications (P) Ltd.

Kindleberger, C. P. (1965). *Economic Development*. (2nd ed.). New York: McGraw-Hill.

Nafziger, E. W. (2006). *Economic Development.* (4th ed.). New York: Cambridge University Press.

Okun, B. & Richardson, R. W. (1962). *Studies in Economic Development.* New York: Holt, Rinehart.

Olajide, O. T. (2004). *Theories of Economic Development and Planning.* Lagos: Pumark Nigeria Ltd.

Rodney, W. (2009). *How Europe Underdeveloped Africa.* Abuja: Panaf Publishing Inc.

Romer, P. (2007). From The Concise Encyclopedia of Economics. D. R. Henderson. (Ed.). *Liberty Fund.* www.ecolib.org/library/ Enc/Economic Growth. *Accessed* on 9/9/2013.

Simon, K. (1973). Modern Economic Growth: Findings and Reflections. *The American Economic Review*, Vol. 63, No. 3 (June, 1973).

http://www.sfu.ca/~dandolfa/Kuznets. Accessed on the 9/9/2013

Todaro, M. P. & Smith, S. C. (2006). *Economic Development.* (9th ed.). Boston: Addison Wesley.

Todaro, M. P. & Smith, S. C. (2011). *Economic Development.* (11th ed.). England: Pearson Education Ltd.

ASSIGNMENT FILE

In this file, you will find all the details of the work you must submit to your tutor for marking. The marks you obtain from these assignments will count towards the final mark you obtain for this course. Further information on assignments will be found in the Assignment File itself and later in this Course Guide in the section on assessment.

There are four assignments in this course. The four course assignments will cover:

Assignment 1 – All TMAs' Question in Units 1 – 4 (Module 1)
Assignment 2 – All TMAs' Question in Units 1 – 4 (Module 2)
Assignment 3 – All TMAs' Question in Units 1 – 5 (Module 3)
Assignment 4 – All TMAs' Question in Units 1 – 3 (Module 4)

PRESENTATION SCHEDULE

The Presentation Schedule included in your course materials gives you the important dates for the completion of tutor-marked assignments and attending tutorials. Remember, you are required to submit all your assignments by the due date. You should guard against falling behind in your work.

ASSESSMENT

Your assessment will be based on tutor-marked assignments (TMAs) and a final examination which you will write at the end of the course.

In attempting the assignments, you are expected to apply information, knowledge and techniques gathered during the course. The assignments must be submitted to your tutor for formal assessment in accordance with the deadlines stated in the Presentation Schedule and the Assignment File. The work you submit to your tutor for assessment will count for 30% of your total course mark.

At the end of the course, you will need to sit for a final written examination of two hours' duration. This examination will count for 70% of your total course mark.

TUTOR-MARKED ASSIGNMENT (TMA)

Every unit contains at least one or two assignments. You are advised to work through all the assignments and submit them for assessment. Your tutor will assess the assignments and select four which will constitute the 30% of your final grade. The tutor-marked assignments may be

presented to you in a separate file. Know that for every, unit there are some tutor-marked assignments for you. It is important you do them and submit them for assessment.

When you have completed each assignment, send it, together with a TMA form, to your tutor. Make sure that each assignment reaches your tutor on or before the deadline given in the Presentation File. If for any reason, you cannot complete your work on time, contact your tutor before the assignment is due to discuss the possibility of an extension. Extension will not be granted after the due date unless there are exceptional circumstances.

FINAL EXAMINATION AND GRADING

At the end of the course, you will write a final examination which will constitute 70% of your final grade. In the examination which shall last for two hours, you will be requested to answer three questions out of at least five questions. All areas of the course will be assessed.

Revise the entire course material using the time between finishing the last unit in the module and that of sitting for the final examination. You might find it useful to review your self-assessment exercises, tutor-marked assignments and comment on them before the examination. The final examination covers information from all parts of the course.

COURSE MARKING SCHEME

The table presented indicates the total marks (100%) allocation.

Assignment	**Marks**
Assignments (Best three assignments out of four that is marked)	30%
Final Examination	70%
Total	**100%**

COURSE OVERVIEW

The Table presented below indicates the units, number of weeks and assignments to be taken by you to successfully complete the course, ECO 347 - Development Economics I

Units	Title of Work	Weeks's Activities	Assessment (end of unit)
	Course Guide		
Module 1 Concepts and Determinants of Economic Growth and Development			
1	Concepts of Economic Growth	Week 1	Assignment 1
2	Determinants of Growth	Week 2	Assignment 1
3	Concepts of Economic Development	Week 3	Assignment 1
4	Sustainable Development	Week 3	Assignment 1
Module 2 Diversity in Structures and Common Characteristics of Less-Developed Countries			
1	The Less-Developed Countries	Week 4	Assignment 2
2	Common Characteristics and Structural Diversity of Less-developed Countries	Week 5	Assignment 2
3	Major Obstacles to Economic Development	Week 6	Assignment 2
4	Meaning and Characteristics of Modern Economic Growth	Week 7	Assignment 2
Module 3 A Survey of Some Selected Theories of Economic Development			
1	Adam Smith's Theory	Week 8	Assignment 3
2	W. W Rostow's Stages of Economic Growth	Week 9	Assignment 3
3	The Marxian Theory	Week 10	Assignment 3
4	Lewis's Theory of Unlimited Supplies of Labour	Week 11	Assignment 3
5	Balanced and Unbalanced Growth Theories	Week 12	Assignment 3
Module 4 Some Economic Growth Models			
1	Harrod-Domar Growth Model	Week 13	Assignment 4
2	The Solow Model	Week 14	Assignment 4
3	The New Endogenous Growth Theory	Week 15	Assignment 4
	Total	**15 weeks**	

HOW TO GET THE MOST FROM THIS COURSE

In distance learning, the study units replace the university lecturer. This is one of the great advantages of distance learning; you can read and work through specially designed study materials at your own pace and at

a time and place that suit you best. Think of it as reading the lecture instead of listening to a lecturer. In the same way that a lecturer might set you some reading to do, the study units tell you when to read your books or other material, and when to embark on discussion with your colleagues. Just as a lecturer might give you an in-class exercise, your study units provides exercises for you to do at appropriate points.
Each of the study units follows a common format. The first item is an introduction to the subject matter of the unit and how a particular unit is integrated with the other units and the course as a whole. Next is a set of learning objectives. These objectives let you know what you should be able to do by the time you have completed the unit. You should use these objectives to guide your study. When you have finished the unit you must go back and check whether you have achieved the objectives. If you make a habit of doing this you will significantly improve your chances of passing the course and getting the best grade.

The main body of the unit guides you through the required reading from other sources. This will usually be either from your set books or from a reading section. Some units require you to undertake practical overview of historical events. You will be directed when you need to embark on discussion and guided through the tasks you must do.

The purpose of the practical overview of some certain historical economic issues are in twofold. First, it will enhance your understanding of the material in the unit. Second, it will give you practical experience and skills to evaluate economic arguments, and understand the roles of history in guiding current economic policies and debates outside your studies. In any event, most of the critical thinking skills you will develop during studying are applicable in normal working practice, so it is important that you encounter them during your studies.

Self-assessments are interspersed throughout the units, and answers are given at the end of the units. Working through these tests will help you to achieve the objectives of the unit and prepare you for the assignments and the examination. You should do each self-assessment exercises as you come to it in the study unit. Also, ensure to master some major historical dates and events during the course of studying the material.

The following is a practical strategy for working through the course. If you run into any trouble, consult your tutor. Remember that your tutor's job is to help you. When you need help, don't hesitate to call and ask your tutor to provide it.

Read this Course Guide thoroughly

Organise a study schedule. Refer to the *course overview* for more details. Note the time you are expected to spend on each unit and how the assignments relate to the units. Important information, e.g. details of your tutorials, and the date of the first day of the semester is available from study centre. You need to gather together all the information in one place, such as your dairy or a wall calendar. Whatever method you choose to use, you should decide on and write in your own dates for working breach unit.

Once you have created your own study schedule, do everything you can to stick to it. The major reason that students fail is that they get behind with their course work. If you get into difficulties with your schedule, please let your tutor know before it is too late for help.

Turn to Unit 1 and read the introduction and the objectives for the unit.

Assemble the study materials. Information about what you need for a unit is given in the *overview* at the beginning of each unit. You will also need both the study unit you are working on and one of your set books on your desk at the same time.

Work through the unit. The content of the unit itself has been arranged to provide a sequence for you to follow. As you work through the unit you will be instructed to read sections from your set books or other articles. Use the unit to guide your reading.

Up-to-date course information will be continuously delivered to you at the study centre.

Work before the relevant due date (about four weeks before due dates), get the Assignment File for the next required assignment. Keep in mind that you will learn a lot by doing the assignments carefully. They have been designed to help you meet the objectives of the course and, therefore, will help you pass the exam. Submit all assignments no later than the due date.

Review the objectives for each study unit to confirm that you have achieved them. If you feel unsure about any of the objectives, review the study material or consult your tutor.

When you are confident that you have achieved a unit's objectives, you can then start on the next unit. Proceed unit by unit through the course and try to pace your study so that you keep yourself on schedule.

After completing the last unit, review the course and prepare yourself for the final examination. Check that you have achieved the unit objectives (listed at the beginning of each unit) and the course objectives (listed in this Course Guide).

FACILITATORS/TUTORS AND TUTORIALS

There are some hours of tutorials (2-hours sessions) provided in support of this course. You will be notified of the dates, times and location of these tutorials. Together with the name and phone number of your tutor, as soon as you are allocated a tutorial group.

Your tutor will mark and comment on your assignments, keep a close watch on your progress and on any difficulties you might encounter, and provide assistance to you during the course. You must mail your tutor-marked assignments to your tutor well before the due date (at least two working days are required). They will be marked by your tutor and returned to you as soon as possible.

Do not hesitate to contact your tutor by telephone, e-mail, or discussion board if you need help. The following might be circumstances in which you would find help necessary.

Contact your tutor if:

- you do not understand any part of the study units or the assigned reading
- you have difficulty with the self-assessment exercises
- you have a question or problem with an assignment, with your tutor's comments on an assignment or with the grading of an assignment.

You should try your best to attend the tutorials. This is the only chance to have face to face contact with your tutor and to ask questions which are answered instantly. You can raise any problem encountered in the course of your study. To gain the maximum benefit from course tutorials, prepare a question list before attending them. You will learn a lot from participating in discussions actively.

SUMMARY

ECO 347 – Development Economics I is a branch of economics which deals with the efficient allocation of scarce resources. Its major concern is the sustenance of economic growth over time in other to improve the standard of living of the masses that live in poverty in developing

countries. The course material has been prepared to facilitate an intelligent grasp of the subject matter and would aid you in having a broad knowledge on problems affecting the less-developed countries and some possible solutions to these problems.

ECO 347 will be very useful to you in your academic pursuit and will help you to gain an in-depth knowledge of what development is all about. On successful completion of the course, you would have developed critical thinking skills for efficient and effective discussion of economic development issues. However, to gain a lot from the course please try to apply everything you learn in the course to term paper writing in other related courses. We wish you success with the course and hope that you will find it both interesting and useful.

MAIN COURSE

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MODULE 1 CONCEPT AND DETERMINANTS OF ECONOMIC GROWTH AND DEVELOPMENT

Unit 1 Concept of Economic Growth
Unit 2 Determinants of Growth
Unit 3 Concept of Economic Development
Unit 4 Sustainable Development

UNIT 1 CONCEPT OF ECONOMIC GROWTH

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1.0 INTRODUCTION

Economic growth is the sustainable increase in the total amount of the goods and services (output) produced in an economy over time. Most times, economic growth is used as a means of knowing how well a country is doing because more output means more trade, more revenue and more consumption. It is an indication of how big an economy is growing, but this does not show how better it is getting. In this unit, the concept of economic growth will be properly explained to you, its importance is analysed and you will also be taught the advantages and disadvantages of the concept.

2.0 OBJECTIVES

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

- define the concept of economic growth as scholarly established
- enumerate the importance of the study of economic growth

- describe how economic growth is measured
- state the advantages and disadvantages of economic growth.

3.0 MAIN CONTENT

3.1 What is Economic Growth?

Economic growth is a term that almost everyone is at least familiar with - whether they have studied economics or not. Most people who use the term have a lean idea of what it means, but to an economist, it takes a deeper and more concise meaning.

To an economist, economic growth is the sustained increase in the National Income (NI) or the total output of all goods and services produced in an economy. It is an increase in the capacity of an economy to produce goods and services, compared from one period of time to another.

Kuznets (1973), a Nobel laureate in economics, defined a country's economic growth as "a long-term rise in capacity to supply increasingly diverse economic goods to its population, this growing capacity based on advancing technology and the institutional and ideological adjustments that it demands". This means that for an economy to achieve growth there should be advancement in technology accompanied by institutional and attitudinal adjustments.

Economic growth according to Todaro and Smith (2006), is the steady process by which the productive capacity of the economy is increased over time to bring about rising levels of national output and income.

Economic growth therefore occurs whenever people take resources and efficiently rearrange them in ways that make them more productive overtime. It is the continuous improvement in the capacity to satisfy the demand for goods and services, resulting from increased production scale, and improved productivity i.e. innovations in products and processes.

In summary, we can say economic growth means new products, more outputs and wider choice for consumers.

SELF-ASSESSMENT EXERCISE

In your own words, define economic growth.

3.2 Why Do We Study Economic Growth?

Growth is an important economic goal because it means there is more material abundance brought about by efficient management of scarce resources. Growth therefore lessens the burden of scarcity in any economy.

The study of economic growth provides learners with both theoretical and empirical understanding of how different factors combine together to provide the right framework for a country's long run growth. We also study economic growth to know how to use existing resources efficiently (by avoiding costly waste) and invest in new ones.

The study of economic growth is important for government/policy makers to take necessary steps in formulating growth enhancing policies and to make amendments where it is necessary.

Economic growth provides a necessary, although not sufficient condition for the development of an economy - without growth, there will be no development. Therefore, the study of growth is important to understand how a country can achieve development.

Since economic growth is largely about innovation, which is also the key to non-material progress in such areas as the environment, health, and education, economic growth is not just studied for the sake of output increase, but for a general progress in the economy.

From the study of economic growth, we are taught how to apply the different economic growth theories (propounded by the developed countries) to suit our own problems and interests.

SELF-ASSESSMENT EXERCISE

Give three reasons why you think economic growth should be studied.

3.3 Measurement of Economic Growth

How do we know whether an economy is growing or not? The basic thing to do is to get the sum total of all the goods and services produced within the economy in the current year and compare it with that of the previous year.

The next question will then be - how can these products be summed up given the fact that they come in different weights and dimensions? The solution to this is to sum up based either on their market prices in the same currency or an indexing system which uses percentage changes in

physical outputs of the goods and services relative to a given base year. In measuring economic growth, the most common method used is the Gross Domestic Product (GDP) or its related indicators, such as Gross National Product (GNP) or Gross National Income (GNI) which are derived from the GDP calculation. The GDP is defined as the market value of the goods and services produced by a country, and it is calculated from a country's national accounts which state annual data on incomes, expenditure and investment for each sector of the economy.

There are three different ways of measuring GDP. They are:

- the income approach
- the value-added approach
- the expenditure approach.

The income approach as the name implies measures people's incomes, the value-added approach measures the total value added to the goods and services at each step of production, and the expenditure approach measures the expenditure on goods and services. In theory, each of these approaches should lead to the same result, so if the output of the economy increases, incomes and expenditures should increase by the same amount. The problem here however, is that when using market prices to calculate GDP, inflation rates should be considered especially for those countries that have high and persistence inflation rates like the less developed countries.

In taking care of inflation, the GDP deflator is used. GDP deflator measures the ratio of nominal GDP to the real measure of GDP. The formula for calculating the deflator is:

$$\text{GDP deflator} = \frac{\text{Nominal GDP}}{\text{Real GDP}} \times 100$$

To get the real GDP, we adjust nominal GDP to take account of inflation which would otherwise make growth rates appear much higher than they really are, especially during periods of high inflation.

$$\text{Real GDP} = \frac{\text{Nominal GDP}}{\text{GDP Deflator}} \times 100$$

The nominal GDP is usually higher than the real GDP because of price changes. The work of the GDP deflator therefore is to deflate the nominal GDP into a real measure i.e., it takes inflation out of GDP. The real GDP is always given in terms of a base year and it is the value the nominal GDP would have been if there was no price changes from the base year.

Consider a numeric example: If nominal GDP is #500,000, and real GDP is #240,000, then the GDP deflator will be, (#500,000 /#250,000 X 100 =#200).

GDP Growth Rate Calculation (Arithmetic of Growth)
Hypothetical illustration (1)

If for example, the real GDP in Nigeria for 2009 and 2010 were #12.7 trillion and #13.1 trillion respectively, calculate the growth rate in the economy.

Solution

GDP growth rate $g(Y) = \Delta Y/Y = (Y_t - Y_{t-1}) / Y_{t-1}$ ..... *(1)*
Where g(Y)= GDP growth rate ; Y and ΔY = GDP and change in GDP respectively;
Y_t = the value of the GDP in the current year and Y_{t-1} = previous year's GDP.

Subtracting the 2009 figure from the 2010 figure results in a difference of N 0 .4 trillion.

Divide this difference by the previous year's real GDP that is N 0.4 trillion by N12.7 trillion, which gives you an annual growth rate of 0.031.

It is conventional to multiply by 100 and express the result in percentage.

We can then say that the economy experienced a growth rate of 3% in 2010.

We could also wish to know the average annual growth of GDP during a period of time say 5, 10 or even more years. In this case, we use a compound interest kind of formula because growth is cumulative like the compound interest rate.

The formula is given as:

$$Y_t = (Y_0 + gY_{0)\,t} = , Y_0(1+g)^t \text{.....(2)}$$

Where Y_t = GDP in the l^{st} year under study; Y_0 = GDP in the first year of study and g is growth rate as in equation (1).

Hypothetical illustration 2

Suppose for example we wish to calculate the average growth rate of output/national income (which of course can be gotten from GDP

calculation) from 2000 to 2010 which is a period of 10 years. Given that GDP at 1990 constant price (1990 as the base year) is N14. 30 trillion in year 2000 and N18.71 trillion in 2010. Calculate the annual average growth rate for the period.

In calculating the annual average growth rate, you only need the first and the last year's rates.

Using the above formula, we have:

$$Y_t = Y_0(1+g)^t$$
$$18.71=14.30(1+g)^{10}$$

Where year 0 is 2000 and year t is 2010, which is a ten year period.
Therefore growth rate $g = (18.71/14.30)^{1/10} - 1 = 0.027$
So the annual GDP growth rate during the decade is 2.7 %.
The growth rate formula in this context can thus be written as

$$(Y_t/Y_0)^{1/t} - 1) \times 100 = g$$

SELF-ASSESSMENT EXERCISE

List and explain the different ways economic growth can be measured.

3.3.1 Limitations of the GDP Method

Despite the fact that the GDP is the most widely used means of measuring economic growth, it has the following limitations:

1) Some cash transactions that take place outside of recorded market places are not included in GDP statistics and as such the actual value of growth cannot be ascertained.
2) Goods and services produced but not exchanged for money, known as "nonmarket production", are not measured, even though they have value. For example, if you paint your house by yourself, instead of allowing a professional to paint it, the value of this service will not be included in GDP.
3) In calculating the real GDP, the GDP deflator is used and since the GDP deflator is based on estimates of inflation rates, it will be subject to statistical estimation errors.
4) The measure fails to take into consideration the changes in the growth of population. If a rise in real growth rate is accompanied by a much faster rise in population growth, then the per capita GDP (GDP divided by the number of people in the country) would be very low and as such there will be no economic growth.

5) GDP figures do not take into consideration the effect of externalities e.g. noise pollution and industrial pollution.

Due to the above limitations, the index of production method seems to be more appropriate in measuring growth.

The index of production method is based on physical output and not on the prices of goods and services like the GDP and therefore it is not affected by the fluctuation in prices of goods and services. This index selects the major industries for growth analysis and you could have for example the index of industrial output, index of agricultural output or a composite index of agricultural and industrial output. The index of each industry is measured by the changes in the physical output in that industry relative to a given base year.

SELF-ASSESSMENT EXERCISE

The GDP method is the most widely used means of measuring economic growth despite its limitations. Mention these limitations.

3.4 Advantages and Disadvantages of Economic Growth

Advantages of Economic Growth

1. **Higher living standards -** since growth means a sustainable increase in the total output of goods and services produced in a country, consumers are able to enjoy more goods and services, increased income and a general improvement in living standard.
2. **Employment effects** - growth stimulates more jobs in an economy and this would address the issue of unemployment.
3. **Lower government borrowing - e**conomic growth boosts tax revenues and provides the government with extra money to improve public services such as education and healthcare. It helps to reduce government borrowing and makes it easier for a government to reduce the size of their budget deficit.
4. **Environmental protection** - growth can also help provide the funds to protect the environment such as low-carbon **investment, innovation/research and development,** in the use of more efficient and environmental friendly production processes. Countries with higher growth rates can afford the luxury of protecting the environment.

Economic growth is a condition that all nations desire to achieve, but when the growth rate becomes too rapid, it brings about great costs, some of which are listed below.

Disadvantages of Economic Growth

1. **Working hours** – sometimes there are fears that a fast-growing economy places increasing demands on the hours that people work and can upset work-life balance.
2. **Environmental issues** - a fast growing economy can put pressure on the environment in terms of depletion of the non-renewable natural resources, and damage caused by industrial/economic activities on the environment e.g. air, water and noise pollutions.
3. **Inequality**- not all of the benefits of economic growth are evenly distributed. There could be a rise in national output but also growing income and wealth inequality in the society. There could also be regional differences in the distribution of rising income and spending.
4. **Risk of inflation** - if the economy grows too quickly, there is the danger of inflation as spending would likely grow faster than production. This means that the demand races ahead of the ability of the economy to supply goods and services. Producers then take advantage of this by raising prices of their goods and services.

SELF-ASSESSMENT EXERCISE 5

List and explain three advantages and three disadvantages of economic growth.

4.0 CONCLUSION

Economic growth as we stated at the beginning of this unit, is the increase in the total amount of the goods and services (output) produced in an economy over time. Economic growth brings about innovation, increases output, raises income, creates employment opportunity and when this growth is sustained, the standard of living of the people will improve. However, a rapid growth rate should be avoided because it could lead to several problem among which is inflation. The knowledge of the concept of growth is very important because it is through this knowledge that we are able to calculate the actual growth rate of an economy and then know what necessary steps policy makers can take to adjust growth rates to a desirable level.

5.0 SUMMARY

In this unit, we studied the concept of growth, we have looked at reasons why we study growth and how it could be measured. We also explained that economic growth has not just advantages but also disadvantages as well and we concluded the unit by saying that the knowledge of the

concept of growth is good because it will aid policy makers to be able to adjust growth rate to a desirable level.

6.0 TUTOR-MARKED ASSIGNMENT

1. Developing nations desire to achieve economic growth. What are the negative sides of a rapid economic growth?
2. The GDP method of measuring economic growth though widely used has some limitations, mention and explain an appropriate alternative method that can be used.

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UNIT 2 DETERMINANTS OF ECONOMIC GROWTH

CONTENTS

1.0 Introduction
2.0 Objectives
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    3.2 Economic Factors
    3.3 Non-Economic Factors
4.0 Conclusion
5.0 Summary
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1.0 INTRODUCTION

The process of economic growth is a highly complex phenomenon and is influenced by numerous and varied factors which are grouped into economic and non-economic factors. It is true that an economy needs economic factors like capital, human resources, natural resources, technology and enterprise to grow, but the non-economic factors such as political, social and cultural factors are also essential ingredients for growth to take place.

Capital is necessary but not a sufficient condition for progress. The supply of natural resources, the growth of scientific and technological knowledge are all important in the growth process but economic growth is not possible so long as social institutions, political conditions and moral values in a nation do not encourage growth. In this unit, we will look at the economic and non-economic factors that determine growth.

2.0 OBJECTIVES

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

- explain determinants of economic growth
- describe economic factors that determine growth
- analyse non-economic factors that determine economic growth.

3.0 MAIN CONTENT

3.1 Determinants of Economic Growth

The determinants of economic growth are factors that are at work in an economy that give rise to the expansion of production capacity through the fuller and more efficient utilisation of available production capacity. Generally speaking, factors such as sound and adequate infrastructural development, expansion of effective demand through the expansion of government fiscal policy and price stabilisation, favourable social order for investment (especially security of lives and property) and appropriate type and rate of capital formation, are all important for an economy to grow. These factors can however be grouped and discussed under economic and non-economic factors.

SELF-ASSESSMENT EXERCISE

What is the meaning of the term determinants of economic growth?

3.2 Economic Factors

The factors of production are regarded by economists as the main economic factors that determine growth. The following are some of the important economic factors which determine economic growth.

Natural Resources

The principal factor affecting the development of an economy is the natural resources or land. In economics, "Land" is generally taken to include the land area and the quality of the soil, forest wealth, good river system, minerals and oil resources, good climate, etc. For economic growth to take place, the existence of natural resources in abundance is essential. A country deficient in natural resources may not be in a position to develop rapidly, as natural resources are necessary but not sufficient condition for economic growth. The reason for this is that having these resources is not what makes a nation grow, but the effective utilisation is what counts. In less developed countries, natural resources are unutilised, underutilised or mis-utilised, and this is one of the reasons for their backwardness. Most developed countries do not just depend on the mere availability of natural resources; they take necessary steps to develop these resources through technological factors to make them perform better.

A country considered to be poor in resources today could be considered rich in resources at a future date not just because new resources are found, but possibly because new methods have been found for the use of

the old resources. Also, a country without any known resources can even import raw materials and mineral resources from other countries and by effectively using these resources, the country can eliminate the deficiencies of their lack of natural resources. The main point to note here is that with or without natural resources a country can still grow. Natural resources can only give rise to growth when they are properly exploited through improved techniques so that waste is minimised as much as possible and they could be utilised for a longer time.

Capital Formation

One other major factor for development of an economy is capital formation. **Capital** can be defined as the stock of physical reproducible factors of production, and capital formation is the rate of investment in both physical and human capital in an economy. Then again, **capital accumulation** is the net additions or amassing of capital stock and for any economy to grow, it needs to increase/amass its capital stock both physical and human capital.

Since capital formation is giving up a portion of wealth now by way of investing, so as to reap better rewards in future, the rate at which this is done and increased upon will determine the growth of the economy. Capital formation starts with savings and a country that has a low propensity to save (like the less developed countries) would find it difficult to increase its stock of capital.

The low rate of savings in less developed countries is due to low per capita income of the people, which may not be raised merely by voluntary savings. For the rate of per capita savings to be increased in such a situation, emphasis would have to be placed on forced savings which will reduce consumption and thereby release savings for capital formation.

Forced savings can be possible through the implementation of a proper fiscal policy. In this regard, taxation, deficit financing and public borrowings are better instruments in the hands of the state to collect savings and accumulate capital. In addition to these, the external resources like foreign loans and grants, and larger exports can also help these economies in capital formation.

The capital formation is key to economic growth, especially in less developed economies.

It is capital formation that leads to technological progress and technological progress in turn leads to specialisation and the economies of large-scale production. It is from capital formation we have

equipments, machines and tools and equipments for the ever increasing labour force and it is also capital formation that leads to effective exploitation of natural resources, industrial growth and expansion of markets in an economy.

Division of Labour and Scale of Production

Division of labour is the breaking down of a work process into different number of tasks, with each task performed by a separate person or group of persons. Breaking down work into simple, repetitive tasks brings about specialisation because by doing a particular task over and over again one becomes perfect in it (practice makes perfect). With division of labour and specialisation, there is a reduction in production time, productivity rises and then there is also the advantage of lower production costs and a less expensive final product as a result of economies of large-scale production which further helps in industrial development. However, division of labour depends on the size of the market and the size of the market depends on the level of economic progress (general level of production, means of transportation, size of demand etc.).

When there is an improvement in modern means of transportation, communication and power, the markets (both domestic and foreign) would be expanded. Expanded markets means an increase in scale of production and this in turn means greater specialisation and division of labour. Therefore for less developed countries to grow, there should expand their markets through the adoption of modern means of transport and communications so that division of labour and scale production can be achieved.

Organisation

Organisation is an important factor for success in any organisation because it involves the optimum use of factors of production in economic activities. Organisation increases the productivity of capital and labour, and the person in charge of ensuring that these two factors of production are effectively and efficiently used is the entrepreneur.

An entrepreneur is the brain behind the success of any business enterprise and this makes him/her an important factor necessary for the overall economic growth. He/she possesses the ability to: recognise opportunities for successful introduction of new commodities, new techniques, new sources of supply, assemble the necessary plants and equipments, management and labour force, and organise them into a growing concern which gives rise to industrialisation.

Industrialisation leads to economic growth and industrialisation cannot take place without the organisational skills of the entrepreneurs. For the less developed countries to achieve growth they should create the right environment to encourage entrepreneurship and this can be achieved by improving the financial, legal, social, research and training institutions and also improving the infrastructural facilities available in the country.

Technological Progress

The technological changes are the most essential factors in the process of economic growth, because even capital accumulation is not possible without technical progress. Technical progress involves changing the methods of production as a result of new techniques of research or innovation. Put simply, it is the research into the use of new and better methods of production or the improvement of the old methods. The use of new techniques and innovation in production bring about significant increase in productivity and also in per capita income. Technological progress therefore increases the ability to get a more effective and rewarding use of natural and other resources for increasing production. For Less Developed Countries (LDCs) to grow rapidly in the short run, they need to import modern technology from the advanced countries because they cannot wait until they themselves invent or modify the technology of advanced countries. But they should also try to develop technology that would suit their own economy in the long run.

Structural Changes

This involves the transformation of traditional agricultural society to a modern industrial economy through the radical and conscious transformation of existing institutions, social attitudes, and motivations.

Most LDCs have a very large primary sector which is the basic production sector comprising of activities such as farming, forestry, fishing and mining and very small secondary and tertiary sectors which are characterised by the processing of raw materials and rendering of services respectively. These LDCs have a large proportion of their population than is really required working in the agricultural sector and as a result, the sector is characterised by surplus labour with zero

Marginal Physical Product of Labour (MPPL)

Structural change in these economies would have to be in the form of a transfer of population from the primary sector to the secondary and then to tertiary sectors and this would bring about a reduction in the number of people depending on agriculture as a source of employment and income.

The secondary and tertiary sectors would improve agricultural production (by producing better tools and machines) and this would increase agricultural earnings, rural demand for consumer goods would also rise and the industrial sector will also expand as a result of this chain reaction.

In summary, structural changes would lead to increasing employment opportunities, higher labour productivity, exploitation of new resources and improved technology. In LDCs, the agriculture and industry sectors are supposed to complement each other for overall growth to be achieved.

SELF-ASSESSMENT EXERCISE

List and explain three economic factors that determine economic growth in an economy.

3.3 Non-Economic Factors

Growth in an economy does not depend solely on the abundance of enough resources nor is it solely an economic phenomenon. Economic growth occurs as a result of economic and non-economic factors. The economic factors mentioned above and non-economic factors such as social, cultural, psychological, human, political and administrative factors are supposed to work *pari passu* for the growth of any economy. In this section, we will discuss some of the essential noneconomic factors which determine the economic growth of an economy.

Political and Administrative Factors

Political stability and strong administration are essential and helpful in modern economic growth. It is because of political stability and strong administration that countries like the U.K., U.S.A., Germany, France and Japan have reached their current level of highest economic growth in the world since the 19th century. Most less developed countries are characterised by weak administrative and political structures and that is why they have remained backwards as far as growth is concerned.

The behaviour of government plays an important role in creating the right environment for business development. The greater the freedom allowed, the more entrepreneurship will prosper. Technical progress, factors mobility and large size of market are important factors that can stimulate growth but in a situation where there is political instability and high rate of corruption, there will be no growth. So, for growth to be

achieved, the government must provide the right fiscal and monetary policies and also, an enabling environment for businesses to succeed.

Social and Psychological Factors

Modern economic growth process has been influenced by social and psychological factors. The growth of most developed country was brought about by their values, social attitudes, and types of institutions they operate. The LDC's, on the other hand are so much enveloped and guided by traditional customs, outdated ideologies and values, and obsolete attitudes that are not conducive for their economic growth. Thus, there is need to change or modify these social and psychological factors for the rapid economic growth in these countries. Modification here would have to take the form of rationality in thoughts and actions through a deliberate cultivation of scientific attitude and application of modern technology in order to increase productivity, raise living standards, and bring about social and economic equalisation.

Human Factor

Economic growth depends on the quality of the human resources of the economy and not the quantity. The quality in this context means their efficiency in handling the other resources at their disposal for growth purpose. This quality is acquired through the increase in the skills, knowledge and capacities of all people of the country and this process is called human capital formation.

A country with a high rate of skilled, knowledgeable and healthy people is bound to achieve growth through their ability to exploit, develop, and utilise scarce resources.

It is the educated and trained labour force with high productivity efficiency that can lead an economy to rapid growth. LDC's should therefore seek to increase the size of its skilled human resources. This is especially important to these economies because they have the quantity (huge population) and investing in them to improve their skills and knowledge would go a long way in making their economies grow.

SELF-ASSESSMENT EXERCISE

What are the non-economic factors determining economic growth?

4.0 SUMMARY

In this unit, you have been introduced to the various determinants of economic growth. You have also been made to know that these

determinants are grouped into two broad headings which are the economic and the non-economic factors of growth determinants.
It has been clearly stated to you that although the economic factors are very important for any country to achieve growth, without the non-economic factors the whole growth process cannot be achieved. So therefore both factors are very important in the growth process.

5.0 CONCLUSION

In this unit, you realised that the economic and non-economic factors are both very important factors in determining growth of a nation with none of them being more superior to the other as regards degree of importance. While it may be true that capital formation, natural resources and technological progress are major factors that can expand the output of an economy rapidly, without political stability, skilled manpower and sound social values, all resources geared towards achieving growth would go to waste because you need skilled-man power with sound social values to effectively and efficiently utilise scarce resources in a stable and business friendly environment.

6.0 TUTOR-MARKED ASSIGNMENT

1. List and explain six determinants of growth - three each under the two broad factors.
2. Out of the two broad factors, which is the most important determinant of growth? Explain.

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UNIT 3 CONCEPT OF ECONOMIC DEVELOPMENT

CONTENTS

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1.0 INTRODUCTION

Economic development can be said to be the sustainable increase in the total or average outputs of all goods and services produced in a country, accompanied by desirable social and institutional changes. This is to say that development is growth accompanied by certain desirable changes. For any economy to develop, it has to experience sustainable growth which is a necessary but not a sufficient condition. The desirable changes which lead to the overall improvement in the living conditions of the citizens in a country are numerous and they are the reasons why we can have growth without development.

In this unit, we would be looking at the various definitions of economic development, the objects will be studied, we would then go ahead to discuss obstacles to economic development and finally you would be taught the concept of growth without development.

2.0 OBJECTIVES

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

- define the meaning of economic development
- identify the objectives of development
- explain the concept of growth without development.

3.0 MAIN CONTENT

3.1 Meaning of Economic Development

Economic development in traditional terms can be seen to mean achieving sustainable rates of growth of income per capita to enable a nation expand its output at a rate faster than the growth rate of population. The level and rates of the real per capita gross national income (GNI adjusted for inflation) are then used to measure the overall economic well-being of the citizens of a nation. This traditional view of economic development is narrow in the sense that it does not directly take into consideration the inequality in income distribution, the rate of widespread poverty and the rate of unemployment in the economy. Modern economist are of the opinion that of what use is the increase in per capita income when there is little or no improvement (and even decline) in employment level, equality and real income per capita. As a result of these observations, during the 1970's, the concept of economic development came to be redefined in terms of reduction or elimination of poverty, inequality and unemployment.

With these factors missed out by the traditional definition or view of economics at the back of their minds, modern economists reasoned that development must therefore be conceived as a multidimensional process involving major changes in social structures, popular attitudes, and national institutions as well as the acceleration of economic growth, the reduction of inequality, and the eradication of poverty. In defining development therefore, the whole process of desirable change in addition to economic growth must be present. Having explained what development is, we can now proceed to define the term.

SELF-ASSESSMENT EXERCISE

Explain the traditional and modern views of economic development.

3.2 Definitions of Economic Development

Economic development is sometimes taken to mean growth. The truth is that they both have different meanings, with economic growth having a narrower concept than economic development. We have already defined growth in Unit 1 as the sustainable increase in the total amount of the goods and services (output) produced in an economy over time.

What is Economic Development?

Economic development has been defined in different ways and as such, it is difficult to choose any single definition which may be regarded as entirely satisfactory. However, below are a few of the different definitions of economic development. Jhingan (2007) defines development as economic growth plus change. The author sees development as being related to qualitative changes in economic wants, goods, incentives, institutions, productivity and knowledge or upward movement of the entire social system. This definition sees development as growth and qualitative changes in the entire social system. This means development brings about desirable changes that improve the lives of the people (ibid.).

According to Kindleberger (1965), **economic development** implies both more output and changes in the technical and institutional arrangement by which it is produced and distributed. In same vein, Friedman and Hansen (1972) define economic development as an innovative process leading to the structural transformation of social system. Innovation and transformation of social system are the key points in this definition. The definitions above imply that development is about growth and change.

Okun and Richardson (1962) also defined economic development along the growth perspective as "a sustained, secular improvement in material well-being, which we may consider to be reflected in an increasing flow of goods and services.

In same vein, Rodney (2009) sees economic development as a situation where members of a society jointly increase their capacity for dealing with the environment. According to Rodney, this capacity for dealing with the environment is dependent on the extent to which they understand the laws of nature, on the extent to which they put that understanding into practice by devising tools (technology) and on the manner in which work is organised. However, Rodney sounds a strong caution on the narrow way economic development is viewed. To him, economic growth goes beyond just economic affair, arguing rather that it should seen as an overall social process which is dependent upon the outcome of man's efforts to deal with his natural environment.

Viewing development broadly, Todaro (2008) defines it as the sustained elevation of an entire society and social system towards a better or more humane life. He believes that there are three core values of development and these core values are life-sustenance, self-esteem and freedom to choose. Life sustenance here means the basic necessities of life which are clothes, food and shelter. Self-esteem deals with a sense of worth and self respect. Not being used as a tool by others for their own ends.

And finally, freedom to choose/freedom from servitude here means increase in the range of human choices, not being bound by culture, tradition, other people, misery, institution or dogmatic beliefs. Freedom cannot be without limits but it has to do with a minimisation of external constraints in the pursuit of social goals called development. From these definitions, we can conclude that development is not just about increase in the output of goods and services, but it is also about how the increase improves the quality or the living standard of the people. So we can rightly say that economic development is about the betterment of the people and not mere quantitative representations of large figures of goods and services produced in the economy.

SELF-ASSESSMENT EXERCISE

Define development by Todaro. Based on his view, explain the core values of developments.

3.3 The Objectives of Development

In the previous unit, we discovered that economic development means growth plus desirable social and institutional changes. Since the definition of growth is universally accepted as having to do with output increase, what then are desirable changes? Every society has what it views as desirable, what is desirable to society "A" may actually not be to society "B". Desirability is therefore relative, making development both a physical reality and a state of mind in which the society has. Whatever the specific components of these desirable changes are, development in all societies must have at least the following three objectives:

1) To increase the availability and widen the distribution of basic life-sustaining goods such as food, shelter, and protection.
2) To raise level of living standard. This involves in addition to higher income, the provision of more jobs, better education, and greater attention to cultural and human values, all of which will serve not only to enhance material well-being but also to generate greater individual and national self-esteem.
3) To expand the range of economic and social choices available to individuals and nations by freeing them from servitude and the dependence not only in relation to other people and nation-states but also to the forces of ignorance and human misery.

From the above objectives, development can thus be said to be a process of satisfying the basic needs of the people, raising their self–esteem and enlightenment aspirations and endowing them with the capacity to sustain their achievements.

SELF-ASSESSMENT EXERCISE

List and explain the objectives of development in any society.

3.3.1 Criteria for Development

Based on the objectives of development, the following can be said to be the criteria for development:

1) Development must be people oriented.
2) It has to be a long term process.
3) Development creates the capacity for people to be self reliant.
4) It must not be abstract that is, it must be observable and measurable.

3.4 Measurement of Economic Development

There are different measures of economic development, all of them having different shortcomings. Be that as it may, whichever method one would want to use to access whether a country is developing or not, care should be taken to minimise the shortcomings as much as possible.

Economic development can be measured in the following ways:

1) **GNP and GNP per capita approach** – These are termed "income approaches" because they aim at measuring productivity and incomes of people over a period of time. The GNP approach measures the real national income over a period of time. It considers the changes in a country's total output of final goods and services in real terms. As for the GNP per capita approach, it is like the GNP measurement only, it takes into consideration the population factor and therefore its measurement is based on what income an individual receives out of the entire available income. This measure is better than the GNP method because it solves one of the limitations the GNP has of not considering the population growth rate in economy. Population growth rate is important in the measurement of economic development because the real per capita income should be higher than growth rate of population for there to be development in the economy. The GNP and the GNP per capita methods heavily rely on increase in income as their means of measurement, these measures however do not consider the fact that this increase in income could be in the hand of a few, making the income inequitably distributed and as such not development oriented.

Also, the measures fail to take into account problems associated with basic needs like nutrition, health, sanitation, housing etc.

Furthermore, the improvement in living standards (which is key to development) by providing basic needs cannot be measured with GNP or GNP per capita. However despite these limitations, the real GNP per capita still remains the most widely used measure of economic development.

2) Welfare

In this method of measurement, economic development is viewed as a process whereby there is an increase in the consumption of goods and services of individuals mainly as a result of increase in income. This measurement looks at the increase in consumption of individual in an economy but since consumption of goods and services is based on taste and preferences of individuals, how can the weight of these outputs be measured when preparing the welfare index of all the individuals? Again, it is not correct to say that with the increase in national income, the economic welfare of the people might have improved. It is possible (like we said earlier on) that when income in the economy is not equitably distributed, the rich will continue to get richer and the poor, poorer. Thus, increase in economic welfare cannot be said to lead to economic development when only a few people are benefiting from the increase in consumption of goods and services.

Finally, mere increase in output or even output per individual cannot and should not be equated with economic welfare or social welfare if due considerations have not been given to value judgments regarding income distribution, composition of output, tastes, real cost and other particular changes associated with the overall increase in the real income.

3) Social Indicators

Due to the inability of the above measures to capture in totality, the "desirable change" aspect of development, some economists have tried to measure it in terms of social indicators. Social indicators are usually referred to as the basic needs for development, and these basic needs focus on alleviation of poverty by providing the basic human necessities to the poor. Examples of the basic needs are food, clothes, healthcare, education, water, sanitation and housing. The direct provision of these needs affects poverty in a faster and cheaper way than the above strategies. The basic advantage of the social indicators is that they are concerned with ends. Ends here are human development and the means to this end is economic development.

However, different basic needs have their different indicators, but the problem with these indicators is that there is no unanimity among economists as to the number and type of items to be included in measuring development and this is a major limitation of this method. For example, Hicks and Streeten (1979), considered six social indicators for basic needs and they are:

1. Health as a basic need with **life expectancy** at birth as its indicator.
2. Education, as basic needs and indicator as the **literacy** taken as the primary school enrolment as a percentage of population
3. Food as basic need with **calories** supply per head as indicator.
4. Water supply as basic needs and **infant mortality** and percentage of population with access to portable water as the indicator.
5. Sanitation as a need and **infant mortality** and percentage of population with access to sanitation.
6. Housing with **no** indicator.

Other economists have used different numbers of indicator for example; Goldsteinin (1985) used only infant mortality in his index. Another limitation of the social indicators method is that they are concerned with current welfare and are not future related.

Lastly, they involve value judgments. Therefore to avoid this problem of value judgment and also for simplicity sake, economists and UN organisations use GNP per capita as the measure of economic development.

SELF-ASSESSMENT EXERCISE

List and explain the different ways development can be measured?

3.5 Distinctions between Economic Growth and Economic Development

Economic growth and economic development are sometimes wrongly used interchangeably. Below is a tabular representation of their differences.

Table 1.1: Distinctions between Economic Growth and Economic Development

	Economic Growth	**Economic Development**
Definition	The sustained increase in the aggregate output or supply of goods and services produced in a country	Economic Growth accompanied by desirable social and institutional changes
Effect	Quantitative: Brings about quantitative increase in the economy	Qualitative and Quantitative: Brings about qualitative and quantitative changes in the economy and society
Applicability/ Relevance	Growth theories are associated with developed countries. Though widely used in all countries of the world, economic growth is a more relevant measurement for progress in developed countries.	Development theories are specific to the developing countries because economic development is more relevant to measuring progress and quality of life in developing nations.
Concept	Narrower concept	Broader concept
Measurement	Increase in GDP per capita	Human Development Index (HDI) which is a composite statistics of the life expectancy, education, and income indices.

Source: Compiled by the developer from Fashola (2001) and Haller (2012)

SELF-ASSESSMENT EXERCISE 5

Differentiate between economic growth and economic development

3.6 Why Growth without Development?

Having clearly stated the differences between economic growth and economic development, and also knowing that growth is a precondition for development, that is to say it is a necessary but not a sufficient condition for development. We will now go further to see why there can

be growth without development or stating it differently, why is growth not a sufficient condition for development? The factors that may lead to the phenomenon of growth without development are presented below.

1) **Population growth and distribution:** In an economy where population growth rate is greater than the GNP growth rate, the income per head (per capita income) would be low because per capita income is total income divided by the population.

Representing it mathematically, we have:

Per capita GNP = GNP/Population i.e. y=Y/N.
Where y= Per capita income, Y= Total Income and N= Population

The more the N keeps growing above the Y, the lower the y would be.
A low per capita income signifies a low standard of living because it means that the population in the economy exceeds the economic growth rate and this situation cannot lead to economic development.

2) **Environmental Degradation:** Every country operates in an environment where it uses scarce resources to achieve economic growth. In the bid to achieve growth, resources from the environment are used in economic activities. The environment therefore, represents our source of sustenance. However, these resources are sometimes overused or even destroyed through careless economic activities. Economic growth that does not therefore consider the conservation of the source of our livelihood would not lead to a sustainable growth and as such will not also lead to development. It can only lead to futureless growth.

Example of environmental degradation includes: deforestation, soil erosion, overgrazing, desertification, air pollution from industrial effluents and vehicular emissions, water pollution from raw sewage, runoff of agricultural pesticides and spillages and also huge/growing population which overstrains natural resources.

3) **Sectoral Imbalance in Development:** Growth can only lead to development when there is progress in all or almost all the sectors of the economy. Growth must be comprehensive, and balanced covering all the sectors. If however some sectors are neglected or do not experience growth, the people may have an undesirable standard of living. For instance, an economy with developmental focus biased in favour of few sectors like the oil and financial sectors with little or no attention paid to security, infrastructure, agriculture, rural development, education etc, will fail to develop.

The growth witnessed in the few sectors will not be able to transform the entire economy because the backwardness experienced in the neglected sectors would eventually negatively affect and bring to a halt the growth in the few favoured sector.

4) **Moral Decadence and Religious Fanatism:** Impressive growth in an economy is nothing without moral values. A country, having the majority of its population as fraudulent, wicked, inconsiderate, and dishonest people will not be able to achieve development because all these moral problems cannot ensure the sustainability of any economic growth achieved. A growth along this part can be termed as ruthless growth.

As regards religion, the attitude of the people towards how it is practiced is key for any meaningful development to take place. If there is religious intolerance vividly present among the citizens of a country, then there is bound to be religious crisis. Religion is supposed to be a wise guide that should be used to influence people to be morally upright and Godly and not as a tool to create disunity among the people. For growth to lead to development, these factors have to be considered. Any development strategy that does not consider these factors will definitely fail.

5) **Income Inequalities:** The dividends of economic growth would not be enjoyed by the majority if there is a huge gap between the rich and the poor. In a situation where the wealth of a nation is in the hands of a few rich, while majority wallow in poverty, the increase in the GNP will not lead to development.

SELF-ASSESSMENT EXERCISE 6

Explain the phenomenon of growth without development.

4.0 CONCLUSION

In this unit, economic development was thoroughly treated. From our discussions in the unit, we can now clearly state that though economic growth and economic development are most often used synonymously, they are quite different, with economic growth being a precondition for economic development. Economic development is a multidimensional process that goes beyond economic growth and involves the entire social system. It is about the betterment of the human life and how this can be fulfilled and sustained. It is true that economic growth can lead to economic development but a growth rate that is marred by overpopulation, imbalance in sectoral growth rates, lost of moral values, inequality in income distribution and environmental degradation will not

lead to economic development. Therefore, development strategists should place great consideration on factors that can frustrate or negate development plans.

5.0 SUMMARY

This unit has discussed in details, the meaning, definition, objectives and measurement of development. It also looked at the distinctions between growth and development and finally concluded by discussing the phenomenon of growth without development.

6.0 TUTOR-MARKED ASSIGNMENT

Define development and list the criteria for economic development based on the generally perceived objectives of development.

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UNIT 4 SUSTAINABLE DEVELOPMENT

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1.0 INTRODUCTION

Sustainable development is a concept of recent origin. It was first used in 1980 by the World Conservation Strategy. The word sustainability in our everyday English could be said to mean the ability to prolong or to keep in existence. Sustainable development in economics looks at development in this perspective. The concept was used and defined for the first time by the Brundtland Report, released by the United Nations which was entitled *Our Common Future*, of the World Commission on the Environment and Development in 1987, and this has become the most widely recognised definition of the concept. In this unit, the definition given in the Brundtland Report would be stated and you would be explicitly taught the concept of sustainable growth.

2.0 OBJECTIVES

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

- explain sustainable development
- state the objectives of sustainable development
- analyse environmental problems associated with sustainable development
- discuss causes of environmental deregulation
- describe policies of sustainable development
- explain measurements of sustainable development.

3.0 MAIN CONTENT

3.1 Meaning of Sustainable Development

There are many different definitions of sustainable development but the most widely recognised is the one given by the Brundtland Reports (1987). The report gave the definition as "meeting the needs of the present generation without compromising the needs of the future generations" From this definition, sustainable development means development that would better the lives of the people now and in the future. Sustainable development is closely related to economic development because they both lay emphasis on the creation of sustainable improvement in the quality of life of all people through increases in real income per capita, improvement in education, health and general quality of life and improvements in quality of natural environmental resources. The difference between them is that sustainable development is economic development that does not decrease overtime. Sustainable development is thus a development that is long lasting and contributes to the quality of life through improvements in natural environment.

SELF-ASSESSMENT EXERCISE

What do you understand by sustainable development?

3.2 Objectives of Sustainable Development

The primary objective of sustainable development is to make life better for the present generation as well as the future generation with a focus on the preservation of the natural resource base. Sustainable development has several other objectives among which are: increasing economic growth and meeting basic needs; betterment of people's health and education opportunities; giving everyone a chance to participate in public life; helping to ensure clean environment and promoting intergenerational equity.

In sustainable development, meeting the needs of the people in the present generation is essential in order to sustain the needs of future generations because it aims at maximising the net benefits of economic development, subject to maintaining the stock of all the environmental and natural resources assets overtime.

As regards the preservation of resources (environmental and natural resources), economists view sustainability in two perspectives - weak sustainability and strong sustainability. Strong sustainability requires that the natural capital stock should not decrease. While weak

sustainability requires that the total value of physical, human and natural capital stock should not decrease. Breaking it down, weak sustainability holds the position that physical capital stock can substitute for natural capital stock and as such the rate of change of development is generally positive over some selected time horizon, while strong sustainability assumes that physical capital stock and natural capital stock are complementary, but not interchangeable. In summary, sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

SELF-ASSESSMENT EXERCISE

What are the objectives of sustainable development?

3.3 Environmental Problems in Less Developed Countries

Every country has its own peculiar environmental challenges. The environmental problems experienced by a country depend on its stage of development, economic structure, existing production techniques and its environmental policies. For example (generally speaking), as a result of industrialisation, the developed countries are faced majorly with the problem of pollution (air, water and noise) while that of most developing countries are poor sanitation and lack of clean drinking water caused by underdevelopment. Table 1.2 is a tabular representation of some of the environmental problems, causes and their effects in an underdeveloped country.

Table 1.2: Environmental Problems, Causes and Effects

Environmental Problems	Causes	Effects
Air Pollution	Urbanisation as a result of economic development and industrial growth. Leading to Industries emitting gases from their production processes, carbon monoxide from cars, smoke from cooking with wood and coal, and fumes for generator sets.	Dirt dust and poisonous gases causing acid rain, depletion of ozone layer, and posing as health risk to humans when inhaled for a long period.

Water Pollution	Economic growth leading to flushing of waste down the domestic sewage, industrial waste containing organic pollutants and chemical wastes and then spillages.	Polluted and untreated water causes waterborne diseases and also endangers aquatic and marine creatures.
Solid and Hazardous Wastes	Unregulated urban growth without proper consideration given to disposal, transportation, treatment of solid waste.	Blocked drains spread communicable diseases and pollute water resources.
Deforestation	Population growth and Industrialisation leading to felling of trees and destruction natural plant growth.	Destruction of the plant and animal life of the area leading to localised flooding in hilly and adjoining areas.
Soil Degradation	Wind and Water (Rain and Rivers) aggravated by deforestation, overgrazing and step-farming in hilly areas.	Wind and soil erosion reducing soil fertility.
Loss of Bio-diversity	Economic and population growth leading to expansion of agriculture and the reckless exploitation of forest and mineral wealth.	Extinction of plant, animal and microbiological species.

Source: Todaro and Smith (2006)

SELF-ASSESSMENT EXERCISE

List six environmental problems in LDCs and explain three of them.

3.4 Causes of Environmental Degradation

Environmental degradation is the deterioration of the environment through depletion of natural resources. It can be caused by several

factors like rapid population growth, poverty, urbanisation etc. Below are some of the factors causing environmental degradation.

1) Rapid population growth: This is a major cause of environmental degradation. The rapid rate of growth leads to increased pressure on the available scarce resources resulting in air pollution, water pollution, and soil degradation.
2) Poverty: Poverty leads to overexploitation of resources. Also, degraded environmental leads to poverty as the people would have little or no resources to use for their livelihood. This is even more so in less developed countries because they depend directly on natural resources as their main source of livelihood.
3) Urbanisation: Rapid and unplanned urbanisation causes environmental degradation because, it puts pressure on the available scarce resources, giving rise to slums, shanty towns, pollution, and poor waste management.
4) Agricultural development: Intensive farming and excessive use of fertilizers and pesticides have caused overexploitation of land and water resources. Over exploitation causes land degradation in the form of erosion, water logging and salination.
5) Industrialisation: Rapid industrialisation causes air, water and noise pollution because these industries, in carrying out their productive activities produce fumes, use mineral resources as sources of energy and this depletes the natural resources and degrades the environment.

SELF-ASSESSMENT EXERCISE

List and explain the causes of environmental degradation.

3.5 Policies of Sustainable Development

In the section 3.4, we found out that rapid population growth, agriculture, urbanisation, industrialisation, and some other factors are causes of environmental degradation in less developed countries. Environmental degradation is harmful to the human health and can also affect economic activities negatively. These negative effects of environmental degradation can be reduced by the proper implementation and execution of economic and environmental policies and environmental investments.

These policy measures and investments should aim at achieving economic development and sustainability.

Below are a few policy measures capable of strengthening sustainable development:

1) **Reducing poverty**: Development projects should aim at providing employment opportunities to the poor; health, family planning services and education facilities should be expanded and made accessible to the poor; and also, investment in basic amenities like supply of drinking water, sanitation facilities etc. should be carried out by the government as all these would improve the welfare of the people and the environment.
2) **Removing subsidies**: Government can reduce environmental degradation at no financial cost by removing the subsidies for resources used by private and public sectors.

Subsidies on the use of electricity, fertilizers, pesticides, petrol, diesel, kerosene, water irrigation etc. should be removed so as to discourage their misuse.

3) **Clarification and extension of property rights:** Lack of property rights over excessive use of resources leads to degradation of the environment. This would lead to the overgrazing of public and private lands, deforestation, and overexploitation of minerals, fish, etc. By clarifying and assigning ownership titles and tenure rights to private owners, these environmental problems would be solved.
4) **Economic incentives**: This has to do with providing incentives in the form of variables fees to resources users for the quantity of pollutants in the air, water and land use. Users are given incentives in the form of rebates if less than the emission standard of waste or pollution is generated.
5) **Public participation**: Government should aim at encouraging public awareness and participation by conducting formal and informal education programmes relating to environmental management. The more the public know about the dangers their activities pose to their environment, the more careful they would be in the use of resources.
6) **Participation in global environmental efforts**: The issue of environmental protection is of global importance because it affects the developed as well as the undeveloped countries of the world. As a result, there are several international conventions and agreements on protection and conservation which every country is expected to follow. It is advisable for all countries to join and participate fully in the unified battle against this common menace.

SELF-ASSESSMENT EXERCISE

Environmental degradation is harmful to the human health and can also affect economic activities negatively. What are the policy measures put in place to address it in your country?

3.6 Measurement of Sustainable Development

Sustainable development is not so easy to measure mainly because it involves the valuation of environmental damage and comparing it with costs of preventing it. We will discuss four ways of measuring sustainable development.

1) Measuring Natural Capital Stock

The necessary condition for sustainable development is that natural capital stock should be conserved and improved. This means that capital stock should remain at least constant. Measuring natural stock as far as sustainability is concerned involves the calculation of the cost – benefit analysis of changes in the natural capital stock as economic activities are carried out. For example, the keeping of land clean and safe is a benefit while the damage of polluted environment is a cost.

2) Natural Resources or Green Accounting

This method permits the measurement of income of a nation by taking into account the economic damage and depletion in the natural resource base of an economy. The computation of gross national product (GNP) in this approach would be replaced by a measure of national output that includes the economic cost of degrading natural resources which are required to produce goods and services directly or indirectly. Thus, we would have an equation like $NNP = GNP- D_N$
Where NNP is the Net National Product and D_N is depreciation in monetary value of natural assets during the year.

3) Social Discount Rate

Environmental degradation leads to costs, while improving the environment leads to benefits of the resources used. The measurement of the effects of the costs and benefits of the resources used on the present and future generations is by the use of a rate of discount where a discounting of all costs and benefits are done.

4) Measuring Environmental Value**s**

This method is concerned with comparing the benefits of the environmental protection with the costs of incurring it. This implies that the damage is evaluated and compared with the cost of preventing it. Here, there are different methods used in evaluation but the World Development Report 1992, suggests the following four approaches and they are: the market prices approach, the costs of replacement approach, the surveys approach and the surrogate markets approach.

a) **Market prices approach** – In this approach, the adverse effects of the damaged environment on human health and loss of productivity are evaluated using the market values. For example, the damages due to soil erosion, deforestation etc. are evaluated using market prices and also, welfare losses relating to health risks due to polluted environment are measured by income foregone because of illness or premature death.

b) **Costs of replacement**- The investment people and firms make in the installation of alternate devices to avert environmental damages of air, water and land can provide an estimate of the environmental damage (but the effects of damages cannot be evaluated by using this method).

c) **Surveys -** Surveys relating to the effects of environmental damage and effects to improve environment are being used in developing countries to determine the amenity value of species or landmarks.

d) **Surrogate market**- Surrogate market is a concept that one uses when one cannot directly estimate the market prices for certain environmental goods. So the value of another market is used as a proxy. Valuation in this case is done on other markets and the result is interpreted in relation to the negative effect of the damaged done in the environment. For example in evaluation of the cost of environmental damage, the value of a property situated in the affected area is used as a proxy for the value of the damaged environment.

SELF-ASSESSMENT EXERCISE

List and explain at least three ways of measuring sustainable development.

4.0 CONCLUSION

Sustainable development is a concept that recognises the fact that the natural environment is the foundation for human survival and well-being. A world in which resources are scarce and poverty is widespread will always be prone to environmental problems or crises. Sustainable development therefore, requires meeting the basic needs of all and extending to all, the opportunity to satisfy their aspirations for a better life.

In sum, sustainable development is a process by which the exploitation and use of resources for developmental purposes will enhance both current and future potential to meet human needs and aspirations. The goals of economic and social development therefore must be defined in terms of sustainability in all countries.

5.0 SUMMARY

This unit has discussed the concept of sustainable development, looking at the meaning, objectives, and environmental problems in less developed countries, causes of environmental deregulation, policies of sustainable development and finally how sustainable development can be measured. In conclusion, all nations should pursue a development pattern that is sustainable.

6.0 TUTOR-MARKED ASSIGNMENT

1. What are some of the environmental problems faced by the less developed countries? Explain looking at the effects and causes.
2. What is the difference between economic development and sustainable development?

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MODULE 2 DIVERSITY IN STRUCTURES AND COMMON CHARACTERISTICS OF LESS-DEVELOPED COUNTRIES

Unit 1 The Less-Developed Countries
Unit 2 Common Characteristics and Structural Diversity of Less-Developed Countries
Unit 3 Major Obstacles to Economic Development
Unit 4 Meaning and Characteristics of Modern Economic Growth

UNIT 1 THE LESS-DEVELOPED COUNTRIES

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1.0 INTRODUCTION

Generally speaking, development economics deals with problems of the developing nations, and examples of such problems are poverty and hunger. Less-Developed Countries (LDC) which could also be referred to as developing, or Third world countries, have certain characteristics that qualify them as such. They are usually nations with low living standard and low Human Development Index (HDI) relative to the developed countries. There are different indicators which could be used to determine whether a country is developing or developed. These indicators are classified into economic or non–economic factors.

Economic factors have to do with the per capita income while the non-economic factors are those that measure the quality of life that are not income related e.g. the life expectancy, literacy level etc.

In summary, less developed countries are, in general, countries that have not achieved a significant degree of industrialisation relative to their populations. This unit brings to light what the term less developed means. You are also expected to understand the indicators of

development in order to know whether a country is developed or not and then you would be given examples of countries that belong to both the developed and developing class. In sum, you would be taught the true meaning of the concept "less developed country" and all that it entails.

2.0 OBJECTIVES

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

- explain what is meant by the concept "less developed country" and how the different words are used interchangeably (wrong and right)
- list the different indicators of underdevelopment
- state which countries fit into the less developed country category
- identify the five most developed countries and five least developed countries in the world today.

3.0 MAIN CONTENT

3.1 Meaning of Less Developed Country

Less developed countries are usually countries with low living standard and underdeveloped industrial base. Less developed, underdeveloped, developing, poor, backwards and even Third world countries are all terms with the same meaning. However, less developed countries, and undeveloped countries are terms wrongly used interchangeably. Underdeveloped countries are countries that are poor, backwards and are in the process of industrialisation, while undeveloped countries are pre-industrial countries that have no prospects of development and examples are Antarctica and some parts of Sahara. As for the underdeveloped countries, examples are Nigeria, Pakistan, and Uganda.

Poor countries are countries with low level of per capita income, while backward is a static term but it is more appropriate and respectable to call a country developing or less developed rather than being poor or backward.

In this unit, less developed, developing, poor, underdeveloped and third world are terms that would be used interchangeably.

SELF-ASSESSMENT EXERCISE

What is the meaning of less developed country? What are the different names that can be used interchangeable for the term?

3.2 Indicators of Underdevelopment

There are several indicators that can show how a country is performing. These indicators give us an idea of how well a country is doing. That is, they tell us whether a country is underdeveloped or developed and there are no particular criteria used to judge the state of a country's performance because underdevelopment can be seen from different angles. It could be seen from the angle of ignorance, diseases, deprivation etc. Be that as it may, the following indicators can give us an idea of the level of underdevelopment in a country.

1) The ratio of population to land area tells us whether the area is sparsely or densely populated. This indicator does not show how poor or how rich a country is. A country with high ratio of population to area means it is densely populated but does not mean it is poor. For example, Singapore has a high ratio of population to area and yet it is rich and meanwhile, some countries have empty spaces signifying a low ratio and yet they are poor. So this indicator is vague and unreliable.
2) Ratio of industrial output to total output, which can also be viewed as a ratio of industrial population to total population. This ratio shows how industrialised a country is. A low level of this ratio indicates that the country is not highly industrialised and therefore underdeveloped and a high level shows that the country is developed. However this ratio tends to increase with increase in per capita income indicating that industrialisation is a result of economic prosperity and not the other way round. Again, if for example, the increase in income is used to subsidise uneconomic urban industries, the overall per capita income would reduce, making this indicator an inappropriate criterion for underdevelopment.
3) The ratio of capital to per head of population determines the level of capital in relation to the population. A country is said to be underdeveloped when the capital per capita is low, and this shows a lack of capital. But again this criterion is faulty as an indicator of underdevelopment because the lack of capital alone is not sufficient to say whether a country is underdeveloped or not, reasons being that:

   (a) if capital deficiency is taken as an indicator for underdevelopment, other socio economic factors like human endowments are neglected

   (b) capital per head deficiency is not related to the absolute size of a country's stock of capital but to the ratio of capital to population.

4) The next indicator is poverty. Like it was mentioned earlier on, underdevelopment is synonymous with poverty. An undeveloped country is a country that is characterised by mass poverty not caused by temporal misfortune but by wrong and obsolete methods of utilising of available resources.
5) Also, the United Nations Development Program (UNDP) uses the level of human development, including health and education attainments. The human development index is an indicator that takes into consideration the economic and non-economic factors of human lives. Human development Index is a composite statistics of the life expectancy, education, and income indices used to rank countries. A country with low life expectancy, low literacy rate and low per capita income relative to the developed countries can be said to underdeveloped.
6) The low level of per capita real income of the underdeveloped countries compared with the advanced countries. Per capita real income tells us the inflation adjusted income per person. The problem with this indicator is that it takes only one aspect of underdevelopment into consideration, and that is poverty, while ignoring other aspects like why consumption levels are low. Also, data on per capita national income are often misleading, inaccurate and unreliable especially in the developing countries.

However, despite the problems associated with the data used for per capita income, the method is the most widely used indicator.

SELF-ASSESSMENT EXERCISE

Identify five measures that one can use to tell whether a country is underdeveloped or not?

3.3 HDI Ranking of some Countries

There is poverty everywhere in the world, particularly in South Asia, Africa and Latin America countries, with **Africa countries topping the list of the least developed.**

Going by the 2013 Human Development Report, the Human development index ranking in 2012, showed that Niger and Democratic Republic of Congo were least with a per-capita GDP (PPP) of less than 365 dollars. Burundi, Zimbabwe and Liberia come just before them. The first non-African country to be found among the world's poorest nations is Afghanistan, with just over a thousand dollars. HDI Ranking, along with values of life expectancy at birth, educational components, income and non-income values are presented in Table 2. 1. The non-income HDI is calculated to provide an additional means of cross-country

comparison achievements in the non income dimensions. Here is an abridged version of the 2012 HDI ranking of countries showing the first five countries and the five least countries in the world.

Table 2.1: **Human Development Index and its Components Showing 5 Top and 5 Least Countries in the World**

S/N	HDI Rank	Human Development Index (HDI)	Life Expectancy at Birth	Mean Years of Schooling	Expected Years of Schooling	Gross National Income (GNI)per capita	Non-income HDI
1	Norway	0.955	81.3	12.6	17.5	48,688	0.977
2	Australia	0.938	82.0	12.0	19.6	34,340	0.978
3	United States	0.937	78.7	13.3	16.8	43,480	0.958
4	Netherlands	0.921	80.8	11.6	16.9	37,282	0.945
5	Germany	0.920	80.6	12.2	16.4	35,431	0.948
183	Burkina Faso	0.343	55.9	1.3	6.9	1,202	0.332
184	Chad	0.340	49.9	1.5	7.4	1,258	0.324
185	Mozambique	0.327	50.7	1.2	9.2	906	0.327
186	Congo, Democratic Republic	0.304	48.7	3.5	8.5	319	0.404
186	Niger	0.304	55.1	1.4	4.9	701	0.313

Source: Human Development Report (2013).

SELF-ASSESSMET EXERCISE

From the 2012 HDI ranking, list the two richest and the two poorest countries. On your own, find out the HDI rank of your country.

4.0 CONCLUSION

From our discussion in this unit, we found out that the less developed countries can also be referred to as developing or underdeveloped countries. The terms refer to a country or countries that have low living standards and underdeveloped industrial base. Other terms that can be used are backward, poor or Third world but it is most often called developing or underdeveloped countries which are less derogatory names.

Underdeveloped countries are countries that are poor, backwards and are in the process of industrialisation and examples are Nigeria, Pakistan, Uganda and India. Different indicators can be used to tell us how poor or undeveloped a country is, either by looking at the economic or non-economic aspect of the lives of the people in a country. It is true that poverty can be found in every country of the world, but the intensity and manner in which it presents itself in the less developed countries especially Africa, is alarming.

African countries are the poorest and least developed countries in the world and a clear evidence of this is their low ranking compared to other countries of the world in the Human Development Index (HDI). From the abridged HDI ranking presented in this unit, we discovered that African countries occupy the least positions in the ranking which looks at average achievements in three basic dimensions of human development - a long and healthy life, knowledge and a decent standard of living.

5.0 SUMMARY

This unit has introduced you to the meaning of the term less developed countries. You were exposed to the various synonyms of the word and you also found out that some words used for it are wrongly used interchangeably. There are different indicators that could give us a picture as to whether a country is developed or developing and these indicators were explained in this unit.

To further understand the topic properly, a table was presented showing top five countries and five least countries of the world using the human capital index as an indicator for the economic and the non-economic performance of different countries. From the table, we realised that African countries did poorly in the human development ranking, showing that we are still backwards in relation to the industrialised nations of the world.

6.0 TUTOR-MARKED ASSIGNMENT

1. Underdeveloped and less-developed can be used interchangeably to describe a country. State whether the statement is true or false and give reason(s) for your answer.
2. Is Nigeria a developed or developing country? List and explain three indicators to buttress your points.

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UNIT 2 COMMON CHARACTERISTICS AND STRUCTURAL DIVERSITY OF LESS DEVELOPED COUNTRIES

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1.0 INTRODUCTION

The less developed countries in the world have common features which are peculiar to them because they all share the same poverty status characterised by low per capita income, high dependency ratio and low standard of living.

Despite this general poverty status and the many common features they share, the less developed countries are in so many ways different from one another because they are culturally different and have different economic, political and social settings. In this unit, the various common characteristics and the diverse nature of the less developed countries would be explained to you.

2.0 OBJECTIVES

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

- list and explain the common characteristics of the less developed countries
- mention and explain the differences between the less developed countries of the world
- differentiate between the economic and non-economic diversity of the less developed countries.

3.0 MAIN CONTENT

3.1 Common Characteristics of Less Developed Countries

The less developed countries are characterised by:

1) **Low per capita income and general poverty:** The level of the per capita income in developing countries is extremely low compared to that of the developed world. A country like Niger has a GNI per capita of 701 dollars, compared with a country like the United States or Norway that have GNI per capita of 43,480 and 48,688 dollars respectively. These figures go a long way in revealing what is obtainable in these countries**.**
2) **Deficiency of capital equipment:** The less developed countries are usually referred to as "capital poor" countries because they lack sufficient physical capital. Not only are they low on capital stock, the rate of capital formation is also very low due to the low rate of investment in these countries, which is usually about 5 to 8% of their national income as against that of the developed countries like Canada with 15 to 18%. With a low per capita income in LDCs, they are hardly able to meet the bare necessities of life and as a result, whatever little income they have go into satisfying these necessities and little or nothing is left for savings.
3) **Rapid rate of population growth:** It is true that developing countries differ in size of population because some have large population size and are poor while others have a small size and are still poor. Be that as it may, one very common characteristic of the less developed countries is rapid rate of population growth. With a reduction in the world's death rate due to advancement in medical science and no significant reduction in birth rates, the population of these countries keeping swelling. That is why these countries (e.g. India) are facing the problem of population explosion.
4) **Unemployment and under-employment:** When population grows rapidly without the economic growth keeping pace with it, then there is bound to be unemployment in the urban areas and disguised unemployment in rural areas. This is so because more people from the rural areas would move in large numbers to the few cities in search of jobs that are not available due to lack of economic growth, then also, the over population in the rural areas means that more people than necessary are engaged in agricultural activities. These two situations would give rise to unemployment and underemployment in the urban and rural areas respectively.
5) **High dependence on agriculture:** Agriculture is the main occupation of most people in the developing world. A great

majority of the people in most LDCs are engaged in agricultural and allied occupations. The reason for this over dependence is because non-agricultural occupations in these countries have not grown enough to accommodate the ever increasing population. With a characterised deficiency of capital equipment and population increase, the increased labour force have no choice but to get involved in the agricultural sector thereby over burdening the sector giving rise to a low output per head.

However, we should note that despite the less developed countries' having majority of their population in the agricultural sector, the developed countries have a much more advanced agricultural sector and as such they have more output than the developing countries who have more people involved in agricultural activities.

6) **Underutilisation of resources:** The resources in the less developed countries are generally underutilised because they have not been able to tap them fully. The reasons why these resources have not been fully tapped could be as a result of lack of capital equipments and skilled personnel. Because of these short comings, most of the resources in LDCs are tapped by foreign companies who exploit the people in the long run**.**
7) **Excessive dependence on export:** The developing countries are known to export raw materials (instead of using them for production) and import manufactured goods. This pattern of trade puts them at a disadvantaged position as the goods they export are usually cheaper than what they import. Excessive dependence on these manufactured goods makes these countries vulnerable and any little shock adversely affects their terms of trade.
8) **Low level of technology and skills:** The less developed countries still use primitive methods of technology and this is compound by lack of skilled personnel. These two dangerous combinations give rise to inefficient production processes where the output produced is less than optimal level.
9) **Economic backwardness:** The less developed countries are usually backwards. Backwardness reflects in the social, political and economic lives of people from LDCs. Their education system is far behind what the developed countries have and so are their legal, financial and all the other institutions. The backwardness manifests itself in high illiteracy level, factor immobility, lack of entrepreneurship, ignorance in economic matters etc.

Other Common Characteristics of Less Developed Countries are:

- Relatively high death rates.
- A low life expectancy.
- Lower proportion of population is enrolled in education.
- Low level of living standard.
- Poor health due to poor nutrition, lack of access to facilities such as clean water and proper sanitation.
- Health care provisions are often poor as well.

SELF-ASSESSMENT EXERCISE

Identify and explain five characteristics of less developed countries.

3.2 Structural Diversity in Less-Developed Countries

Less developed countries are commonly classified as poor countries with low per capita income and low standard of living. However, it should be noted that the developing countries are not homogeneous in nature, they are highly diverse in their structure and the differences can be seen in the following areas: (1) size and income level (2) historical background of the countries (3) resource (physical and human) endowments of the countries, (4) relative importance of public and private sectors in these countries (5) nature of industrial sector in the countries (6) degree of dependence on external economic and political forces (7) distribution of power in a country (8) ethnic and religious composition.

Now, let us consider each of these components based on economic and non-economic differences of less developed countries.

SELF-ASSESSMENT EXERCISE

Despite their similarities, the less developed countries have lots of differences. Mention six of these differences.

3.3 Economic and Non-Economic Related Diversity in Less Developed Countries

3.3.1 Economic Diversity

(1) Size and income level: The developing countries are diverse in physical size, in population and in GNP per capita and these three factors are very important determinants of the economic position of a country. Some developing countries are large and populated

like Brazil, India, Pakistan, China, Egypt and Nigeria, while others are small like Paraguay, Nepal, Jordan, and Chad. Although, the high population and low level of income in most developing countries means that their GNP per capita would be low, this large population and large geographical size also present potentials to these countries in terms of availability of human and natural resources, they have a high prospect of being self reliant and also it means the country would have a large market. However it also has disadvantages of poor administrative control and regional imbalances. Then for the small countries (small in size and population), they have the disadvantages of limited markets, the shortage of human and physical resource and little prospects of significant economic self reliance. However, it should be noted that the size of a country does not determine its per capita income, and the degree of equity in distribution of its national income.

(2) Resource endowment (physical and human resources): Naturally, the growth of any economy is determined among other things by the level of physical and human resources. A country rich in natural resources and in skilled humans would most likely achieve growth than a country without these resources. However, these resources on their own do not guarantee automatic growth because other factors like political instability, social strife, corruption etc. could act against the benefits of these resources.

Geographical factors and climate can also play an important role in the success or failure of development efforts. For example, landlocked countries are at a disadvantaged position compared to their coastal counterparts and this factor determines their economic activities. By and large, the quality, quantity and attitudes of the human resource play a major role in determining the difference between countries because it is their skills knowledge and the way they go about (attitude) utilising resources at their disposal that makes the difference. Attitude here covers cultural outlook; attitude towards work; desire for self improvement; access to information; willingness to innovate; desire; and administrative skills.

(3) Relative importance of the public and the private sectors: Most of the less developed countries have mixed economic systems, that is to say, they depend upon a mixture of public and private sectors in respect of allocation of resources and production of goods. However, Latin American and Southeast Asian nations have larger private sectors than South Asian and African nations due to historical and political reasons.

Their economic policies are different. Countries with large public sector have direct government investment projects, and large rural works programs. Countries with large private sector have special tax allowance to encourage private sector investment. Also, the degree of foreign ownership in the private sector is another important factor to consider when differentiating among LDCs. In certain LDCs there is a greater role played by foreign private investments. For example, while countries Malaysia, Thailand, and Taiwan have attracted lots of foreign private investment, most African countries have attracted little of none of these investments.

A large foreign-owned private sector usually creates economic and political opportunities as well as problems not found in countries where foreign investors are less prevalent.
The different roles of public and private sectors in an economy lead to the adoption of different economic policies in these less developed countries.

(4) **Nature of industrial structure:** As regards industrial structures, the developing countries also differ. The Latin American countries with long history of independence and higher incomes have higher structures than African and Asian countries.

(5) **External dependence on developed countries (economic, political and cultural):** Developing countries depend on developed countries for manufactured goods as well as technologies while they (LDCs) export raw materials to these countries. They also depend and are influenced by these countries politically and culturally. The external dependence of a country is related to its size, resource endowments, and political history. Most times the technologies gotten from these developed countries are hardly appropriate for the LDCs. In such situation, the growth of LDCs is highly dependent upon the behavior of developed countries. The LDCs not only depend upon foreign goods and technologies, but they are highly influenced by the foreign values, patterns of consumption and attitudes towards life, work and self. This transmission phenomenon brings mixed blessings to most LDCs, especially which are highly ambitious for self-reliance. But it has also been observed-that the degree of such dependence also varies from country to country.

SELF-ASSESSMENT EXERCISE

Explain four economic structural differences in less developed countries.

3.3.2 Non-Economic Diversity

(1) Historical background: Most of Asian and African less developed countries have been the colonies of England, France, Germany, Spain and Holland etc. The social, economic, educational and institutional structures of these countries have been designed by their colonial masters i.e. countries that were colonised by British have different political and legal structures from those colonised by French.

(**2) Political structure, power and interest groups:** The various interest and power groups among different segments of the populations in a developing country exist as a result of their economic, social, and political history and they differ from country to country in developing world. In Latin American countries, there have the landowners; Pakistan has the bureaucrats; there are also the money lenders in India; there are wealthy sheikhs of Gulf-States. These various elite groups play their role in the politics of their respective countries. While these groups involved in politics for the sake of prestige and power, the difference in them lies in the fact that they come to power to get their various interests promoted. So the part they pursue depends on their individual personal interests.

3) The ethnic and religious composition: Some countries are greatly diverse in their religious and ethnic compositions. Generally speaking, it is expected that the greater the diversity in a country, the more they are bound to have internal strife and political instability and this off course would affect all developmental efforts. However, some countries have been able to grow despite their differences in political and religious compositions, example is Malaysia.

This goes to say that the way and manner countries handle their diversity in ethnic and religious composition differ, while some will grow despite the diversities, others would continuously have political, religious and ethnic crisis which would definitely frustrate all efforts geared towards development.

SELF-ASSESSMENT EXERCISE

Explain three non-economic structural diversities in less developed countries.

4.0 CONCLUSION

This unit unveils the common characteristics and also diversities of less developed countries. The diversities were further divided into economic

and non-economic in nature so as to understand the structural differences better. From this unit, you have learnt that despite the general poverty and low per capital income status of the less developed countries, sweeping generalisations should be avoided because they have great differences in their structures and any generalisation would be misleading. Therefore, each individual country must be considered in its own right when deciding policies geared towards development.

5.0 SUMMARY

This unit considered the common characteristics of the less developed countries. The unit revealed that the less developed countries are similar in the areas of low per capita income and general poverty, they are deficient in capital equipments because of low savings rate, unemployment rates and underemployment rates are high, and they are generally backwards in almost everything. Despite these similarities, we also learnt that they can be so different from one another in various ways which we classified under economic and non-economic diversities. In conclusion, sweeping generalisations should be avoided when dealing with less developed countries.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain what is likely to be the occupational distribution of the population in less developed countries.
2. Outline and explain the common features of less developed countries.

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UNIT 3 MAJOR OBSTACLES TO ECONOMIC DEVELOPMENT

CONTENTS

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    3.2 Economic Constraints
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1.0 INTRODUCTION

Economic development was defined in Module 1 as economic growth plus desirable social changes. The developing countries of the world have lots of challenges which have hindered their development. These factors have over the years militated against their development and are therefore considered as obstacles to development. These obstacles are usually classified into economic and non-economic constraints. In this unit, we shall identify and discuss the constraints to development extensively.

2.0 OBJECTIVES

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

- identify the obstacles to development
- differentiate between the economic and non-economic constraints of development
- explain the various economic and non-economic constraints of development.

3.0 MAIN CONTENT

3.1 Major Obstacles to Development

The obstacles to development are the factors that act as constraints to development in less developed countries. These factors impede the growth and development of these countries and affect them in different ways. Recall that we discussed the basic characteristics and diversities of the less developed countries in our previous unit

and we found out that these countries are similar in certain ways and are also diverse in some ways as well. When looking at the obstacles, we are looking at the various factors that have generally affected them not to develop. In essence, what are those constraints that have made these countries to be "less developed"? These characteristics from the previous unit explain why these countries are poor; a number of these characteristics are both the cause and consequences of poverty. In studying the constraints or obstacles to development, we have the factors broadly divided into two main groups based on the ways they affect the people (their economic or social lives) and as such we have the non-economic and the economic constraints.

SELF-ASSESSMENT EXERCISE

Explain what you understand by "obstacles to development".

3.2 Economic Constraints

1) **Vicious circles of poverty:** The greatest obstacle to development in less developed countries is that of "poverty begetting poverty". These countries are poor to start with and because of this poverty, they are unable to achieve growth because it brings about more poverty. These countries are trapped in circle of poverty so difficult to break and as such are vicious in nature. These countries are usually plagued with low productivity due to capital deficiency, market imperfections, economic backwardness and underdevelopment. These forces act and react upon one another so that the country is always in a state of poverty. The vicious circle of poverty operates both on the demand side as well as the supply side as can be seen in the two figures below**.**

On the supply side (Figure 2.1), the low level of income leads to a low level of savings which in turn, leads to a low rate investment, then to capital deficiency, which would lead to low productivity and then back to low level of income. Also, in Figure 2.2, low level of real income means low demand. The low level of demand leads to a low investment and to deficiency of capital. The deficiency of capital will in turn lead to a low level of productivity and back to low income. These circles go on and on creating vicious circles of poverty and if conscious effort is not taking to break these cycles, development will never be achieved. Main points of vicious circles of poverty are: Low real income (poverty), low productivity, low demand (consumption)/low savings, low investment, lack of capital, then back to low productivity and poverty.

These diagrams are showing the vicious circles of poverty.

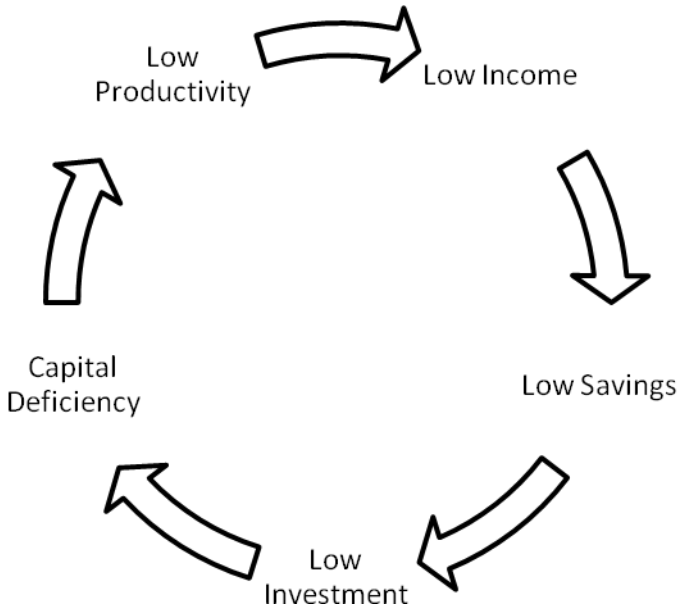

Fig. 2.1: The Vicious Cycle of Poverty (Supply side)
Source: Jhingan M.L. (2007)

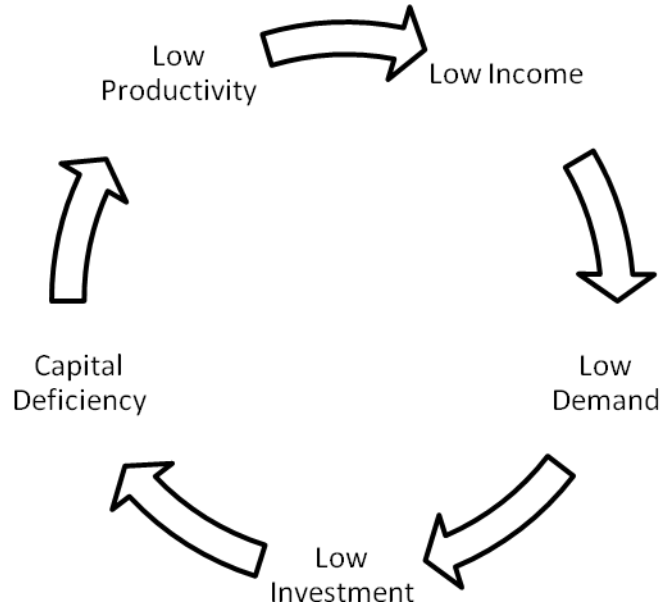

Fig. 2.2: The Vicious Cycle of Poverty (Demand side)
Source: Jhingan M.L. (2007)

2) **Low rate of capital formation:** A second obstacle to economic development is the low capital formation which is as a result of low income level causing low savings and then low investment as discussed above. Poverty is both a cause and a consequence of a country's low rate of capital formation. Capital here is both human and physical capital. Physical capital includes all those durable goods used for production except land while human capital refers to investment in human being e.g. education, training and health care, which makes the human a more productive factor of production. In most developing countries, the labour force consist of mostly unskilled and illiterate workers who use substandard and inefficient tools, equipments and machineries to work, resulting in extremely low marginal productivity of labour.

3) **High population ggrowth rate:** Most LDC's have a very high rate of population and coupled with this is also a high rate of illiteracy making the majority of the population unskilled. Population growth can present an advantage of surplus labour supply but this advantage becomes a disadvantage when large portion of them are unskilled and also, when the rate of capital formation does not keep up with the pace of this population growth. When population growth is rapid and capital formation is not, the per capita income becomes really low, consumption declines and poverty becomes very unavoidable if the population growth rate is not checked.

4) **Emphasis on more capital utilisation:** Developing countries, because of their rapid population growth, have a large supply of labour force and with their characterised low level of capital formation, the best and most forward looking approach to development would therefore be to employ labour intensive methods of production rather than capital intensive methods. When emphasis is placed on capital utilisation like it is done in the developed world (because they have it in abundance relative to the developing country), then our surplus labour becomes a liability to us instead of an asset.

(5) **Agricultural constraint:** The developed countries of the world have a small percentage of its population engaged in agriculture compared to the developing countries. Despite this, they (developed countries) have been able to produce enough food to meet the requirement of their citizens and also earn foreign exchange through the use of advanced technology in their agricultural sector, thereby avoiding the prediction of Reverend Thomas Malthus who said that, food was growing at an

arithmetic progression while population at geometric progression. Sadly however, this prediction holds true for most LDC's especially those situated in the tropical and sub-tropical regions where climate conditions are unfavourable for agriculture. The environmental factors coupled with non-mechanised farming and high population growth rate are great impediments to development. The result of this is a falling output per person and a slow economic growth. The rapid population growth in developing countries is a major obstacle to economic development.

SELF-ASSESSMENT EXERCISE

With diagrams, explain the vicious circles of poverty.

3.3 Non-Economic Constraints

1) Socio-cultural constraints

The socio-cultural constraints were emphasised by Nurkse who said that economic development has much to do with human endowments, social attitudes, political conditions and historical antecedent. Economic factors e.g. capital are necessary but not sufficient condition for development. The traditional values, customs, beliefs of the people have ways of affecting their development activities. Institutional factors characterised by rigid stratification of occupations, tribalism, nepotism, bribery, wrong attitude towards education (where there is usually a hunger for certification rather than knowledge), wrong attitude towards work, religious dogmas (over-sentimentality in the way religion is handled thereby negating any development plans) etc., all of these factors work together to inhibit progress by preventing the political, economic and social institutions of an economy to transform for the better.

2) Nature of relationship

The relationship between the developed and the less developed countries have a way of hindering development because in most cases there exist a master/slave relationship.

The developed countries which are the feudal lords at the centre usually dictate and control the development pattern which is usually to their benefits and to the detriment of the developing countries. The consequence of this pattern of relationship is that the poor countries have been made so vulnerable and very dependent on the rich countries.

3) Political instability

When a country's political institution is immature, there is bound to be political crisis as this is a part of the learning process and it is usual for problems to crop up in the learning process. Most developing countries are politically undeveloped and this could be seen in the non-existence of political democratisation, promotion of rule of law, honesty and good leadership. No meaningful development can take place when a country is politically undeveloped as this gives rise to political instability. Apart from the political instability posing an obstacle to development, most developing countries are faced with the problem of bad leadership. Over the years, most countries in the developed countries have continuously had to endure under the leadership of greedy, dishonest, corrupt and incompetent leaders who have done nothing but to waste the scarce resources of these nations, causing more harm than good.

SELF-ASSESSMENT EXERCISE

List and explain two non-economic obstacles to development.

4.0 CONCLUSION

From what you have learnt so far about the obstacles to development, we can say that economic development is a complete process which is directly influenced by economic, social, cultural, administrative and political factors. As **Ragnar Nurkse, a renowned** economics Professor **rightly said, ''Economic development has much to do with human endowments, social attitudes, political conditions and historical antecedent. Clearly, capital is necessary but not a sufficient condition of progress, for of what use is capital and technological advancement when there is constant political, religious and ethnic crisis?**

For an economy to develop, the obstacles of development which sometimes present themselves as both causes and effects of poverty have to be tackled consciously as failure to do so would deepen the effect of poverty in an economy.

5.0 SUMMARY

This unit has highlighted the major obstacles to economic development and these obstacles were grouped based on economic and non-economic constraints. From this unit, you have learnt that vicious cycle of poverty which is an economic constraint to development is so called because ones the forces of poverty set in, it goes on and on until there is a conscious effort to break this cycle. You also learnt that the other

economic factors are low capital formation, high population growth rate, agricultural constraints, and emphasis on more capital utilisation. While the non-economic factors from what you have learnt are socio-cultural constraint which talks about beliefs, culture, attitude etc. The second is the nature of the relationship between the developed and the undeveloped countries which is usually a master slave relationship and the finally, the third is political instability.

6.0 TUTOR- MARKED ASSIGNMENT

1. List and explain the economic and non-economic constraints to economic development.
2. Mention and explain two obstacles to development in Nigeria.

7.0 REFERENCES/FURTHER READING

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UNIT 4 MEANING AND CHARACTERISTICS OF MODERN ECONOMIC GROWTH

CONTENTS

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    3.2 The Fundamental Points in Modern Economic Growth
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1.0 INTRODUCTION

The development of the advanced countries of West Europe, the United States, Canada and Australia is termed modern economic growth. This concept of modern economic growth hinges majorly on the work of Nobel laureate Professor Simon Kuznets who got the Nobel Prize in economics in 1971 for his pioneering work on the measurement and analysis of the historical growth of National Income in Developed Countries. In his Nobel Memorial Lecture, Kuznets defined economic growth and in his definition, three distinctive components of economic growth can be highlighted. He also pointed out that there are six characteristics features manifested in the growth process of almost every developed countries. These components of economic growth and the six characteristics of modern economic growth would be explained to you in this unit.

2.0 OBJECTIVES

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

- define modern economic growth
- list the fundamental issues raised by Kuznets in his definition of modern economic growth
- outline and explain Kuznets' six characteristics of modern economic growth.

3.0 MAIN CONTENT

3.1 Meaning of Modern Economic Growth

In discussing modern economic growth, the pioneering work of Professor Simon Kuznets in his "Measurement and Analysis of Historical Growth of National Income", comes into focus. Analysing the historical growth of national income of the developed countries, Kuznets defined economic growth as a "long term rise in capacity to supply increasingly diverse economic goods to its population, the growing capacity based on advancing technology and the institutional and ideological adjustments that it demands". Modern economic growth is in a way different from traditional economic growth in the sense that it deals with advancements as a means of increasing the long term supply of different economic goods - advancements in technology, institution and ideology. While the traditional economic growth deals with the increase in output without necessarily emphasising on technological progress.

SELF-ASSESSMENT EXERCISE

What do you understand by the term modern economic growth?

3.2 The Fundamental Points in Modern Economic Growth

From the definition by Kuznets, three fundamental issues can be pin pointed and these are:

1) Sustained increase in the supply and in the variety of goods which indicate economic growth and maturity.
2) Technological advancement is seen as the key instrument for countries economic growth.
3) To benefit from this advancement in technology, there has to be an institutional, attitudinal and ideological advancement.

Technological advancement will lead to economic development if and only if positive institution, attitudinal and ideological changes are made. The three components of the definition are all important and work hand in hand to achieve growth. From the definition, you can deduce that the sustained rise in the supply of goods is the result of economic growth, and advancing technology is identified as the engine or source of economic growth. However, technological advancement is but a potential, for it is only a necessary and not a sufficient condition for growth. If technology is to be used efficiently and effectively for growth, other factors like institutional and ideological adjustments must

be put in place as this would ensure the proper use of innovations/ideas generated by the advancing stock of human knowledge.

In line with these three fundamental issues raised in Kuznets definition, six characteristics of modern economic growth are given and these characteristics are present in almost every contemporary development economy.

SELF-ASSESSMENT EXERCISE

Explain the fundamental terms in modern economic growth

3.3 Kuznets's Six Characteristics of Modern Economic Growth

In his pioneering work "**the measurent and analysis of the historical growth of national incomes in developed economies", Kuznets empirically identified six characteristics features present in the growth process of every developed nation and they are:**

1. High rates of growth of per capita output and population

Modern economic growth of developed countries is usually accompanied by high rate of increase in per capita output accompanied by a substantial rate of population growth. Although some countries like the United States and Canada do not have population growth accompanying their increased rate of per capita output but for the majority of other countries that achieved development for example China, this characteristics holds true for them. It can therefore be said that the high rates of growth of per capita output and population implies high rates of increase in total output.

2. The rise in productivity

With modern economic growth, one is expected to experience a high rate of output per unit of all inputs as a result of efficiency. Efficiency here means that input yields more output due to technological advancement or progress and the upgrading of existing physical and human resources.

3. High rates of structural transformation

The rate of structural transformation of the economy in the form of growing sectoral shares of manufacturing industry, service and entertainment industry usually rises, while the agricultural and rural-based activities experience continual fall in their sectoral shares of

national output and employment. For example the United States agricultural sector's share of national output was almost 50% in 1879 by 1950 it was less than 7%. Also, there are growths in the rates of urban industrial complexes, large business concerns, as opposed to small scale enterprises and informal activities. Finally, shifts in several other aspects of economic structure can be experienced (like shifts in the structure of consumption, in the relative shares of domestic and foreign supplies, etc.).

4. High rates of social and ideological transformation

The high rates of social and ideological transformation, comes in the form of changes in attitude, evolution from superstitious beliefs to rationality and scientific explanations of events, greater social justice and equalisation of economic opportunities, growing education, literacy, and skills development, etc. This process is the modernisation process which signifies the moving away from traditional ways of doing things to a modernised approach to life which brings about urbanisation and secularisation which are the key components of modernisation process.

5. High rates of international economic outreach

The economically developed countries, by means of the increased power of technology, particularly in transport and communication, have the propensity to reach out to the rest of the world especially the developing countries to source for cheap raw materials and labour for their industries and also market their expensive finished products. This international outreach has really gone a long way in opening up the world, making it a global village and as such creating more development opportunities for both the developed and the developing countries. There is therefore interdependency in the world seen in the growth of trade (specifically import of raw materials and export of manufactures). This implies that there is a growing participation in international markets.

6. Limited spread of economic growth

There is limited spread of growth and development to only a third of the world population, signifying that in spite of tremendous growth in the world economy, a lot of third world countries could not benefit or be carried along. Like was said about vicious cycle of poverty, there is also the virtuous cycle of wealth, where wealth begat wealth and even more wealth. So the more these developed countries grow, the more they are likely going to keep growing (*ceteris paribus*).
Sadly though, as the developed countries experience more growth, the less developed countries plunge deeper and deeper into poverty and are cut off from the whole development process thereby further promoting

the gap between the rich developed countries and the poor developing ones. The characteristics of modern economic growth can be said to be interrelated because each one links to the other in a continuous circle. Thus, Kuznets economic growth can be summarised as follows: "high rates of per capita output growth is as a result of high rates of labour productivity which leads to high rates of per capita consumption, which will in turn lead to high rate of socio-political transformation , then this already transformed countries would be able to further achieve economic growth by having a high rate of international economic outreach at the expense of the poor countries rationed out of the development process and hence, there is limited international economic growth". On and on it goes in a circle as can be seen in Figure 2.3.

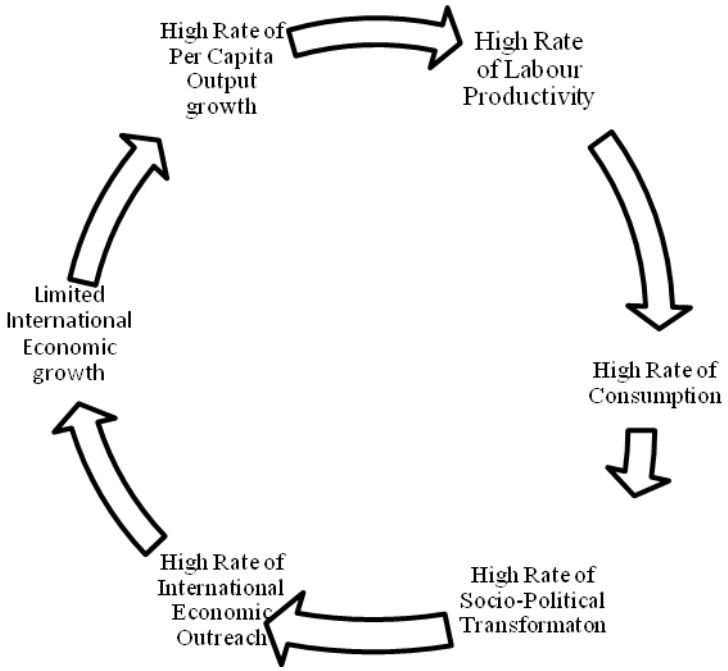

Fig. 2.3: The Circular Flow in Modern Economic System

Source: Olajide (2004)

SELF-ASSESSMENT EXERCISE

Explain the characteristics of modern economic growth as given by Kuznets.

4.0 CONCLUSION

The basic feature of modern economic growth, as been observed in the more developed countries, is that the rise in per capita output or per worker product was largely associated with extended application of a growing stock of useful knowledge, in technological innovations in their

production process, coupled with the right institutional, attitudinal and ideological adjustments. Their growth process indicates the existence of a technological backlog, which has generated accelerated advancement. The characteristics of modern economic growth are therefore important in helping the LDCs to know the growth pattern of the developed countries, and this will enable them to have an idea of the different types of breakthrough that can be initiated that will be able to sustain a high rate of growth in the LDC's. One lesson to be learnt from the growth process of the advanced countries is that despite their technological advancement brought about growth in these economies; these countries achieved growth because they had the right institutions, attitude and ideologies which made the advancements in technology yield positive results. For advancement in technology is a necessary but not a sufficient condition for growth. For according to Todaro & Smith (2006), "Technological innovation without concomitant to social innovation is like a light bulb without electricity; the potential exists but without the complementary inputs nothing will happen".

5.0 SUMMARY

In this unit, you were taught the meaning of economic growth as given by Simon Kuznets in his work on the measurement and analysis of the historical growth of national income in developed economies. From his definition, three distinctive components of growth were highlighted and then we listed and explaining the six characteristics of modern economic growth as given by Kuznets.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain the circular flow of modern economic growth (include diagram).
2. In your opinion, why do you think Nigeria has not achieved economic growth given the three components in Kuznets definition of growth?

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MODULE 3 A SURVEY OF SOME SELECTED THEORIES OF ECONOMIC DEVELOPMENT

Unit 1 Adam Smith's Theory
Unit 2 W.W Rostow's Stages of Economic Growth
Unit 3 The Marxian Theory
Unit 4 Lewis' Theory of Unlimited Supplies of Labour
Unit 5 Balanced and Unbalanced Growth Theories

UNIT 1 ADAM SMITH'S THEORY

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1.0 Introduction
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3.0 Main Content
  3.1 The Theory
  3.2 The Agents and Process of Growth in Smith's Theory
  3.3 Weaknesses of the Theory
  3.4 The Relevance of the Theory to the Less Developed Countries
  3.5 Brief Summary of the Classical Theory
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5.0 Summary
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7.0 References/Further Reading

1.0 INTRODUCTION

Adam Smith, the father of Economics is regarded as the pioneer of classical economics and in his book "An Enquiry into the Nature and Causes of the Wealth of Nations" published in 1776, focused on economic development. Although he failed to give a well defined theory, his work was clearly constructed by later day economist to formulate a development theory. Generally speaking, the classical theorists mainly focused on the ways market economies function and their studies are mostly on the dynamics of economic growth. Apart from Adam Smith, other classical theorists are David Ricardo and Thomas Malthus. In this unit, the work of Adam smith on the theory of economic development would be treated in detail.

2.0 OBJECTIVES

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

- explain Adam Smith's theory of economic development
- state the growth agents and growth process of the theory
- list the weaknesses of the theory
- enumerate and explain the theory's applicability in developing countries
- explain the main ideas surrounding the classical theory of development.

3.0 MAIN CONTENT

3.1 The Theory

In explaining Adam Smith's theory of economic development, the concepts of laissez-faire, division of labour, and capital accumulation are important and they are discussed below.

Laissez –faire

Adam Smith's theory is based on the principle of laissez-faire, where the economy is free from government intervention and the "invisible hand" guides the market mechanism. According to Smith, people are the best judge when it comes to pursuing their self interests, and allowing each individual to pursue his/her own interest, they end up achieving the aggregate interest of the society. This implies that each person's self-interest leads him/her to serve the wants of his fellow man. For example, a food seller does not sell food because she is nice or kind-hearted, but she does so because of her self- interest (probably trying to earn a living) and in so doing, she satisfies the wants of her customers leaving everyone better off. In Smith's opinion, people should be left to pursue their own interests without any interference from the government as the invisible hand is there to automatically regulate the activities of the perfectly competitive markets in the overall interest of the whole economy.

Division of Labour

In Adam Smith's book (The Wealth of Nations), focus was laid on the concept of economic growth and this growth, according to Smith, is rooted in increasing *division of labour*. According to him, it is division of labour that results in the greatest improvement in the productive power of labour. Stating further, he noted that the productive capacity of labour increases as a result of improved craftsmanship of workers which

saves time and labour as there is also the invention of large number of labour-saving machines.

Division of labour is brought about by the human nature that tends to make people want to exchange one thing for another and it depends on the size of the market. So when market increases, then division of labour would increase. Productive capacity rests on the division of labour and the accumulation of capital that it makes possible. Division of labour means that people cooperate to do different works as these works are broken down into small parts, each undertaken by different workers. By cooperating with each other, craftsmanship is built, time is saved, more goods are produced, people have enough to consume, innovation is promoted, market is enlarged; income increases and all these would give rise to increase in productivity. Division of labour in reality can be seen as the reason why humans form societies because the human nature compels man to constantly want to exchange one thing for another and from one another as social beings. However, division of labour according to smith depends on the size of the market which depends on the population.

Capital Accumulation

Smith viewed capital accumulation as a necessary condition for economic development. He reasoned that the ability of people to save and invest (more) would lead to economic development. Savings lead to investment and with higher savings come higher investment. In Smith's theory, only the capitalist and the land owners could afford to save because of the investment capital or rent on land they posses, while the labourers on the other hand are unable to save because they earn wages only enough for consumption i.e. subsistence wage. This idea is based on the belief of "Iron law of wage" (that is wages tend toward a level sufficient only to maintain a substance standard of living). Smith noted that at any point, when total wages by workers increase, more labour will be supplied to the market and competition for employment will become tense and keener, this will therefore force wages down to its subsistence level making the workers unable to save and this according to Smith is what happens in the stationary state. Smith believed that in periods of rapid capital accumulation, wage rates rise above the subsistence level however the rate at which they rise will depend on the population growth and on the rate of accumulation.

Adam Smith also described the relationship that exists between wage and profit. According to him, profits fall as wages rise when an economy progresses. When the rate of capital accumulation increases, increasing competition among capitalists raises wages and tends to lower profits. The increasing difficulty in finding new profitable

investment outlets is actually responsible for this fall in profits because the economy becomes stagnant as profit is pulled down.

SELF-ASSESSMENT EXERCISE

Explain the underlying concepts of Adam Smith's theory.

3.2 The Agents and Process of Growth in Adam Smiths's Theory

The theory identifies the farmers, producers and businessmen as the agents of economic progress. Smith noted that the functions of these agents are interrelated, as the development of one would lead to the development of others. He posited that it was free trade, the enterprise nature, and competition of these three agents that leads to development. In the growth process, institutional, political and national factors are considered to remain unchanged and the growth process is seen by Smith as steady and continuous because one development stage leads to the other. Each situation grows out of the preceding one in a uniquely determined manner with each individual agent of growth performing their own bit in the process. According to Smith, the growth process is thus cumulative. The good performance of the agricultural sector, commerce, industrial and manufacturing sectors, would lead to capital accumulation, technical progress, population increase, expansion of market, division of labour and a continuous rise in profit and hence the wealth of the nation.

Note that all these will happen in Adam Smith's progressive state where institutional, political and natural factors are taken for granted. In reality however, we know that there is limited supply of natural resources and the scarcity of this will eventually stop growth thereby leading the economy to a stationary state which is the end of capitalism. In the stationary state, the competition for employment would reduce wages to subsistence level and competition among businessmen would bring profits as low as possible and investment will also decline. The following are experienced as a result of stationary state: capital accumulation stops, population becomes stationary; profit is at the lowest; wages are at the subsistence level; production and per capital income remain stationary and then also the economy reaches stagnation.

In Figure 3.1, the horizontal axis is taken as time (T) and the rate of capital accumulation.

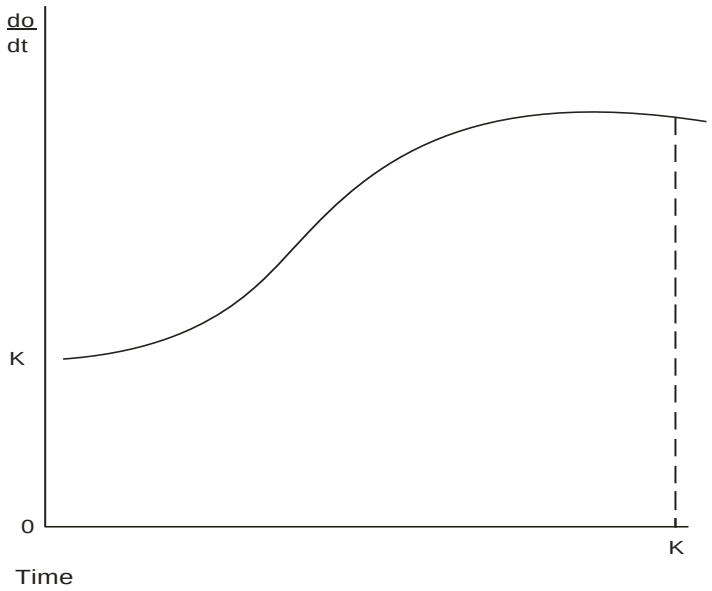

Fig 6.1 T*he Stationary Stage Depicted by Adams Smith's Theory*

Fig. 3.1: Stationary State as Explained by Adams Smith's Theory

dk/dt is on the vertical axis.

From the diagram, the economy is seen to grow from K to S during the time path T and afterwards it reaches the stationary state S where further growth does not take place because wages rise so high that profits become zero, there is little or no investment, and capital accumulation stops.

SELF-ASSESSMENT EXERCISE

Explain the growth process as explained in Adam Smith's theory.

3.3 Weaknesses of the Theory

1) Erroneous notion of the role of wages and profit. According to the theory with rise in wage, profit goes down and economy stagnates and wages will fall to subsistence level. From what we can see around us, we can say this is not true for a developed economy as wages and profits have been known to increase simultaneously.
2) The theory recognised technology but its importance was not stressed. The theory failed to see the role of technology in falsifying the stagnation stage of the classical system.

3) In real life situation, growth process is not smooth as the theory would have us believe. Development is never smooth or steady.
4) It assumes the existence of a rigid division of society between the rich capitalist and the poor labourers. In the theory, the middle class was not considered and that is not what is obtainable in our societies.
5) Smith's theory focuses on the principles of laissez-faire where there is perfect competition. This is not found in any economy as there is nowhere in the world where a form of restriction is not imposed.
6) According to the theory, only the rich capitalist and landlords save because they have the capital to do so. This is not true because in modern society as we have today, the major source of savings is usually from the income earners and not the capitalists who are always looking for opportunities to borrow and invest in one business or the other.

Despite all these criticisms, the theory can still be credited with having been able to make some good points as far as growth of an economy is concerned. For example, it emphasised on the importance of savings to capital accumulation; importance of division of labour and expansion of markets in production. It also stressed on the importance of balanced growth in the process of growth.

SELF-ASSESSMENT EXERCISE

What are the criticisms of Adam Smith's theory?

3.4 The Relevance of the Theory to the Less Developed Countries

The following are the applicability of the theory to the developing countries:

1) The economies of the LDCs are characterised by low income, low savings, low investment and a high propensity to consume (every increase in income is consumed). All this makes the market remain small and hence impede the growth of division of labour and further expansion of market for development.
2) Political, social and institution assumptions underlying Smith's theory are not applicable in underdeveloped countries. Also the principle of laissez-faire cannot be effective in allocating scarce resources because exploitation of the masses will be the other of the day. Therefore for development to take place in a less developed country, government intervention is very necessary.

Despite all these, the theory can still be said to be relevant to the less developed countries because Smith gave some key points that can help any economy to achieve growth and examples are the agents of growth mentioned in the model, the promotion of balanced growth in an economy, and the emphasis laid on savings.

SELF-ASSESSMENT EXERCISE

Can Adam Smith's theory be applicable in Nigeria? Give reasons for your answer.

3.5 Brief Summary of the Classical Theory

Adam Smith, David Ricardo, Thomas Malthus and John Stuarts Mill are all proponents of the classical theory of development and their works put together can be briefly summarised as follows:

1) Laissez-faire policy - Free market perfectly competitive economy devoid of any government intervention where the 'invisible hand' guides the market mechanisms.

2) Capital is a key to economic progress - They believed that capital is the key to progress and as such emphasis is laid on larger savings as it is believed that it would bring about capital accumulation.
3) Profits as an incentive to investment - The classicalist believed also that profits induce investment. The greater the profit, the greater the capital accumulation and investment.
4) According to the classicalist, there is a tendency for profits to decline when there is an increase in competition for larger capital accumulation among capitalist.
5) Lastly, the classicalist all agreed upon the fact that there is a stationary state which is the end of the process of capital accumulation. According to them, as profits start declining, it continues to do so until it gets to zero, population and capital accumulation stop increasing and the wage rate gets to the subsistence level.

SELF-ASSESSMENT EXERCISE

What are the basic points raised in the classical school of thought?

4.0 CONCLUSION

Adam Smith's theory is built majorly on the principles of laissez –faire where there is perfect competition and people are free to pursue their self interest without government interference. The theory has it that with division of labour, productivity will be enhanced but this division of labour comes about as a result of the market size. Also Smith believed that for an economy to progress there should be capital accumulation which he believed is brought about by savings which on its own promotes investment. According to him, the farmers, producers and businessmen are the agent of progress and development takes a smooth and steady pace which is cumulative as one stage leads to the other until it gets to a stationary state where growth ceases because wages rise so high bringing profits to zero and thereby stopping capital accumulation. The theory has lots of criticisms; however, it still has some key points that can guide a developing country on the path of development.

5.0 SUMMARY

In this unit, the theory of development as given in Adam Smith's wealth of a nation was studied. We studied the theory and its main concepts, learnt about the growth agents and process, the criticisms were listed out, we looked at the applicability to the less developed countries and then we went ahead to study the general underlying assumptions of the classical growth theory which the Smith theory belong.

6.0 TUTOR-MARKED ASSIGNMENT

1. With the aid of a diagram, explain the stationary state in Adam Smith's theory.
2. Explain what is meant by the growth agents and the growth process in the theory.

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UNIT 2 W.W. ROSTOW STAGES OF ECONOMIC GROWTH

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1.0 Introduction
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7.0 References/Further Reading

1.0 INTRODUCTION

Using an historical approach, Professor Walt Whitman Rostow in 1960 explained the process of growth of developed countries. Though it is not the only historical theory on economic development we have, it is today seen as a major work in that field in the 20th century. Like Adam Smith, Rostow was an advocate of free market, and in his book, "The stages of economic growth" posited that all countries pass through a series of stages of development as their economies grow. He stated that the advanced countries at a point in time passed through these series of stages before they became what they are. According to Rostow, there are five stages countries pass through and the process is linear in nature as one stage leads to the other without a return to the previous that is the stages are not cyclical. He argued that these stages follow a logical sequence; each stage could only be reached through the completion of the previous stage. Some other stage theory economists are Fredrick List and Hilderbrand.

2.0 OBJECTIVES

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

- explain W.W. Rostow theory of economic growth
- state and explain the five stages of economic growth
- list the weaknesses of the theory
- discuss the applicability and limitations of the take-off stage in developing countries.

3.0 MAIN CONTENT

3.1 The Model

The theory as formulated by Walt W. Rostow in 1960 has five stages which he believed the advanced countries passed through before they got to the stage of development. According to Rostow, transition from underdevelopment to development starts from the traditional society to precondition for take-off, then take off stage and then drive to maturity and eventually to the age of high mass consumption which is the final stage.

The five stages are explained below.

1) The Traditional Society Stage

The traditional society stage is characterised by the following:
Changes are actually very slow; the economy is agrarian as over 75% per cent of the working population is involved in agriculture; the method of production is crude and as such there is low per capita output and barter system of exchange; the people have a conservative disposition towards the outside world and hence their social habits influence their development; the society has a social structure that is hierarchical in nature, mostly based on family and clan connections and finally; it is a population that does not understand or exploit science and technology.

2) The Pre-Conditions for Take-Off Stage

Pre-condition for take-off stage is a period of transition geared towards creating an enabling environment for a self-sustained growth. The traditional society's rigidity is broken with the development in education; an improvement of science and its application to communication, agriculture and transportation; the emergence of entrepreneurs and a simple banking system, and hence rising savings at this stage. This broken-down rigidity which is usually brought about by external forces also allows for mobility of labour to take place in the society. People become aware that economic progress is possible and as such entrepreneurs are ready to take risks in pursuit of profits to modernisation.

According to Rostow, this stage has usually required radical changes in three non-industrial sectors and they are:

1) The transportation system is overhauled to enlarge the market and make productive exploration of raw materials and allow effective and efficient ruling of state.

2) Agricultural sector is revolutionalised to increase output in order to take care of the growing urban population.
3) An expansion of imports, including capital imports are financed by efficient production and marketing of natural resources for exports.

By and large, a prerequisite for the precondition for take-off is industrial revolution.

3) Take-Off Stage

This stage is characterised by rapid, self-sustained growth where the traditional institutions habits do not have significant influence on individuals and the society is driven more by economic processes. At this stage, economic growth becomes a nation's second nature and shared goal.

According to Rostow, there are three main requirements for a country to successfully take-off and they are:

1) A rise in the rate of productive investment from 5% or less to over 10% of national income or net national product.
2) The development of one or more leading sectors with a high rate of growth
3) The existence or quick emergence of a political, social and institutional framework which exploits the impulses to expansion in the modern sector and the potential external effects of the take-off gives rise to growth as an ongoing character.

A country in the take-off stage needs:
(a) a large and sufficient amount of loanable funds for expansion of industrial sector usually gotten from fiscal measures e.g. tax and also reinvestments of profits earned from foreign trade

(b) a group of innovative entrepreneurs in the society.

Nations at this stage depend on- existence of one or more key sectors, existence of an increased and sustained effective demand for the product of the key sectors, introduction of new productive technologies and techniques in these sectors, the ability of the society to increasingly generate enough capital to complete the take-off stage, and the existence of strong linkage effect of key sector(s) with other sectors which will constitute a strong inducement to their expansion.

4) Drive to Maturity Stage

According to Rostow, it takes approximately sixty years to get to this stage from the take–off stage**.** At this stage, 10-20% of national income is steadily invest, output outstrip population, the makeup of economy changes as technology improves rapidly, and new industries accelerate taking the place of old ones. The society experiences a structural transformation because (1) it is less agrarian as only about 20% of the working population is in the agricultural sector as opposed to over 75% in the traditional sectors. At this stage, the work force is skilled and prefer to live in the cities as against staying in the villages (2) There is great professionalism introduced in the industries as rugged and hard working masters give way to polished and polite efficient managers and (3) Bored of what has been achieved, the people are eager for new things and this leads to further change.

In the drive to maturity stage there is great reduction in poverty because the economy has the capacity to produce anything it wants to and the welfare of the people is expected to improve greatly.

5) Age of High Mass Consumption

This stage has been characterised by (1) migration to cities (2) extensive use of automobiles, durable consumer goods and electronic gadgets (3) attention shifts from supply to demand, and from problems of production to problems of consumption (4) there is national policy that guarantees welfare packages for people (5) countries at this stage can also pursue external power and influence. Here, people are comfortable because they have enough to consume, employment is full and there is increasing sense of security. A country experiencing these features usually has a growth in population.

From historical facts, the first country to reach this stage is the United States and it was attained in the 1920's, Great Britain was next and achieved theirs in the 1930's

SELF-ASSESSMENT EXERCISE

Briefly explain the stages in Rostow's theory of development.

3.2 Criticisms of the Stages of Economic Growth

1) Rostow's model is historical because the end result is known at the outset and is derived from the historical geography of a developed, bureaucratic society.
2) His model is based on American and European history and as such it is based on the prevailing conditions of these developed countries. These conditions are however peculiar to them and therefore the theory cannot be said to be relevant to the less developed countries of Africa and Asia.
3) The stages cannot be properly identified as the conditions of the take-off and the pre-take-off stage are very similar and overlap.
4) In Rostow's model, he asserted that growth becomes automatic by the time it reaches the maturity stage but according to Kuznets, no growth is automatic because there is always a need for push.
5) According to Rostow, countries must start from the traditional society. This is not always true because some countries like the United States and Canada were born free of traditional societies and they derived the precondition from Britain.
6) As regards the stage of high mass consumption, some countries enter into this stage before reaching maturity e.g. Australia.

SELF-ASSESSMENT EXERCISE

Discuss the shortcomings that characterised Rostow's stages of economic growth.

3.3 Importance of the Take-Off Stage for a Developing Country like Nigeria

From the take-off stage, a developing country can get useful ideas for industrialisation (most especially from the first two conditions Rostow stated as necessary for take-off). As for the first condition, which is capital formation of over 10% of national income, the developing countries can achieve this and so also can the second condition which is the development of one or more leading sectors in the economy be achieved if it is adjusted to suit the conditions available in the particular country because each country/nation has sector(s) where its strength lies. For example, a country rich in large arable land like Nigeria can develop its agricultural sector for exporting of raw material and exporting manufactured goods using raw materials from the agricultural sector.

SELF-ASSESSMENT EXERCISE

What development lesson(s) can an underdeveloped country learn from the take-off stage?

3.3.1 Limitations

The take-off has the following limitations as regards the developing countries.

Capital-output ratio is not constant in developing countries because they are majorly into subsistence farming and given their unchanged technology and increasing population, their natural resources give rise to a condition of diminishing return to scale and not constant return to scale of the advanced countries. Take-off stage gives an assumption of spontaneous economic development. This is not so because a take-off can never be instantaneous.

SELF-ASSESSMENT EXERCISE

Is take-off stage realistic in an underdeveloped country? Give reasons for your answer.

4.0 CONCLUSION

In 1960, W.W. Rostow using an historical approach outlined five linear stages which countries must pass through before achieving development. The model asserts that all countries exist somewhere on this linear spectrum, and climb upward through each stage in the development process. Despite its popularity, the model has been criticised by scholars and one of the criticisms is that it was developed based on the conditions prevailing in the developed societies and as such has no relevance to the less developed countries of Africa and Asia. Be that as it may, the theory's take–off stage can serve as a guide to LDCs in their bid to achieve industrialisation.

5.0 SUMMARY

In this unit, you have learnt W.W. Rostow's development theory. The five stages of the theory were discussed extensively, we also looked at the criticisms of the theory, the importance and limitations of the take-off stage (which is the industrialisation stage) to the developing countries and then we concluded by agreeing that despite the theory being designed after the prevailing conditions of the developed countries of Europe and America, it can be used as a guide in the industrialisation process of the underdeveloped countries.

6.0 TUTOR-MARKED ASSIGNMENT

1. Discuss Rostow's stages of growth and its criticisms.
2. Based on the theory, what stage do you think Nigeria is? Give reason(s) for your answer.

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UNIT 3 THE MARXIAN THEORY

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1.0 INTRODUCTION

Karl Marx, a German economist and political scientist contributed to the theory of economic development in three respects, namely, in broad respect of providing an economic interpretation of history, in the narrower respect of specifying the motivating forces of capitalist development, and in the final respect of suggesting an alternative-path of planned economic development. Marx work can be seen as a way of trying to explain how a society functions, why history has unfolded, and it especially gives us an account of the nature of capitalism. While the classicalist believed in capitalism, Karl Marx on the other hand was strongly against it and was bent on getting rid of it through revolution. In his book "Das Capital" published in 1867, Marx predicted the fall of capitalism and movement of society toward communism, in which "the people" (that is the workers) own the means of production and thus have no need to exploit labour for profit. Clearly, the ultimate goal Marxists aim at is a classless society, i.e., a society in which all enjoy equal wealth and power. This unit focuses on the contributions of Karl Marx to the theory of development.

2.0 OBJECTIVES

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

- explain Karl Marx theory of development
- state the weaknesses of the theory
- explain Karl Marx contribution to the developing countries.

3.0 MAIN CONTENT

3.1 The Theory

In discussing the contribution of Karl Marx to the theory of economic development, the following salient points are raised, (a) Materialistic interpretation of history (b) Surplus value and (c) Capital Accumulation.

(a) Materialistic Interpretation of History

According to Marx, all the historical invents happened because of a continuous economic struggle between different classes and groups in the society and this is basically what the materialistic interpretation of history is all about.

Marx believed that this struggle between the classes is majorly caused by the conflict between the "mode of production" and the "relations of production".

Mode of production refers to a particular arrangement of production in a society that determines the entire social, political and religious way of living, while the relations of production relate to the class structure of a society and he believed that every society class structure is made of the haves and have-nots.

Marx stated further that since the mode of production is subject to change, a stage comes in the evolution of a society when the forces of production come into clash with the society's class structure and the end result is a class struggle between the propertied and the non-propertied or the rich capitalists and the poor workers and this struggle will ultimately breakdown the entire social system.

(b) Surplus Value

In capitalism, we have the capitalist and the worker in the system. The workers are those who sell their labour power at a value for what it is worth in the labour market and the capitalist are the owners of means of production. It is assumed that when people work, they earn wages based on the value attached to their level of productivity. The extra labour that a labourer puts in and for which he does not get paid for is surplus labour to the worker, and surplus value to the capitalist which goes into his pocket as net profits, rent and interest, and according to the theory, the capitalist main preoccupation is to increase the surplus value which results in creating an increase in his profit.

(c) Capital Accumulation

According to Marx, the development of a capitalist economy is as a result of high capital accumulation by the capitalist. The capitalist get their profit for capital accumulation majorly by increasing the productivity of labour through reinvestment in large stock of capital from the surplus value gotten from labour. Profits are determined by the amount of capital and the higher the capital the higher the profit.

Note that the surplus value goes a long way in increasing the capital of the capitalist. But the rate of surplus value which is defined as the ratio of surplus value to variable capital (s/v) or which can also be regarded as the ratio of profits to wages is referred to as the degree of exploitation.
In his work, capital is divided into constant capital (c) which includes capital invested in stocks or raw materials or equipment which directly assists the productivity of labour and variable capital (v) which is the capital used for the purchase of labour power in the form of wages or direct subsistence. The organic composition of capital is the ratio of constant capital to variable capital (c/v)

Karl Marx further explained that, the rate of profit (r) is an inverse function of the organic composition of capital (OCC) - which is defined as the ratio of constant capital to variable capital (c/v), and a direct function of the rate of surplus values (s/v).

Thus Marx represents profit as:

$$R = \frac{s}{c+v} = \frac{s/v}{c/v+1}$$

This is to say that the rate of profit rises with an increase in rate of surplus value and reduces with the organic composition of capital. The more the organic composition of capital in the economy, the more people are out of jobs because men have been replaced by machines, and the more the capitalist embark on labour saving and cost reducing strategies in the economy, the more labour is displaced meaning more people are unemployed, consumption reduces, demand falls, and profits decline (as the capitalist would not get market for his over produced commodities), prices fall and the capitalist may decide to reduce production and this will cause more people to be unemployed and so on it goes in a circle. The circularity of this situation in the capitalist economy is what Karl Marx termed the CAPITALIST CRISIS.

Marx proffered a solution to this crisis which according to him leads to the oppression of the working poor and also a collapse of the economy by the capitalist. According to him, the solution is Socialism, a system

where each individual gets to contribute to national income according to his abilities and receives according to his needs.

SELF-ASSESSMENT EXERCISE

Describe the capitalist crisis as explained in the Marxian theory.

3.2 Weakness of the Theory

The Marxian theory despite its acceptability by his large followers (some of who saw him as a Prophet) was criticised by his opponents. Some of these criticisms are as follows:

1) Marx was proved to be a false prophet as capitalist countries have over the years emerged to be richer and recording increasing rates of real wages of worker compared to all the communist states. Also in the capitalist state, the middle class have overtime emerged as a dominant class instead of disappearing like Marx stated.
2) Marx's cyclical theory which he explained as a situation where capital accumulation leads to a reduction in the demand for consumption of goods and falling profits is wrong because with economic development the share of wages in aggregate income and the demand for consumer goods do not have to fall.
3) The theory failed to see that political democracy has built-in structures that keep capitalism growing stronger. Built-in structures like social security measures and anti-trust laws all go a long way to preserve capitalism.
4) Marx was also wrong about increasing technological progress causing an expansion in the industrial reserve army (rise in unemployment). This assertion cannot be said to be totally correct because the long run effect of technological progress is to create more employment opportunity by raising aggregate demand and income.
5) In the theory, Marx explained that as development increases, there is an increase in the organic composition of capital which brings about a decline in the rates of profit, but in real life, technological innovations could be capital saving which gives rise to a fall in the capital output ratio by making cost of production cheaper, output increases also and profits will increase along with wages.
6) Marx theory is mainly built around the theory of surplus value but in real world, what matters is not value but real tangible prices. This shortcoming, gives his theory an abstract and unrealistic edge making the understanding of the working of capitalism difficult to understand.

SELF-ASSESSMENT EXERCISE

What are the criticisms of the Marxian Theory?

3.3 Karl Marx and the Developing Countries

Despite the criticisms mentioned above, the theory still has some important qualities and these qualities have made it to be seen today as a relevant growth theory. For one, Marx was able to show that development does not come smoothly like Adam Smith stated, but that it comes in "fits and starts", recognising that the Business cycles are unavoidable. Also, he recognised the importance of capital accumulation to economic growth and noted that wage rates shouldn't be too high or too low in relation to total output as this can adversely affect investment.

Generally speaking, a casual observer could conclude that Marx's theory does not address the situations of developing countries as his theory is concerned mainly with the problems related with the development of capitalism in the western world. For example, as regards the developing countries, Marx failed to recognise the existence of population pressures in these countries, and this makes his theory not suitable for most of these overpopulated countries. However, taking a closer look at the model, you would notice that some of the variables in his analysis do exist in the less developed economies. E.g. the subsistence wage level in his model is quite common in most LDCs and because of this subsistence wage, the poverty level is high, a large proportion of the population is extremely poor and the wealth of these nations is in the hands a few. The existence of such social dualism (rich and poor class) can and do lead to "class struggle", where you have dictatorship and proletariat.

Also, Marx opinion of planned development can be said to be applicable in the dualistic economy of the LDCs which consists of capitalist sector and a subsistence agricultural and small scale sector, with the capitalist sector making higher economic impact. Rapid economic development can be achieved in such an economy by recognising and expanding the capitalist sector to absorb the subsistence sector in order to increase economic surplus through deliberate planning for industrialisation and increase in supply of agricultural commodities to meet the expanding demand of the capitalist sector.

SELF-ASSESSMENT EXERCISE

Is Marxian theory applicable to the less developed countries? State reason(s) for your answer.

4.0 CONCLUSION

Karl Marx contributed immensely to the theory of economic development in three ways namely, in broad respect of providing an economic interpretation of history, in the narrower respect of specifying the motivating forces of capitalist development, and in the final respect of suggesting an alternative path of planned economic development.

According to Marx, every society's class structure consists of the propertied and the non-propertied classes and the 'class struggle' between these two groups under capitalism is the surplus value in the hands of the few propertied. He argued that the main aim of the capitalist is to keep increasing the surplus value and this makes the working class earn subsistence wage rate which makes them poor and oppressed. But according to Marx, there comes a time when the capitalist encounters problems because as the rate of capital accumulation rises, people will be displaced by machines, unemployment becomes the order of the day, and a lot of other economic problems follow suit. This goes on in a circle and the circularity of this situation in the capitalist economy is what Karl Marx termed the capitalist crisis. With Marx prediction of the capitalism fall came his solution which is a movement of the society toward communism, where "the people" i.e. the workers own the means of production and thus have no need to exploit labour for profit.

Marx theory though accepted greatly by his followers, has over time been subjected to criticism by some scholars and among the criticisms raised is that it is not suitable for the economies of the developing countries as he was concerned with the problems of the advanced capitalist states. However, despite these criticisms, some key points raised by Karl Marx in his theory are still quite relevant to us and in a way can be said to recognise some of the issues inherent in these economies.

5.0 SUMMARY

In this unit, we discussed yet another development theory developed by Karl Marx. We started off by explaining the theory. In doing this, the salient features of the theory were discussed in details. We went further to look at its weaknesses, its relevance to the developing countries and then we came to the conclusion that the theory though seen by critics as being irrelevant to the underdeveloped countries, has some relevance to their growth and development process.

6.0 TUTOR-MARKED ASSIGNMENT

Discuss the Marxian theory while taking note of its key concepts
What is the relevance of this theory to a country like Nigeria?

7.0 REFERENCES/FURTHER READING

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UNIT 4 LEWIS' THEORY OF UNLIMITED SUPPLIES OF LABOUR

CONTENTS

1.0 Introduction
2.0 Objectives
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1.0 INTRODUCTION

The theory of unlimited supplies of labour is credited to the Nobel Laureate, Sir W. Arthur who initially presented the dual-sector model which he later enumerated in his article entitled "Economic Development with Unlimited Supplies of Labor" written in 1954. The model sought to give solution to the development problems of over populated agricultural economies of the developing countries and Arthur believes that economic development could be achieved through the use of available surplus labour in the rural developing nations. By surplus labour, he means that part of manpower which even if withdrawn from the process of production, will bring about no fall in the amount of output.

Arthur Lewis gave some assumptions in his theory; one of them is the "dual economy assumption". This assumption has it that the economies of the less developed countries are characterised by the traditional, overpopulated rural subsistence sector and the high productivity modern urban industrial sector with low level of labour supply. According to the theory, by transforming surplus labour in the rural agricultural areas to the modern urban industrial sector, development will be achieved in these less developed countries.

In this unit, the theory of unlimited supplies of labour as given by Arthur Lewis will be discussed.

2.0 OBJECTIVES

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

- explain the theory of unlimited supplies of labour by Arthur Lewis
- state the assumptions of the Model
- critically appraise the theory.

3.0 MAIN CONTENT

3.1 The Lewis Theory

The theory of unlimited supplies of labour by Professor W. Arthur Lewis is a systematic classical theory of economic development which is based on the existence of two sectors in the economy of developing countries- the modern and the traditional sectors. The modern sector is small and uses considerable amounts of capital, while the traditional sector is the large labour surplus rural agricultural sector, with little amount of capital.

The argument is that poor countries have two sectors (the rural agricultural or subsistence sector and the modern industrial or capitalist sector) and that the wage level in the sector with unlimited supply of labour (rural sector) is at its subsistence. In addition to that, it is also believed that the marginal productivity of this surplus labour is zero and as such the economy is backward. Lewis argues that if this surplus labour can be transferred to the sector that has few labour supplies (the modern sector), the productivity level in the agricultural sector would not experience any noticeable reduction but rather, economic development would take place because labour would be put to good use bringing about a chain of productive reactions. Arthur in his article on "Economic Development with unlimited supplies of labour" has a model called the dual sector- model enumerated in it and the model was named in Lewis's honor. To understand the theory better, the underlining assumptions of the model will be discussed in the next section.

SELF-ASSESSMENT EXERCISE

Briefly explain the theory of unlimited supplies of labour.

3.2 The Assumptions of the Model

The following are the assumptions of the model:

(i) Existence of dual Economy: There exist a two sector economy characterised by a traditional, over-populated agricultural rural subsistence sector with zero Marginal Productivity of Labour(MPL), and the 'capitalist' sector which is the high productive modern industrial sector represented by the manufacturing, mining activities.

(ii) Elasticity of Labour: According to Arthur, the supply of labour is perfectly elastic. In other words, the supply of labour is greater than demand for labour in the agricultural sector and therefore the capitalist sector can have as much labour as it requires and will continue to absorb this surplus from the agricultural sector until there is no longer surplus labour left.

(iii) Reproducible Capital: The subsistence sector does not make use of 'Reproducible Capital', while the modern sector uses the produced means of capital. As a result of the non usage of reproducible capital in the subsistence sector, output per head is lower than in the capitalist sector.

(iv) The model also assumes that the wages in the manufacturing sector are higher than those of the subsistence sector and are also more or less fixed.

(v) Entrepreneurs in the manufacturing sector make profit because they charge a price above the fixed wage rate

(vi) There is the willingness of the capitalist to reinvest the profit in the business and this is done in the form of fixed capital.

The main people/sources from which workers would be coming for employment at the subsistence wage as economic development proceeds are "the farmers, the casual workers, small scale informal sector participants, women in the household, and population growth.

SELF-ASSESSMENT EXERCISE

List three assumptions of Arthur Lewis' dual-sector model.

3.3 Basic Thesis of the Lewis Model

The Lewis model is a classical type model based on the assumption of a dual sector economy which is the capitalist sector and the subsistence sector. The subsistence sector is that part of economy which does not use reproducible capital and therefore, the output per head is lower than in the capitalist sector. Also there is perfectly elastic supply of labour at the subsistence sector in many underdeveloped countries but not in the

modern sector. Lewis is of the opinion that the industrial and advanced modern sector can be developed and made to boost the entire economy, this according to him, can be done by transferring the surplus labour from traditional sector to the modern sector. From this surplus labour now in the modern sector, new industries will spring up and existing ones would grow. However, the capitalist sector requires skilled labour and this stands as a stumbling block to the development process as the surplus labour from the subsistence sector are mostly unskilled. This problem can be eliminated by providing training facilities to unskilled workers. So in essence, the absence of skilled labour in this sector is a temporary problem which can be solved through training.

Lewis says that the wages in industrial sector remain slightly higher than that of the agricultural sector. Consequently, labour will be attracted to the modern sector because of the higher wage incentives and as a result of this, the capitalists will earn surplus from the increase in productivity brought about by the surplus labour transferred. Such surplus will be re-invested in the modern sector leading thereby to further increase in the productivity of this sector. In this way, the surplus labour or the labour which were prey to disguised unemployment will get to be employed into productive activities. Thus both the labour transfer and modern sector employment growth are brought about by output expansion in the modern sector. The speed with which this expansion occurs is determined by the rate of industrial investment and capital accumulation in the modern sector. Here is a diagrammatical explanation of Lewis Model

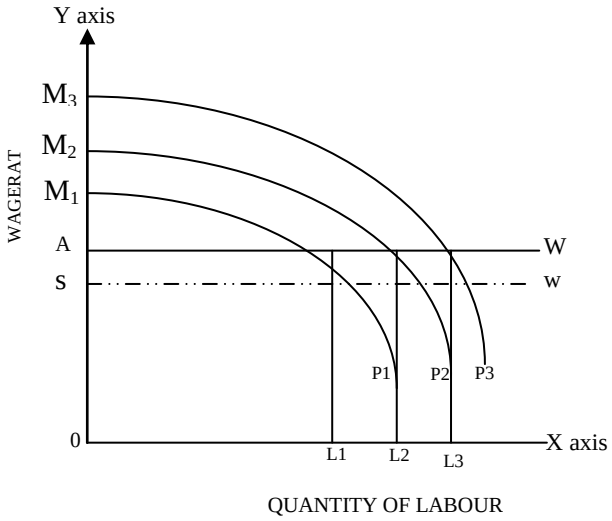

Fig. 3.2: Diagramatic Representation of Lewis Model

In this diagram, the horizontal axis (x) represents the quantity of labour employed, while the vertical axis (y) represents the wage rate/Marginal Productivity of Labour. Also in the diagram, OS represent average

subsistence wage in the agricultural sector, and OA the capitalist wage, the supply of labour is unlimited and this is shown by the horizontal supply curves of labour AW and Sw. The analysis goes thus: The marginal productivity of labour in the industry is M1P1, with OL_1 labour employed , $OAKL_1$ wage rate is paid from the total product of OM_1KL_1, giving the capitalist a profit of AM_1K. With the reinvestment of this profit, the marginal productivity of labour of labour increases from M_2P_2 and then further reinvestment brings it to M_3P_3 and so on. As the capitalist continues to reinvestment his profit, his surplus continues to grow.

Overtime, as the transition continues and the capitalist continues to reinvest surplus derived from the use of surplus labour from the subsistence sector, the capital stock increases, the marginal productivity of workers in the manufacturing sectors will be driven up by capital formation. Capital formation resulting from this increase in investment leads to quicker utilisation of surplus labour. As more labour is supplied, the marginal productivity falls, and in the long run, the wage rates of the agricultural and manufacturing sectors will equalise because as workers leave the agricultural sector for the manufacturing sector, they increase marginal productivity and wages in agricultural sector while reducing them in manufacturing. The process of modern self sustaining growth and employment expansion will continue till all the surplus rural labour is absorbed in the new industrial sector. Thereafter, additional workers can be withdrawn from agricultural sector only at a higher cost of lost of food production because this will decrease the labour to land ratios. In this way, the MPL will no more be zero and the labour supply curve will become positively sloped along with the growth of modern sector.

SELF-ASSESSMENT EXERCISE

With the aid of a diagram, explain the Lewis model.

3.4 Criticisms of the Theory

Despite the theory's huge success in identifying the two key sectors in the developing countries and stating how growth can be achieved in these usually over populated countries, most of the theory's assumptions do not fit into the institutional and economic realities of the Developing countries and as such can be said to be irrelevant to these countries. Below are some of the flaws of the theory.

(i) The industrial real wage continues to rise and is not constant as Lewis assumes

(ii) There is the likelihood of the capitalist reinvesting in labour saving techniques like investments in machineries and this would

reduce the amount of labour needed causing urban unemployment.

(iii) Lewis ignored the balanced growth between agricultural sector and industrial sector. But we know that there, exists a linkage between agricultural growth and industrial expansion in poor countries. If a part of profits made by capitalists is not devoted to agricultural sector, the process of industrialisation would be jeopardised (perhaps, due to reduced supply of raw material).

(iv) Lewis model underestimates the full impact on the poor economy of a rapidly growing population, i.e., its effects on the capitalist profit share, wage rates and overall employment opportunities.

(vi) Lewis has ignored the role which the leakages can play in the economy. As Lewis assumed that all increases in profits are diverted into savings. It means that the savings of producers is equal to 1. But, this is unrealistic as the increase in profits may accompany an increase in consumption.

(vii) Lewis assumed that the transfer of unskilled labour from the subsistence agricultural sector to the industrial sector is regarded as almost smooth and costless. The model however fails to take account of the cost of educating and training rural workers for urban employment and also, there is also other indirect cost associated with rural-urban migration. Amongst these are: a lack of sufficient housing, leading to the development of squatter townships or shanty towns, pressure on social infrastructure such as schools and hospitals, increases in disease due to a lack of clean water and sanitation.

SELF-ASSESSMENT EXERCISE

List and discuss five flaws in Lewis theory.

4.0 CONCLUSION

Arthur Lewis theory of economic development is a structural change theory which explains the mechanism of changing structure of underdeveloped economies from the subsistence rural sector to a modern urbanised one. According to the theory, the economies of most developing countries are made up of two key sectors, the subsistence agricultural sector and the modern capitalist sector. Lewis is of the opinion that economic development occurs when the capitalist gets labour from the unlimited supply of labour in the subsistence sector, which it uses to set up new industries and also grow existing ones. The capitalist gets profit from the activities of the surplus labour and according to Lewis, the capitalist reinvests this profits and this sets off a growth process that continues until there is no longer surplus labour to be absorbed. The theory was criticised by some scholars and one major

criticism raised is that the transition from rural sector to urban sector does not come without cost like the theory would like us to.

However, despite the criticisms, the theory still helps to point us to the reality of the existence of the overpopulated subsistence agricultural sector and a modern capitalist sector in most underdeveloped countries. The way we go about developing these sectors to achieve a balanced growth in the economy (which the theory was criticised for not doing) was latter addressed by Fei-Ranis.

5.0 SUMMARY

In this unit, the Lewis theory of unlimited supplies of labour was discussed. We studied the model, its assumptions and the basic explanation of how the model works to bring about growth in a two sector economy and finally the criticisms of the model were stated.

6.0 TUTOR-MARKED ASSIGNMENT

1. According to Arthur Lewis's model, how can growth be achieved in a dual sector economy?
2. The Lewis model can be said to be relevant to the economies of the developing countries, True or False? Give reason(s) for your answer.

7.0 REFERENCES/FURTHER READING

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UNIT 5 BALANCED AND UNBALNCED GROWTH THEORIES

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1.0 INTRODUCTION

Achieving economic growth has been approached by different scholars in their different ways with each one providing a solution to how best they feel the vicious circles of poverty can be broken for growth to take place. In this unit, we would be discussing two opposite ideas to achieving growth and they are (a) the balanced growth theory, which emphasises on the simultaneous development of the supply and the demand sides of an economy i.e. an all round growth approach and (b) the unbalanced growth theory which has it that an imbalance rather than a balance among the different sectors of the economy will lead to economic growth. In this unit, the two approaches will be studied to enable you appreciate their opposing arguments.

2.0 OBJECTIVES

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

- explain the balanced and unbalanced growth theories
- state the criticisms of the theories
- identify the differences between the balance and unbalanced theories.

3.0 MAIN CONTENT

3.1 The Balanced Growth Theory

There is no consensus as to the meaning of the concept of balanced growth. It could mean different things to different authors. Within the context of our study, the theory of balanced growth states that there should be simultaneous and harmonious development of different sectors of the economy so that the sectors grow in unison. To get the unified growth, the development of the demand and supply side of the economy has to be balanced. The demand side has to do with the provision for large employment opportunities and increasing incomes so that there will be increase in the demand for goods and services in the economy, while the supply side emphasises on the simultaneous development of all the interrelated sectors which help in increasing the supply of goods. In sum, when there is increased demand backed by increase in supply of goods and services, and all goods and services are sold off at the end of the day, then we can say there is balanced growth in such an economy.

The theory of balanced growth was first propounded by Rosenstein Rodan in 1943, although he did not specifically use the word "Balanced growth" in his article written in titled, " …. Problems of Industrialisation of Eastern and South- Eastern Europe" his work is still regarded as the pioneer work which was later developed and elaborated by Ragnar Nurkse in his book "Problems of Capital Formation in the Underdeveloped Countries".

The doctrine of Balance growth as formulated by Rosenstein–Rodan and Nurske is explained below.

According to Rosenstein–Rodan, for an economy to grow, the whole of the industry to be created in eastern and south-eastern Europe should be treated and planned like one huge firm or trust. He pointed out that "Often Social Marginal Product (SMP) of an investment is different from its Private Marginal Product (PMP) and that when a group of industries is planned together in accordance with their SMPs; the rate of growth of the economy is greater than it would have been otherwise". This is so because an individual entrepreneur would likely be interested only in the Private Marginal Product of his investment and is likely not going to have an accurate assessment of its SMP. In explaining his idea, Rodan gave an example of a shoe factory, which employs a particular amount of workers in the region it is established. According to him, workers will create a market for shoes if all their income was spent on shoes, but this is not practical as workers cannot spend all their income on shoes. So therefore, if a whole series of industries were started which

produce the consumption goods on which workers would spend all their incomes on, all the industries would expand together.

This idea of expansion of all industries was elaborated by Nurkse who stated that the vicious circles of poverty (both on the demand and the supply sides) are at work in the underdeveloped countries and are responsible for the retard in their economic development. He reasoned that if this circles are broken economic development will take place and the only way to break these circles is by investing in a wide range of industries which will eventually lead to - both vertical and horizontal integration of industries, a division of labour, a common pool of raw materials and technical skill, an expansion of the size of the market and better utilisation of social and economic overhead capital. Nurkse emphasised the need for a simultaneous investment in productive equipments and in human capital development stressing that it would be a waste of resources to spend heavily on equipments if there are no healthy and educated people to operate them.

Nurkse advocated for a balance in the agriculture and industrial sector because according to him, they complement each other and also he advocated a balance between the domestic and the public sector for he believed not in autarky but in international trade as according to him, export revenue is an important source of financing domestic trade.

For an economy to grow therefore, Nurkse recommended that the different sectors of the economy should be simultaneously developed i.e. investment in one should not be carried out at the detriment of the other.

SELF-ASSESSMENT EXERCISE

Explain the doctrine of the balanced growth theory as propounded by R. Nurkse.

3.2 Criticisms of the Balanced Growth Theory

The balanced growth theory has been criticised by lots of economists especially the unbalanced growth theorists like Albert O. Hirschman and Hans W. Singer. Some of the criticisms they raised are given below.

1) **Shortage of resources**: The theory does not address the problems of shortage of resources because it is based on Say's Law which has it that supply creates its own demand. This is a wrong notion because supply of goods refers to the demand for factors especially capital which does not create its own supply. With simultaneous investment carried out in different new industries, there is bound to be competition in the demand for

factors. In Less developed countries, Factor supply is limited and as such, there exist a competitive rather than a complimentary relationship between industries.

2) **Rise in costs**: A simultaneous establishment of industries in an economy will likely raise money and real costs of production which will in the long-run make those investments economically unprofitable in an environment characterised by inadequate and insufficient capital equipment, skills, cheap source of power, infrastructure and other necessary resources that would aid growth.
3) **Reduction in costs**: According to Kindleberger, Nurkse theory should have addressed the issue of reducing the costs of existing industries rather than starting new ones.
4) **Beyond the capabilities of developing countries**: In Hirschman's view, the developing countries are so called because they face a lack of resources (human and capital), so therefore it is unrealistic for the balanced growth theory to be advocating for a large investment in many industries in a developing country
5) **Not a growth theory:** Again according to Hirschman, the balance growth theory is not a growth theory because economic growth is supposed to be a gradual transformation of an economy from one stage to the next. That is to say, an economy is supposed to grow from infancy to maturity. But the doctrine of balanced growth involves the superimposition of a brand new self sufficient modern industrial economy upon the stagnant and equally self sufficient traditional economy.
6) **Does not solve the problem of vicious cycle of poverty**: Singer asserted that the theory is more applicable in solving the problem of cyclical downswing rather than that of vicious cycle of poverty faced by underdeveloped countries.
7) **Scarcities and bottlenecks promote growth**: According to Paul Streeeten, going by the historical facts, it was scarcities and bottlenecks that provided stimulus to the inventions that revolutionalised England's and the world's economic system and not balanced growth. He believed that scarcities and bottlenecks promote/encourage incentives for discoveries.

SELF-ASSESSMENT EXERCISE

Identify four criticisms of the balanced growth theory.

3.3 The Concept of Unbalanced Growth

Based on the criticisms of the balanced growth theory, the theory of unbalanced growth was propounded as a strategy of development to be used by the underdeveloped countries and the pioneer of this theory is

Professor Hirschman. Other economists belonging to this school of thought are Rostow, Flemming and Singer. The principle behind this theory is that for growth to take place in an economy there is a need for investment to be carried out in strategic sectors of the economy rather than for all the sectors to be simultaneously.

invested on. The unbalanced growth economists stressed the need for an unbalanced approach to development rather than a balanced approach like Nurkse and Rosenstein.

Hirschman argued that creating imbalances in the system is the best strategy for growth. Stating further, he explained that owing to the lack of availability of resources in the less developed countries, the little that is available must be efficiently used. If investment is carried out in the key sectors of the economy, the other sectors would automatically develop through what is known as "Linkage effect".

By promoting growth through the investment in a leading sector, the other sectors grow through (1) Externalities effect and (2) Complimentary effect which may bring about economies of scale. Hirschman classified investment into Social overhead capital (SOC) and Direct productive activities (DPA). SOC are investments on social infrastructure usually done by the government and example are capital on schools, hospitals, roads etc, while DPA are investments done by the private entrepreneur which adds to the flow of final goods and services, and example is the investment in an industry. The investment on SOC creates more economies and is thus called divergent series of investment. As for the DPA, they are called convergent services because they appropriate more economies than they have created. The strategy of unbalance growth suggests that since the underdeveloped countries cannot pursue a simultaneous investment in both SOC and DPA due to a general lack of resources so therefore they should according to Hirschman (a) unbalance the economy for overall growth through SOC, as this would stimulate investment in DPA e.g. with constant electricity and good roads, there would be growth of small scale industries and (b) unbalance the economy for growth with DPA as this would press for investment in SOC. That is to say, demand for good roads transportation system, schools and hospitals would increase with investment in DPA. The SOC creates external economies while the DPA appropriates external economies. In the unbalanced growth model, it is through the effects of linkages that the economy will grow.

The relationship between SOC and DPA is presented in the production function diagram presented.

Figure 3.3
UNBALANCED GROWTH
VIA SOC AND DPA

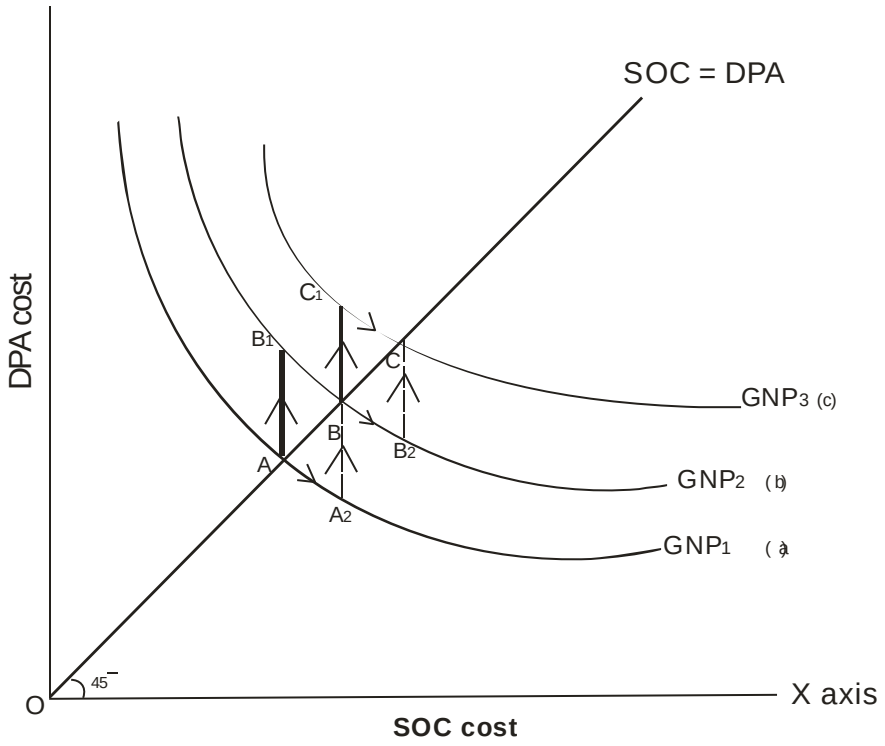

Fig. 3.3: Unbalanced Growth via DPA

DPA investments are measured along the vertical axis and SOC on the horizontal axis. The curves a,b,c are isoquants showing various combinations of DPA and SOC which will give the same gross national product (GNP) at any point. As we move to a higher curve, it represents a higher GNP, so that $GNP_3 > GNP_2 > GNP_1$. The curves are so drawn that the 45^0 line through the origin connects the optimal points (A, B, C) on the different curves. This line shows the balanced growth of DPA to SOC. The path of economic development could be started in two ways (1) by expanding SOC which Hirschman called development via excess capacity of SOC and (2) by investing in DPA, which he called development via shortage of SOC.

If the path to development is pursued via excess capacity of SOC, the economy will follow the dotted line AA2BB2C. When the economy increases SOC from A to A1, it induces DPA until balance is restored at B, where the whole economy is on a higher level of output. The higher gross national product thus achieved induces government to increase SOC further from B to B2, DPA is also induced to increase to point C. If

on the other hand the path to development via shortage of SOC is followed, the economy moves along the thick line AB1BC1C. When DPA is increased from A to B1, then to B, and when DPA is further increased to C1, SOC has to move to C in order to restore balance.

In the unbalanced growth approach, the selection of the leading sector that would make the most positive impact in the economy is important; therefore the linkage effects of the leading industry ought to be carefully identified. An investment may have both forward linkage and backward linkage effects.

Fig. 3.4: Forward and Backward Linkages

Backward Linkages: The growth of leading industry leads to the growth of the industries that supply inputs to it. For example growth of textile industry would lead to the growth of cotton production.

Forward Linkages: The products of the leading industries are used as inputs for other industries. Example: Rubber as a product of the leading industry can serves as input to a whole lot of other industries.

Be it the SOC or DPA investment pattern used, the other will be induced and development will be achieved but care should be taken to invest in the leading sector with the highest linkage potential.

SELF-ASSESSMENT EXERCISE

Explain the theory of unbalanced growth.

3.4 Criticisms of Unbalanced Growth

The followings are some of the criticisms raised by critics of the theory:

1. **No mention of obstacles**- According to Paul Streeten, the theory mentions the establishing of leading sectors. It however fails to mention the possible difficulties in establishing these leading sectors. In reality, it is not easy to establish leading industries right at the beginning of a development programme.

2. **Neglect of the degree of imbalance**- How much to imbalance and where to imbalance are not known by the theory of unbalanced growth. It only tells of the need to imbalance.

3. **Lack of basic facilities**- 'Unbalanced Growth Theory' assumes the availability of certain basic facilities in terms of necessary raw materials, technical knowhow and developed means of transport. However in less developed countries these are insufficient.
4. **Linkages effects are not based on empirical data**- Prof. Hirschman advocated to start only those industries that have maximum linkages effect. But these effects are not based on statistical data pertaining to the less developed countries.
5. **Unbalance is not necessary**- Critics are of the opinion that deliberately introducing imbalances in the system is not so much needed in the less develop countries. These imbalances are caused on their own due technical indivisibility and uncertain behaviour of demand and supply forces.

SELF-ASSESSMENT EXERCISE

Critically appraise the concept of unbalanced growth.

3.5 Balanced and Unbalanced Growth

Dissimilarities between balanced theory and unbalanced theory

1) The theory of balanced growth promotes the simultaneous growth of all sectors of the economy while the theory of unbalanced growth, on the other hand, focuses on the growth of some leading sectors of the economy.
2) Balanced growth doctrine seeks to promote the growth process through simultaneous investment across all sectors of the economy. Unbalanced growth however, seeks to promote the growth process through imbalances in the system.
3) Size of the market is the principal limiting factor according to the balanced growth theory. But according to the unbalanced growth theory, it is decision making and entrepreneurialskill.

Similarities between balanced growth and unbalanced growth

Both focus on economic growth; approaches are based on developing countries; they focus on importance of investment; and finally, both ignore the role of supply limitations.

SELF-ASSESSMENT EXERCISE

In tabular form, differentiate between the balance growth and the unbalanced growth theory.

4.0 CONCLUSION

The ways development can be achieved by underdeveloped countries have been approached differently by development economists overtime. While some economists like Rosenstein Rodan, W. Lewis and R. Nurkse reasoned that development should be approached by investing in all the sectors of the economy thereby creating a balanced growth, Hirschman, Singer and Fleming however are of the opinion that growth and hence development should take an unbalanced approach with investments made in leading or key sectors of the economy. In the opinion of the unbalanced growth theorist, the underdeveloped countries lack resources (human and capital) and as such available scarce resources should not be wasted on sectors that would not be able to move the economy forward rather resources should be channeled to sectors which have the greatest linkage effects as the investment in these sectors would generate growth in the other sectors through externalities and complimentary effects. Despite the fact that the theories are opposite in nature, they have few similarities among which is that they both lay emphasis on investment as a means of growth. The controversies between the two theories have however been over stretched and as a result, they no longer hold water. The truth of the matter is that whichever path a developing nation may want to tow, internal issues such as inflation control, adverse balance of payment and also the availability of resources (especially humans) at their disposal should be put into consideration.

5.0 SUMMARY

In this unit, we studied the Balanced and Unbalanced growth theories as growth strategies of breaking the vicious cycle of poverty in Less Developed Countries. We looked at their different arguments, criticisms and we also tried to see how different and similar they are and we concluded by saying the growth path pursed by a developing country should be based on what their internal conditions are.

6.0 TUTOR-MARKED ASSIGNMENT

1. With the knowledge of the balanced and unbalanced growth theories you have, give two advantages and two disadvantages of each of the theories. In your opinion, which of them do you think

is most suitable for a country like Nigeria? Give reason(s) for your answer.

2. With the aid of a diagram explain the process of unbalanced growth.

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MODULE 4 SOME SELECTED ECONOMIC GROWTH MODELS

Unit 1 Harrod-Domar Growth Models
Unit 2 The Solow Model
Unit 3 The New Endogenous Growth Theory

UNIT 1 HARROD-DOMAR GROWTH MODELS

CONTENTS

1.0 Introduction
2.0 Objectives
3.0 Main Content
- 3.1 Harrod-Domar Models
- 3.2 Assumptions of the Models
- 3.3 The Domar Model
- 3.4 The Harrod Model
- 3.5 Criticisms of the Models
- 3.6 The Importance and Limitations of Harrod-Domar Models to the Underdeveloped Countries

4.0 Conclusion

5.0 Summary
6.0 Tutor-Marked Assignment
7.0 References/Further Reading

1.0 INTRODUCTION

The Harrod-Domar model is an early model of economic growth used in the field of development economics to explain an economy's growth rate in terms of level of saving and productivity of capital. The model which was developed independently by Sir Roy Harrod and Evsey Domar, started in the late 1930's with Harrod expanding upon the work done by earlier theorist especially John Maynard Kenyes. At about the same time, Domar also came up with a closely related model.

The Harrod-Domar growth model is based on the experiences of advanced capitalist countries and is interested in knowing the rate of income growth that would bring about smooth and sustained growth of the economy. It assumes that funding for capital investment comes from money that has been saved, rather than spent, and that the rate of economic growth depends upon the level of this saving and the productivity of investment i.e. the capital output ratio. It is believed that investment creates income because productivity is enhanced from the savings invested, and eventually this brings about an increase in capital stock of the nation. According to the theory, the key to economic growth is expansion of investment levels in the economy. In this unit, you would study the theory of growth as propounded by Harrod and Domar i.e. The Harrod-Domar growth theory.

2.0 OBJECTIVES

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

- discuss the Harrod-Domar growth models
- state the basic assumption underlying the models
- explain the mathematical representation of the models
- list the weaknesses of the model
- analyse the relevance of the model to the less developed countries.

3.0 MAIN CONTENT

3.1 The Harrod-Domar Models

The Harrod- Domar models attempt to analyse the requirement of a steady growth in the advanced economies. They are interested in

discovering the rate of income growth necessary for a smooth working of an economy and as such, believed that investment plays a key role in the process of economic growth. Investment according to the models is divided into two, based on its ability to:

(a) create income, which is the demand effect of investment and
(b) augmenting the productive capacity of the economy by increasing capital stock, this is the supply effect of investment. Expansion of net investment would result in increase in real income and output in the economy and if this expansion is stopped, income and employment will fall, thereby moving the economy off the equilibrium path of steady growth. For net investment to grow however, the real income is required to also grow continuously at a rate sufficient enough to ensure capacity use of growing stock of capital. The real income growth rate required here is called the full capacity growth rate or the warranted rate of growth.

SELF-ASSESSMENT EXERCISE

According to the Harrod-Domar model, what is the major factor necessary for economic growth to be achieved? Explain.

3.2 Assumptions of the Models

The following are the assumptions of the models:

1. There is an initial full employment equilibrium level of income
2. There is an absence of government interference and the models operate in a closed economy which has no foreign trade
3. The average propensity to save is equal to the marginal propensity to save and marginal propensity to save remains constant for the period
4. There are no changes in interest rates
5. There is a fixed proportion of capital and labour in the productive process
6. The general price level is constant i.e. nominal and real incomes are the same
7. There is no separation between fixed and circulating capital. They are both lumped together under capital
8. There is no depreciation of capital goods, which are assumed to possess infinite life
9. The above are the assumptions of the Model. Let us now examine each of the models independently.

SELF-ASSESSMENT EXERCISE

List eight assumptions of the Harrod-Domar model

3.3 The Domar Model

Domar builds his model based on a self asked question which goes thus "since investment generates income on the one hand and increases productive capacity on the other, at what rate should investment increase in order to make the increase in income equal to the increase in productive capacity, so that full employment is maintained?"

In answering the question, Domar forged a link between aggregate supply and aggregate demand through investment. On the supply side, starting from the increase in productive capacity, annual investment rate is taken to be (I), and the annual productive capacity per dollar of newly created capital on the average equals to (s) and this represents the ratio of increase in real income or output to an increase in capital or is the reciprocal of the accelerator or the marginal capital-output ratio. So the productive capacity of I dollar invested will be I.s dollars per day. However, some new investment will be at the expense of the old because the new investment will bring about a competition, for available factors of production and competition in the labour market which brings about a reduction in the old plants output and the annual increase in the

economy i.e. the productive capacity of the economy will be less than I.s. This can be represented as Iσ, where σ (sigma) stands for the net potential social average productivity of investment (=ΔY/I). Note that Iσ is less than I.s, and it is the total net potential increase in output of the economy known as the sigma effect of the supply side of the economic system. To explain the demand side, the Keynesian multiplier was used. Here, the annual increase in income is denoted by ΔY, increase in investment as ΔI and the propensity to save α (alpha) is (ΔS/ΔY).

Increase in income will therefore be 1 which is also the multiplier effect 1/α.

1-MPC

Note that 1-MPC = MPS. Where MPC and MPS (α) are marginal propensity to consume and marginal propensity to save respectively. Increase in income would be equals to the multiplier (1/ α) multiplied by the increase in investment, which is ΔY =ΔI. I/α. ……. (1)

For full employment equilibrium level of income to be maintained aggregate demand should be equal to aggregate supply which will bring the equation to,

ΔI.1/α = I σ…… (2)

Equation (2) is the fundamental equation of the model.

To solve the equation, divide the two sides by I and multiply by σ, we would have,

ΔI/I= α σ……..… (3)

Equation (3) shows that to maintain full employment, the growth rate of net autonomous investment (ΔI/I) must be equal to the product of MPS and capital productivity (α σ).This is the rate at which investment must grow to ensure the usage of potential capacity in order to maintain a steady growth rate of the economy at full employment.

SELF-ASSESSMENT EXERCISE

Succinctly analyse Domar's model.

3.4 The Harrod Model

The Harrod model like that of Domar, examines the possibility of steady growth. Harrod made efforts to show how economy can have a steady growth path and if by any chance this steady growth is interrupted, the economy falls into disequilibrium and cumulative forces prolong the divergence from the 'golden path' which eventually leads to either secular deflation or secular inflation, showing that the process of steady growth is never smooth. Harrod developed his model on three basic concepts of rates of growth, and they are (1) actual growth, (2) warranted growth and (3) natural growth.

(1) The actual rate of growth which is given as G, is determined by the saving ratio indicated by s and the incremental capital-output ratio indicated by C. It shows a short run cyclical variations in the rate of growth; (2) Warranted rate of growth represented by Gw is taken to be the full capacity growth rate of income in an economy. It is the rate of growth required for the full utilisation of a growing stock of capital. The warranted growth rate can therefore be said to be the growth rate at which all saving is absorbed into investment. The demand at this growth rate is high enough for businessmen to sell what they have produced. And (3) the natural growth rate represented by (Gn), is the rate of advancement which the increase in population and technological improvements allow. This growth rate depends on variables like technology, population and natural resources. The natural growth rate is therefore the rate required to maintain full employment. If the labour force grows at 3 percent per year, then to maintain full employment, the economy's annual growth rate must be 3 percent (assuming no growth in productivity).

According to Harrod, Warranted growth rate Gw is a self-sustaining rate of growth and if the economy continues to grow at this rate, it will follow the equilibrium path. He asserted that on a long run basis, the actual growth rate (G) should be equal to warranted growth rate (Gw). For full employment growth realisation, actual capital goods (C) must equal required capital goods C(r) if not, the economy would be in disequilibrium. Equation for full employment growth Gn =Gw= G.
The full employment equilibrium is difficult to achieve and any divergent would lead to disequilibrium either in form of secular stagnation or inflationary conditions in an economy. Harrod model presents a situation where savings is a virtue when there is inflationary gap and a vice when there is deflationary gap in the economy.

This model therefore would enable policy makers in an advanced country to use savings adjustments to correct inflation or deflation in the economy.

SELF-ASSESSMENT EXERCISE

Explain briefly the three components in Harrod's model.

3.5 Criticisms of the Models

Some of the criticisms of the models are as follows:

Harrod-Domar model was formulated primarily to protect the developed countries from chronic unemployment, and was not meant for developing countries.

Most less developed countries lack sound financial system and therefore, increased saving by households does not necessarily mean there will be greater funds available for firms to borrow for invest.

Improving capital/output ratio is difficult to achieve in developing countries this is
often due to a poorly educated work force. New capital is often inefficiently used by labour.

Increasing the savings ratio in developing countries is not always easy. Majority of these developing countries have low marginal propensities to save and low income.

Research and Development needed to improve the capital/output ratio is often underfunded in developing countries.

The model fails to address the nature of unemployment which exists in different countries. In developed countries, the unemployment is 'cyclical unemployment', which is due to insufficient effective demand; whereas in developing countries, there is high level of 'disguised unemployment' in the urban informal sector and rural agricultural sector.

Finally, the model failed to recognise the effect of government programs on economic growth.

SELF-ASSESSMENT EXERCISE

What are the criticisms of the Harrod- Domar Model?

3.6 The Importance and Limitations of the Models to Underdeveloped Countries

The Harrod-Domar model like we have been taught was formulated to maintain the steady growth rate in developed economies of the world and not to address the problem of vicious cycle faced by the developing countries. Be that as it may, the model could still be used to aid in analysing the growth process in less developed countries. The importance of this model to the developing countries is explained below. The Harrods-Domar models are based on three principal concepts: the saving function, autonomous vs. induced investment, and the productivity of capital. These concepts were primarily developed in order to illuminate secular stagnation that was threatening the advanced economies in the post-war period. The models show us the rate at which the economy must grow if it is to make full use of the capacity created by new investment and it gave a projection of capital-output ratio of between 2.5 and 5, this rate can also be applied in less developed countries.

Harrod in his Second Essay on Dynamic Theory which he tagged "natural rate of interest", tried to make his model more applicable to underdeveloped countries. He carefully elaborated the supply side of his fundamental equation by introducing the role of interest rate in determining the supply of savings and the demand for savings. He observed a significant influence between interest and growth rate of income and defined the natural rate of interest (rn) as the ratio of the natural growth rate of per capita output (Pc) and the natural growth rate of income (Gn) to the elasticity of diminishing utility of income (e). So we have: $rn/e = Pc.Gn$.

Taking the values of Pc and Gn as given, the natural rate of interest depends on the value of e which is assumed to be less than Unity (1), meaning that rn and e are inversely related to each other. When e is small, rn is high and vice versa.

Harrod, recognising the fact that the less developed countries have low savings, high level of investment and chronic inflation, suggests the financing of large investments through the expansion of bank credit. But there are no organised capital markets in such economies, therefore, expansion of bank credit is the only way to finance investments and generate economic growth. Low savings in an underdeveloped country is responsible for the low rate of growth and the existence of mass unemployment and underemployment.

SELF-ASSESSMENT EXERCISE

Is the Harrod- Domar models important to the developing countries? Give reason(s)

4.0 CONCLUSION

Harrod-Domar models are models developed independently by Sir Roy Harrod and Evsey Domar. The models explain economy growth rate in terms of level of saving and productivity of capital. The Harrod -Domar growth model is based on the experiences of advanced capitalist countries and is interested in knowing the rate of income growth that would bring about smooth and sustained growth of the economy. The model has it that growth depends on the quantity of labour and capital, noting that more investment leads to capital accumulation which brings about the growth in an economy. The model's implication for the less developed country is that because labour is in excess supply and physical capital is not, the LDC's do not have sufficient average incomes to enable high rates of saving which the model believes is necessary for the accumulation of capital stock. Therefore these countries have low rate of investment caused by low savings rate. For economic growth to be achieved in these countries policies geared towards increasing investment through increased savings should be pursued and also the savings can be used by policy makers to correct inflation or deflation as the case may be.

5.0 SUMMARY

In this unit, the models as propounded by Harrod and Domar were presented. You have learnt about the assumptions of the model, their individual ideas, we also saw the criticisms of the model and its relevance to the less developed countries.

6.0 TUTOR-MARKED ASSIGNMENT

1. Using the concept of the Harrod-Domar model, explain the barriers to growth that may be faced by developing countries.
2. From your knowledge of the two models, what do you think are their similarities?

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UNIT 2 THE SOLOW MODEL

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1.0 Introduction
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    3.2 Assumptions of the Model
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    3.4 Basic Graphical Representation of the Basic Solow Growth Model
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1.0 INTRODUCTION

The Solow growth model is a neoclassical model developed by Professor Robert M. Solow. The model has three basic sources of gross domestic product (GNP) and they are Labour (L) - increase in quality and quantity of labour through population growth and education; Capital (K) - increases in capital through saving and investment and; improvements in technology (A). The model is a simple growth model which shows how saving, population growth and technical progress affect the level of a country's GNP and growth overtime. Solow in developing his model builds upon the Harrod–Domar model, but eliminated the assumption of fixed proportions in the production function and rather postulates a continuous production function linking output to the inputs of capita and labour which according to him are substitutable. Solow won a Nobel Prize in 1987 for his contribution to the growth theory and the model stands as a basic foundation which helps us to understand more complex growth models.

In this unit, we would study the Solow's model, its assumptions, basic ideas and the criticisms.

2.0 OBJECTIVES

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

- intelligently discuss the Solow model
- state the basic assumption underlying the model
- list the weaknesses of the model
- explain the implications of the model.

3.0 MAIN CONTENT

3.1 The Solow's Model

The Solow's model is a simple framework designed to analyse the proximate causes of economic growth and cross-country income differences. The Solow model expands on the work of Harrod-Domar by adding Labour and an independent variable – Technology, to the growth equation. While Harrod-Domar assumed a fixed-coefficient, constant-returns-to-scale, the Solow's neoclassical growth model exhibits diminishing returns to labour and capital separately and then constant returns to both of them put together. The Solow neoclassical growth model has technological progress as the residual factor explaining the growth in an economy in the long-run and this factor is determined exogenously, that is to say, it is determined outside the model independent of all other factors. The model assumes that economies will conditionally converge to the same level of income given that they have the same rates of savings, depreciation, labour force growth, and productivity growth.

Solow began with a production function of the Cobb-Douglas type which is a standard neoclassical function.

$Y = K^{\alpha} (A L)^{1-\alpha}$ …… (1)
where Y= Gross Domestic Product

K= Stock of Capital (which may include Human capital and Physical capital) L= Labour and

A= The productivity of labour which grows at an exogenous rate and can also be called technical progress.

α is a parameter measuring the output elasticity of capital , and it is less than 1 i.e. $0 < \alpha < 1$ or $\alpha + (1- \alpha) = 1$, indicating constant returns to scale.

The Solow Model focuses on four variables: output (*Y*), capital (*K*), labour (*L*), and (A) measures level of technology.

Diminishing returns to scale with respect to each input: $\alpha < 1$ and $1- \alpha < 1$, means that successive increase in K (or in L) leads to smaller and smaller increases in Y.

Technically, the same can be expressed by saying that the first partial derivative of Y (with respect to L or to K) is positive, while the second

is negative diminishing returns implying that at some point, the amount of new capital produced is only just enough to make up for the amount of existing capital lost due to depreciation.

Due to the assumption of constant return to scale (CRTS) of the production function Y =f (K,L), multiplying each input by some factor means output changes by a multiple of that same factor. Therefore output and inputs increase by same amount. In our equation, anything done to the left hand side of the equation should be done to the right hand side. To simplify the equation so as to enable us deal with just one argument in the production function we can decide to multiply each side (left and right) by γ which can be said to assume any positive real number.

We will now have: $\gamma Y = F(\gamma K, \gamma L)$..... (2)
To analyse the implications of the model, we can set $\gamma = 1/L$ so that we can eliminate L, this would give us: $Y/L = f(K/L,1)$ or $y = f(k)$.....(3)
And using the Cobb-Douglas production function we have the per capita form rewritten as, $y = AK^{\alpha}$ …….. (4)

Where y=Y/L which is output per worker and
k =K/L which is equal capital per worker.

This gives it a per head or per worker consideration.

From equation (4), we can see that output per worker depends on the amount of capital per worker and this is so because the more capital a worker has to work with, the more the worker is likely going to produce, ceteris paribus. According to the model, Labour force grows at a rate n per year and for capital stock K to grow, the saving rate should be greater than depreciation. But the capital per worker k grows when savings are also greater than what is needed to equip new workers with the same amount of capital as existing workers have. So growth of capital stock and capital per worker require savings but at different levels. The growth of k is known as capital deepening and it depends on savings [sf(k)] after allowing for capital required to service depreciation, δk and after capital widening (amount needed to equip net new workers with same amount of capital as existing workers i.e. nk) . So we have the equation as:

$\Delta k = sf(k) - \delta k + nk = sf(k) - (\delta + n)k$ ……..(5)

From the model, a state will be reached where the stock of capital is just sufficient enough for investment (savings) and depreciation to offset each other. This state is referred to as the steady state level of capital stock, and once this steady state is reached, the growth of per-capita income can come only from technical progress which is exogenous and un-explainable by the model. So holding technical progress (A) constant in our model, the steady state is said to be reached when output per worker (y) and capital per worker (k) are no longer changing.

To find the steady state, we assume $\Delta k = 0$.
Then, $sf(k^*) = (\delta + n) k^*$ …….(6)

Where k* represents the level of capital per worker in steady state which is called the stable equilibrium. k* therefore represents the steady state as can be seen in figure 4.1 Note that ones the economy reaches the stable equilibrium state k* and for any reason it is made to move away from this state, it returns back to this state. For example, if k is lower than k* as can be seen in the figure 4.1, where $k < k^*$ and the $(\delta + n) k$ curve is below the sf (k) curve. When presented with such a case, from our equation (5), we can see this as $(\delta + n) k < sf(k)$ and as such $\Delta k \neq 0$ but $\Delta k > 0$.There is growth in k and from the figure, we can see that the k will tend till it gets to k*. The same reasoning goes for a situation of k being > than k*.

FIGURE 4.1 EQUILIBRIUM IN THE SOLOW GROWTH MODEL

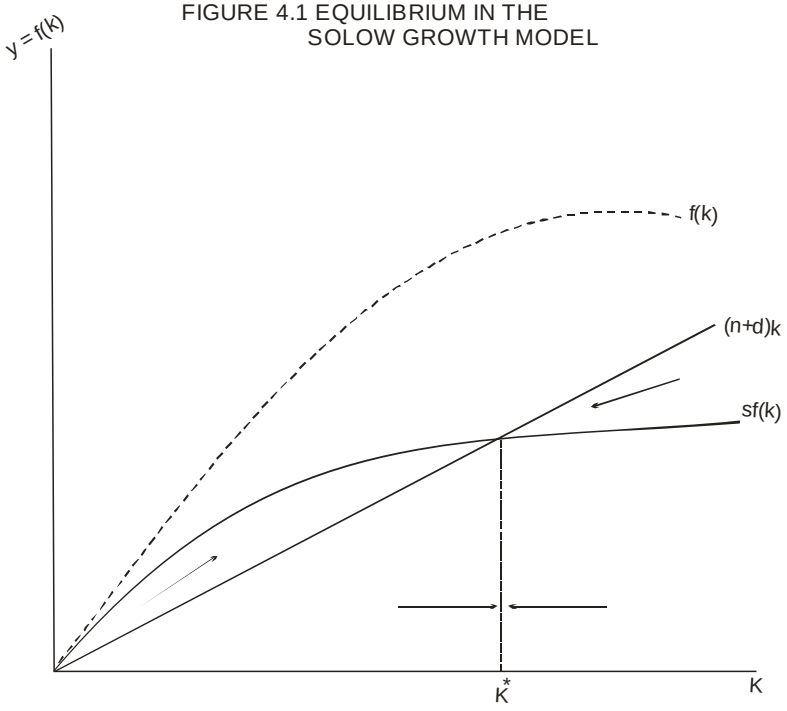

Fig. 4.1: **Equilibrium in the Solow Growth Model**

You should note that, in the above figure, the production curve f(k) assumes diminishing returns to capital in the model, and it is denoted by the slope .

When there is an increase in savings rate what happens? When there is an increase in k as a result of increase in the savings rate (s), the rate of output will increase temporarily. The economy will still later return to the steady state growth rate, but it does so at a higher level of output per worker (y) in each later year. The implication of this is that an increase in (s) will not increase growth in the long-run, it will only increase the equilibrium k* i.e. capital-output ratio increases and output-labour ratio (y) also does but the rate of growth does not. Meaning that the increase in 's' raises equilibrium output per person but not the equilibrium rate of growth.

SELF-ASSESSMENT EXERCISE

Graphically explain what happens when stable equilibrium capital per worker k* is (1) less and (2) greater than the capital per worker k.

3.2 Assumptions of the Model

The following are some of the underlying assumptions of the model:

1. Single good produced with a constant technology with no government's presence
2. All factors of production are fully employed and the model assumes constant return to scale with respect to labour and capital
3. Technical progress is an exogenous factor
4. Labour growth depends on population growth
5. Investment or growth in capital stock is financed out of national income
6. Labour growth and technical progress are what determine economic growth
7. Once the steady state is reached, the growth of per-capita income can come only from technical progress which is exogenous and un-explainable by the model. That is in the long run its only technical progress that determines growth.
8. Saving rate has no effect on the long run growth rate per capita but it affects the level of per capita income in steady state.

SELF-ASSESSMENT EXERCISE

List seven assumptions of the Solow's model.

3.3 Criticisms of the Model

The Solow model is a simple growth model which is seen as a building block for most of the new growth model as it helps in giving an insight into what causes growth in an economy. However, the model has been criticised by various scholars over time and some of the criticisms are as follows:

1) The model fails to take account of entrepreneurship which may be the catalyst an economy needs to grow.
2) The model does not explain the why and how of Technological progress. It assumes it to be exogenously determined and as such is not explained in the model. However, according to the model, growth in the long-run is determined by technical progress, so it means that the model does not explain the mechanisms that bring about Long-run growth.
3) Also, because capital exhibits diminishing marginal returns in the production process, this prevents the model from providing an explanation for the wide and persistent variations across countries in growth rates. The new growth literature which you would be taught in the next chapter, addresses these limitations of the neoclassical model by proposing a variety of channels through which steady-state growth arises endogenously.

SELF-ASSESSMENT EXERCISE

What are the downsides of the Solow's model?

3.4 Implications of the Model

One of the most important predictions of the neoclassical growth model is the Convergence hypothesis. The Solow growth model predicts that economies with similar rates of saving, population growth, and technological progress will converge over time.

The model implies that countries with similar production technologies as well as comparable saving and population growth rates should converge to similar steady –state levels of per capita income. This convergence property has it that poor countries starting with a relatively low standard of living and a lower capital/labor ratio will grow faster during the transition as they catch up with the rich countries, but ultimately both groups will arrive at the same level of per capita income. The convergence hypothesis can help to explain why countries with similar population growth rates can converge to the same growth rates. Then, for the long run implication of the Solow model, changes in total output are dependent upon changes in population and technology

growth. Changes in output per person are solely dependent upon changes in technology, implying that technological progress is the only variable that improves standard of living in the long run and that countries with lower population growth rates experience higher income per person. The steady state condition informs an economy as to its correct level of saving/investment.

However, a model that places its long-run growth on exogenous factors, has few policy implications because according to Romer (an endogenous theorist), "In models with exogenous technical change and exogenous population growth, it never really mattered what the government did."

SELF-ASSESSMENT EXERCISE

What do you think is the implication of Solow's model for a country like Nigeria?

4.0 CONCLUSION

In this unit, you were taught the Solow's model of economic growth and you were equally taught that the model is a well known simple neoclassical growth model that tries to explain what causes economic growth in the long-run. The model for which Solow won a Nobel Prize for in 1987 is a model that serves as a foundation for understanding other more complex growth models. It is an extension of the Harrord-Domar model which is characterised by a stable equilibrium. The model has some key assumptions, one of which is that Technical progress is an exogenous factor explained outside the model. The model was criticised for not being able to explain how and why this technological progress happens and as such, it failed to explain the long term economic growth of an economy. The model shows that economic growth can be sustained only if technological progress continues to offset diminishing returns to investment. Without technological change, growth stops. It concludes that there are fundamental differences between economic growth generated by factor accumulation and growth generated by technological change, with only the latter capable of sustaining growth indefinitely.

5.0 SUMMARY

In this unit, the Solow's growth model was discussed extensively and a graphical representation was presented. The various assumptions were given, and we looked at the criticisms of the model. Also, the models implication was explained to you and finally we concluded by saying that technological progress is the key factor necessary for a long run economic growth.

6.0 TUTOR-MARKED ASSIGNMENT

1. What are the basic features of the Solo's model?
2. How does the Solow model differ from the Harrod-Domar model?

7.0 REFERENCES/FURTHER READING

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UNIT 3 THE NEW ENDOGENOUS GROWTH THEORY

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1.0 INTRODUCTION

In the previous unit, we learnt about the Solow's model which is an exogenous growth model. From what we learnt in that unit, the main variable which gives rise to the long run growth in the economy is technological progress and it is exogenously determined i.e. determined outside the model. This model was criticised for not being able to explain the long run growth in an economy and as a result, new growth theories which came up in the mid-1980 were designed to endogenise the variables causing long-run growth in the economy. The new growth theorists built on the ideas of the neoclassical theorists by introducing endogenous technical progress in the model, and endogenising technical progress, opens the possibility for continuous capital accumulation and unlimited growth in per-capita income.

In studying the endogenous growth theory, we would be studying the AK model, Paul M. Romer Model and Robert E. Lucas Jr model, with an aim of exposing learners to the various slightly different arguments they represent.

2.0 OBJECTIVES

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

- explain the endogenous growth theory
- state the assumptions of the model
- list and explain the criticisms of the theory

- analyse the implications of the theory for developing countries like Nigeria.

3.0 MAIN CONTENT

3.1 The Endogenous Growth Theory ("Endogenising" the growth rate)

In the endogenous growth theory also known as the new growth theories, two broad approaches were used to relax the assumption of diminishing returns to capital imposed by the neoclassical growth model and the approaches are:

a) Viewing all productive inputs as some form of reproducible capital (human capital is also considered) and
b) Introducing spillover effects or externalities in the growth process.
c) Productive inputs as reproducible capital: A simple growth model along this line is the AK(Still remains the simplest form of the endogenous growth theory) model which results from setting α as 1 in the cobb-Douglas production function thereby doing away with the diminishing marginal returns assumption of the Solow model studied in the previous unit. We then have: Y=AK…….. (1)

The key property of AK endogenous-growth model is the absence of diminishing returns to capital. The model uses a linear model where output is a linear function of capital.

The capital stock (K) in this model represents a broad measure of capital comprising physical and human capital stock. In this model, the steady-state growth rate depends positively on the savings rate and negatively on the depreciation rate, neither of which has any effect on long-run growth in the Solow's model. In addition—and again in contrast with the neoclassical growth model, which predicts that poor countries would grow faster than rich countries—the AK model implies that poor nations whose production process is characterised by the same degree of technological sophistication as other nations, always grow at the same rate as rich countries, regardless of the initial level of income.

The AK model thus does not predict convergence even if countries share the same technology and are characterised by the same pattern of saving, a result that seems to accord well with empirical evidence.

The model in essence proves that endogenous steady state is achieved if a core or capital good is produced according to constant-returns-to-scale technology and without the use of no reproducible factors.

b) The second approach is the introduction of externalities which relaxes the assumption of diminishing returns to capital. The idea is that when a firm increases its investment in capital, this not only increases its own production, but also the production of neighboring firms. In most models, externalities take the form of technological advancement that is available to all firms for improved production process but it can also take the form of public learning (human capital formation) or public spending.

The presences of externalities can be viewed as meaning the same as increasing return to scale in the production function but they are not the exactly the same because sustained growth does not result in externalities but rather from the assumption of constant return to scale. An example of model developed along this reasoning is the Romer model.

SELF-ASSESSMENT EXERCISE

How is the assumption of diminishing returns to capital imposed by the neoclassical growth model relaxed in the endogenous growth theory?

3.2 Assumptions of the Model

The following are some of the assumptions of the theory:

- Technological advance comes from things people do i.e. from creation of new ideas
- The following are some of the underlying assumptions of the endogenous theory:
- There are many firms in the market
- Knowledge or technological advancement is a non-rival good
- Many individuals and firm have market power and earn profits from their discoveries. This arises from increasing returns to scale in production that leads to imperfect competition.
- These assumptions are required for a model to be called an endogenous growth model.

3.3 The Lucas Model: A Human Capital Approach

Human capital accumulation as a source of externalities has been really explored in recent times. Lucas provides one of the best known attempts to incorporate spillover effects of human capital accumulation in a

model. The model builds upon the idea that individual workers are more productive, regardless of their skill level, if other workers have more human capital. One assumption of the model is that human capital is accumulated through explicit production- a part of the individuals' working time is devoted to accumulation of skills and accumulation raises the productivity of both labour and physical capital.

Lucas used a growth model developed by Uzawa and the model is based on investment in human capital. Lucas posited that investment on education leads to the production of human capital which is the key determinant in the growth process. He identified two types of human capital effects and they are the external effects and the internal effects.

According to him, the internal effects has to do with a situation where the individual worker undergoing the training becomes more productive and the external effects which is the spillover effect which increases the productivity of capital of other workers in the economy. Lucas reasoned that the spillover effects of investment in human capital rather than physical capital is what is responsible for increase in the level of technology.

The representation of the model in equation form is:

$Y_i = A\ (K_i)\ (H_i).\ H^e$
Where
A = technical coefficient
Ki = inputs of physical capital
Hi = inputs of human capital
Yi = goods produced
H = economy's average level of human capital
e = the strength of the external effects from human capital to each firms productivity.

In this model, each firm faces constant returns to scale while the economy has increasing returns to scale. The important implication of the external effect captured in the model presented by Lucas is that under a purely competitive equilibrium its presence leads to an underinvestment in human capital because private agents do not take into account the external benefits of human capital accumulation.

SELF-ASSESSMENT EXERCISE

Explain the Lucas model and give its representation in equation form model.

3.4 Romer Model of Growth: The Production of Knowledge

The Romer model is based on the belief that a research sector which is specialised in production of ideas is the key to economic growth. Romer argued that ideas and not natural resources are the major engine of growth; he buttressed his point by using Japan.

as an example saying that Japan's economic growth was brought about not by natural resources (of which they have little of) but by openness to western ideas and technology.

According to the model, the research sector involves human capital along with the existing stock of knowledge and this new knowledge can enter into the production process in three ways which are:

1) A new design is used in the intermediate goods sector for the production of a new intermediate input
2) A new design is used in the final sector as labour, capital and available producer durables produce the final product and finally,
3) A new design increases the total stock of knowledge which increases the productivity of human capital use in the research sector.

The Romer model is based on certain assumptions and they are listed below:

a) Economic growth comes from technological change.
b) Technological change is endogenous.
c) Market incentives play important roles in making technological changes available to the economy.
d) Invention of a new design requires a specified amount of human capital.
e) The aggregate supply of human capital is fixed.
f) Knowledge or new design is assumed to be partially excludable and retainable by the firm which invented it. This assumption means that the developer of an idea has monopoly rights to the use of the idea implying that the developer can charge a price above marginal cost for the use of his or her idea. The resulting profits provide the incentive for research and development.
g) Technology is non-rival input- Is used by one firm does not prevent another from using it.
h) The new design can be used by firms and in different periods without additional costs and without reducing the value of the input.

i) When firms make investments on research and development and invent a new design, there are externalities that are internalised by private agreements.
j) It is also assumed that the low cost of using an existing design reduces the cost of creating new designs.

The model can be explained with the following technological production function:

$\Delta A = F(K_A, H_A, A)$
Where ΔA = increasing technology
K_A = amount of capital invested
H_A = amount of human capital (labour) employed in research and development of new design
A = existing technology
F = production function for technology.

From the model, we can see that the production function shows that technology is endogenous.

Technology increases (ΔA), when more human capital is employed for research and development of new designs; If more capital is invested in research laboratories and equipment to invest new design and also, when existing technology A leads to the production of new technology i.e. $A\Delta$.

Since technology is assumed to be non-rival input and partially excludable, there are positive spillover effects of technology which can be used by other firms. Romer was able to show that economic growth is no longer captive to the saving ratio or to exogenous technology but can indeed be directly influenced by a conscious policy of investment in new designs and, more generally, in knowledge-generating activities. In summary, the Romer model shows that ideas can be increased through the use physical and human capital and existing technology.

SELF-ASSESSMENT EXERCISE

List at least seven assumptions of the Romer model.

3.5 Criticisms of the New Enogenous Growth Theory

The new growth theory was developed to address the major shortcoming of the neoclassical growth theory which is, explaining the cause of growth in the model. However, the model still has its downsides. A few of the criticisms raised by some renowned economists are given below.

1) The different versions of the new growth theory did not make clear whether it is the physical or human capital that is the major driving force in the models.
2) Mankiw, Romer and Weil countered the assumption of physical and human capital accumulation leading to perpetual growth when they carried out their research using secondary school enrollment as proxy for human capital in their analysis.

SELF-ASSESSMENT EXERCISE

What are the shortfalls of the endogenous theory?

3.6 Implications of the Theory for Developing Countries

The new growth theory has the following policy implications for LDCs:

1) The theory suggests openness where new knowledge, technology, research and development, from development countries can be gained by developing countries.
2) It also shows that the private firms have huge roles to play in investing in technology/ research and development, but because the private firms cannot effectively incorporate externalities in their accounts, Lucas in his analysis suggests that the way out is for government to provide subsidies (for example in education) in developing countries and also provide incentives to firms that invest in research and development of new technologies.

SELF-ASSESSMENT EXERCISE

What are the implications of the New Growth theory for a country like Nigeria?

4.0 CONCLUSION

The Traditional neoclassical approaches, which attribute growth to exogenous technological progress, are incapable of explaining the wide disparities in the pace of economic growth across countries, as the key factor that they attributed to the growth process of a country is not determined in the model. This major shortfall of the neoclassical exogenous model brought about the birth of the "New Endogenous growth" approaches which explain the mechanisms that foster economic growth endogenously, i.e. in the model. While various versions of the Endogenous model have their slightly different endogenously determined causes of growth, they all boil down to the fact that the assumption of diminishing marginal returns to capital does not hold. Reason for this is: (a) assumption that all productive inputs are some

form of reproducible capital (including human capital) and (b) the introduction of spillover effects or externalities in the growth process. Despite the theory's endogensing growth process, it was still criticised by some scholars and one of the criticisms raised is that it failed to differentiate properly what capital actually brings about the long run growth-whether it is physical or human capital. The theory's implication for developing country is that these countries should promote research and development to obtain new ideas and also private sector should be given incentives to encourage them to embrace research and development.

5.0 SUMMARY

In this unit, you learnt the Endogenous growth theory. You were taught that this theory is different from the neoclassical growth theory you learnt in the previous unit because the factors that bring about the long-run growth process is explained in the model and as such it addresses the major shortcoming of the neoclassical theory. From this unit, you got to know the underlying assumptions of the endogenous growth theory, and some few models that endogenised the growth process were explained to you. The criticisms of the theory were listed and the model's implication for a developing country like Nigeria was made known to you.

6.0 TUTOR-MARKED ASSIGNMENT

1. What is the key difference between the endogenous and the exogenous models?
2. How can new knowledge enter the production process in Romer's Model?

7.0 REFERENCES/FURTHER READING

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