NATIONAL OPEN UNIVERSITY OF NIGERIA

SCHOOL OF MANAGEMENT SCIENCES

COURSE CODE:-AEM 724

COURSE TITLE:-
MACRO ECONOMICS

COURSE GUIDE

AEM 724
MACRO-ECONOMICS

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What You Will Learn in this Course

This course guide tells you briefly what to expect from reading this material. As a branch of economic analysis, macroeconomics is of much theoretical and practical importance. The study of macroeconomic variables is indispensable for understanding the working of the economy as a whole. For instance, one may not agree on the best method of measuring different prices, but the general price level is helpful in understanding the nature of the economy. Macroeconomics has special significance in studying the causes, effects and remedies of general unemployment since the general level of employment in an economy depends upon effective demand which in turn depends on aggregate demand and aggregate supply functions. Unemployment is caused by deficiency of effective demand and to eliminate it, effective demand should be raised by increasing total investment, total output, total income and total consumption.

The study of macroeconomics is very important for evaluating the overall performance of the economy in terms of national income. National income is the total money value of all goods and services produced by a country during the year. National income data help in forecasting the level of economic activity and to understand the distributions of income among different groups of people in the economy.

The economics of growth is also a study in macroeconomics. It is on the basis of macroeconomics that the resources and capabilities of an economy are evaluated. Plans for the overall increase in national income, output, and employment are framed and implemented so as to raise the level of economic development of the economy as a whole.

It is in terms of macroeconomics that monetary problems can be analyzed and understood properly. Frequent changes in the value of money (inflation or deflation) affect the economy adversely. They can be counteracted by adopting monetary, fiscal and direct control measures for the economy as a whole. Thus the importance of macroeconomics lies in analyzing the causes of economic fluctuations and in providing remedies.

Course Aims

The aim of this course is very simple. Macroeconomics aims to enrich the student's knowledge of the functioning of an economy by studying the behaviour of national income, output, investment, saving, and consumption. Moreover, it throws much light in solving the problems of unemployment, inflation, economic instability and economic growth.

Course Objectives

In addition to the aims above, this course set to achieve some objectives. After going through this course, students should be able to:

(i) understand the working and performance of the economy through simple macroeconomic models;
(ii) understand the concept of national income and how to measure the total; volume of output produced and income earned in the whole economy;
(iii) know the relationship between consumption and income; and
(iv) define capital and investment, and know the relationship between them.

Textbooks and References

Ragnar Frisch (1933). Propagation Problems and Impulse Problems *in Dynamic Economics. In Economic Essays in Honour of* Gustav Cassel. London: Allen and Unwin.

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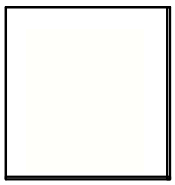

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MODULE 1

UNIT 1 INTRODUCTION TO MACROECONOMICS

CONTENTS

1.0 INTRODUCTION

Economics can be divided into two major fields. The first, price theory or microeconomics, explains how the interplay of supply and demand in competitive markets creates a multitude of individual prices, wage rates, profit margins, and rental changes. Microeconomics assumes that people behave rationally. Consumers try to spend their income in ways that give them as much pleasure as possible. As economists say, they maximize utility. For their part, entrepreneurs seek as much profit as they can extract from their operations.

The second field, macroeconomics, which is the focus in this course, deals with explanations of national income and employment. Macroeconomics dates from the book entitled Theory of Employment, *Interest and Money (1935), by the British Economist, John Maynard* Keynes. His explanation of prosperity and depression centres on the total or aggregate demand for goods and services by consumers, business investors and government. According to Keynes, this is due to the fact that inadequate aggregate demand increases unemployment and

this can be solved by more investment or more spending, which will result in larger budget deficits by government.

Macroeconomics is composed of different areas, based on different schools of thought. These schools of thoughts are the Classical Economics, Neoclassical Economics, Keynesian Economics and Neo Keynesian Economics. Until the 1930s, most economic analysis did not separate out individual economics behaviour from aggregate behavior. The dichotomy macro-economy/micro-economy was first coined by the Norwegian Economist, Ragnar Frisch in 1933 (Frisch 1933). With the Great Depression of the 1930s and the development of the concept of national income and product statistics, the field of macroeconomics began to expand. Particularly influential were the ideas of John Maynard Keynes, who formulated theories to try to explain the Great Depression.

The Classical Model (1776-1935)

- The Classical Model largely follows the conclusions reached in Microeconomics. The fundamental equilibrium is in the supply and demand for labor. The Demand for Labor and Labor Supply, Income Taxes, and Transfer Payments are the major microeconomic references in the Classic Economic Models.

Keynesian Models (1936-1969)

- The Simple Keynesian Model is a vastly oversimplified view of the economy. It constructs an equilibrium without referring to the labor market. The point here is that the economy can be in an equilibrium that is far from full employment.

- The Keynesian IS/LM Model shifts from the Classical Model's focus on the wage rate to a focus on long-term and short-term interest rates. These interest rates are taken to be equal. Income and the interest rate are the variables that adjust to achieve equilibrium. The model is presented in two versions, one with fixed prices and one where the Aggregate Supply/Aggregate Demand extension adds adjustments in the nominal price level to the mix.

- The Mundell-Fleming Model adds the Balance of Payments (BP) curve to the IS/LM Model. Equilibrium is reached by adjustments in the exchange rate, the interest rate, and income.

The New Classical Model (1970)

• Real Business Cycles shifts attention from nominal interest rates back to the real factors of production that dominated the original Classical Model. By considering a "Robinson Crusoe" economy with only one representative agent, the model is able to explain business cycles without introducing even a nominal wage rate.

New Keynesian Economics (1982)

The recession of 1982 reopened the debate about the real effects of nominal monetary policy, and the decade of the 1980's reopened the debate about the stimulative effects of government budget deficits. The Classic Economic Models collection includes a recent reworking of the Keynesian Model:

• The IS/MP Model addresses a perceived shortcoming of the IS/LM Model by replacing the price level with the inflation rate and by replacing the nominal interest rate with the real interest rate.

2.0 OBJECTIVES

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

• define economics
• define macroeconomics
• differentiate between macroeconomics and microeconomics.

3.0 MAIN CONTENT

3.1 Definition of Economics

Economics is a social science concerned with the production, distribution, exchange, and consumption of goods and services. Economics is concerned with the proper use and allocation of resources for the achievement and maintenance of growth with stability. Economists focus on the way in which individuals, groups, business enterprises, and governments seek to achieve efficiently any economic objective they select. The economic problem has been identified as that of how to get more and how to make the best use of what is available. Because they fall short of wants, resources are said to be scarce. Resources have alternative uses, i.e. they can be put into many uses, some of which are more urgent than others, hence resources must be allocated among competing ends or purposes as efficiently as possible. Because they fall short of wants, resources are said to be scarce. Broadly defined, economics concerns:

1. the allocation of a society's resources among alternative uses and the distribution of the society's output among individuals and groups;
2. the ways in which production and distribution change overtime; and
3. the efficiencies and inefficiencies of economic systems.

There are two basic approaches to economic study and analysis: Microeconomics and Macroeconomics. Microeconomics has been described as a microscopic study of the economy in which the economic actions of individual and small groups of individuals are studied. It also involves the study of particular firms, particular households, individual prices, wages, incomes etc. The basic economic units are the consumer or household, the firm, individual prices and wages, individual industries and particular commodities.

3.2 Definition of Macroeconomics

Macroeconomics is the study of aggregates or averages covering the entire economy such as total employment, national income, national output, total investment, total consumption, total savings, aggregate supply, aggregate demand, and general price level, wage level and cost structure. As a field of study, it explains the aggregate economic behaviours. It analyses the principal determinants of employment, growth of income and mounting international trade and payment problems.

Macroeconomics is otherwise referred to as the theory of income and employment and has the objectives of analyzing the causes of unemployment, the causes of inflation and the causes of sluggish growth of income and employment. Macroeconomics also attempts to find remedies to solve these problems. It also goes beyond a closed economy to open economy. It is an approach of economic study and analysis which affects the life and interest of people everywhere. It is useful in understanding the working of an economy and in formulating economic principles that guide the economy along certain desired lines and minimize economic fluctuations.

3.3 Relationship between Macroeconomics and Microeconomics

Macroeconomics and microeconomics are the two vantage points from which the economy is observed. Macroeconomics looks at the total output of a nation and the way the nation allocates its limited resources of land, labour, and capital in an attempt to maximize production levels and promote trade and growth for future generations. After observing

the society as a whole, Adam Smith noted that there was an "invisible hand" turning the wheels of the economy, a market force that keeps the economy functioning.

Microeconomics looks into similar issues but on the level of the individual people and firms within the economy. It tends to be more scientific in its approach, and studies the parts that make up the whole economy. Analyzing certain aspects of human behaviour, microeconomics shows us how individuals and firms respond to changes in price and why they demand what they do at particular price levels.

Macroeconomics is concerned with the aggregate, or overall, economy. Macroeconomics deals with economic factors such as total national output and income, unemployment, balance of payments, and the rate of inflation. It is distinct from microeconomics, which is the study of the composition of output such as the supply and demand for individual goods and services, the way they are traded in markets, and the pattern of their relative prices.

At the basis of macroeconomics is an understanding of what constitutes national output, or national income, and the related concept of gross national product (GNP). The GNP is the total value of goods and services produced in an economy during a given period of time, usually a year. The measure of what a country's economic activity produces in the end is called final demand. The main determinants of final demand are consumption (personal expenditure on items such as food, clothing, appliances, and cars), investment (spending by businesses on items such as new facilities and equipment), government spending, and net exports (exports minus imports).

SELF ASSESSMENT EXERCISE

Discuss the meaning of Macroeconomics

4.0 CONCLUSION

Macroeconomic theory is largely concerned with what determines the size of GNP, its stability, and its relationship to variables such as unemployment and inflation. The size of a country's potential GNP at any moment in time depends on its factors of production—labor and capital—and its technology. Over time the country's labor force, capital stock, and technology will change, and the determination of long-run changes in a country's productive potential is the subject matter of one branch of macroeconomic theory known as growth theory.

5.0 SUMMARY

In this unit, attempts have been made to define and explain the meaning of macroeconomics and the differences between macro and micro economics.

6.0 TUTOR -MARKED ASSIGNMENT

Distinguish clearly the difference between Macro economics and Micro economics.

7.0 REFERENCES/FURTHER READINGS

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UNIT 2 MONEY AND ITS FUNCTIONS

CONTENTS

1.0 INTRODUCTION

The demand for money consists of all the goods offered for sale. Every seller of goods is a seeker of money, and the goods he brings with him constitute his demand. As the whole of the goods in the market compose the demand for money, so the whole of the money constitutes the demand for goods. The money and the goods are seeking each other for the purpose of being exchanged. They are reciprocally supply and demand to one another. It is indifferent whether in characterizing the phenomena, we speak of the demand and supply of goods, or the supply and the demand for money. They are equivalent expressions.

2.0 OBJECTIVES

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

- define money;
- explain the functions of money
- explain inventory theoretic model graphically and mathematically.

3.0 MAIN CONTENT

3.1 Functions of Money

In any economy, money plays several functions:

- It acts as a medium of exchange to facilitate the payment of income and purchase of goods and services.
- It acts as a unit of account--a measure by which all prices are established, and

- It acts as a store of value -- that is to alter the timing of spending decisions relative to earning income.
- It acts as a means of deferred payment.

Because of the dual role of money as a medium of exchange and store of value; there are several economic variables that affect the desire to hold this type of financial asset.

Money can be narrowly defined as anything that may be used for purchasing goods and services or more broadly to include anything of value that may be used for trade. Two common definitions as established by monetary authorities are M1 and M2:

- M1 = Currency + Demand Deposits (cheque accounts or current *accounts)*
- M2 = M1 + Time Deposits (simple interest-bearing savings *accounts)*

The first measure (M1) is known as the narrow definition of money which represents components that are readily accepted as payments for goods or to satisfy debts. The second measure (M2) is known as a broader definition which includes savings accounts that can easily be converted into currency or demand deposits.

Theories regarding the money supply are central to macroeconomics. They are also the subject of debate between Keynesians and monetarists (economists who believe that growth in the money supply is the most important factor that determines economic growth). The classical or pre-Keynes view was that the interest rate led to a balance between savings and investment, which in turn would cause equilibrium in the goods market. Keynes disagreed and believed that the interest rate was largely a monetary phenomenon; its chief function was to balance the unpredictable supply and demand for money, not savings and investment. This view explained why the amount of savings was not always correlated with the amount of investment or the interest rate.

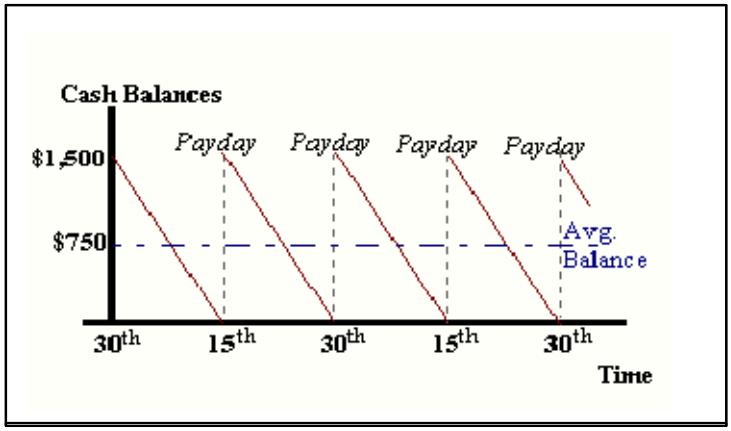
Keynesians and monetarists also disagree about how changes in the money supply affect employment and output. Some economists argue that an increase in the supply of money will tend to reduce interest rates, which in turn will stimulate investment and total demand. Therefore, an alternative way of reducing unemployment would be to expand the money supply. Keynesians and monetarists disagree on how successful this method of raising output would be. Keynesians believe that under conditions of underemployment, the increased spending will lead to greater output and employment. Monetarists, however, generally believe that an increase in the money supply will lead to inflation in the long run.

Cash Holding

Individuals typically hold cash balances (money) to allow for making transactions (that is buying goods and services and the paying of bills and other obligations). The volume of these transactions tends to be proportional to that individual's level of income. Thus the demand for these cash balances to support transactions needs will also be proportional to income 'Y'.

Md = k(Y)

This is best understood by looking at the cash balances held by an individual over time. Assume that a person is paid a monthly salary of ₦5,000 and paid twice a month. On the 1st and 15th of each month, this person is paid ₦2,500 which is held as cash or as a deposit in a current account. Over the days that follow these cash balances are run-down as this person buys goods and services or pays his monthly bills such that towards the end of a pay period, his cash balances are close to N0. However, at the beginning of the next pay period ₦ 2,500 is received and his cash balances are restored. Thus at the beginning of a pay period this person is holding (demanding) ₦ 2500 and towards the end of the pay period he is holding some amount close to N0. On average this person has cash balances of about ₦1,250 = [(2500-0)/2].



N1,250
N2,500

This represents part of his individual demand for cash balances or money. By aggregating over all individuals and institutions in the economy we can derive the aggregate demand for money as the sum of individual demands. With an increase in income (either for an individual or in the aggregate) we would expect that more is held such that the average amount held over time increases.

N5,000

N2,50000

MdT = f[+](Y)

Note: 'Y' = Nominal GDP in the aggregate

Where MdT is the aggregate demand for money

One might question the notion that at the end of a pay period, cash balances are equal to N0. Cash balances not used for transactions represent a source for savings (a surplus of funds). The individual might choose to keep these "savings" in the form of currency on deposit in a current account. But by making this choice, the individual is giving up the opportunity to earn some form of return (or yield) on these funds in the form of interest, profits, or rents. As yields rise, the opportunity cost of holding cash balances also increases inducing the individual to minimize his cash holdings. The individual can do this by buying an alternative financial asset in the form of a time deposit (or certificate of deposit), share of stock, or a bond. When one of these assets is purchased (or demand deposit balances are converted to time deposit balances) the individual's cash balances are reduced. We can amend our expression for money demand as follows:

Md = f (Y[+], i[-])

Where Y is income and i the interest rate (or yield).

We can therefore state that money demand is directly proportional to Nominal GDP, and inversely related to market interest rates and yields on different financial assets. Thus economic performance in the real sector (changes in income) or activity in financial markets (buying and selling of stocks, bonds, and related financial instruments) can affect the demand for money/cash balances.

SELF ASSESSMENT EXERCISE

State the different functions of money.

4.0 CONCLUSION

Money demand is directly proportional to Nominal GDP, and inversely related to market interest rates and yields on different financial assets. Thus economic performance in the real sector (changes in income) or activity in financial markets (buying and selling of stocks, bonds, and related financial instruments) can affect the demand for money/cash balances.

5.0 SUMMARY

In this unit, attempts have been made to define money and discuss the role of money. Attempt has also been made to discuss inventory theoretic model.

6.0 TUTOR-MARKED ASSIGNMENT

List and discuss the functions of money.

7.0 REFERENCES/FURTHER READINGS

Baumol, William J. and Alan, S. Blinder (2006). 10th ed. *Macroeconomics: Principles and Policy Thomson South-*Western. ISBN 0-324-22114-2.

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UNIT 3 MONETARY AND FISCAL POLICY

CONTENTS

1.0 INTRODUCTION

Policy is course of action or. a program of actions to be adopted by a person, group, or government, or the set of principles on which they are based. Monetary policy pertains to the regulation, availability, and cost of credit, while fiscal policy deals with government expenditures, taxes, and debt. Through management of these areas, the Ministry of Finance regulated the allocation of resources in the economy, affected the distribution of income and wealth among the citizenry, stabilized the level of economic activities, and promoted economic growth and welfare.

2.0 OBJECTIVES

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

• define fiscal policy and monetary policy
• differentiate between fiscal policy and monetary policy.

3.0 MAIN CONTENT

3.1 Monetary and Fiscal Policy

3.2 Definition of Monetary Policy

Monetary policy in an underdeveloped country plays an important role in increasing the growth rate of the economy by influencing the cost and availability of credit, by controlling inflation and maintaining

equilibrium in the balance of payments. So the principal objectives of monetary policy in such a country are to control credit for controlling inflation and to stabilize the price level, to stabilize the exchange rate, to achieve equilibrium in the balance of payments and to promote economic development.

An expansionary monetary policy is used to overcome a recession or depression or a deflationary gap. When there is a fall in consumer demand for goods and services, and in business demand for investment goods, a deflationary gap emerges. The central bank starts an expansionary monetary policy that eases the credit market conditions and leads to an upward shift in aggregate demand. For this purpose, the Central Bank purchases government securities in the open market, lowers the reserve requirements of member banks, lowers the discount rate and encourages consumer and business credit through selective credit measures. By such measures, it decreases the cost and availability of credit in the money market, and improves the economy.

A monetary policy designed to curtail aggregate demand is called restrictive monetary policy. It is used to overcome an inflationary gap. The economy experiences inflationary pressures due to rising consumers' demand for goods and services and there is also boom in business investment. The central bank starts a restrictive monetary policy in order to lower aggregate consumption and investment by increasing the cost and availability of bank credit. It might do so by selling government securities in the open market, by raising reserve requirements of member banks, by raising the discount rate, and controlling consumer and business credit through selective measures. By such measures, the Central Bank increases the cost and availability of credit in the money market and thereby controls inflationary pressures.

3.3 Definition of Fiscal Policy

Fiscal policy is a powerful instrument of stabilization. "By fiscal policy we refer to government actions affecting its receipts and expenditures which are ordinarily taken as measured by the government's net receipts, its surplus or deficit." The government may offset undesirable variations in private consumption and investment by anti-cyclical variations of public expenditures and taxes. Fiscal policy as can be seen as a policy under which the government uses its expenditure and revenue programmes to produce desirable effects and avoid undesirable effects on national income, production and employment. Though the ultimate aim of fiscal policy is the long-rum stabilization of the economy, yet it can only be achieved by moderating short-run economic fluctuations. In this context fiscal policy can be described as changes in

taxes and expenditures which aim at short-run goals of full employment and price-level stability.

In a developing country, where monetary policy alone is ineffective, due to the existence of undeveloped money and capital markets, fiscal policy can be used as an important adjunct to monetary policy in accelerating the rate of capital formation.

3.3 The Fiscal Deficit

The conventional measure of the fiscal deficit as the difference between total government expenditure and current government revenue is considered both as an accounting concept, and as an economic entity. Tanzi (1993) for, example, mentions the following three difficulties:

(v) the conventional measure of the deficit fails to recognize that different tax and expenditure categories and this have different types of effects on aggregate demand. For example, an excess of expenditure on the infrastructure creates productive capacity and will have a different impact than an excess of expenditure due to consumption subsidies.

(vi) A second problem arises because tax revenues are not exogenous of expenditures. The level of public expenditures determines national income, which then determines tax revenue, at least in part.

(vii) Finally there is the problem of sources of financing the deficit. In developing countries several sources of financing have been used e.g., central bank financing, commercial bank financing, domestic sale of government bonds to cover the deficit and foreign financing. Each of these has different macroeconomic consequences. Central bank financing raises the monetary base and the money supply, thereby blurring the distinction between monetary and fiscal policies. Foreign financing will raise the cost of servicing external debt whereas domestic bond issues will raise interest rates.

An additional difficulty is that some sources of finance are available only under certain circumstances. For example, a country with a thin bond market (which is the case in almost all of sub Saharan Africa except South Africa) can hardly afford to issue bonds to cover the fiscal deficit and may have to rely on central bank financing or some such measure.

A country with large external debt would, in all probability, be able to finance its deficit externally only by borrowing short term at high rates

of interest. This would make it difficult to finance the external debt and may put pressure on the currency.

Particularly in those developing countries where public investment has played a significant role in the economy, a distinction is made between revenue or current deficit and capital deficit. The former is the deficit on expenses of a recurrent nature after netting out investment expenditure. Surely, if a country is running a large and growing deficit on such current transactions it is a reason for worry. However, it should be pointed out that the distinction between capital and current expenditures is often an artificial one (for example, in aid dependent economies, large amounts of aid-financed current expenditure connected with aid financed projects are placed in the capital expenditure category. It would be meaningful only if it was clear that all capital expenditures were productive in nature.

There are some other problems associated with the measurement of deficits that are worth mentioning.

(a) First, is the problem of arrears. This becomes particularly relevant in the case of repayment of foreign debt. If, for example, the interest payment on the foreign debt is rescheduled—which is the case in many Heavily Indebted Poor

(b) A further important problem arises when the fiscal deficit reported is only that of the central government. In countries with different levels of government this would be an inappropriate indicator of the deficit. Even if the deficits of state and lower levels of government are included, there may be other government agencies that are running a deficit, which does not get reflected, in the measured fiscal deficit. The difficulty in measuring and interpreting the deficit notwithstanding, it is useful to understand whether the underlying fiscal stance is sustainable.

Rapid accumulation of domestic debt can lead to severe macroeconomic problems, and can impede control of the fiscal deficit itself. In line with the arguments developing the notion of a sustainable internal deficit, a case can be made to ascertain the sustainability of the external deficit (typically the current account balance or trade balance) of a country. Just as a government cannot borrow in the domestic market indefinitely to finance its budgetary deficit, it cannot borrow indefinitely in global capital markets to finance its trade account deficit. This notion can be formalized in a manner similar to that expressed above. It should be noted that it is only rather recently that the notion that large current account deficits may cause problems has achieved acceptance.

3.4 Fiscal Policy, Capital Flows and the Money Supply Process

In the presently rapidly globalizing world economy, a liberal regime is often promoted in the interest of optimal international capital allocation of capital. This change has been assisted by an emerging consensus, both in academic and policy making circles, on the type of policies that promote growth with equity. The new development model emphasizes macroeconomic stability, competitive market structures, globalization (integration into the world economy) and a role for the government and fiscal policy that emphasizes facilitating the growth of the market and the private sector.

Large capital flows have turned out to be a major welcome as well as worrisome macro economic development for these countries. Some of the obvious positive features are: (i) acquiring capital for higher economic growth; (ii) smoothing out consumption over time; and (iii) acquiring new technology and expertise through FDI. At the same time, these inflows have also posed major challenges for the conduct of monetary policy. Thus there is a tendency for the real exchange rate to appreciate as a result of the build-up of foreign exchange reserves and associated expansion of monetary base, greater speculative activity on the part of the domestic asset markets and possible disruption associated with sudden reversal of flows. Capital inflows lead to increased expenditures some of which will spill over onto tradable goods. This will increase the size of the trade deficit. If this were the only adjustment required, there would be no grounds for concern because the higher deficit will be financed directly by the capital inflow with no disequilibrium in the market for non-tradable goods.

SELF ASSESSMENT EXERCISE

1. Define the term fiscal policy.
2. Explain the monetary policy.
3. Explain the difference between fiscal policy and monetary policy.

4.0 CONCLUSION

Fiscal policy plays a significant role in the development plans of developing countries. Under planning, balance has to be achieved both in real and money terms. In other words, a physical plan has to be matched by a financial plan. The implementation of the financial plan and the achievement of balances of real and money terms obviously will have to rely largely on fiscal measures.

5.0 SUMMARY

In this unit, attempts have been made to define and explain fiscal policy and monetary policy and how they can be applied to stabilize the economy

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain fiscal policy and monetary policy
2. How is fiscal policy related to capital flow and money supply?

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UNIT 4 GROSS DOMESTIC PRODUCT (GDP)

CONTENTS

1.0 INTRODUCTION

A region's gross domestic product, or GDP, is one of several measures of the size of its economy. The GDP of a country is defined as the market value of all final goods and services produced within a country (by both nationals and foreigners) in a given period of time. It is also considered the sum of value added at every stage of production of all final goods and services produced within a country in a given period of time. Until the 1980s the term GNP or gross national product was used in the United States (USA). The two terms GDP and GNP are almost identical - and yet entirely different; GDP being concerned with the region in which income is generated and GNP (or GNI - Gross National Income) being a measure of the accrual of income to a region.

2.0 OBJECTIVES

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

- define Gross Domestic Product (GDP)
- identify different component of GDP.

3.0 MAIN CONTENT

3.1 Meaning and Measures of Gross Domestic Product

Gross Domestic Product is the most commonly used indicator of national income. It attempts to measure the sum of incomes received by the various wealth creating sectors of the economy: agriculture, manufacturing, service industries.

Essentially it tells us how much money was made in the economy over a certain period of time. The figures are 'gross' because GDP does not allow for the depreciation of physical capital - wear and tear on factory machines, office equipment becoming outdated etc.

When the value of income from abroad is included - what domestic companies earn abroad minus what foreign companies earn here and expatriate - then the GDP becomes the Gross National Product (GNP).
This is particularly important for economies with large traded sectors, which includes many developing countries.

Methods of Measuring GDP

The basic methods of measuring GDP are:

(i) Expenditure Approach (ii) Income Approach
The most common approach to measuring and understanding GDP is however the expenditure method:

GDP = consumption + investment + (government spending) + (exports - imports).

With depreciation, and given net investment instead of gross investment, it then becomes the net domestic product. Consumption and investment in this equation are the expenditure on final goods and services. The exports minus imports part of the equation (often called cumulative exports) then adjusts this by subtracting the part of this expenditure not produced domestically (the imports), and adding back in domestic production not consumed at home (the exports).

Economists (since Keynes) have preferred to split the general consumption term into two parts; private consumption, and public sector (or government) spending. Two advantages of dividing total consumption this way in theoretical macroeconomics are:

- Private consumption is a central concern of welfare economics.
  The private investment and trade portions of the economy are ultimately directed (in mainstream economic models) to increases in long-term private consumption.
- If separated from endogenous private consumption, government consumption can be treated as exogenous, so that different government spending levels can be considered within a meaningful macroeconomic framework.

Real GDP for a given year is the year's nominal GDP stated in the base-year price level. Real GDP growth on an annual basis is the nominal GDP growth rate adjusted for inflation and expressed as a percentage.

3.2 The Components of GDP

Each of the variables C, I, G and NX (where GDP = C + I + G + NX as above):

- C is private consumption in the economy. This includes most personal expenditures of households such as food, rent, medical expenses and so on but does not include new housing.
- I is defined as business investments in capital. Examples of investment by a business include construction of a new plant, purchase of software, or purchase of machinery and equipment for a factory. Spending by households on new houses is also included in Investment. Unlike its general meaning, 'Investment' in GDP is meant very specifically as non-financial product purchases. Buying financial products is classed as 'saving', as opposed to investment. The distinction is (in theory) clear: if money is converted into goods or services, it is investment; but, if you buy a bond or a share, this transfer payment is excluded from the GDP sum. Although such purchases would be called *investments in normal speech, from the total-economy point of* view, this is simply swapping of deeds, and not part of the real economy or the GDP formula.
- G is the public sector spending, which is the sum of government expenditures on final goods and services. It includes salaries of public servants, purchase of weapons for the military, and any investment expenditure by a government. It does not include any transfer payments, such as social security or unemployment benefits.
- X is gross exports. GDP captures the amount a country produces, including goods and services produced for overseas consumption, therefore exports are added.
- M is gross imports. Imports are subtracted since imported goods will be included in the terms G, I, or C, and must be deducted to avoid counting foreign supply as domestic.
- NX are "net exports" in the economy: gross exports - gross imports. There is a fixed relation: NX = X - M.
- It is important to understand the meaning of each variable *precisely in order to:*
- Read national accounts.
- Understand Keynesian or neo-classical macroeconomics.

3.3 Examples of GDP Component Variables

Examples of C, I, G, & NX: If you spend money to renovate your hotel so that occupancy rates increase, that is private investment, but if you buy shares in a consortium to do the same thing it is saving. The former is included when measuring GDP (in I), the latter is not. However, when the consortium conducted its own expenditure on renovation, that expenditure would be included in GDP.

If the hotel is your private home your renovation spending would be measured as Consumption, but if a government agency is converting the hotel into an office for civil servants the renovation spending would be measured as part of public sector spending (G).

If the renovation involves the purchase of a chandelier from abroad, that spending would also be counted as an increase in imports, so that NX would fall and the total GDP is unaffected by the purchase. (This highlights the fact that GDP is intended to measure domestic production rather than total consumption or spending. Spending is really a convenient means of estimating production.).

If you are paid to manufacture the chandelier to hang in a foreign hotel the situation would be reversed, and the payment you receive would be counted in NX (positively, as an export). Again, we see that GDP is attempting to measure production through the means of expenditure; if the chandelier you produced had been bought domestically it would have been included in the GDP figures (in C or I) when purchased by a consumer or a business, but because it was exported it is necessary to 'correct' the amount consumed domestically to give the amount produced domestically (as in Gross Domestic Product).

3.4 The Income Approach

Another way of measuring GDP is to measure the total income payable in the GDP income accounts. This should provide the same figure as the expenditure method described above.

The formula for measuring GDP using the income approach is:

GDP = Compensation of employees + Gross operating surplus + Gross mixed income + Taxes less subsidies on production and imports

- Compensation of employees (COE) measures the total remuneration to employees for work done. It includes wages and salaries, as well as employer contributions to social security and other such programs.

- Gross operating surplus (GOS) is the surplus due to owners of incorporated businesses. Often called profits, although only a subset of total costs is subtracted from gross output to calculate GOS.
- Gross mixed income (GMI) is similar to GOS, but it is for unincorporated businesses. This often includes most small businesses.
- The sum of COE, GOS and GMI is called total factor income. It measures the value of GDP at factor (basic) prices. The difference between basic prices and final prices (those used in the expenditure calculation) is the total taxes and subsidies that the Government has levied or paid on that production. So adding taxes less subsidies on production and imports converts GDP at factor cost to GDP (I).

SELF ASSESSMENT EXERCISE

List example of GDP component variables.

4.0 CONCLUSION

Economists (since Keynes) have preferred to split the general consumption term into two parts; private consumption, and public sector (or government) spending.

5.0 SUMMARY

In this unit, attempt has been made to discuss the meaning of Gross Domestic Product, components of Gross Domestic Product as well as examples of variable components. Attempts have also been made to discuss the GDP income account.

6.0 TUTOR-MARKED ASSIGNMENT

Discuss the meaning of GDP and the components of GDP.

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UNIT 5 MEASUREMENT OF GDP AND ITS USES

CONTENTS

1.0INTRODUCTION

Measurement of GDP is an important aspect of national account computation. It is also used as a measure of the standard of living in a country. This measure has both advantages and disadvantages.

2.0 OBJECTIVES

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

• compare the GDP for different countries
• explain criticisms against measures of GDP
• rank some African countries by GDP.

3.0 MAIN CONTENT

3.1 Comparison of GDP

The level of GDP in different countries may be compared by converting their value in national currency according to either

• Current currency exchange rate: GDP calculated by exchange rates prevailing on international currency markets.

• Purchasing power parity exchange rate: GDP calculated by purchasing power parity (PPP) of each currency relative to a selected standard (usually the United States dollar).

Ranking of Countries by GDP

The relative ranking of countries may differ dramatically between the two approaches.

- The current exchange rate method converts the value of goods and services using global currency exchange rates. This can offer better indications of a country's international purchasing power and relative economic strength. For instance, if 10% of GDP is being spent on buying hi-tech foreign arms, the number of weapons purchased is entirely governed by current exchange *rates, since arms are a traded product bought on the international* market (there is no meaningful 'local' price distinct from the international price for high technology goods).

- The purchasing power parity method accounts for the relative effective domestic purchasing power of the average producer or consumer within an economy. This can be a better indicator of the living standards of less-developed countries because it compensates for the weakness of local currencies in world markets. The PPP method of GDP conversion is most relevant to non-traded goods and services.

There is a clear pattern indicating that the purchasing power parity *method decreases the disparity in GDP between high and low income* (GDP) countries, as compared to the current exchange rate method. This finding is called the Penn effect.

Advantages

The major advantages using GDP per capita as an indicator of standard of living are that it is measured frequently, widely and consistently; frequently in that most countries provide information on GDP on a quarterly basis (which allows a user to spot trends more quickly), widely in that some measure of GDP is available for practically every country in the world (allowing crude comparisons between the standard of living in different countries), and consistently in that the technical definitions used within GDP are relatively consistent between countries, and so there can be confidence that the same thing is being measured in each country.

Disadvantages

The major disadvantage of using GDP as an indicator of standard of living is that it is not, strictly speaking, a measure of standard of living. GDP is intended to be a measure of particular types of economic activity within a country. Nothing about the definition of GDP suggests that it is

necessarily a measure of standard of living. For instance, in an extreme example, a country which exported 100 per cent of its production would still have a high GDP, but a very poor standard of living.

The argument in favour of using GDP is not that it is a good indicator of standard of living, but rather that (all other things being equal) standard of living tends to increase when GDP per capita increases. This makes GDP a proxy for standard of living, rather than a direct measure of it. GDP per capita can also be seen as a proxy of labor productivity. As the productivity of the workers increases, employers must compete for them by paying higher wages. Conversely, if productivity is low, then wages must be low or the businesses will not be able to make a profit.
There are a number of controversies about this use of GDP.

3.2 Criticisms and Limitations

GDP is widely used by economists to follow how the economy is moving, as its variations are relatively quickly identified. However, its value as an indicator for the standard of living is considered to be limited. An alternative for this purpose is the United Nations' Human Development Index in which the GDP is a contributing factor in its calculation. Criticisms of how the GDP is used include:

- GDP does not take into account the black market, where the money spent isn't registered, and the non-monetary economy, where no money comes into play at all, resulting in inaccurate or abnormally low GDP figures. For example, in countries with major business transactions occurring informally, portions of local economy are not easily registered. Bartering may be more prominent than the use of money, even extending to services (I helped you build your house ten years ago, so now you help me).

- This mainstream economic analysis ignores externalities such as the environment, subsistence production and domestic work. The current system counts oil spills and wars as contributors to economic growth, while child-rearing and housekeeping are deemed valueless. The work of New Zealand economist, Marilyn Waring, has highlighted that if a concerted attempt to factor in unpaid work were made, then it would in part, undo the injustices of unpaid (and in some cases, slave) labour, and also provide the political transparency and accountability necessary for democracy. Also, when GDP is used as a measure of success over time, the amount of housework that was done 50 years ago compared to the present time is much greater. Thus, comparing GDP over time cannot take into account the changes in society and lifestyle.

- It ignores volunteer, unpaid work. For example, Linux contributes nothing to GDP, but it was estimated that it would have cost more than a billion US dollars for a commercial company to develop. Wikipedia, an open-source online encyclopedia[2], is another good example.

- Very often different calculations of GDP are confused among each other. For cross-border comparisons one should especially regard whether it is calculated by purchasing power parity (PPP) method or current exchange rate method.

- GDP counts work that produces no net change or that results from repairing harm. For example, rebuilding after a natural disaster or war may produce a considerable amount of economic activity and thus boost GDP, but it would have been far better if the disaster had never occurred in the first place. The economic value of health care is another classic example—it may raise GDP if many people are sick and they are receiving expensive treatment, but it is not a desirable situation. Alternative economic measures, such as the standard of living or discretionary income per capita better measure the human utility of economic activity. See uneconomic growth.

- Quality of life—human happiness—is determined by many other things than physical goods and services. Even the alternative economic measures of standard of living and discretionary income do not take these factors into account.

- As the single most important figure in statistics it is subject to fraud, such as the usage of hedonic price indexing on official GDP numbers in the US, thereby creating investments out of nothing while statistically dampening inflation.[citation needed]

- Cross border trade within companies distorts the GDP and is done frequently to escape high taxation. Examples include the German Ebay that evades German tax by doing business in Switzerland, and American companies that have founded holdings in Ireland to "buy" their own products for cheap from their continental factories (without shipping) and selling them for profit via Ireland - thereby reducing their taxes and increasing Irish GDP.[citation needed]

- People may buy cheap, low-durability goods over and over again, or they may buy high-durability goods less often. It is possible that the monetary value of the items sold in the first case is higher

than that in the second case, in which case a higher GDP is simply the result of greater inefficiency and waste. (This is not always the case; durable goods are often more difficult to produce than flimsy goods, and consumers have a financial incentive to find the cheapest long-term option. With goods that are undergoing rapid change, such as in fashion or high technology, the short lifespan may increase customer satisfaction by allowing them to have newer products.)

- If a nation does not spend, but saves and invests overseas, its GDP will be diminished in comparison to one that spends borrowed money; thus accumulated savings and debt are not taken into account so long as adequate financing continues.

- GDP does not measure the sustainability of growth. A country may achieve a temporarily high GDP by over-exploiting natural resources or by misallocating investment. For example, the large deposits of phosphates gave the people of Nauru one of the highest per capita incomes on earth, but since 1989 their standard of living has declined sharply as the supply has run out. Oil-rich states can sustain high GDPs without industrializing, but this high level would no longer be sustainable if the oil runs out. Economies experiencing an economic bubble, such as a housing bubble or stock bubble, or a low private-saving rate tend to appear to grow faster due to higher consumption, mortgaging their futures for present growth. Economic growth at the expense of environmental degradation can end up costing dearly to clean up; GDP does not account for this.

- As a measure of actual sale prices, GDP does not capture the economic surplus between the price paid and subjective value received, and can therefore underestimate aggregate utility.

- The annual growth of real GDP is adjusted by using the "GDP deflator", which tends to underestimate the objective differences in the quality of manufactured output over time. (The deflator is explicitly based on subjective experience when measuring such things as the consumer benefit received from computer-power improvements since the early 1980s). Therefore the GDP figure may underestimate the degree to which improving technology and quality-level are increasing the real standard of living.

- In 'poor' countries, it may just be that most essentials are affordable, except for a few western goods. So one may have little money, but if everything is cheap that evens out nicely.

Thus, the standard of living may be quite reasonable, it's just that there are, say, fewer TV-sets, meaning people have to share them.

- GDP does not take disparity in incomes between the rich and poor into account. See income inequality metrics for discussion of a variety of complementary economic measures.

The limits of GDP (or GNP, a different notion) can be summed up in the words of two critics. Robert Kennedy said:

The gross national product includes air pollution and advertising for cigarettes and ambulances to clear our highways of carnage. It counts special locks for our doors and jails for the people who break them. GNP includes the destruction of the redwoods and the death of Lake Superior. It grows with the production of napalm, and missiles and nuclear warheads... it does not allow for the health of our families, the quality of their education, or the joy of their play. It is indifferent to the decency of our factories and the safety of our streets alike. It does not include the beauty of our poetry or the strength of our marriages, or the intelligence of our public debate or the integrity of our public officials. It measures everything, in short, except that which makes life worthwhile.

The second critic, Simon Kuznets the inventor of the GDP, in his very first report to the US Congress in 1934 said:

...the welfare of a nation can scarcely be inferred from a measure of national income. If the GDP is up, why is America down? Distinctions must be kept in mind between quantity and quality of growth, between costs and returns, and between the short and long run. Goals for more growth should specify more growth of what and for what.

Some economists have attempted to create a replacement for GDP called the Genuine Progress Indicator (GPI), which attempts to address many of the above criticisms. Many nations calculate a national wealth, a sum of all assets in a nation, but this again does not account for future obligations such as environmental degradation, asset bubbles, and debt. Other nations such as Bhutan have advocated gross national happiness as a standard of living. (Bhutan claims to be the world's happiest nation).

3.3 Measuring a Country's Wealth

A crude measure of a country's wealth is Gross National Product (GNP) per capita: the figure for GNP divided by the population.

In order to compare GNP per capita across countries there is the need to use a common currency. Most international institutions like the World Bank use the US dollar for this purpose.

But this may give a misleading picture of how much an individual in a particular country can actually purchase in a particular currency. Many of the transactions which make up the income of an economy are not traded internationally. The fluctuating nominal values of currencies also make credible comparisons difficult.

To respond to these problems, economists have devised an alternative measure known as Purchasing Power Parity (PPP) which tracks the cost of a basket of traded and non-traded goods and services across countries. This gives a better indication of the purchasing power of an economy and consequently its relative wealth.

3.4 List of African Countries by GDP (2002)

Countries for which no information is available are not included in this list.

Rank	Country	GDP (Million USD)	Date of Information
1	South Africa	$ 427,700	2002 est.
2	Egypt	$ 289,800	2002 est.
3	Algeria	$ 173,800	2002 est.
4	Morocco	$ 121,800	2002 est.
5	Nigeria	$ 112,500	2002 est.
6	Tunisia	$ 67,130	2002 est.
7	Sudan	$ 52,900	2002 est.
8	Ethiopia	$ 48,530	2002 est.
9	Ghana	$ 41,250	2002 est.
10	Democratic Republic of the Congo	$ 34,000	2002 est.
11	Libya	$ 33,360	2002 est.
12	Kenya	$ 32,890	2002 est.
13	Uganda	$ 30,490	2002 est.
14	Cameroon	$ 26,840	2002 est.
15	Zimbabwe	$ 26,070	2002 est.
16	Côte d'Ivoire	$ 24,030	2002 est.
17	Tanzania	$ 20,420	2002 est.
18	Mozambique	$ 19,520	2002 est.
19	Guinea	$ 18,690	2002 est.

20	Angola	$ 18,360 2002 est.
21	Senegal	$ 15,640 2002 est.
22	Burkina Faso $ 14,510 2002 est.	
23	Botswana $ 13,480 2002 est.	
24	Namibia	$ 13,150 2002 est.
25	Madagascar $ 12,590 2002	
26	Mauritius $ 12,150 2002 est.	
27	Mali	$ 9,775 2002 est.
28	Chad	$ 9,297 2002 est.
29	Rwanda	$ 8,920 2002 est.
30	Niger	$ 8,713 2002 est.
31	Zambia	$ 8,240 2002 est.
32	Togo	$ 7,594 2002 est.
33	Benin	$ 7,380 2002 est.
34	Malawi	$ 6,811 2002 est.
35	Swaziland $ 5,542 2002 est.	
36	Lesotho	$ 5,106 2002 est.
37	Mauritania $ 4,891 2002 est.	
38	Central African Republic $ 4,296 2002 est.	
39	Somalia	$ 4,270 2001 est.
40	Eritrea	$ 3,300 2002 est.
41	Burundi	$ 3,146 2002 est.
42	Liberia	$ 3,116 2002 est.
43	Sierra Leone $ 2,826 2002 est.	
44	Gambia	$ 2,582 2002 est.
45	Republic of the Congo $ 2,500 2002 est.	
46	Equatorial Guinea $ 1,270 2002 est.	
47	Guinea-Bissau $ 901.4 2002 est.	
48	Seychelles $ 626 2002 est.	
49	Djibouti	$ 619 2002 est.
50	Cape Verde $ 600 2002 est.	
51	Comoros $ 441 2002 est.	
52	São Tomé and Príncipe $ 200 2002 est.	

53	Western Sahara	-	-

Source: World Bank 2006

SELF ASSESSMENT EXERCISE

List the best 10 African countries by GDP performance in descending order.

4.0 CONCLUSION

GDP per capita is often used as an indicator of standard of living in an economy. While this approach has advantages, many criticisms of GDP focus on its use as a sole indicator of standard of living.

5.0 SUMMARY

In this unit, attempts have been made to discuss various measures of GDP and criticisms against the measures. Attempt was also made to rank African countries in the order of their performance in term of GDP

6.0 TUTOR-MARKED ASSIGNMENT

How is GDP related to the welfare of the people in a society?

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MODULE 2

Unit 1 Economic Growth
Unit 2 National Income and Related
Unit 3 Measurement of National Income
Unit 4 National Income (NI) Measurement Continued
Unit 5 The Consumption and Savings Functions

UNIT 1 ECONOMIC GROWTH

CONTENTS

1.0 INTRODUCTION

Economic growth theory typically refers to growth of potential output which is caused by growth in aggregate demand. As economic growth can also be measured as the annual percent change of National Income it has all the advantages and drawbacks of using national income as indicator of economic growth.. But people tend to attach a particular value to the annual percentage change, perhaps since it tells them what happens to their pay check.

2.0 OBJECTIVES

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

• clearly define and explain economic growth as a concept
• list some indicators of economic growth
• state the theories of economic growth.

3.0 MAIN CONTENT

3.1 Definition and Meaning of Economic growth

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

In the early modern period, some people in Western European nations began conceiving of the idea that economies could "grow", that is, produce a greater economic surplus which could be expended on something other than religious or governmental projects (such as war).

The previous view was that only increasing either population or tax rates could generate more surplus money for the Crown or country.

Now it is generally recognized that economic growth also corresponds to a process of continual rapid replacement and reorganization of human activities facilitated by investment motivated to maximize returns. This exponential evolution of our self-organized life-support and cultural systems is remarkably creative and flexible, but highly unpredictable in many ways. Since science still has no good way of modeling complex self-organizing systems, various efforts to model the long term evolution of economies have produced few useful results.

3.2 Economic Growth and Economic Development

Economic growth is not synonymous with economic development. Economic growth is increase in the GDP while economic development involves improvement in all areas such as income, GDP, education, infrastructure, etc. Therefore economic growth is subsumed in economic development. There can be growth without development.

3.3 Measurement of Growth

There are different methods of measuring GDP. They include:

(i) Output method of measurement: This measure is related to growth in output
(ii) Income method of measurement: This is measured as percent change in national income

3.4 Problems of Using GDP Per Capita as Welfare Measure

The real GDP per capita of an economy is often used as an indicator of the average standard of living of individuals in that country, and economic growth is therefore often seen as indicating an increase in the average standard of living. However, there are some problems in using growth in GDP per capita to measure general well being.

- GDP per capita does not provide any information relevant to the distribution of income in a country.
- GDP per capita does not take into account negative externalities from pollution consequent to economic growth. Thus, the amount of growth may be overstated once we take pollution into account.
- GDP per capita does not take into account positive externalities that may result from services such as education and health.
- GDP per capita excludes the value of all the activities that take place outside of the market place (such as cost-free leisure activities like hiking).

Economists are well aware of these deficiencies in GDP, thus, it should always be viewed merely as an indicator and not an absolute scale. Economists have developed mathematical tools to measure inequality, such as the Gini Coefficient. There are also alternate ways of measurement that consider the negative externalities that may result from pollution and resource depletion (see Green Gross Domestic Product.).

The flaws of GDP may be important when studying public policy, however, for the purposes of economic growth in the long run it tends to be a very good indicator. There is no other indicator in economics which is as universal or as widely accepted as the GDP.

Economic growth is exponential, where the exponent is determined by the PPP annual GDP growth rate. Thus, the differences in the annual growth from country A to country B will multiply up over the years. For example, a growth rate of 5% seems similar to 3%, but over two decades, the first economy would have grown by 165%, the second only by 80%.

3.4 Theories of Economic Growth

The short-run variation of economic growth is termed the business cycle, and almost all economies experience periodic recessions. Explaining and preventing these fluctuations is one of the main focuses of macroeconomics.

A statistical relationship called Okun's law relates the growth rate of an economy to the level of unemployment. On a Keynesian view, growth varies because of changes in aggregate demand, causing firms to produce more or less goods for sale and hence altering the size of the economy. The contrasting real business cycle model suggests that in the short run growth depends on a series of shocks to the productivity of the economy, e.g. an oil price rise making the economy generally less productive and reducing growth.

The long-run path of economic growth is one of the central questions of economics; in spite of the problems of measurement, an increase in GDP of a country is generally taken as an increase in the standard of living of its inhabitants. Over long periods of time, even small rates of annual growth can have large effects through compounding (see exponential growth). A growth rate of 2.5% per annum will lead to a doubling of GDP within 28 years, whilst a growth rate of 8% per annum (experienced by some Four Asian Tigers) will lead to a doubling of GDP within 9 years.

The neo-classical growth model: Developed by Robert Solow and Paul Samuelson in the 1950s, was the first attempt to model long-run growth analytically. This model assumes that countries use their resources efficiently and that there are diminishing returns to capital and labor increases. From these two premises, the neo-classical model makes three important predictions. First, increasing capital relative to labor creates economic growth, since people can be more productive given more capital. Second, poor countries with less capital per person will grow faster because each investment in capital will produce a higher return than rich countries with ample capital. Third, because of diminishing returns to capital, economies will eventually reach a point at which no new increase in capital will create economic growth. This point is called a "steady state." The model also notes that countries can overcome this steady state and continue growing by inventing new technology that allows production with fewer resources, but the model assumes technological progress, "exogenizing" technology from the model.

Unsatisfied with Solow's explanation, economists worked to "endogenize" technology in the 1980s. They developed the endogenous growth theory that includes a mathematical explanation of technological advancement. This model also incorporated a new concept of human capital, the skills and knowledge that make workers productive. Unlike

physical capital, human capital has increasing rates of return. Therefore, overall there are constant returns to capital, and economies never reach a steady state. Growth does not slow as capital accumulates, but the rate of growth depends on the types of capital a country invests in. Research done in this area has focused on what increases human capital (e.g. education) or technological change (e.g. innovation).

The growth can be explained by two different sources. One is factor accumulation or "working harder" which means the growth simply comes from an increase in labor, land, capital, or any factor endowment. The other source comes from improvements in efficiency or "working smarter" which means there has been a development in technology that brings increasing returns to scale.

There is common misconception that the positive correlation between high income and cold climate is causal, when in fact it is a by-product of history. Former colonies have inherited corrupt governments and geo-political boundaries (set by the colonizers) that are not properly placed regarding the geographical locations of different ethnic groups; this creates internal disputes and conflicts. Colonies in temperate climate zones as Australia and USA did not inherit exploitative governments since Europeans were able to inhabit these territories and set up governments that mirrored those in Europe. Thus, we observe a correlation between high incomes and average temperatures but the correlation is, again, not casual and a mere reflection of the product of colonization.

Jared Diamond attempts to explain, in his book Guns, Germs and Steel, why it was that some groups were able to colonize others. He argues that Eurasia was much more advanced because it had a larger surface area that had a common climate (oriented from east to west as opposed to America which is oriented from North to South,) they had more domesticable animals. These advantages in size and agro-technologies translated in the long run into advantages that allowed them to become militarily stronger than other groups.

SELF ASSESSMENT EXERCISE

What is economic growth?

4.0 CONCLUSION

As economic growth is measured as the annual percent change of **National Income it has all the advantages and drawbacks of that level** variable. But people tend to attach a particular value to the percentage change, perhaps since it tells them what happens to their pay check. Origins of the concept of economic growth

5.0 SUMMARY

In this unit, attempts have been made to define economic growth and discuss how economic growth can be measured. Different theories of growth have also been discussed.

6.0 TUTOR-MARKED ASSIGNMENT

1. Distinguish between economic growth and economic development.
2. Is it possible for a country to have economic growth without economic development?

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UNIT 2 NATIONAL INCOME AND RELATED

CONTENTS

1.0 INTRODUCTION

In any economy, countless transactions are being conducted all the time – housewives are buying their daily needs, firms are paying wages and buying machinery, taxes are being paid etc. For purposes of any national analysis of the way the economy is behaving, these millions of transactions have to be classified in some systematic manner for purposes of estimation.

2.0 OBJECTIVES

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

- define what national income is
- identify the components of National Income
- distinguish between the different concepts of national income and
- describe the importance of national income.

3.0 MAIN CONTENT

3.1 Definition of National Income

National income is an uncertain term which is used interchangeably with national dividend, national output and national expenditure. On this basis, national income has been defined in a number of ways. In common parlance, national income means the total money value of

goods and services produced annually in a country. In other words, the total amount of income accruing to a country from economic activities in a year is known as national income. It includes payments made to all factors of production (such as land, labour, capital, and entrepreneurship) in the form of wages, interest, rent and profits.

National income refers to the total market value of all goods and services produced in the economy during some specific period of time and the total of all income earned over the same period of time – hence it is a flow. It can also be defined as the total money value of all goods and services produced by a country during a year. Simon Kuznet however defined national income as "the net output of commodities and services flowing during the year from the country's productive system in the hands of the ultimate consumers".

NI = GNP – Dp – Ti
Where Dp is depreciation, Ti is indirect taxes

3.2 Concepts of National Income

There are a number of concepts pertaining to national income. These concepts are briefly discussed below:

Gross Domestic Product (GDP): This is the total value of all goods and services produced within the country of an economy by those living in that country irrespective of their nationality. This excludes the net income from abroad. Domestic income or product includes:

i. wages and salaries
ii. rents, including imputed house rents;
iii. interest;
iv. dividends;
v. undistributed corporate profits, including surpluses of public sector undertakings;
vi. mixed incomes consisting of profits of unincorporated firms, self-employed persons, partnerships etc., and
vii. direct taxes.

Gross Domestic Product could be at factor cost or at market prices.

1. **Gross Domestic Product at Factor Costs: This is the total value** of goods and services produced in a country based on input costs (the costs of factors of production). To arrive at GDP at factor cost, indirect taxes are deducted while subsidies are added

2. Gross Domestic Product at Market Prices: This is the market value of the total goods and services produced within a given country. It is calculated by adding indirect taxes and deducting the subsidies granted.

Gross National Product (GNP): This is the total value of goods and services produced by the citizens of a country whether or not currently resident in that country. It simply means the total measure of the flow of goods and services at market value resulting from current production during a year in a country, including net income from abroad. It is measured by adding domestic product and earnings from citizen living abroad and deducting earnings from foreigners staying in the country:

$$GNP = GDP + Yz - Yf$$

Where, GNP = Gross National Product,
GDP = Gross Domestic Product
Yz = Income from citizens abroad
Yf = earnings of foreigners living in the country

GNP includes mainly final goods and services. These are goods and services that are not used up in the production of other goods and services. GNP has four components of final goods and services:

a) Consumer goods and services to satisfy the immediate wants of the people;
b) Gross Private domestic investment in capital goods consisting of fixed capital formation, residential construction and inventories of finished and unfinished goods;
c) Goods and services produced by government;
d) Net exports of goods and services, i.e. the difference between value of exports and imports of goods and services known as net income from abroad.

Gross National Product can also be at factor cost or at market prices.

3.3 GNP at Factor Cost

This is the sum of money value of the income produced by and accruing to the various factors of production in one year in a country. It is the income which the factors of production receive in return for their services alone i.e. it is the cost of production. To arrive at GNP at factor cost, we deduct indirect taxes (Ts) from GNP at market prices and add subsidies:

$$GNPfc = GNPmp - \underset{Ti}{\text{Indirect Taxes}} + \underset{Sb}{\text{Subsidies}}$$

3.4 GNP at Market Prices

GNP at market prices considers a situation when we multiply the total output produced in one year by their market prices prevalent during that year in a country. Thus GNP at market prices means the gross value of final goods and services produced annually in a country plus net income from abroad.

GNPmp = GNPfc – Sb + Ti

3.5 Net National Product (NNP)

This is the total value of all goods and services produced by nationals of a country within a year, after allowances has been made for the consumption of fixed capital (i.e. depreciation) used in the production process. The process of production uses up a certain amount of fixed capital, some equipment wears out, while some other components damaged or destroyed. Some other equipment are rendered obsolete through technological changes. This process is termed depreciation or capital consumption allowance. Therefore, Net National Product is Gross National Product less depreciation (Dp). The word 'net' refers to the exclusion of that part of total output which represents depreciation.

NNP = GDP-DP

Net National Product at Market Prices is normally considered as the net value of final goods and services evaluated at market prices in the course of one year in a country. If we deduct depreciation from GNP at market prices, we get NNP at market prices.

Net National Product at Factor Cost is the net output evaluated at factor prices. It includes income earned by factors of production through participation in the production process such as wages and salaries, rents, profits etc. Indirect taxes are deducted and subsidies are added to NNP at market prices in order to arrive at NNP at factor cost.

3.6 Personal Income (Y)

This is the total income received by the individuals of a country from all sources before personal income taxes are paid. Personal income is never equal to the national income, because the former (i.e. personal income) includes the transfer payments whereas they are not included in national income. Personal income can be calculated from GNP by deducting any retained company profits and adding transfer payments.

Personal Income = GNP – retained company profit – company taxes
+ transfer payments.

3.7 Disposable Income (Yd)

Disposable income means the actual income which can be spent on consumption by individuals and families. The whole of the personal income cannot be spent on consumption, because it is the income(Y) that accrues before direct taxes have actually been paid. Therefore, in order to obtain the disposable income Yd), direct taxes (Td) are deducted from personal income.

Yd = Y – Td
Y = Personal income
Td = Direct taxes

The disposable income consists of two components: consumption expenditure and savings. While some portions of the disposable income is spent on consumption (consumption expenditure), a part of it is saved (savings). Therefore, the disposable income is divided into consumption expenditure (c) and savings (s).
Yd = C + S
Therefore, Y – Td = C + S
Y = C + S + Td

3.8 Transfer Payment

This represents the payment made by the business sector of the government for which no services are currently rendered by the individual who received them. Examples are retirement benefits, pension allowances, scholarship awards, bursary awards, food subsidies etc.

SELF ASSESSMENT EXERCISE

List and briefly explain 3 concepts of national income.

4.0 CONCLUSION

National income accounting is the measurement of the flows of output of goods and services and of input of factors of production that pass through the markets in the economy during a specific period.

5.0 SUMMARY

In this unit, attempts have been made to define national income and the concepts involved in national income. Such concepts include GNP, NNP, personal income, disposable income, etc.

ANSWER TO SELF ASSESSMENT EXERCISE

1. Gross Domestic Product (GDP): This is the total value of all goods and services produced within the economy of a country by those living in that country irrespective of their nationality. This excludes the net income from abroad.

2. Personal Income: This is the total income received by the individuals of a country from all sources before personal income taxes are paid. Personal income can be calculated from GNP by deducting any retained company profits and adding transfer payments.

3. Gross National Product (GNP): This is the total value of goods and services produced by the citizens of a country whether or not currently resident in that country. It simply means the total measure of the flow of goods and services at market value resulting from current production during a year in a country, including net income from abroad. It is measured by adding domestic product and earnings of citizens living abroad and deducting earnings from foreigners staying in the country.

6.0 TUTOR-MARKED ASSIGNMENT

Discuss personal income, disposable income and transfer payment.

7.0 REFERENCES/FURTHER READINGS

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UNIT 3 MEASUREMENT OF NATIONAL INCOME

CONTENTS

1.0 INTRODUCTION

There are different methods of measuring national income. The method used depends on the purpose of measurement. In this unit, we shall look at expenditure method, income method as well as the value of output method.

2.0 OBJECTIVES

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

- calculate national income using some simple examples
- appreciate the difficulties in computing national income.

3.0 MAIN CONTENT

3.1 Methods of Measuring National Income

There are three different methods of measuring national income. The use of these methods depends on the availability of data and the purpose.

3.2 Expenditure Method

This consists of adding up the value of all final products or sales to final demands, i.e. all goods and services that are not used up in the production of some other good or service. According to this method, the total expenditure incurred by the society in a particular year is added together and includes personal consumption expenditure, net domestic

investment, government expenditure on goods and services, and net foreign investment.

Example:	**(₦ Million)**
Consumer's Expenditure	96,086.00
General government final consumption	32,693.00
Gross capital formation (investment) at home, including Increases in stocks	30,746.00
Total Domestic expenditure at market prices	159,525.00
Plus Export of goods and services	47,636.00
Less Import of goods and services	-45,522.00
Gross Domestic Product at market prices	161,639.00
Less taxes on expenditure	-23,238.00
Plus subsidies	3,598.00
Gross domestic product (expenditure based)	141,999.00
Plus net property income from abroad	836.00
Gross National Product	142,835.00
Less depreciation	-18,310.00
NATIONAL INCOME	124,525.00

3.3 Output or Value Added Method

The second method of measuring national income is the value added by industries. As the term 'value added' implies, it is the value added by each industry to the materials or other goods and services that it bought from other industries before passing on the products to the next link in the whole chain of production. This method amounts to calculating what each separate industry added to the value of final output. If all such added values are added up for all industries in the economy, we arrive at the gross domestic product.

Example

SECTORS INPUT	**(₦ B)**	**OUTPUT (₦ B)**	**NET OUTPUT (₦ B)**
Mining & Quarrying	7 10 3		
Agriculture 4 6			2
Manufacturing 2 4			2
Others	3 5		2
TOTAL			**9**

National Income = N9 Billion

The most important advantage of this method is that it tells us the contribution of each sector to the gross national product.

3.4 Income Method

A third way of looking at the value of national product and indeed, of calculating it is in terms of the incomes accruing to the basic factors of production used in producing the national product. It is the total money value of all incomes received by persons and enterprises in the country during the year by way of net rents, net wages, net interest and net profits. These are added together but incomes received in the form of transfer payments are not included in it.

3.5 Difficulties of Measuring National Income

Calculating the national income of a country is a complicated problem and is beset with the following difficulties:

a. The greatest difficulty in calculating the national income is of double counting, which arises from the failure to distinguish properly between a final and an intermediate product. There always exists the fear of a good or a service being included more than once. If it so happens, the national income would work out to be many times the actual. Flour used in a bakery is an intermediate product and that by a household the final product. To solve this difficulty, only the final goods and services are taken into account, and that is not so easy a task.

b. Another difficulty in calculating national income is that of price changes which fail to keep stable the measuring rod of money for national income. When the price level in the country rises, the national income also shows an increase even though the production might have fallen. On the contrary, with a fall in price level, the national income shows a decline even though the production might have gone up. Thus due to price changes the national income cannot be adequately measured. To solve this difficulty, the statisticians have introduced the concept of real national income, according to which the prices of the year in question are assessed in terms of prices of the base year. But this does not solve the problem of calculating the national income, because the index numbers which measure the price changes are just rough estimates. Thus the national income data are misleading and unreliable.

c. National income is always measured in money, but there are a number of goods and services which are difficult to be assessed in terms of money e.g. painting as a hobby by an individual, the bringing up of children by the mother etc. By excluding all such services from it, the national income will work out to be less than what it actually is.

d. Income earned through illegal activities such as gambling illicit extraction of wine etc. is not included in national income. Such goods and services do have value and meet the needs of the consumers. But by leaving them out, the national income works out to less than the actual.

e. Then there arises the difficulty of including transfer payments in the national income. Individuals get pension, unemployment allowance and interest on public loans, but whether these should be included in national income is a difficult problem. On the other hand, they are government expenditure. To avoid this difficulty, these are deducted from national income.

SELF ASSESSMENT EXERCISE

Briefly explain 2 difficulties of measuring national income.

4.0 CONCLUSION

Each of the different approaches for measuring national income is unique. As such, this unit has clearly discussed these approaches and the situation under which they are relevant

5.0 SUMMARY

In this unit, attempts have been made to discuss the major approaches to national income measurement, which include expenditure approach, output or value added approach and income approach. Attempts were also made to discuss the difficulties associated with these approaches.

ANSWER TO SELF ASSESSMENT EXERCISE

a. The problem of double counting, which arises from the failure to distinguish properly between a final and an intermediate product.

b. The problem of not including income earned through illegal activities such as gambling illicit extraction of wine etc. in national income and such goods and services do have value and meet the needs of the consumers.

6.0 TUTOR-MARKED ASSIGNMENT

Distinguish between income approach and expenditure approach to national income measurement.

7.0 REFERENCES/FURTHER READINGS

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UNIT 4 NATIONAL INCOME (NI) MEASUREMENT CONTINUED

CONTENTS

1.0 INTRODUCTION

There are several problems in measurement of national income especially in the developing countries. Given these difficulties, it is always difficult to get accurate values for national income, and in most situations, the values arrived at are only estimates. It is therefore important to discuss these difficulties so that they can be minimized.

2.0 OBJECTIVES

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

- state the importance of national income analysis
- identify problems associated with national income measurement in developing countries
- identify those of such problems that are peculiar to Nigerian environment.

3.1 Importance of National Income Analysis

The national income data have the following importance:

- National income data form the basis of national policies such as employment policy, because the figures enable us to know the direction in which the industrial output, investment and savings etc. change, and proper measures can be adopted to bring the economy to the right path.

- In the present age of planning, the national data are of great importance. For economic planning, it is essential that the data pertaining to a country's gross income, output, savings, consumption from different sources should be available. Without these, planning is not possible. Similarly, the economists propound short-run as well as long-run economic models or long-run investment models in which the national income data are very widely used.

- The national income data are also made use of by the research scholars of economics. They make use of the various data of the country's input, output, income, saving, consumption, investment, employment etc. which are obtained from social accounts.

- National income data are significant for a country's per capita income, which reflects the economic welfare of the country. The higher the per capita income, the higher the economic welfare and vice versa.

- National income statistics enable us to know about the distribution of income in the country. From data pertaining to wages, rent, interest and profits, we learn of the disparities in the incomes of different sections of the society. Similarly, the regional distribution of income is revealed. It is only on the basis of these that the government can adopt measure to remove the inequalities in income distribution and to restore regional equilibrium. With a view to removing these personal and regional disequilibria, the decisions to levy more taxes and increase public expenditure also rest on national income statistics.

3.2 Problems of National Income Measurement in Developing Countries

The following problems are associated with national income measurement in the developing countries.

3.2.1 Non-availability of Data

Adequate and correct production and cost data are not readily available in a developing country. In Nigeria for example, there is dearth of data virtually on everything and as a result, the computation of national income is a guess.

3.2.2 Subsistence Economy

Most developing nations' economies are on the subsistence level and most goods are not brought to the market and as such the value of such goods cannot be determined. The question is: do we value such goods at local prices or do we use off-farm prices for such valuation? The majority of people in such accounting are illiterate and they do not keep any accounts about the production and sales of their products. Under the circumstances, the estimates of production and earned incomes are simply guesses.

3.2.3 Lack of Occupational Specialization

There is the lack of occupational specialization in such a country, which makes the calculation of national income by product method difficult. Besides the crop, farmers in a developing country are engaged in supplementary occupations like dairying, poultry, cloth making etc. But income from such productive activities is not included in the national income estimates.

SELF ASSESSMENT EXERCISE

Why is it important to study national income?

4.0 CONCLUSION

In practice, while estimating national income, any of the different definitions may be adopted, because the same national income would be arrived at, if different items are correctly included in the estimate.

National income data are of great importance for the economy of a country. These days the national income data are regarded as accounts of the economy, which are known as social accounts. Their constituents are inter-related and each particular account can be used to verify the correctness of any other account.

5.0 SUMMARY

In this unit, attempts were made to discuss the importance of national income as well as the problems in national income measurement in developing countries.

6.0 TUTOR-MARKED ASSIGNMENT

Discuss 3 major problems associated with national income calculation in the developing countries

7.0 REFERENCES/FURTHER READINGS

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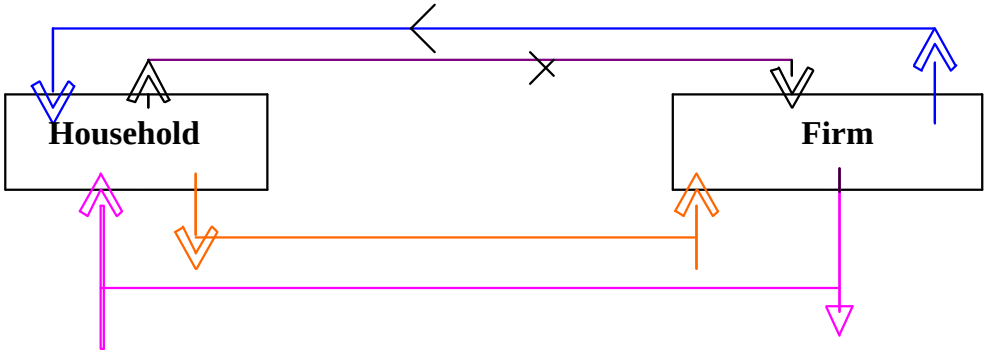
UNIT 5 THE CONSUMPTION AND SAVINGS FUNCTIONS

CONTENTS

1.0 INTRODUCTION

In a simple two-sector national income model, it is assumed initially that all income earned by the household is spent on consumer goods and services. In reality, not all income is spent, as a certain fraction is saved. However, it is just important to state that consumption level always depend on the level of disposable income. The relationship between consumption and disposable income is referred to as the consumption function.

The figure below illustrates a simple 2-sector economy model, showing the flow of income between the household and the firm.



Flow of Income between Household and Firm

This unit deals with the consumption function, its technical attributes, its determinants and theories of consumption function.

2.0 OBJECTIVES

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

- understanding what consumption function is
- know the technical attributes of consumption function
- identify the determinants of the consumption function.

3.0 MAIN CONTENT

3.1 The Consumption Function

The consumption function refers to income consumption relationship. The consumption function indicates a functional relationship between consumption and income, where consumption is dependent variable and income is the independent variable, i.e. consumption is determined by income.

In general terms, this can be represented in mathematical notation as:

$C = f(Xi)$

Where C = Consumption

f = a suitable functional form

Xi = a vector of the determinants of consumption expenditure

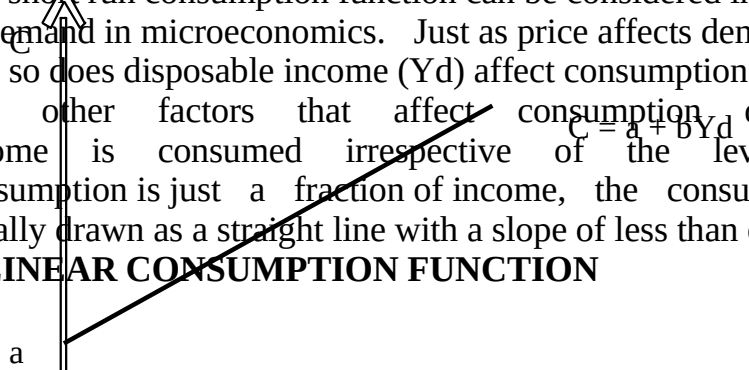
The specific form of the function is: C = f(Yd). This relationship is based on the assumption that only income (disposable income) is considered while all other factors are assumed to be constant. In fact, consumption function is a schedule of the various amounts of consumption expenditure corresponding to different levels of disposable income.

Recall: Y = Yd + Td and
Yd = Y - Td

3.2 Linear Consumption Function

The short run consumption function can be considered in the same way as demand in microeconomics. Just as price affects demand in the short run, so does disposable income (Yd) affect consumption in the short run. The other factors that affect consumption determine how much of income is consumed irrespective of the level of income. Since consumption is just a fraction of income, the consumption function is usually drawn as a straight line with a slope of less than one.

A LINEAR CONSUMPTION FUNCTION



A linear consumption function can thus be represented as:

C = a + byd
A = Constant
B = a parameter, coefficient of Yd, which is less than 1.

It is worthwhile to note that b is the marginal propensity to consume (mpc) by the consuming unit.

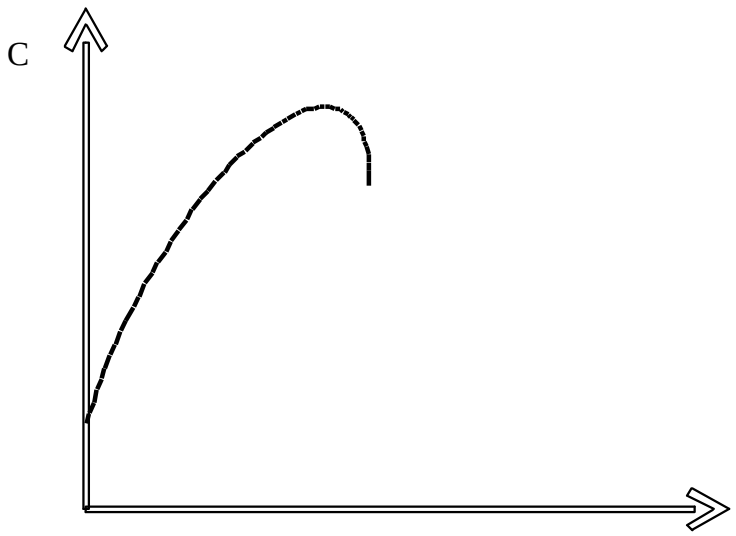
If C = a + byd

$$\frac{dc}{dYd} = b = mpc$$

3.3 Non Linear Consumption Function

However, the fraction of income spent otherwise is not constant at every level of income. It decreases at every level as income increases (Engel;s law). Hence a straight line consumption function is a simplification of reality, as it has a constant slope. A more realistic function is a non-linear curve whose slope decreases as disposable income increases.

3.4 A Non-Linear Consumption Curve



Its upward slope to the right indicates that consumption is an increasing function of income. The consumption function measures not only the amount spent on consumption but also the amount saved. It should also be noted that the consumption function has a positive intercept, meaning that even when zero income is earned, some consumption is still made. An example of a non-linear function is quadratic function.

3.5 Properties or Technical Attributes of the Consumption Function

The consumption function has two technical attributes or properties.

1. the average propensity to consume (APC);
2. the marginal propensity to consume (MPC)

1. The Average Propensity to Consume (APC) is defined as the ratio of consumption expenditure to any particular level of income. It is found by dividing consumption expenditure by income. This is represented as:

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

But $APS = \frac{S}{Yd}$ and

$$APC + APS = \frac{C}{Yd} + \frac{S}{Yd} = \frac{C + S}{Yd}$$

But $Yd = C + S$

Therefore, $APC + APS = \frac{Yd}{Yd}$

Hence, $APC + APS = 1$ QED

APC is expressed as the percentage or proportion of income consumed. It declines as income increases because the proportion of income spent on consumption decreases. But the reverse is the case with average propensity to save (APS) which increases with increase in income. Thus the APC also tells us about the APS:

$$APS = 1 - APC$$

APC measures the proportion of income that goes on consumption.

2. The Marginal Propensity to Consume (MPC): The marginal propensity to consume is defined as the ratio of the change in

consumption to the change in income or as the rate of change in the average propensity to consume as income changes. It can be found by dividing change in consumption by a change in income:

$$MPC = \frac{dC}{dYd}$$

The MPC measures the rate of change of consumption with respect to income and it is measured by the gradient or slope of the consumption curve. The MPC is constant at all levels of income. The marginal propensity to save (MPS)can be derived from the MPC by the formula:

MPS = 1 – MPC. $MPC + MPS = 1$

Derivation

The savings function can be represented as

$S = f(Yd)$

$Yd = C + S$

If $S = Yd + a$

$= intercept$

$a = parameter\ or\ MPS$

$$\frac{ds}{dYd} = MPS = a$$

$Yd = C + S$

$dYd = dc + ds$;

But $$\frac{dYd}{dYd} = \frac{dc}{dYd} + \frac{dS}{dYd}$$

$1 = MPC + MPS$

$MPS = 1 - MPC$

QED

Extreme cases of MPC and MPS

If $C = Yd$

$b = a = 1$, 0

$$\frac{dC}{dY} = 1$$

If $S = Yd$

$a = 1$, 0

$$\frac{dS}{dYd} = 1$$

$b + a = 1$

But *If*

$= b = 1; 0$

i.e. no savings.

But if $a 1 = ; 0 = b$

i.e. no consumption.

Example

The APC and MPC at various income levels is shown in the table below:

Income Y	**Consumption C**	**APC = C/Y** Decreasing	**APS = S/Y = 1 – APC** Increasing	**MPC = $\frac{\Delta C}{\Delta Y}$** Constant	**MPS= $\frac{\Delta C}{\Delta Y}$ = 1 – MPC** Constant
120	120	$\frac{120}{120}$ or 1 or 100 %			
180	170	$\frac{170}{180}$ = 0.94 or 94 %		$\frac{60}{}$ = 0.83	0.17
240	220	$\frac{220}{240}$ = 0.92 or 92 %		$\frac{60}{}$ = 0.83	0.17
300	270	$\frac{270}{300}$ = 0.90 or 90 %		$\frac{60}{}$ = 0.83	0.17
360	320	$\frac{320}{360}$ = 0.88 or 88 %		$\frac{60}{}$ = 0.83 or 83%	0.17

SELF ASSESSMENT EXERCISE

Define and explain consumption function

4.0 CONCLUSION

The most prominent of these determinants of consumption expenditure is the disposable income. There is no doubt that income plays a significant role in determining the volume of consumption expenditure but income must be defined more precisely so as to become operationally useful.

5.0 SUMMARY

In this unit, attempts have been made to explain the meaning of consumption function, including linear and non-linear function as well as properties of consumption function.

6.0 TUTOR-MARKED ASSIGNMENT

With graphical illustration, explain linear and non-linear consumption function.

7.0 REFERENCES/FURTHER READINGS

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MODULE 3

UNIT 1 DETERMINANTS OF CONSUMPTION

CONTENTS

1.0 INTRODUCTION

There are two principal factors which influence consumption and determine its slope and position. They are the subjective factors; and the objective factors. These factors greatly influence the propensity to consume. It is therefore important to identify and discuss them.

2.0 OBJECTIVES

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

- identify the factors that influence consumption
- explain the effects of these factors on consumption.

3.0 MAIN CONTENT

3.1 Factors Affecting Consumption

3.2 The Subjective Factors

These are endogenous or internal to the economic system. They are unlikely to undergo a material change over a short period of time except in abnormal or revolutionary circumstances. They, therefore, determine the slope and position of the consumption curve which is fairly stable in the short run. The subjective factors are the psychological characteristics of human nature, social practices and institutions, especially the behaviour patterns of business concerns with respect to wage, dividend payments, retained earnings, and social arrangements affecting the distribution of income.

3.2.1 Individual Motives

There are eight motives which lead individuals to refrain from spending out of their incomes. They are:

- the desire to build reserves for unforeseen contingencies;
- the desire to provide for anticipated future needs i.e. old age, sickness, etc.
- the desire to enjoy an enlarged future income by way of interest and appreciation;
- the desire to enjoy a gradually increasing expenditure in order to improve the standard of living;
- the desire to enjoy a sense of independence and power to do things;
- the desire to carry out speculative or business projects;
- the desire to bequeath a fortune
- the desire to satisfy a pure miserly instinct.

3.2.2 Business Motives

The subjective factors are also influenced by the behaviour of business corporations and governments. There are four motives for accumulation on their part:

- enterprise: the desire to do big things and to expand;
- liquidity: the desire to meet emergencies;
- income noise: the desire to secure large income and to show successful management;

- financial prudence: the desire to provide adequate financial resources against depreciation and obsolescence and to discharge debt.

These factors remain constant during the short-run and keep the consumption function stable.

3.3 The Objective Factors

They are exogenous or external to the economic system. They may therefore undergo rapid changes and may cause marked shifts in the consumption function i.e. the consumption curve. They include the following:

3.3.1 Change in the Wage Level

If the wage rate rises, the consumption function shifts upward. The workers having a high propensity to consume spend more out of their increased income and this tends to shift the curve upward. If however the rise in the wage rate is accompanied by a more than proportionate rise in the price level, the real wage rate will fall and it will tend to shift the curve downward. A cut in the wage rate will also reduce the consumption function of the society due to a fall in income, employment and output. This will shift the curve downward.

3.3.2 Changes in the Fiscal Policy

Changes in fiscal policy in the form of taxation and public expenditure affect the consumption function. Heavy commodity taxation adversely affects the consumption function by reducing the disposable income of the people. On the other hand, the policy of progressive taxation along with that of public expenditure on welfare programmes tends to shift the curve upward and altering the distribution of income.

3.3.3 Attitude toward Savings

The consumption function is also influenced by people's attitude toward saving. If they value future consumption more than present consumption, they will tend to save more and the consumption function will shift downward. This tendency may be reinforced by the state through compulsory life insurance, provident fund and other social insurance schemes to keep the consumption function low. In a high saving economy, the consumption function is low.

3.2.4 The Distribution of Income

The distribution of income in the society also determines the shape of the consumption function. If there are large disparities in income distributions between the rich and the poor, the consumption function is low because the rich have a low propensity to consume and the poor with a very low income are unable to spend more on consumption. If through progressive taxation and other fiscal measures, the inequalities of income and wealth are reduced, the consumption function will shift upward because with increase in the income of the poor, their consumption expenditure will increase more than the reduction in the expenditure of the rich.

4.0 CONCLUSION

It is important to note that both subjective factors and objectives factors are important determinants of consumption function. Hence any analysis has to take adequate care of these factors.

5.0 SUMMARY

In this unit, attempt has been made to identify both objective factors and subjective factors that determine consumption function. Attempts were also made to break these factors to their constituent components.

6.0 TUTOR-MARKED ASSIGNMENT

1. Give the major classification of factors that determine consumption function
2. List the different components of each of the classifications in 1 above.

7.0 REFERENCES/FURTHER READINGS

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UNIT 2 THEORIES OF CONSUMPTION

CONTENTS

1.0 INTRODUCTION

The theory of consumer behaviour revolves around the fact that every consumer aspires to maximize utility derived from consumption of a commodity or basket of commodities. Over the years, economists have been engaged in reconciling the short-run and long-run consumption functions and the proposed solutions have all taken the form of reinterpretation of the independent variable in the consumption function.
We study below some of the important theories of consumption.

2.0 OBJECTIVES

At the end of this unit, you should be able to explain the following theories of consumption function:

- Absolute income Hypothesis (AIH)
- The Relative Income Hypothesis (RIH)
- Permanent Income Hypothesis
- Life Cycle Hypothesis.

3.0 MAIN CONTENT

3.1 Consumption Theories

3.2 Absolute Income Hypothesis (AIH)

Keynes' consumption income relationship is known as the absolute income hypothesis, which states that when income increases, consumption also increases, but by less than the increase in income and

vice versa. This means that the consumption income relationship is non-proportional.

James Tobin and Arthur Smiths tested this hypothesis in separate studies and came to the conclusion that the short-run relationship between consumption and income is non-proportional but the time-series data show the long-run relationship to be proportional. The latter consumption income behaviour results through an upward shift or drift in the short run non-proportional consumption function due to f actors other than income. These factors are increase in asset holdings, availability of new household consumer goods, urbanization, a continuous increase in the percentage of old people in the total population etc. Factors, like these, according to the absolute income hypothesis have caused the consumption function to shift upward by roughly the amount necessary to produce a proportional relationship between consumption and income over the long run and thus to prevent the appearance of what would otherwise be the non proportional relationship that would be expected on the basis of the income factor alone.

The great merit of this theory is that it lays stress of factors other than income which affect the consumer behaviour. But its weakness lies in assuming a non-proportional consumption function. More and more Economists now feel that the basic consumption function is proportional, which amounts to a rejection of the major tenet of the absolute income hypothesis.

3.3 The Relative Income Hypothesis (RIH)

In formulating this theory of consumption (RIH), Duesenberry writes: "a real understanding of the problem of consumer-behaviour must begin with a full recognition of the social character of consumption patterns". By the "social character of consumption patterns" he means the tendency in human beings not only to keep up with the Joneses" but also to surpass the Joneses. In other words, the tendency is to constantly toward a higher consumption level and to emulate the consumption patterns of one's rich neighbours and associates. Thus consumers' performances are interdependent.

A family with any given income level spends more on consumption. If it lies in a society where the income is relatively high, there arises pressure on the family to keep up with other families. This is the demonstration effect. The RIH has implication for cross sectional and time series analysis. The demonstration effect has to do with the issue of cross sectional analysis which derives from the hypothesis that a person's consumption behaviour is a function of his

position in the income distribution hence an individual consumption behaviour is assumed to be interdependent and not independent.

The time series analysis depends on the idea that consumption behaviour is not readily reversible and so people react awkwardly to downward changes in income. The hypothesis argues that current consumption depends not only on current income but also on the history of income. Individuals build up consumption standards that are geared to their peak income levels. If income declines to past income, then individuals will not immediately sacrifice the consumption standard they have adopted. This phenomenon is called Ratchet effect. Duesenberry combines these two related hypotheses in the following form:

$$\frac{C_t}{Y_t} = a \quad b\, Y_t / Y_o$$

where C and Y are consumption and income respectively, t refers to the current period and the subscript (o) refers to the previous peak, a is a constant relating to the positive autonomous consumption and b is the consumption function parameter. In this equation, the consumption income ratio in the current period C_t / Y_t *is regarded as a function of* Y_t / Y_o *that is, the ratio of current income to the previous peak income. If* this ratio is constant, as in periods of steadily rising income, the current consumption income ratio is constant. During recession when current income (Yt) falls below the previous peak income (Yo), the current consumption income ratio C_t / Y_t *will increase.*

Although this theory satisfied the Keynesian hypothesis (AIH) that APC declines as income increases and also reconciles the apparent contradictions between budget studies and short-term and long-term time series studies, yet it is not without its deficiencies. The hypothesis has not been able to distinguish between the short run and long run MPC.

3.4 Permanent Income Hypothesis

This was developed by Milton Friedman in his work titled "A theory of *the consumption Function" (1957). He started by rejecting the role of* income that it is not current income which determines consumption but the permanent income. The permanent income is the income an individual is expected to receive over a long period of time. He gave permanent income the definition as the mean (average) income being

regarded as permanent by the consumer unit, which in turn depends on time horizon and far sightedness. He divided income into two components thus:

$$Y = Yp + Yt$$

Where Y = income,
Yp = permanent income,
Yt = transitory income

He also divided consumption into two components thus:

$$C = Cp + Ct$$

C = consumption
Cp = permanent consumption
Ct = transitory consumption

Permanent consumption is defined as the value of the services that is planned to be consume during the period in question. It is a multiple (k) of permanent income, Yp:

$$Cp = k(Yp)$$
$$K = f(r, w, u)$$

$$\therefore Cp = k(r, w, u)\, Yp$$

where k is a function of the rate of interest (r), the ratio of property and non-property income to total wealth or national income (w), and the consumer's propensity to consume (u). This equation tells that over the long period, consumption increases in proportion to the change in Yp. This is attributable to a constant $k = \frac{C_p}{Y_p}$ *which is independent of* the size of income. Thus k is the permanent average propensity to consume.

The PIH is consistent with cross-section budget data but this hypothesis is not still free from certain weaknesses. A major weakness is that the APC for all people is identical and unrealistic. Empirical study shows that poor people spend more than their income and therefore disave and their APC is greater than 1. For rich people, their APC is less than 1. Therefore APC is not identical for all people.

3.5 Life Cycle Hypothesis

Francis Mochghani and Ando Albert developed this hypothesis in the article titled "the life cycle hypothesis of savings, aggregate *consumption and tests" (America Economic Review 1963). This* hypothesis views individuals as planning their consumption and savings

behaviour over long periods with the intention of allocating their consumption in satisfactory way over their entire lifetime. The consumption of the individual consumer depends on the resources available to him, the rate of return on capital, the spending plan, and the age at which the plan is made. The present value of his income (or resources) includes income from assets or property and from current and expected labour income.

The aim of the consumer is to maximize his utility over his lifetime which will, in turn, depend on the total resources available to him during his lifetime. Given the life span of an individual, his consumption is proportional to these resources. As a rule, an individual's average income is relatively low at the beginning of his life and also at the end of his life. This is because in the years of his life he has little assets, and during the late years his labour income is low. It is, however, in the middle of his life that his income, both from assets and labour, is high. As a result, the consumption level of the individual throughout his life is somewhat constant or slightly increasing.

SELF ASSESSMENT EXERCISE

Discuss 4 major theories of consumption function

4.0 CONCLUSION

The life cycle hypothesis is superior to the other hypotheses because it includes not only assets as a variable in the consumption function but also explains why MPC < APC in the short run and the APC is constant in the long run.

5.0 SUMMARY

In this unit, attempts have been made to discuss different theories surrounding consumption function. Specifically, the discussions covered
Absolute Income Hypothesis
Relative Income Hypothesis, Permanent Income Hypothesis and the Life Cycle Hypothesis.

6.0 TUTOR-MARKED ASSIGNMENT

1. Explain the difference between the relative income hypothesis and permanent income hypothesis.
2. Explain why life cycle hypothesis is superior to the other hypotheses of consumption function

7.0 REFERENCES/FURTHER READINGS

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UNIT 3 THE INVESTMENT THEORY

CONTENTS

1.0 INTRODUCTION

Investment has become one of the most important components of the demand side of the economy. The importance of this particular sector has been pronounced in both economic growth and development. Factors affecting investment have been one of the areas of interest for any economic analysis.

2.0 OBJECTIVES

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

- define capital
- define investment
- know the relationship between capital and investment
- know the two types of investment;

3.0 MAIN CONTENT

3.1 Definition of Investment

Investment may simply means to buy shares, stocks, bonds and securities which are already existing in stock market. But this is not real investment because it is simply a transfer of existing assets. Hence this is called financial investment, which does not affect aggregate spending. In Keynesian terminology, investment refers to real investment which adds to capital equipment. It leads to increase in level of income and production by increasing the production and purchase of capital goods. Investment thus includes new plant and equipment, construction of

public works like dams, roads, buildings etc, net foreign investment, inventories, and stocks and shares of new companies. In the words of Joan Robinson, "By investment means an addition to capital, such as occurs when a new house is built or a new factory is built. Investment means making an addition to the stock of goods in existence".

3.2 Definition of Capital

Capital can be defined as a stock of man made resources yielding which are combined with labour to produce a flow of output. It is also includes any previously produced input that can be used in the production process to produce other goods. The choice of the size of capital to hold is an intertemporal choice problem since it involves comparing future benefits with present costs.

To be more precise, investment is the production or acquisition of real capital assets during any period of time. Capital and investment are related to each other through net investment. Gross investment is the total amount spent on new capital assets in a year. Net investment is gross investment minus depreciation and obsolescence changes (or replacement investment). This is the net addition to the existing capital stock of the economy. If gross investment equals depreciation, net investment is zero and there is no addition to the economy's capital stock. If gross investment is less than depreciation, there are disinvestments in the economy and the capital stock decreases. Thus for an increase in the real capital stock of the economy, gross investment must exceed depreciation i.e. there should be net investment.

3.3 Types of Investment

3.3.1 Autonomous Investment

This is the type of investment that is not motivated by any economic activity. It is independent of the level of income. It is influenced by exogenous factors like innovations, inventions, growth of population and labour force, researches, social and legal institutions, weather changes, war, revolution etc. But it is not influenced by changes in demand, rather it influences demand. It remains constant no matter the level of economic activity. This type of investment is required when a businessman requires initial capital that does not depend on the level of production. Investment in economic and social overheads whether made by the government or the private enterprise is autonomous. Such investment includes expenditure on building, dams, roads, canals, schools, hospitals etc. Since investment on these projects is generally associated with public policy, autonomous investment is

regarded as public investment. In the long run, private investment of all types may be autonomous because it is influenced by exogenous factors.

3.3.2 Induced Investment

It is the type that is motivated by certain economic activities. Induced investment is profit or income motivated. Factors like prices, wages and interest changes which affect profits, influence induced investment. Similarly demand also influences it. When income increases, consumption demand also increases. In the ultimate analysis, induced investment is a function of income i.e.

$I = f(Y)$

It is income elastic, it increases or decreases with the rise or fall in income.

Induced investment may be further divided into two namely:

a. the average propensity to invest: is the ratio of investment to income i.e. I/Y
b. the marginal propensity to invest: is the ratio of change in investment to the .

Change in income i.e. $\frac{dI}{dY}$.

4.0 CONCLUSION

It must be noted that the aggregate demand in a closed economy without government is divided into consumption goods and capital goods. Generally, demand for capital goods is called investment. Investment is the addition to existing stock of capital and therefore it is a flow concept. Capital refers to real assets like factories, plants, equipment and inventories of finished and semi-finished goods. The amount of capital available in an economy is the stock of capital. Thus capital is a stock concept.

5.0 SUMMARY

In this unit, attempts have been made to define capital and investment and differentiate between capital and investment. Attempts have also been made to discuss autonomous investment and induced investment.

6.0 TUTOR-MARKED ASSIGNMENT

1. Differentiate between capital and investment
2. Explain the differences between autonomous investment and induced investment

7.0 REFERENCES/FURTHER READINGS

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UNIT 4 DETERMINANTS OF INVESTMENT

CONTENTS

1.0 INTRODUCTION

The decision to invest in a new capital asset depends on whether the expected rate of return on the new investment is equal to or greater or less than the rate of interest to be paid on the funds needed to purchase this asset. It is only when the expected rate of return is higher than the interest rate that investment will be made in acquiring new capital assets. In reality, there are three factors that are taken into consideration while making any investment decision. They are the cost of the capital asset, the expected rate of return from it during its life time, and the market rate of interest. Keynes sums up these factors in his concept of the marginal efficiency of capital (MEC).

2.0 OBJECTIVES

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

- identify the determinants of investment
- know the other factors (other than interest rate) that affect inducement to invest
- explain marginal efficiency of capital and marginal efficiency of investment.

3.0 MAIN CONTENT

3.1 MEC and MEI in Investment

3.2 Marginal Efficiency of Capital

It is the highest rate of return expected from an additional unit of capital asset over its cost. It is the ratio between the prospective yield of additional capital-goods and their supply price. The prospective yield (Y) is the aggregate net return from an asset during its life-time, while the supply price (P) is the cost of producing this asset. If the supply price of a capital asset is N20, 000 and its annual yield is N2,000, the marginal efficiency of capital of this asset is: $\frac{2,000}{20,000} x \frac{100}{1}$ 10%

Thus the marginal efficiency of capital is the percentage of profit expected from a given investment on a capital asset.
Keynes relates the prospective yield of a capital asset to its supply price and defines the MEC as equal to the rate of discount which would make the present value asset during its life given by the returns expected from the capital asset during its life just equal to its supply price. Symbolically, this can be expressed as:

$$Sp = \frac{R_1}{(1+i)} + \frac{R_2}{(1+i)} + ... + \frac{R_n}{(1+i)^n} \quad \text{.....}$$

where Sp is the supply price or the cost of the capital asset, Ri, R2 ….
and Rn are the prospective yields or the series of expected annual returns from the capital asset in the years 1, 2, ….. and n, I is the rate of discount which makes the capital asset exactly equal to the present value of the expected yield from it. Thus I is the MEC or the rate of discount which equates the two sides of the equation.

In equation (1), the term $\frac{R}{1+i}$ is the present value (PV) of the capital asset. Present value is the value now of payments to be received in the future. It depends on the rate of interest at which it is discounted. The present value of a capital asset is inversely related to the rate of interest. The lower the rate of interest, the higher is the present value and vice versa.

As a matter of fact, the MEC is the expected rate of return over cost of a new capital good. In order to find out whether it is worthwhile to purchase a capital good, it is essential to compare the present value of the capital asset with its cost or supply price. If the present value of a

capital good exceeds its cost of buying, it pays to buy it. On the contrary, if its present value is less than its cost, it is not worthwhile investing in this capital good.

The same results can be obtained by comparing the MEC with the market rate of interest. If the MEC of a capital asset is higher than the market rate of interest at which it is borrowed, it pays to purchase the capital asset, and vice versa. If the market interest rate equals the MEC of the capital asset, the firm is said to possess the optimum capital stock. Further, to reach the optimum (desired) capital stock in the economy, the MEC must equal the rate of interest. Everyone in the economy will borrow funds and invest in capital assets. This is because the MEC is higher than the rate of interest. This will continue till the MEC comes down to the level of the interest rate. When the MEC equals the interest rate, the economy reaches the level of optimum capital stock.

3.3 Marginal Efficiency of Investment (MEI)

The MEI is the rate of return expected from a given investment on a capital asset after covering all its costs, except the rate of interest. Like the MEC, it is the rate which equates the supply price of a capital asset to its prospective yield. The investment on an asset will be made depending upon the interest rate involved in getting funds from the market. If the rate of interest is high, investment is at a low level but a low rate of interest leads to an increase in investment. Thus the MEI relates the investment to the rate of interest. The MEI schedule shows the rate of investment per time period at each possible market rate of interest. It indicates how much of the required net investment that will be undertaken per period of time in other words, how long will it take to build the capital stock from its existing level to the desired or the profit maximizing level.

On the other hand, given the rate of interest, the higher the MEI, the larger will be the volume of investment. When the existing capital assets wear out, they are replaced by new ones and level of investment increases. But the amount of induced investment depends on the existing level of total purchasing. Therefore, more induced investment occurs when the total purchasing is higher.

3.4 Factors Other than the Interest Rate Affecting Inducement to Invest

There are a number of factors other than the rate of interest which affect the inducement to invest. They are the following:

3.4.1 Level of Income

If the level of income rises in the economy through rise in money wage rates and other factor prices, the demand for goods will rise which will, in turn, raise the inducement to invest. On the other hand, the inducement to investment will fall with the lowering of income levels.

3.4.2 Consumer Demand

The present and future demand for the products greatly influences the level of investment in the economy. If the current demand for consumer goods is increasing rapidly more, investment will be made. Even if we take the future demand for the products, it will be considerably influenced by their current demand and both will influence the level of investment. Investment will be low if the demand is low, and vice versa.

3.4.3 State Policy

The economic policies of the government have an important influence on the inducement to invest in the country. If the state levies heavy progressive taxes on corporations, the inducement to invest is low, and vice versa. Heavy indirect taxation levies to raise the prices of commodities adversely affects their demand, thereby lowering the inducement to invest and vice versa. If the state follows the policy of nationalization of industries, the private enterprise would be discouraged to invest. On the other hand, if the state encourages private enterprise by providing credit, power and other facilities, inducement to invest will be high.

3.4.4 New Products

The nature of new products in terms of sales and costs may also influence their MEC and hence investment. If the sale prospects of a new product are high and the expected revenues more than the costs, the MEC will be high which will encourage investment in this and related industries. For example the invention of television must have encouraged the electronics industry to invest in the elated capital assets and used them to produce television sets, if they had expected profits to be higher than costs. Thus lower maintenance and operating costs in the

case of new products are important in increasing the inducement to invest.

3.4.5 Inventions and Innovations

Inventions and innovations tend to raise the inducement to invest. If inventions and technological improvements lead to more efficient methods of production which reduce costs, MEC of new capital assets will rise. Higher MEC will induce firms to make larger investments in the new capital assets and in related ones. The absence of new technologies will mean low inducement to invest. An innovation also includes the opening of new areas. This requires the development of means of transport, the construction of housing etc, leading to new investment opportunities, thereby leading to inducement to invest.

3.3.6 Element of Uncertainty

According to Keynes, the MEC is more volatile than the rate of interest. This is because the prospective yield of capital assets depends upon the business expectations. These business expectations are very uncertain. They may change quickly and drastically in response to the general mood of the business society, rumours, news of technical developments, political events, even directors' wears may cause a sudden rise or fall of the expected rate of yield. As a result, it is difficult to calculate the expected annual returns on the life of a capital asset. Further, because of uncertainty, investment projects usually have a short pay off period. Capital assets become obsolete earlier than their expected life due to rapid technological developments. The rate of depreciation also does not remain constant and varies much. So firms have a tendency to invest only if they are in a position to recover the capital outlay in a short period. These factors tend to bring instability in the investment function.

4.0 CONCLUSION

To what extent the fall in interest rate will increase investment depends upon the elasticity of the investment demand curve of the MEI curve. The less elastic is the MEI curve, the lower is the increase in investment as a result of fall in the rate of interest and vice versa.

5.0 SUMMARY

In this unit, attempts were made to discuss marginal efficiency of capital and marginal efficiency of investment as well as factors that determine these efficiencies.

6.0 TUTOR-MARKED ASSIGNMENT

Discuss the concept of marginal efficiency of investment and marginal efficiency of capital, bringing out the difference between the two terms.

7.0 REFERENCES/FURTHER READINGS

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UNIT 5 UNEMPLOYMENT

CONTENTS

1.0 INTRODUCTION

Unemployment has been one of the most persistent and unmanageable problems facing all industrial countries of the world. At the same time, the goal of public policy has been to remove unemployment and to achieve full employment in such countries. This unit attempts to consider the various types or causes of unemployment for an understanding of the meaning of the term full employment.

2.0 OBJECTIVES

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

- define unemployment
- identify the types or causes of unemployment
- define full employment
- know the measures to achieve and maintain full employment.

3.0 MAIN CONTENT

3.1 Meaning of Unemployment

Before explaining the various types of unemployment, it is necessary to define the term unemployment. Everyman's Dictionary of Economics defines unemployment as "involuntary idleness of a person willing to work at the prevailing rate of pay but unable to find it". It implies that only those persons are to be regarded as unemployed who are prepared

to work at the prevailing rate of pay but they do not find work. Voluntarily unemployed persons who do not want to work like the idle rich, are not considered unemployed.

3.2 Types of Unemployment

3.2.1 Frictional Unemployment

This type of unemployment exists when there is lack of adjustment between demand for and supply of labour. This may be due to lack of knowledge on the part of employers about the availability of workers or on the part of workers that employment is available at a particular place. It is also caused by lack of necessary skills for a particular job, labour immobility, breakdowns of machinery, shortages of raw materials, etc. The period of unemployment between losing one job and finding another is also included under frictional unemployment.

3.2.2 Seasonal Unemployment

Seasonal unemployment results from seasonal fluctuations in demand. Example is the case with agricultural workers who are employed during harvesting and sowing seasons and remain idle for the rest of the year.

3.2.3 Cyclical Unemployment

Cyclical unemployment arises due to cyclical fluctuations in the economy. They may also be generated by international forces. A business cycle consists of alternating periods of booms and depressions.

3.2.4 Structural Unemployment

Structural Unemployment results from a variety of causes. It may be due to lack of the co-operant factors of production, or changes in the economic structure of the society. The word structural implies that the economic changes are massive, extensive, deep-seated, amounting to transformation of an economic structure, i.e. the production functions or labour supply/ distribution. More specifically, it refers to changes which are large in the particular area, industry or occupation. Shifting patterns in the demand for the products of various industries have also been responsible for this type of unemployment.

There are, however, economists who argue that the higher unemployment rate has been due to causes other than inadequate demand: Such factors include (1) a faster rate of technological change (2) a displaced worker remains unemployed for a number of days in

finding a new job (3) most of the unemployed workers belong to blue-collar groups.

The supporters of the structural transformation thesis hold that the number of displaced workers due to structural changes in particular area, industry or occupation, and that unemployment is not due to inadequacy of demand.

3.2.5 Technological Unemployment

Modern production process is essentially dynamic where innovations lead to the adoption of new machineries and inventions thereby displacing existing workers, leaving behind a trail of unemployment. When there is automation or displacement of old technology by a new one requiring less workers than before, there is technological unemployment. A special case of technological unemployment is that which is not due to improvements in the technique of production but in the technique of organization. It pertains to making management more efficient which may decide upon modernising existing facilities or closing down obsolete plants. In all such cases unemployment is bound to increase.

4.0 CONCLUSION

The subject of unemployment is important in the study of economics as unemployment has important implications on economic stability of every nation. All the factors are very important in addressing unemployment problem.

5.0 SUMMARY

In this unit, attempts have been made to describe the meaning of unemployment, types of unemployment such as frictional unemployment, seasonal unemployment, structural unemployment and technological unemployment.

6.0 TUTOR-MARKED ASSIGNMENT

List and briefly discuss the types of unemployment

7.0 REFERENCES/FURTHER READINGS

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MODULE 4

UNIT 1 FULL EMPLOYMENT

CONTENTS

1.0 INTRODUCTION

Right from the classical to the modern economists, there is no unanimity of views on the meaning of full employment. According to Ackley, it is a very slippery concept, but the credit for popularizing it goes to Keynes. Since the end of World War, it has been accepted as one of the important goals of public policy.

2.0 OBJECTIVES

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

- discuss the classical view of full employment
- keynesian view of full employment
- other views of full employment
- measures to achieve full employment.

3.0 MAIN CONTENT

3.1 The Classical View

The classical economists always believe in the existence of full employment in the economy. To them, full employment was a normal situation and any deviation from this was regarded as something abnormal. According to Pigou, the greatest exponent of the classical view, the tendency of the economic system was to automatically provide full employment in the labour market. Unemployment resulted from the rigidity in the wage structure and interference in the working of free market system in the form of trade union legislation, minimum wage legislation, etc. Full employment exists when everybody who at the running rate of wages wishes to be employed. Those who are not prepared to work at the existing wage rate are not unemployed in the Pigouian sense because they are voluntarily unemployed. There is however no possibility of involuntary unemployment in the sense that people are prepared to work but they do not find work. According to Pigou "with perfectly free competition – there will always be at work a strong tendency for wage rates to be so related to demand that everybody is employed". However, this classical view of full employment is consistent with some amount of functional, voluntary, seasonal or structural unemployment.

3.2 The Keynesian View

According to Keynes, full employment means the absence of involuntary unemployment. In other words, full employment is a situation in which everybody who wants to work gets work. Everybody who wants to work gets work. Full employment so defined is consistent with functional and voluntary unemployment.

Keynes assumes that with a given organization, equipment and technique, real wages, the volume of output (and hence of employment) are uniquely co-related, so that, in general, an increase in employment can only occur with a decline in the rate of wages. To achieve full employment, Keynes advocates increase in effective demand to bring about reduction in real wages. Thus the problem of full employment is one of maintaining adequate effective demand. When effective demand is deficient, according to Keynes, there is underemployment of labour in the sense that there are men unemployed who would be willing to work at less than existing real wage. Consequently, as effective demand increases, employment increases, though at a real wage equal to, or less than, the existing one, until a point comes, at which there is no surplus of labour available at the then existing real wage".

An alternative definition of full employment by Keynes is: "It is a situation in which aggregate employment is inelastic in response to an increase in the effective demand for its output". It means that the test of full employment is when any further increase in effective demand is not accompanied by any increase in output. Thus, the Keynessian concept of employment involves three conditions: (i) reduction in the real wage rate; (ii) increase in effective demand; (iii) inelastic supply of output at the level of full employment.

3.3 Other Views on Full Employment

Lord Beveridge in his book 'Full Employment in a Free Society", defined it as a situation where there were more vacant jobs than employed men so that normal lag between losing one job and finding another will be very short. By full employment he does not mean zero unemployment which means that full employment is not always full. There is always a certain amount of frictional unemployment in the economy even when there is full employment.

According to the American Economic Association Committee, "Full employment means that qualified people who seek jobs at prevailing rates can find them in productive activities without considerable delay". It means full time jobs for people who want to work full time. It does not mean people like housewives and students are under pressure to put in undesired overtime. It does not mean unemployment is even zero. This is not a definition but a description of full employment situation, where all qualified persons who want jobs at current wage rates find full time jobs. Like Beveridge, the committee considered full employment to be consistent with some amount of unemployment.

3.4 Measures to Achieve and Maintain Full Employment

Since underemployment is caused by deficiency in effective demand, full employment can be achieved by increasing effective demand either by stimulating investment or consumption, or both. Full employment is thus sought to be achieved and maintained by monetary, fiscal and direct measures.

3.4.1 Monetary Policy

Monetary policy in an underdeveloped country plays an important role in increasing the growth rate of the economy by influencing the cost and availability of credit, by controlling inflation and maintaining equilibrium in the balance of payments. So the principal objectives of monetary policy in such a country are to control credit for controlling inflation and to stabilize the price level, to stabilize the exchange rate, to

achieve equilibrium in the balance of payments and to promote economic development.

An expansionary monetary policy is used to overcome a recession or depression or a deflationary gap. When there is a fall in consumer demand for goods and services, and in business demand for investment goods, a deflationary gap emerges. The central bank starts an expansionary monetary policy that eases the credit market conditions and leads to an upward shift in aggregate demand. For this purpose, the Central Bank purchases government securities in the open market, lowers the reserve requirements of member banks, lowers the discount rate and encourages consumer and business credit through selective credit measures. By such measures, it decreases the cost and availability of credit in the money market, and improves the economy.

A monetary policy designed to curtail aggregate demand is called restrictive monetary policy. It is used to overcome an inflationary gap. The economy experiences inflationary pressures due to rising consumers' demand for goods and services and there is also boom in business investment. The central bank starts a restrictive monetary policy in order to lower aggregate consumption and investment by increasing the cost and availability of bank credit. It might do so by selling government securities in the open market, by raising reserve requirements of member banks, by raising the discount rate, and controlling consumer and business credit through selective measures. By such measures, the Central Bank increases the cost and availability of credit in the money market and thereby controls inflationary pressures.

3.4.2 Fiscal Policy

Fiscal policy is a powerful instrument of stabilization. "By fiscal policy we refer to government actions affecting its receipts and expenditures which are ordinarily taken as measured by the government's net receipts, its surplus or deficit." The government may offset undesirable variations in private consumption and investment by anti-cyclical variations of public expenditures and taxes. Fiscal policy as can be seen as a policy under which the government uses its expenditure and revenue programmes to produce desirable effects and avoid undesirable effects on national income, production and employment. Though the ultimate aim of fiscal policy is the long-rum stabilization of the economy, yet it can only be achieved by moderating short-run economic fluctuations. In this context fiscal policy can be described as changes in taxes and expenditures which aim at short-run goals of full employment and price-level stability.

In a developing country, where monetary policy alone is ineffective, due to the existence of undeveloped money and capital markets, fiscal policy

can be used as an important adjunct to monetary policy in accelerating the rate of capital formation.
Fiscal policy plays a significant role in the development plans of developing countries. Under planning, balance has to be achieved both in real and money terms. In other words, a physical plan has to be matched by a financial plan. The implementation of the financial plan and the achievement of balances of real and money terms obviously will have to rely largely on fiscal measures.

4.0 CONCLUSION

Corresponding growth in demand and output are essential for an economy to attain full employment. If the potential growth in output is not matched by the actual growth in output, there will be unemployment in the economy due to deficiency in demand. Therefore, modern economists are of the view that unemployment is caused by structural changes, technological changes and by inadequacy of demand.

5.0 SUMMARY

Attempts have been made in this unit to discuss full employment from the angle of classical economists and Keynesian view. Attempts have also been made to discuss other views of full employment and the measures that are necessary for the attainment of full employment.

6.0 TUTOR-MARKED ASSIGNMENT

Discuss how monetary policy and fiscal policy can help maintain full employment.

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UNIT 2 INFLATION

CONTENTS

1.0 INTRODUCTION

Inflation is a highly controversial term which has undergone modification since it was defined by the neo-classical economists. Inflation simply refers to a galloping rise in prices as a result of the excessive increase in the quantity of money. But Keynes in his General *Theory did not believe like the neo-classicits that there was always full* employment in the economy which resulted in hyper-inflation with increases in the quantity of money. According to him, if there is underemployment in the economy, an increase in the money supply leads to increase in aggregate demand, output. Therefore, employment will rise further while diminishing returns start and certain bottlenecks appear and prices start rising. This process continues till the full employment level is reached.

In this unit, we shall study different theories of inflation, besides Keynes's theory of the inflationary gap. But before we analyse them, it is instructive to know about the meaning of inflation.

2.0 OBJECTIVES

At the end of this unit, students should:

• understand the meaning of inflation
• know the types and causes of inflation and remedies for inflation.

3.0 MAIN CONTENT

3.1 Inflation and its Types

3.2 Meaning of Inflation

The definition of inflation is a general rise in the price level in an area over a certain period of time. In mainstream economics, the word **inflation refers to a general rise in prices measured against a standard** level of purchasing power. Previously the term was used to refer to an increase in the money supply, which is now referred to as expansionary monetary policy. Inflation is measured by comparing two sets of goods at two points in time, and computing the increase in cost not reflected by an increase in quality. There are, therefore, many measures of inflation depending on the specific circumstances. The most well known are the CPI which measures consumer prices, and the GDP deflator, which measures inflation in the whole economy.

Related terms in the study of inflation include the following:

Deflation: is defined as a general falling level of prices.
Disinflation: is the reduction of the rate of inflation.
Hyper-inflation: is defined as an out of control inflationary spiral.
Stagflation: is defined as a combination of inflation and poor economic growth.
Reflation: is defined as an attempt to raise prices to counteract deflationary pressures.

However, it is essential to understand that a sustained rise in prices may be of various magnitudes. Accordingly, different names have been given to inflation depending upon the rate of rise in prices.

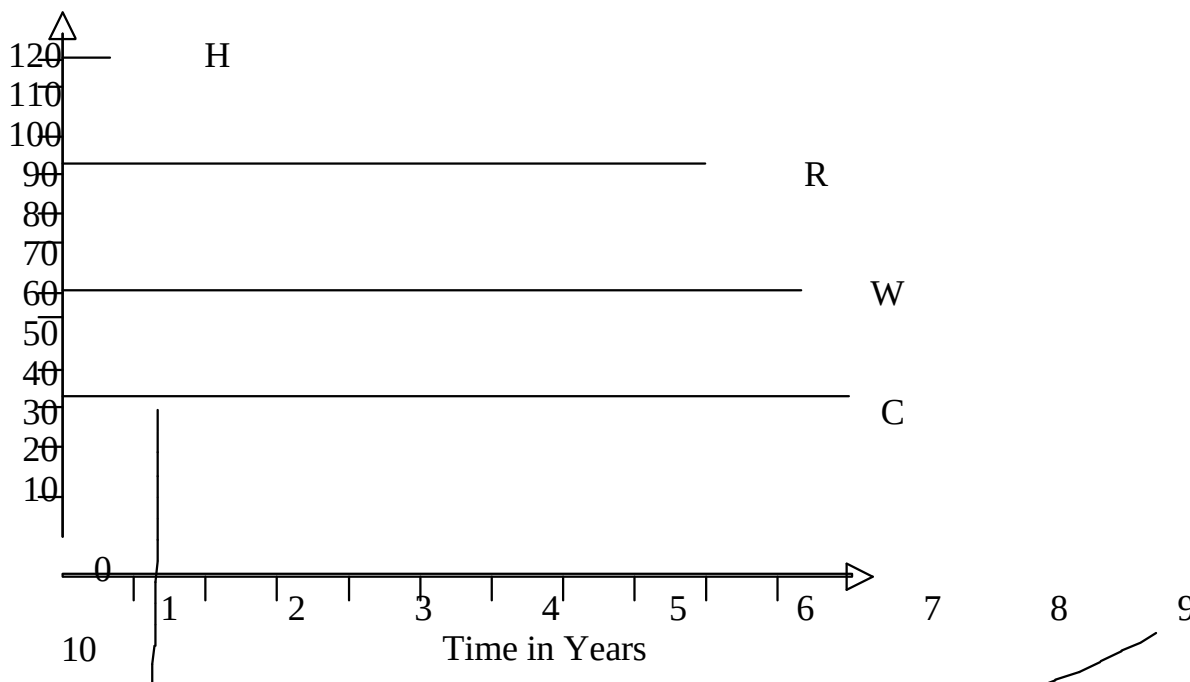
1. **Creeping Inflation. When the rise in prices is very slow, it is** called creeping inflation. In terms of speed, a sustained rise in prices of annual increase of less than 3 per cent per annum is characterized as creeping inflation. Such an increase in prices is regarded safe and essential for economic growth.

2. **Walking or Trotting Inflation. When prices rise moderately and** the annual inflation rate is a single digit. In other words, the rate of rise in prices is in the intermediate range of 3 to 7 per cent per annum or less than 10 per cent. Inflation at this rate is a warning signal for the government to control it before it turns into running inflation.

3. **Running Inflation. When prices rise rapidly at a rate of speed of** 10 to 20 per cent per annum. It is called running inflation. Such inflation affects the poor and middle classes adversely. Its control requires strong monetary and fiscal measures, otherwise it leads to hyperinflation.

4. **Hyperinflation. When prices rise very fast at double or triple** digit rates from more than 20 to 100 per cent per annum or more, it is usually called hyper inflation or galloping inflation. It is also characterized as hyperinflation by certain economists. In reality, hyperinflation is a situation when the rate of inflation becomes immeasurable and absolutely uncontrollable. Prices rise many times every day. Such a situation brings a total collapse of the monetary system because of the continuous fall in the purchasing power of money.

The speed with which prices tend to rise is illustrated in diagram below:



The curve C shows creeping inflation when within a period of ten years the price level has been shown to have risen by about 30 per cent. The curve W depicts walking inflation when the price rose by more than 50 per cent during ten years. The curve R illustrates running inflation

showing a rise of about 100 per cent in ten years. The steep curve H shows the path of hyperinflation when prices rose by more than 120 per cent in the less than one year.

3.3 Types and Causes of Inflation

3.3.1 Demand-Pull Inflation

Demand-Pull Inflation or excess demand inflation is the traditional and most common type of inflation. It takes place when aggregate demand is rising while the available supply of goods is becoming less. Goods may be in short supply either because resources are fully utilized or production cannot be increased rapidly to meet the increasing demand. As a result, prices begin to rise in response to a situation often described as “too much money chasing too few goods.”

Aggregate supply. It involves inflation rising as real gross domestic product rises and unemployment falls, as the economy moves along the Phillips curve. More accurately, it should be described as involving "too *much money spending chasing too few goods", since only money that is* spent on goods and services can cause inflation. This would not be expected to persist over time due to increases in supply, unless the economy is already at a full employment level.
The term demand-pull inflation is mostly associated with Keynesian economics.

(Y2-Y1) > (Y3-Y2)
(P2-P1) < (P3-P2)

How it Happens

- According to keynesian theory, the more firms will employ people, the more people are employed, and the higher aggregate demand will become. This greater demand will make firms employ more people in order to produce more output more. This increase in output will eventually become so small that only the price of the good is affected, not the amount of output. At first, unemployment will go down, shifting AD1 to AD2, which causes an increase in Y (Y2 - Y1). This increase in demand means more workers are needed, and then AD will be shifted from AD2 to AD3, but this time much less is produced than in the previous shift, but the price level has risen from P2 to P3, a much higher increase in price than in the previous shift. This increase in price is called inflation.

There are two principal theories about the demand-pull inflation: that of the monetarists and Keynesians, aggregate supply

3.3.2 Cost-Push Inflation

Cost-push inflation is caused by wage increases enforced by unions and profit increases by employers.

3.3.2.1 Rise in Money Wages

The basic cause of cost-push inflation is the rise in money wages more rapidly than the productivity of labour. In advanced countries, where trade unions are very powerful, they press employers to grant wage increases considerably in excess of increases in the productivity of labour, thereby raising the cost of production of commodities. Employers, in turn, raise prices of their products. Higher wages enable workers to buy as much as before, in spite of higher prices. On the other hand, the increase in prices induces unions to demand still higher wages. In this way, the wage-cost spiral continues, thereby leading to cost-push or wage-push inflation.

3.3.2.2 Rise in Cost of Living Index

Cost-push inflation may be further aggravated by upward adjustment of wages to compensate for rise in the cost of living index. This is usually done in either of the two ways. First, unions include an "escalator" clause in contracts with employers whereby money rates are adjusted upward each time the cost of living index increases by some specified number of percentage points. Second, in case where union contracts do not have an escalator clause, the cost of living index is used as the basis

for negotiating larger wage increases at the time of fresh contract settlements.

3.3.2.3 Rise in Production Cost of Other Sectors

Again, a few sectors of the economy may be affected by money wage increases and prices of their products may be rising. In many cases, their products are used as inputs for the production of commodities in other sectors. As a result, production costs of other sectors will rise and thereby push up the prices of their products. Thus wage-push inflation in a few sectors of the economy may soon lead to inflationary rise in prices in the entire economy.

3.3.2.4 Increase in Price of Domestic Products

Further, an increase in the price of domestically produced materials may lead to cost-push inflation. Since raw materials are used as inputs by the manufacturers of finished goods, they enter into the cost of production of the latter. Thus a continuous rise in the prices of raw materials tends to set off a cost-price-wage spiral.

3.3.2.5 Profit Maximization Objective

Another cause of cost-push inflation is Profit-push inflation. Oligopolist and monopolist firms raise the price of their products to offset the rise in labour and production costs so as to earn higher profits. There being imperfect competition in the case of such firms, they are able to administer price of their products. In an economy in which so called administered prices abound there is at least the possibility that these prices may be administered upward faster than cost in an attempt to earn greater profits. Therefore, such a process will lead to widespread profit-push inflation. Profit-push inflation is also called price-push inflation or sellers' inflation or market-power inflation.

But there are certain limitations on the power of firms to raise their profits. They cannot raise their selling prices to increase their profit-margins if the demand for their products is stable. Moreover, firms are reluctant to increase their profits every time unions are successful in raising wages. This is because profits of a firm depend not only on price but on sales and unit costs as well, and the latter depend in part on prices charged. So firms cannot raise their profits because their motives are different from unions. Lastly, profits form only a small fraction of the price of the product and a once-for all increase in profits is not likely to have much impact on prices. Economists, therefore, do not give much importance to profit-push inflation as an explanation of cost-push inflation.

4.0 CONCLUSION

The prevailing view in mainstream economics is that inflation is caused by the interaction of the supply of money with output and interest rates. In general, the mainstream economists are divided into two camps: those who believe that monetary effects dominate all others in setting the rate of inflation, or broadly speaking, monetarists, and those who believe that the interaction of money, interest and output dominate over other effects, or broadly speaking Keynesians. Other theories, such as those of the Austrian school of economics, believe that an inflation of overall prices is a result from an increase in the supply of money by central banking authorities.

5.0 SUMMARY

Attempts have been made in this unit to discuss the meaning of inflation, causes of inflation and types of inflation.

6.0 TUTOR-MARKED ASSIGNMENT

1. Distinguish between demand-pull inflation and cost-push inflation.
2. Explain the causes of cost-push inflation.

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UNIT 3 MEASUREMENT OF INFLATION

CONTENTS

1.0 INTRODUCTION

Measuring inflation is a question of econometrics, that is, finding objective ways of comparing nominal prices to real activity. In many places in economics, "real" variables need to be compared, in order to calculate GDP, effective interest rate and improvements in productivity. Each inflationary measure takes a "basket" of goods and services, then the prices of the items in the basket are compared to a previous time, then adjustments are made for the changes in the goods in the basket itself. For example if a month ago canned corn was sold in 10 oz. jars, and this month it is sold in 9.5 oz jars, then the prices of the two cans have to be adjusted for the contents. The result is the amount of increase in price which is attributed to "inflation" and not to improvements in productivity.

This means that there are many measures of inflation, depending on which baskets of goods and services are used as the basis for comparison. Different kinds of inflation measure are used to determine the real change in prices, depending on what the context is.

2.0 OBJECTIVES

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

• commonly used measures of inflation
• hedonic adjustments to measuring inflation
• the role of inflation in the economy.

3.0 MAIN CONTENT

3.1 Commonly used Measures of Inflation

Examples of common measures of inflation include:

• Consumer price indices **(CPIs) which measure the price of a** selection of goods purchased by a "typical consumer".

• Cost-of-living indices **(COLIs) which often adjust fixed incomes** and contractual incomes based on measures of goods and services price changes.

• Producer price indices **(PPIs) which measure the price received** by a producer. This differs from the CPI in that price subsidization, profits, and taxes may cause the amount received by the producer to differ from what the consumer paid. There is also typically a delay between an increase in the PPI and any resulting increase in the CPI. Producer price inflation measures the pressure being put on producers by the costs of their raw materials. This could be "passed on" as consumer inflation, or it could be absorbed by profits, or offset by increasing productivity.

• Wholesale price indices **, which measure the change in price of a** selection of goods at wholesale, prior to retail mark ups and sales taxes. These are very similar to the Producer Price Indexes.

• Commodity price indices **, which measure the change in price of** a selection of commodities. In the present commodity price indexes are weighted by the relative importance of the components to the "all in" cost of an employee.

• GDP Deflator **s use an entire economy as the basket of goods and** services, rather than some particular subset. The term "deflator" in this case means the percentage to reduce current prices to get the equivalent price in a previous period. The US Commerce Department publishes a deflator series for the US economy.

• Purchasing Power Parity **adjusts for the inflationary effects of** goods being non-tradeable between two or more economies, for example land prices, to compare standard of living purchasing power between two economies. PPP adjustments are, therefore, measuring inflation in location, rather than in time. Many inflation series numbers are also published for particular geographic regions. For example, the US Bureau of Labor

Statistics breaks down CPI-U calculations down to different regions of the US.

- Historical Inflation Before collecting consistent econometric data became standard for governments, and for the purpose of comparing absolute, rather than relative standards of living, various economists have calculated imputed inflation figures. Most inflation data before the early 20th century is imputed based on the known costs of goods, rather than compiled at the time. It is also used to adjust for the differences in real standard of living for the presence of technology. This is equivalent to not adjusting the composition of baskets over time.

3.2 Hedonic Adjustments to Measuring Inflation

Inflation measures are often modified over time, either for the relative weight of goods in the basket, or in the way in which goods from the present are compared with goods from the past. This includes hedonic adjustments and "reweighing" as well as using chained measures of inflation. As with many economic numbers, inflation numbers are often seasonally adjusted in order to differentiate expected cyclical cost increases, versus changes in the economy. Inflation numbers are averaged or otherwise subjected to statistical techniques in order to remove statistical noise and volatility of individual prices. Finally, when looking at inflation, economic institutions sometimes only look at subsets or special indices. One common set is inflation ex-food and energy, which is often called "core inflation".

In classical political economy, "inflation" referred to government policy itself: inflation meant increasing the money supply over and above that necessary to accommodate any increase in real GDP, while "deflation" meant decreasing it. Some economists in a few schools of economic thought, generally described as libertarian, classical liberal, or ultra-conservative, still retain this usage. In mainstream economic terms these would be referred to as expansionary and contractionary monetary policies.

3.3 The Role of Inflation in the Economy

In the long run, inflation is generally believed to be a monetary phenomenon, while in the short and medium term, it is influenced by the relative elasticity of wages, prices and interest rates. The question of whether the short-term effects last long enough to be important is the central topic of debate between monetarist and Keynesian schools. In monetarism, prices and wages adjust quickly enough to make other factors merely marginal behavior on a general trend line. In the

Keynesian view, prices and wages adjust at different rates, and these differences have enough effects on real output to be "long term" in the view of people in an economy.

A great deal of economic literature concerns the question of what causes inflation and what effect it has. A small amount of inflation is often viewed as having a positive effect on the economy. One reason for this is that it is difficult to renegotiate some prices, and particularly wages, downwards, so that with generally increasing prices it is easier for relative prices to adjust. Many prices are "sticky downward" and tend to creep upward, so that efforts to attain a zero inflation rate (a constant price level) punish other sectors with falling prices, profits, and employment. Efforts to attain complete price stability can also lead to deflation, which is generally viewed as a negative outcome because of the significant downward adjustments in wages and output that are associated with it.

Inflation is also viewed as a hidden risk pressure that provides an incentive for those with savings to invest them, rather than have the purchasing power of those savings erode through inflation. In investing inflation risks often cause investors to take on more systematic risk, in order to gain returns that will stay ahead of expected inflation. Inflation is also used as an index for cost of living adjustments and as a peg for some bonds. In effect, inflation is the rate at which previous economic transactions are discounted economically.

Inflation also gives central banks room to maneuver, since their primary tool for controlling the money supply and velocity of money is by setting the lowest interest rate in an economy - the discount rate at which banks can borrow from the central bank. Since borrowing at negative interest is generally ineffective, a positive inflation rate gives central bankers "ammunition", as it is sometimes called, to stimulate the economy.

However, in general, inflation rates above the nominal amounts required to give monetary freedom, and investing incentive, are regarded as negative, particularly because in current economic theory, inflation begets further inflationary expectations.

- Increasing uncertainty may discourage investment and saving.
- Redistribution

  - It will redistribute income from those on fixed incomes, such as pensioners, and shifts it to those who draw a variable income, for example from wages and profits which may keep pace with inflation.

- Similarly it will redistribute wealth from those who lend a fixed amount of money to those who borrow. For example, where the government is a net debtor, as is usually the case, it will reduce this debt redistributing money towards the government. Thus inflation is sometimes viewed as similar to a hidden tax.

• International trade: If the rate of inflation is higher than that abroad, a fixed exchange rate will be undermined through a weakening balance of trade.

• Shoe leather costs: Because the value of cash is eroded by inflation, people will tend to hold less cash during times of inflation. This imposes real costs, for example in more frequent trips to the bank. (The term is a humorous reference to the cost of replacing shoe leather worn out when walking to the bank.)

• Menu costs: Firms must change their prices more frequently, which impose costs, for example with restaurants having to reprint menus.

• Relative Price Distortions: Firms do not generally synchronize adjustment in prices. If there is higher inflation, firms that do not adjust their prices will have much lower prices relative to firms that do adjust them. This will distort economic decisions, since relative prices will not be reflecting relative scarcity of different goods.

• Hyperinflation: if inflation gets totally out of control (in the upward direction), it can grossly interfere with the normal workings of the economy, hurting its ability to supply.

• Inflation tax when a government can improve its net financial position by allowing inflation, then this represents a tax on certain holders of currency. Governments may decide to use this "stealth tax" in order to avoid hard fiscal decisions to cut expenditures, raise taxes, or confront government unions with greater efficiency.

• Bracket Creep is related to the inflation tax. By allowing inflation to move upwards, certain sticky aspects of the tax code are met by more and more people. Commonly income tax brackets, where the next dollar of income is taxed at a higher rate than previous dollars. Governments that allow inflation to "bump" people over these thresholds are, in effect, allowing a tax increase because the same real purchasing power is being taxed at a higher rate.

• Corporate Return on Investment is affected by generating inflation. Should a firm increase productivity, this would tend to reduce the prices as per supply/demand ratios. Inflation enables firms to reap the reward from productivity investment instead of benefiting the consumer as happened prior to 1913 in the US.

SELF-ASSESSMENT EXERCISE

State the role of inflation in the economy

4.0 CONCLUSION

As noted, some economists see moderate inflation as a benefit; some business executives see mild inflation as "greasing the wheels of commerce." A very few economists have advocated reducing inflation to zero as a monetary policy goal - particularly in the late 1990s at the end of a long dis-inflationary period, when the policy seemed within reach.

5.0 SUMMARY

Thus demand-shift inflationary process arises initially out of excess demand in particular industries. But it results in a general price rise only because of the downward rigidities and cost-oriented nature of prices and wages. It is not characterized by an autonomous upward push of costs or by an aggregate excess demand. Indeed its basic nature is that it cannot be understood in terms of aggregates alone. Such inflation is the necessary result of sharp changes in the composition of demand, given the structure of prices and wages in the economy.

6.0 TUTOR-MARKED ASSIGNMENT

Discuss the common measures of inflation.

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