

# AEM 102: PRINCIPLES OF ECONOMICS

# COURSE OUTLINE:

## WEEKS

- 1 INTRODUCTION TO ECONOMICS
- 2 THE ECONOMIC PROBLEM
- 3 DEMAND, SUPPLY AND EQUILIBRUM
- 4 – 5 DEMAND, SUPPLY AND ELASTICITY
- 6 – 7 UNEMPLOYMENT, AND NATIONAL INCOME
- 8 MID-SEMESTER: CONTINUOUS ASSESSMENT TEST (CAT)
- 9 CONSUMPTION, INVESTMENT AND EXPORTS
- 10 INFLATION, DEFICITS AND DEBT

# Recommended Textbook

- Salvatore, D. and Diulio, E. A. (1996) Schaum's Outlines of Theory and Problems of Principles of Economics 2<sup>nd</sup> ed. 400pp
- **Course Coordinator:** Prof. (Mrs.) C. A. Afolami
- **Other Lecturers:**
  - Dr. B. Phillip
  - Dr. Adewuyi
  - Dr. Obayelu A. E.
  - Dr. O. Ashaolu
  - Dr. O. I. Vaughan

# Ground Rules

- Switch off all mobile phones.
- No side talking/no conversations.
- No loitering in the auditorium.
- Talk only when the lecturer approves it.
- No strolling into the auditorium during lecture i.e. lateness to lecture is not allowed.
- No form of disturbance during lectures.

# 1.0 Introduction to Economics

1.1. The Subject Matter of Economics

1.2. The Methodology of Economics

1.3. The Use of Tables, Graphs and Equations

# 1.1. The Subject Matter of Economics

Economics is a social science.

It studies individuals and organizations engaged in production, distribution and consumption of goods and services (using scarce resources of land, labour , capital).

Its tools are:

Principles

Theories and

Models.

Principles are basic laws of the discipline e.g. an increase in the demand for a commodity results in rise of its price, ccccccc ppppppp (other things being equal).

Theories: – these are further explanations of the general principles e.g. The law of diminishing returns, the consumer theory etc.

The models – are mathematical relationships between economic variables e.g.  $C = f(Q)$

Where: C= cost of production,

Q=Output e.g. maize in tonnes

f=function

- These are developed around the cause and effect of economic events. Also, they isolate a few of the most important determinants or causes of the economic events.
- They are to:
  - i. predict economic occurrences
  - ii. Develop policies that will prevent or correct economic problems e.g. Unemployment, inflation, forex supply, forex demand, wastages in the economy.



Economics is subdivided into branches:

- Microeconomics
- Macroeconomics

Microeconomics studies the economic behavior of individual decision-making units e.g. farmers, consumers, companies and resource owners.

Macroeconomics studies the behavior of aggregates of economic activities e.g. aggregate demand, aggregate output, aggregate unemployment, the general price level and the balance of payment.

# Relevance of Economics

- The performance of the economy (economic condition) affects all members of the nation.
- Economic conditions determine where we live, what we eat, where we eat, the school attended, whether we work or not and how much we earn.
- Economic conditions affect the peace and stability in our cities, nation and in the world – unemployment, inflation and corruption.
- Economics gives a better understanding of how the economy operates and what can be done to avoid, correct and alleviate unemployment, inflation and waste.

## 1.2 The Methodology of Economics

Economic phenomena are complex, so economists model economic behaviors. In constructing a model, economists:

(i) make assumptions which cut away unnecessary details; and

(ii) reduce the complexity of the economic behavior.

The economic behavior is then presented as a relationship between a dependent variable and a few independent variables

The economic behavior being explained is the dependent variable while the variables explaining that economic behavior are the independent variables.

Frequently, the dependent variable is presented as depending upon one independent variable, with the influence of the other independent variables held constant. e.g.  $C=f(Q/T,W,D)$

that is, C depends upon Q ( while other independent variables T, W and D are held constant).

An economic model will, also, specify the type of relationship between the dependent and independent variables. This can be:

(a.) positive or (b.) negative

(a.) Positive relationship: when the dependent variable moves in the same direction as the independent variable e.g. positive relationship between price (independent variable) and supply (dependent variable), *ceteris paribus*.

(b.) Negative relationship: when the value of the dependent variable increases as the value of the independent variable decreases e.g. as the price of a commodity increases, its demand decreases, *ceteris paribus*.

# 1.3. The use of Tables, Graphs and Equations

Models which simplify real economic relationships provide the frame work for organizing data, empirically testing economic hypotheses and forecasting economic behaviour.

Below is a consumer spending model with data on consumer spending for a hypothetical economy, we shall:

- \* graph the data with consumption in the y-axis
- \* establish an equation for consumer spending; &
- \* use the equation to forecast consumer spending.

# Table 1: Consumption and Disposable Income data.

Individual	Disposable Income ( $Y_d$ )	Consumption (E)	$y=Y - \bar{Y}$	$e=E - \bar{E}$
1	20,000	20,000		
2	21,000	20,750		
3	22,000	21,500		
4	24,000	23,000		
5	27,000	25,250		
TOTAL	114,000	110,000		
Average	22,800	22,100		

From Table 1, it is evident that consumption and disposable income display a positive relationship.

Note: a table /schedule is made up of a number of rows and columns.

The following must be specified for a table: a title, a (table) number, units of measurement of the data and the source of the data.



In a graph, the following must, also, be specified: a title, a (figure) number, scale and axes (vertical and horizontal) identities with units of measurement.

The equation for above set of data.

A linear relationship is evident in the graph. The appropriate equation is, therefore of the form:

$$E = a + bY_d$$

where: a is the intercept

and b is the coefficient of  $Y_d$ , or the slope

$$b = \frac{\sum ye}{\sum y^2}$$

$$a = \bar{E} - b\bar{Y}_d$$

e = deviations from the mean of E

y = deviations from the mean of Y

$\sum$  is summation

$\bar{E}$  is mean of E

$\bar{Y}$  is mean of Y

## **2. LECTURE NOTE ECONOMIC PROBLEMS**

### **Contents**

- **The Problem of scarcity**
- **The Production possibility Frontier**
- **The Principle of Increasing Costs**
- **Scarcity and Market system**

# Learning Objectives

**At the end of the lecture, students should be able to**

- **Identify the various types of economic resources**
- **Explain scarcity as a fundamental economic problem**
- **Explain the basic questions in economics due to the problem of scarcity**
- **Explain Production Possibility Frontier (PPF) and its applications**
- **Explain the principle of increasing costs**
- **Identify the characteristics of various economic systems and how the economic problems can be solved?**

# What are economics resources?

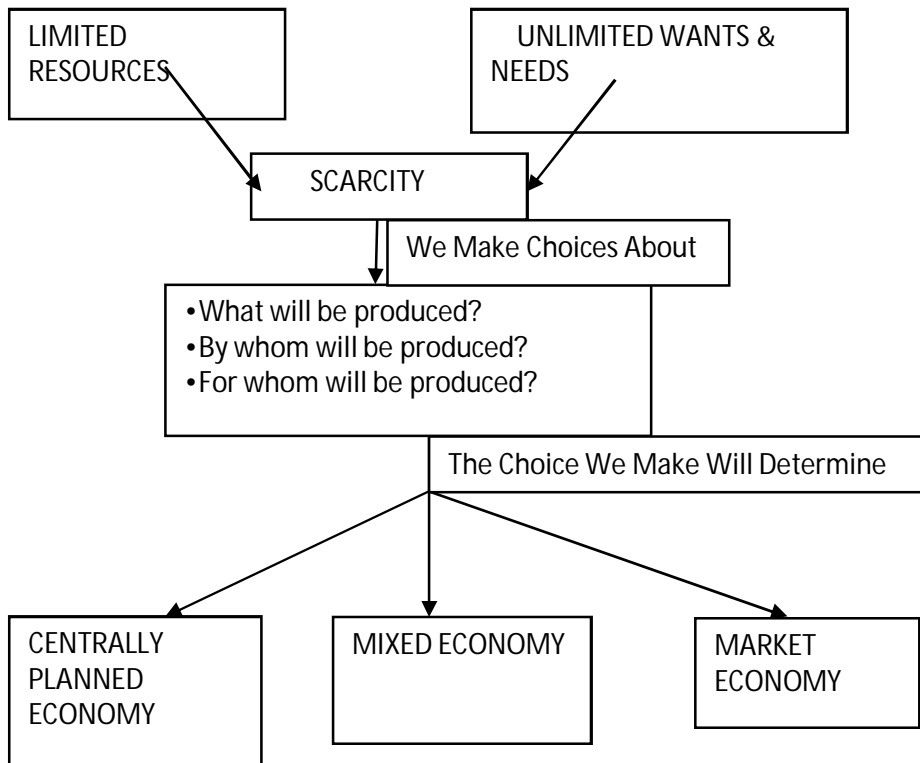
- Economic resources consist of Natural resources such as minerals, forests, rivers and agricultural land
- **Capital** are human-made resources which consist of tools, equipment, machinery, buildings, financial instruments and transportation networks to facilitate production
- **Labour** is human resources which consists of human beings who possess a wide array of skills needed to produce goods and services. **Entrepreneurial ability** is a special labour skill

# What is Scarcity?

- The Central Problem of all economies is scarcity
- Limited Resources + Unlimited Wants = Scarcity
- Scarcity is the basis of many economic concepts because it constrains or limits our behavior
- Scarcity exists worldwide because people want more goods and services than can be produced by each economy's limited supply of economic resources

# What is Scarcity?

- Scarcity forces individuals, firms, governments and societies to make choices
- Economics is therefore defined as the study of scarcity – the study of the allocation of scarce resources to satisfy human wants





# Basic Economic Decisions as a result of Problem of scarcity

- What to produce – This involves decisions about the kinds and quantities of goods and services to produce
- How to produce – This requires decisions about what techniques to use and how the economic resources are to be combined in producing output
- And for whom to produce – this involves decisions on the distribution of output among the members of a society

# The Production Possibilities Frontier (PPF)

- In economics, the PPF also known as the production Possibility Curve (PPC) or transformation curve is the maximum amount of alternative combinations of goods and services that a society can produce at a given time when there is full utilization of economic resources and technology.
- It is a curve that is convex from the origin, showing attainable levels of production assuming resources and technology stays constant
- The opportunity cost of an activity is the value of the resources used in that activity when they are measured by what they would have produced when used in their **next best** alternative.

# The slope of PPF

- The slope of the PPF at any given point is called the **marginal rate of transformation** or marginal opportunity cost. That is, the opportunity cost of good **X** in terms of good **Y** at the margin
- A person with the lower marginal opportunity cost of an activity has the comparative advantage at that activity.
- That is, a person with the comparative advantage can produce the activity by giving up the smallest amount of the alternative activity.

# The applications of PPF

- The Production Possibilities Frontier is a basic workhorse in economics.
- It is important for understanding some basic issues in economics.
- Great application is with international trade theory.
- Helps one to understand and distinguish between comparative advantage and absolute advantage.

# The PPF

- Great application is with international trade theory.
- Helps one understand and distinguish between comparative advantage and absolute advantage.
- An important historical figure in all this is David Ricardo.

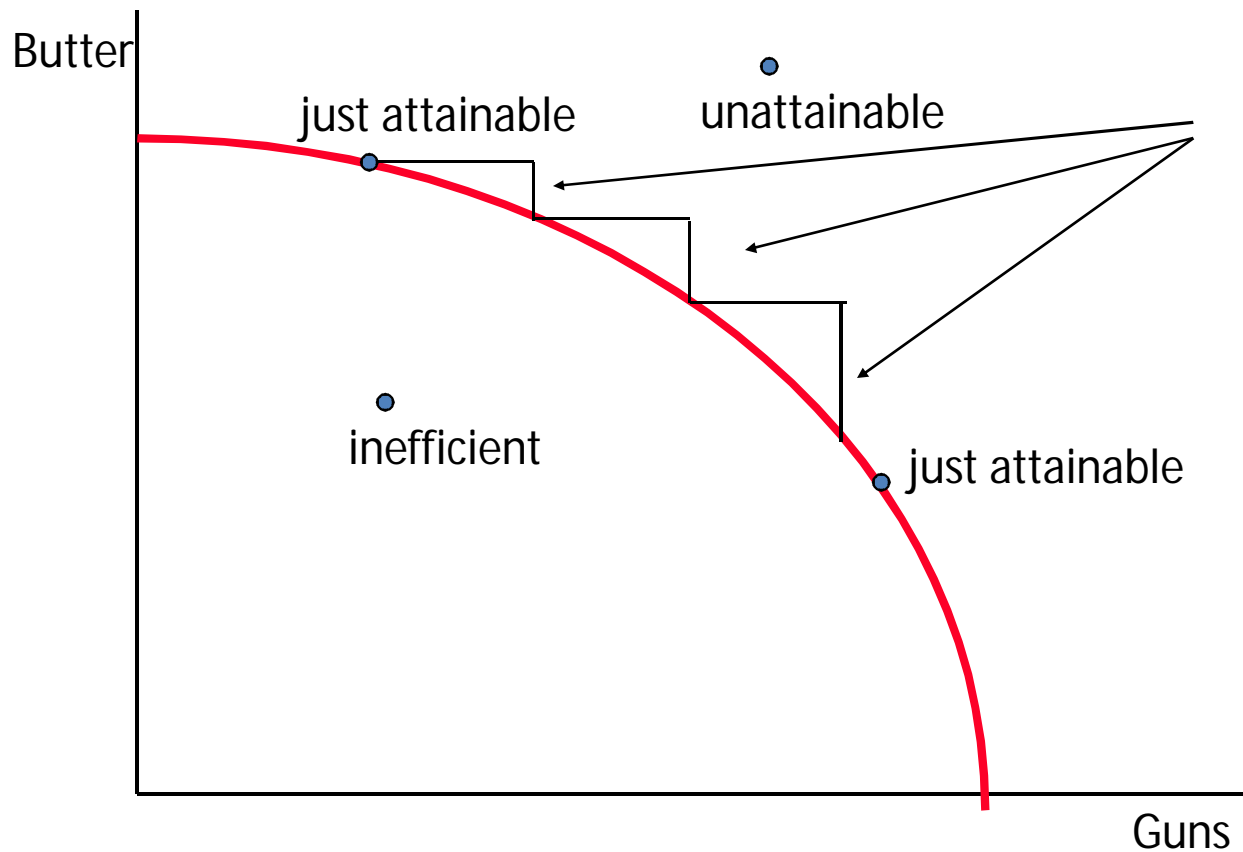
# Absolute vs. Comparative Advantage Applied to Trade

- **Absolute advantage:** if your country uses fewer resources to produce a given unit of output than the other country.
- **Comparative advantage:** if your country can produce the output at a lower marginal cost in terms of other goods foregone than the other country.
- Every country (or person, or economy) has a comparative advantage at some activity.
- Absolute advantage is not important and may not always happen. Sometimes people or countries have the absolute advantage in nothing! Yet trade possibilities still exist.

# Points to Note on PPF

- The PPF curve divides production space into 3 distinct areas, points on the PPF curve, points outside the curve and points on the inside of the curve
- the PPF curve also illustrates scarcity by dividing production space into attainable and unattainable levels of production

# A Typical PPF Picture



**The marginal opportunity cost of guns in terms of butter is increasing as we move down the PPF!**

**The PPF is typically bowed-out or linear.**

**It is not bowed-in**



# PPF

- The PPF shifts outward overtime as more resources become available and technology is improved
- Points on a PPF are efficient; points within the frontier are inefficient and points outside the frontier are unattainable
- Points on PPF are efficient because all available resources are utilized and there is full use of existing resources

# PPF

- Position outside the PPF are unattainable since PPF define the maximum amount that can be produced at a given time
- Position within a PPF are inefficient because some resources are either unemployed or underemployed

# Assignment 1

- (a). Use the data from Table 1 to draw a PPF. Plot clothing production on the vertical axis and food production on the horizontal axis. Label the production alternatives A, B, C, D, E and F on the curve
- (b) On the same figure, label as point U the production of 3 thousand units of clothing and a 3 million units of food and as point H the production of 6 thousand units of clothing and 3.5 million units of food. What do point U and H indicate?
- (c) What is the difference between unemployed and underemployed economic resources?
- (d) When is the production efficient?

# Table 1

<b>Alternative or point</b>	<b>Units of food (millions)</b>	<b>Units of clothing (thousands)</b>	<b>Cost of additional units of food</b>
<b>A</b>	<b>0</b>	<b>8.0</b>	<b>0.5</b>
<b>B</b>	<b>1</b>	<b>7.5</b>	<b>1.0</b>
<b>C</b>	<b>2</b>	<b>6.5</b>	<b>1.5</b>
<b>D</b>	<b>3</b>	<b>5.0</b>	<b>2.0</b>
<b>E</b>	<b>4</b>	<b>3.0</b>	<b>3.0</b>
<b>F</b>	<b>5</b>	<b>0.0</b>	

# Principles of increasing opportunity costs

- Resources are not equally efficient in the production of goods and services
- When decision is made to produce more of a commodity ( e.g guns) and less of other ( butter), the resources reallocated to the production of the first are usually less productive
- Implying that larger amounts of resources are transferred from the production of the 2<sup>nd</sup> to the production of the 1<sup>st</sup>
- Increasing units of the 2<sup>nd</sup> are given up for fewer incremental units of the 1<sup>st</sup>

# Principles of increasing opportunity costs

- Increasing opportunity cost of production of the 1<sup>st</sup> commodity illustrates the principle of increasing costs
- The law of increasing opportunity costs states that as production of a product increases, the cost to produce an additional unit of that product increases as well.

# Scarcity in a Free Market economy system or a capitalist market economy/ laissez-faire system

- Free market is a market with no government interference. Government only provide defense and core services
- households own resources, allocate resources through the workings of the price mechanism
- Prices resolves the three fundamental economic questions of what, how and for whom to produce
- The only goods and services produced are those which individuals are willing to purchase at a price sufficient to cover the cost of producing them

# Scarcity in a Free Market economy system

- There is competition which affect the price of the goods and services produced
- Because of scarce resources, goods and services are produced under this system using the technique and resource combination that minimizes the cost of production
- Goods and services produced are distributed or sold to those who are willing and have the money to pay their prices
- What then develops is a circular flow



# Scarcity in a command economy/systems

- In Command systems like Eastern Europe, former Soviet Union, what to produce, how to produce it, and who gets what's produced are controlled by a central planner.

# Scarcity in a mixed economy system

- Under this system, government replaces, regulates or modifies the price mechanism
- For instance, in US, government produces some goods itself (police protection, road)
- government finances these expenditures by taxing the income of individuals and businesses
- Government also influences what to produce by imposing direct regulations on producers or on specific goods and services

# 3. Demand, Supply and Equilibrium

- Demand
- Shifting of the market demand curve
- Supply
- Shifting of the market supply curve
- Equilibrium price and quantity
- Equilibrium when market demand and/ or market supply shifts
- Government and price determination

# Demand

- The term demand refers to the number of units of a particular good or service that consumers (households) are willing to purchase at a particular period.
- This refers to actual quantities purchased at a certain price at a point in time.

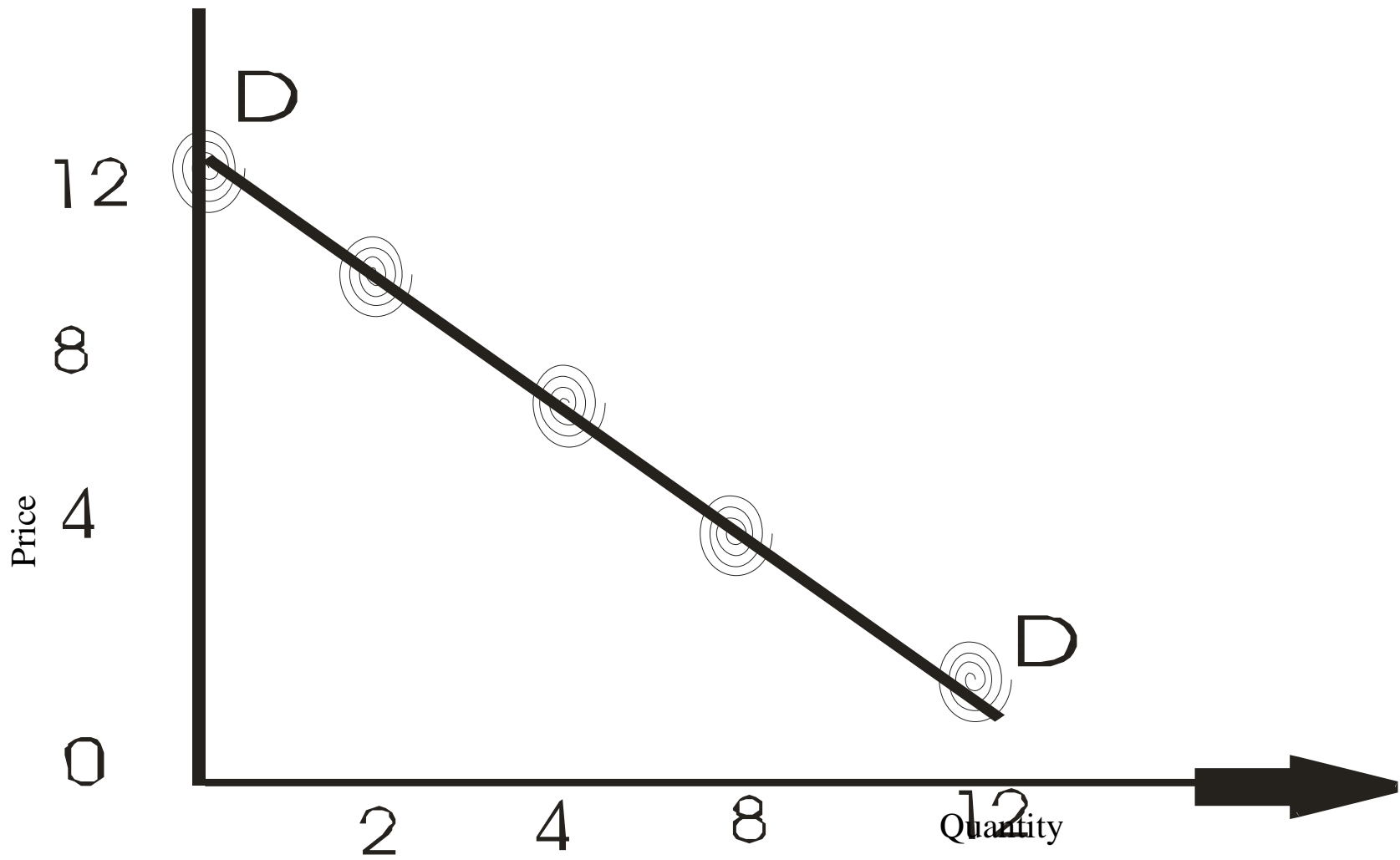
**Table 1: DEMAND SCHEDULE**

<b><math>P_x(\text{₦})</math></b>	<b>2</b>	<b>4</b>	<b>6</b>	<b>8</b>	<b>10</b>	<b>12</b>
<b><math>Q_x(\text{Kg})</math></b>	<b>12</b>	<b>8</b>	<b>6</b>	<b>4</b>	<b>2</b>	<b>0</b>

- A market schedule shows the units of a good or service that individuals are willing and able to buy.

Factors that determine the quantities of goods and services demanded include:

- Price of the commodity.
- Price of other goods and services.
- Average household disposable income.
- Wealth
- Taste and preferences.
- Size of the population



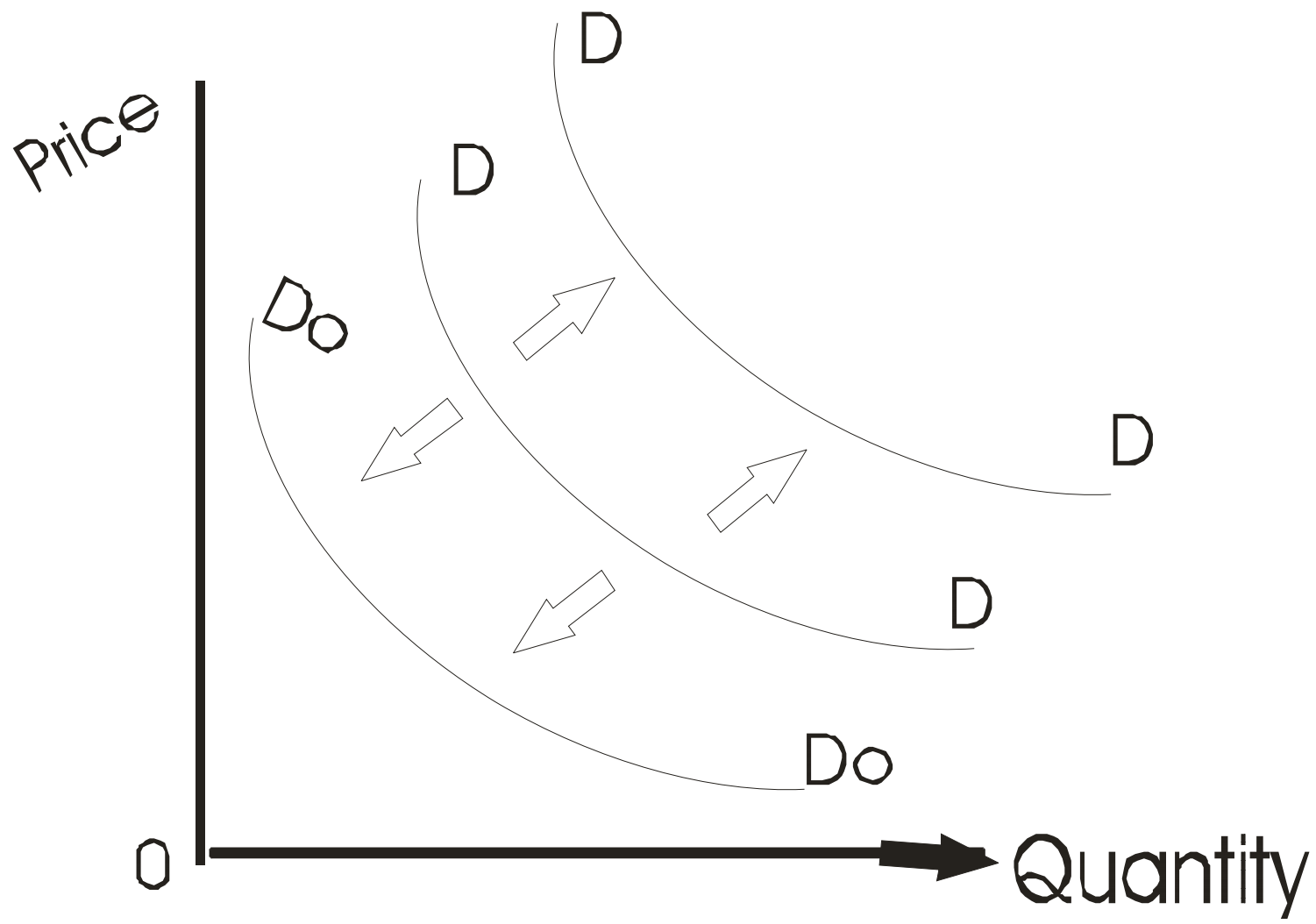
**Fig 1: INDIVIDUAL'S DEMAND CURVE**

- **Price of the commodity:** stated differently  $Q_x = f(p_x)$  i.e. the quantity of commodity x demanded is a function of the price of x.
- The relationship between price and quantity demanded is inverse. This is due to a substitution and an income effect.
- As price falls, an individual purchases more of this good to replace others whose price has remained unchanged.
- When the purchase price of a good falls, an individual with a given income can buy more of that commodity.

- The demand curve above is drawn on the assumption that other variables are held constant.
- A change in demand refers to a shift of the demand curve because a variable other than price has changed.
- A change in quantity demanded occurs when there is change in the price of the commodity, leading to a movement along an existing demand curve.



- A change in any of these other variables:-  
price of other goods and services, average household disposable income, wealth, taste and preferences and size of the population will cause a change in demand and consequently a shift of the demand curve.
- Such shifts could be inward signifying a decrease in demand or outward indicating an increase in demand.



**Figure 2 : MARKET DEMAND CURVE**

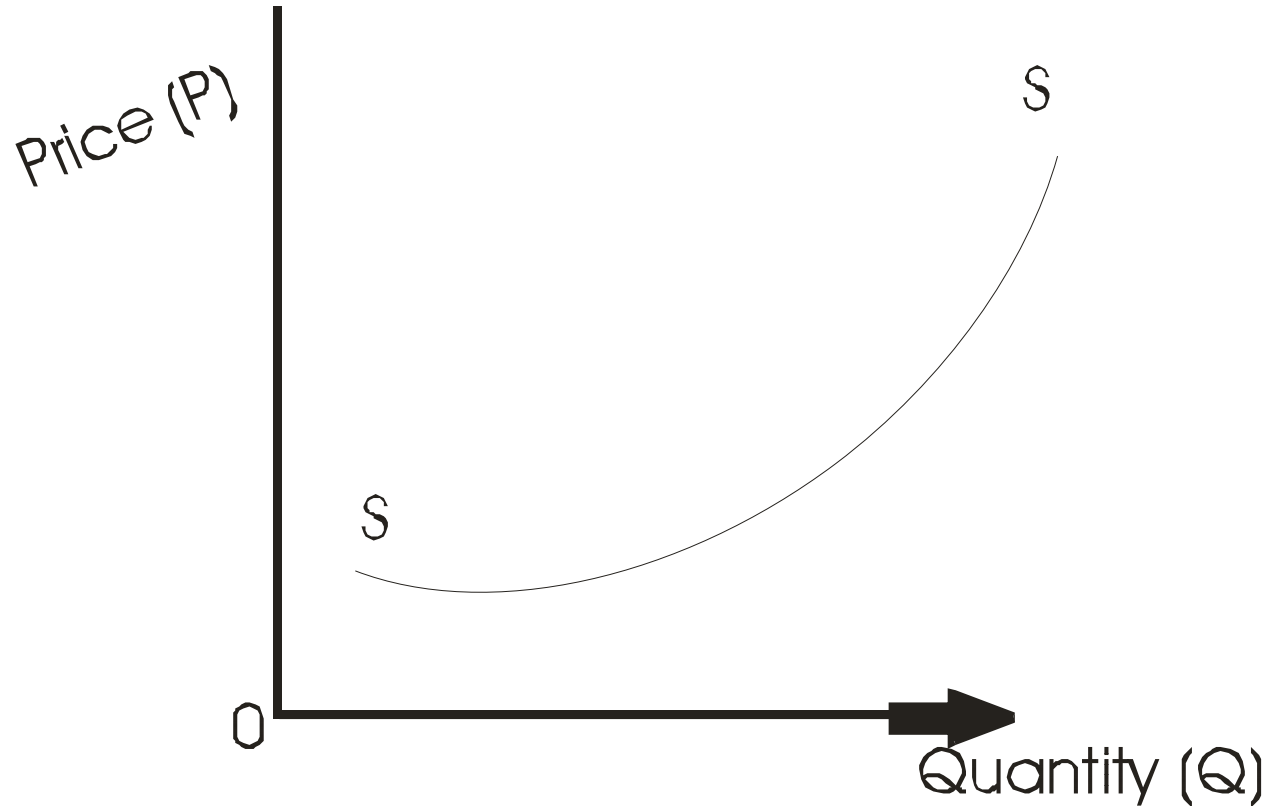
# SUPPLY

- The quantity of a commodity that producers wish to sell at various prices is the quantity supplied. The supply schedule specifies the units of good or service that a producer is willing to supply at alternative prices.

Table 2: Supply Schedule

Price per kg (P)	Quantity Supplied (S)
20	5
40	46
60	70
80	100
100	115
120	122

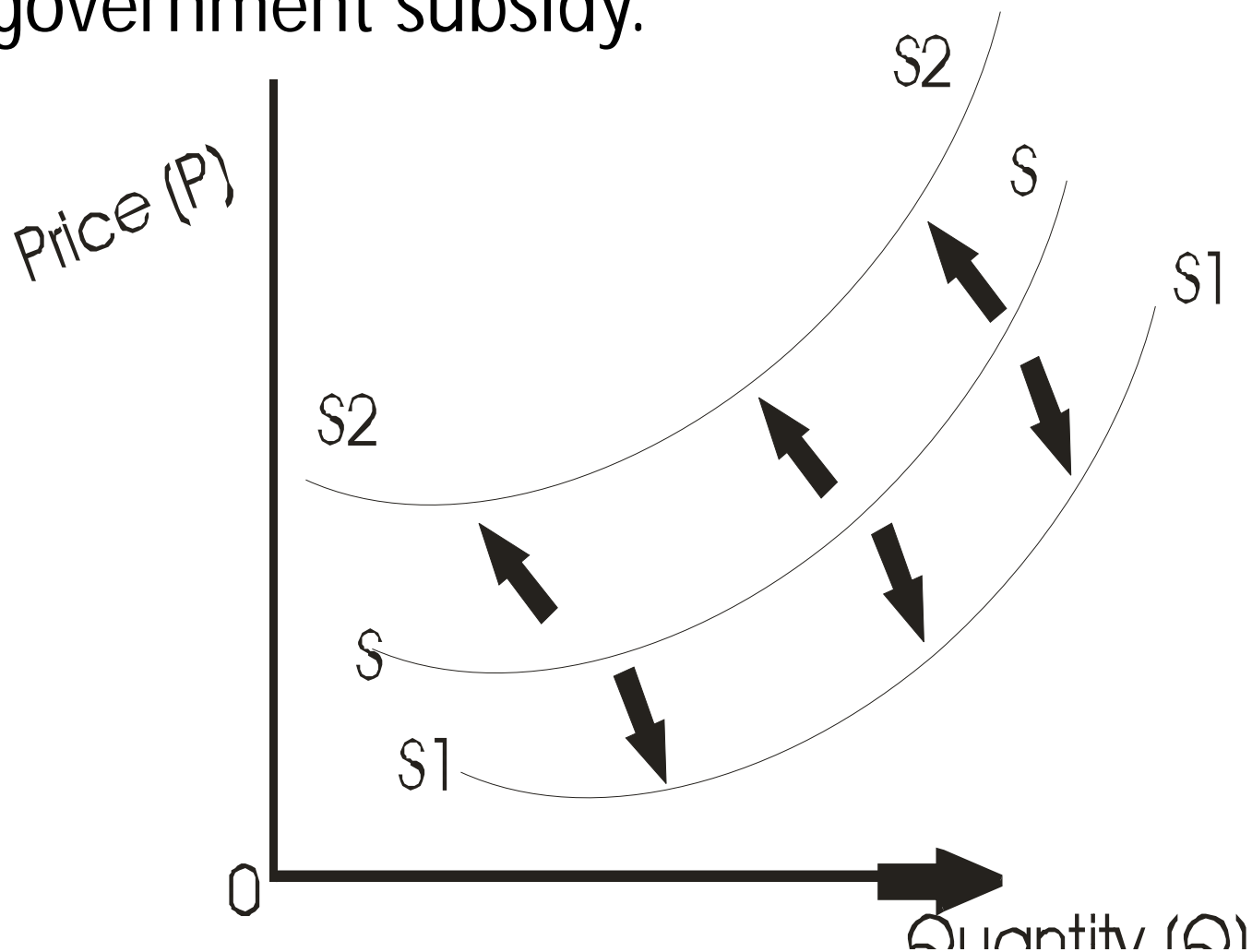
- The graphic presentation of the supply schedule is the supply curve. The curve has a positive slope indicating that suppliers must have a higher price to increase supply.



**Figure 3 : AN INDIVIDUAL PRODUCER'S SUPPLY CURVE**

- The determinants of the quantity supplied of goods and services are:
  - The commodity's own price.
  - Number and /or size of producers.
  - Factor prices (wages, interest or rent paid to economic resources).
  - Cost of factors of production
  - Technological progress
  - Government subsidy/or taxes on output
- A **change in quantity supplied** indicates a change in the price of the commodity leading to movement along the supply curve.
- A **change in supply** denotes a shift in the supply curve

The curve shifts to the right when more producers enter the market, decreases in factor prices, improvements in technology and government subsidy.



# Equilibrium price and quantity

- To consider how prices are determined in a competitive market by the forces of supply and demand, we assume first that other factors except the commodity's own price are held constant.
- Equilibrium price is the price at which quantity demanded equals quantity supplied.
- It is a situation in which there is no tendency for price or quantity to change.

Table 3:

Price ₦	Quantity Demanded	Quantity Supplied
20.00	110	5
40.00	90	46
<b>60.00</b>	<b>77</b>	<b>77</b>
80.00	67	100
100.00	62	115
120.00	60	122

**At P =60.00; Q<sub>s</sub> = Q<sub>d</sub>**



- Graphically, the equilibrium point is that point where the market demand and market supply curves intersect.

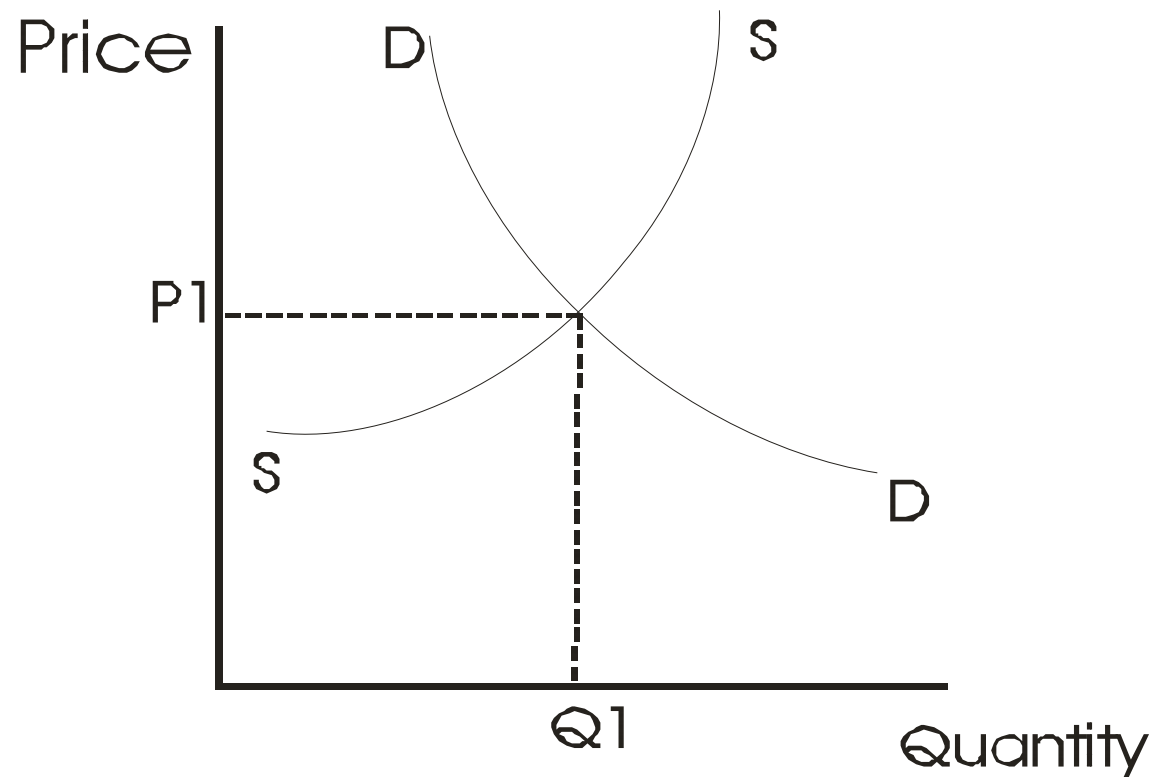


Figure 5 : DEMAND SUPPLY AND EQUILIBRIUM

- At prices below the equilibrium there will be **shortages** and rising prices. And at points above the equilibrium there will be **surpluses** and falling prices.

# Equilibrium when demand and /or supply changes

- Equilibrium price and /or equilibrium quantity change when the market demand and /or market supply curve shifts.
- An increase in market supply without a corresponding increase in market demand will lead to a fall in equilibrium price and an increase in equilibrium quantity – market supply curve shifts down and to the right and demand is unchanged.

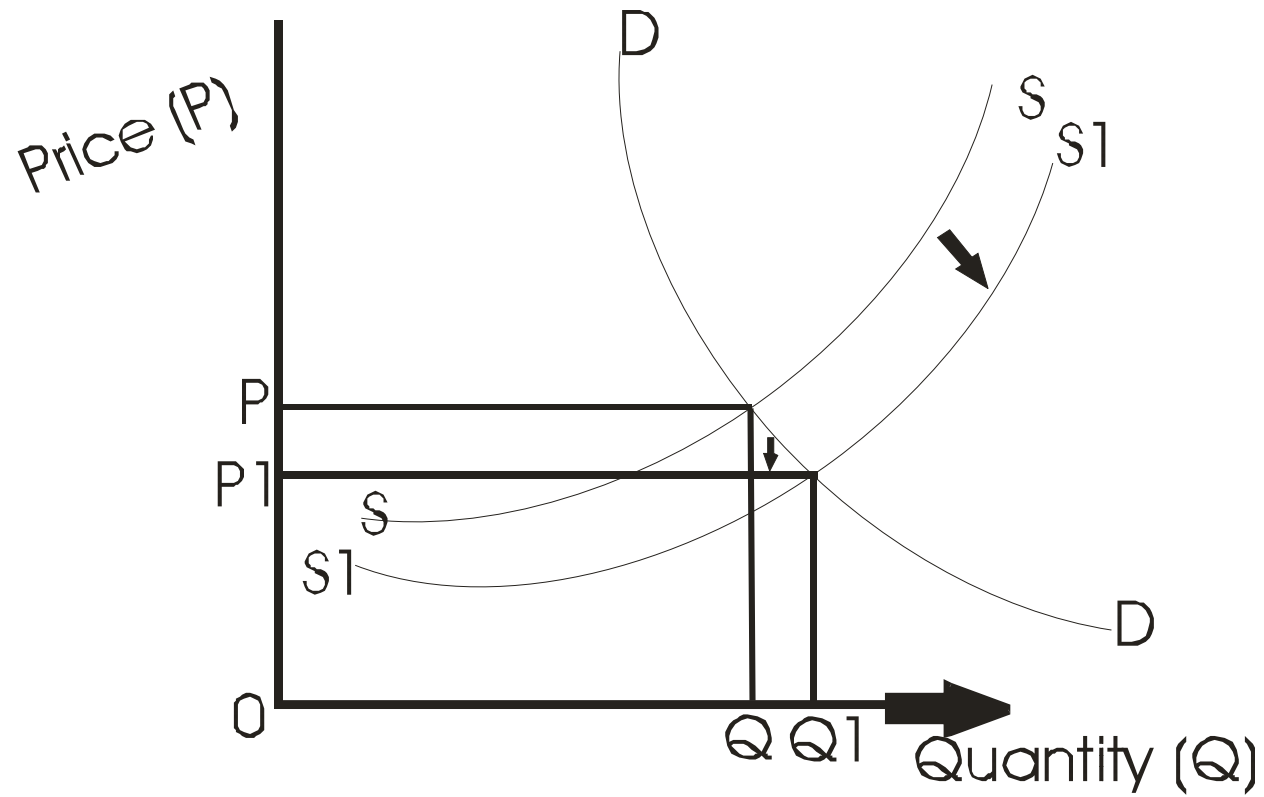


Figure 6: Equilibrium when supply curve shifts

- Equilibrium price and equilibrium quantity both rise when there is an increase in market demand
- An increase in both market demand and market supply result in a higher equilibrium quantity.
- The change in equilibrium price is indeterminate, when the magnitude of the demand and supply shift is unspecified.

# Government and price Determination

- Government sometime intervene in the market by setting a minimum price (price floor) or a maximum price (price ceiling) for a good or service.
- Price ceilings are usually set below equilibrium while price floors are set above the equilibrium.
- An example of price floor is minimum wage and price ceiling is pump price of (PMS) Petrol
- These result in disequilibria.

- When there is a price ceiling, market demand will be greater than market supply resulting in shortages.
- The government can restrict demand by rationing.
- The market can respond to the shortages through the development of black markets
- In rationing, a consumer must possess a coupon authorizing the purchase of a good in addition to having the willingness and financial capacity to purchase the good or service.

- A price floor results in excess supply
- Government can control the excess supply by shifting the market supply curve to the left through taxes. This will increase equilibrium price of the commodity and reduce equilibrium quantity.
- Government can subsidise the produce leading to a fall in equilibrium price and increase in equilibrium quantity.



## 4 – 5 DEMAND AND SUPPLY OF ELASTICITY.

Elasticity of demand is the responsiveness of a change in the quantity demanded due to a change in many independent variables such as prices, income.

Mathematically, this can be represented as shown below: -

$$E = \Delta Q / \Delta X$$

Where E = Elasticity,

Q = Quantity demanded;

X = independent variable.

$\Delta Q$  = Change in quantity

$\Delta X$  = change in independent variable

- Price elasticity of demand is the percentage in the quantity demanded in response to a percentage change in the price of that good.
- 
- Elasticity (E) = -  $\frac{\% \text{ change in Quantity demanded}}{\% \text{ Change in price}}$
- 
- The value of the elasticity is negative because the slope of the demand curve is negative or downward slopping
-

# Illustrations

- If the price of gari decreases by 10%, and the quantity demanded is less than 10%, the demand is inelastic
- 
- If the price of meat decreases by 10%, and the quantity demanded decreases by more than 10%, the demand is elastic
- 
- If the price of salt decreases by 10%, and the quantity demanded increases by 10%, the demand is unitary elastic
- 
- To determine the price elasticity, we calculate the total revenue (TR.). If there is no change in the TR at different prices, then there is unitary elasticity. When  $TR_2 > TR_1$ ; the element is elastic
- When  $TR_2 < TR_1$  then the demand is inelastic.

• Example

• At ~~N~~25 bottle 100 bottles of coca-cola are sold. If the price drops to ~~N~~20 / bottle, the week sales increase to 110 bottles. Is the demand elastic or inelastic?

• Solution:

•  $P_1 = \text{N}25; Q_1 = 100; P_2 = \text{N}20; q_2 = 110$

$$TR_1 = P_1 \times Q_1 = 25 \times 100 = 2500.$$

$$TR_2 = P_2 \times Q_2 = 20 \times 110 = \text{N}2200.$$

• Since  $TR_2 < TR_1$ , the demand is elastic.

• Income elasticity ( $E_Y$ )

• Income elasticity is the percentage in quantity demanded due to a percentage change in income.

$$E_Y = \frac{\frac{\Delta Q}{Q}}{\frac{\Delta Y}{Y}} = \frac{\Delta Q}{\Delta Y} \cdot \frac{Y}{Q}$$

•

- Income elasticity ( $E_Y$ )
- Income elasticity is the percentage in quantity demanded due to a percentage change in income.

- $E_Y = \frac{\frac{\Delta Q}{Q}}{\frac{\Delta Y}{Y}} = \frac{\Delta Q}{\Delta Y} \cdot \frac{Y}{Q}$

- If  $E_Y > 0 \Rightarrow$  Normal good
- 
- $Y$  = New income
- $E_Y < 0 \Rightarrow$  inferior good
- 
- $\Delta Y$  = Change in income
- 
- $E_Y < 1 \Rightarrow$  income inelastic
- $Q$  = Original quantity
- $E_Y > 1 \Rightarrow$  income elastic
- $\Delta Q$  = change in quantity demanded.

# Cross elasticity

- The cross elasticity of demand  $\epsilon_{B,A}$  is the responsiveness of the quantity demanded of good B to a change in the price of another good A.
- $\epsilon_{B,A} = \frac{\Delta Q_B / Q_B}{\Delta P_A / P_A}$
- $\epsilon_{A,B}$  is the change in quantity of A demanded with respect to change in the price of commodity B.
- If  $\epsilon_{A,B}$  is positive, it implies that as price of good B increases, the quantity of commodity A demanded increases.
- Therefore, commodities A&B are substitutes.
- If on the other  $\epsilon_{A,B}$  is negative, it shows that as the price of commodity B increases the quantity of commodity A demanded decreases.
- 
- Therefore, they are complements. Example is bread and butter.
-

- **Exercise 1**

- Define the following terms giving appropriate equations.

- 

- a. (i) Price elasticity

- (ii) Income elasticity

- (iii) Cross price elasticity

- b. An economist conducted a study on the consumption of eggs in Kebbi State, Nigeria. His report shows that the quantity of eggs demanded varies from time to time. He equally reported a demand function as

- $$q = 24 - 0.2p$$

- Where  $q$  = quantity of eggs demanded

- $p$  = price

- Using the above information;

- i. If the price of egg falls from N70/crate to N50/crate determine the price elasticity of demand

- ii. What conclusion can you draw from the result obtained in (ii) above?

- **Solution**

- (i)  $q = 24 - 0.2p$

- $P_1 = 70; P_2 = 50$

- $q_1 = 24 - 0.2P_1$

- $= 24 - 0.2(70)$

- $= 10$

- $q_2 = 24 - 0.2P_2$

- $= 24 - 0.2(50)$

- $= 14$

- $E_p = \frac{q_2 - q_1}{q_1} \cdot \frac{P_1}{P_1 - P_2}$

- $= \frac{14 - 10}{10} \cdot \frac{70}{70 - 50}$

- $= \frac{4}{10} \cdot \frac{70}{20}$

- $= \frac{4 \times 7}{20} = \frac{28}{20} = 1.4$

- $= 1.4$

- $= 1.4$

-



- ii. **Conclusion:**
- Since the price elasticity is greater than one  
1.e  $E_p > 1$ , it shows that the demand is elastic.
- Therefore, a small increase in the price of egg  
will significantly affect the quantity of egg  
demanded.
-

- **ELASTICITY, TOTAL EXPENDITURE AND TOTAL REVENUE**

- The amount of money consumers spend in purchasing goods and services is the gross revenue of suppliers.
- Changes in the price of a commodity will either lead to an increase or decrease in the gross revenue of the producers depending on the value of elasticity.
- If the demand is elastic, i.e when own price elasticity of demand is greater than 1.
- A fall in price will lead to an increase in total expenditure of consumers and total revenue of producers
- But an increase in price will lead to a decrease in total expenditure of consumers and a decrease in total revenue of producers.

- 
- When demand is inelastic i.e when elasticity is less than 1, a fall in price will cause a decrease in total expenditure and consequently
- A fall in total revenue, but an increase in the price of the commodity will increase total expenditure and total revenue.

Value of elasticity	Price of commodity	Quantity of commodity	Total revenue
• Greater than one	Fall	Increase	Increase
• Greater than one	Rise	Decrease	Decrease
• Less than one	Fall	Decrease	Decrease
• Less than one	Rise	Increase	Increase
• Equal to one	Rise/fall	Unchanged	Unchanged

- When elasticity of demand is unity , an increase or decrease in the price of a commodity leaves total expenditure and hence revenue unaffected.
- A fall in price will generally lead to an increase in total quantity demanded
- But total revenue will decrease with elastic demand curve but increase with elastic demand curve.
- The most important determinant of elasticity is whether or not the product has close substitute e.g fish and beef and margarine. Substitution is possible only if the price of the substitutes remain constant.
- We expect little decrease in quantity demanded when the price of such commodities go up. The degree of elasticity depends to a great extent on how widely or narrowly a commodity is defined.
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# 6 – 7 UNEMPLOYMENT AND NATIONAL INCOME

## LABOUR AND UNEMPLOYMENT

Labour Market may be defined as an organization in which buyers and sellers of labour are in close contact. Where the wages and conditions of service are stated and agreed upon.

- The Concept of Labour Force: Labour refers to all human efforts used in the labour force is the production of goods and services on the other hand the total number of the employed, the self-employed and the unemployed.
- That is, those who are working and those who are looking for work.
- Labour force can also be described as the numbers of people allowed bylaw to work.
- The Labour force falls into the age bracket of18-65 years.

- **Demand for Labour.**
- Demand for labour may be defined as the total number of workers that are being engaged by employers at a particular time.
- **Factors that determine the Demand for Labour.**
- Demand for good and services. Demand for labour can be stimulated by an increase in the demand for good and services.
- Expansion of purchasing power. When the purchasing power expands as a result of increase in wages, the demand for labour increases and vice versa.
- The market size: The size of the market for the goods and services produced determines the demand for labour.

- Rate of Substitution. Demand for labour is affected by the availability of possible substitutes, such as machines etc. that can actually do the job of labour.
- Labour efficiency. If labour is high, there would be high propensity for producers to hire more labour and vice versa.
- The price size of labour (wages rate).
- The tastes of consumer, which define their trade-off between leisure and work.
- The size of population.
- The labour force participation rate.
- The occupational, educational and geographical distribution of the labour force.

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- **Efficiency Of Labour.**

- Efficiency of labour may be defined as the ability of labour to increase output without increasing the quantity of labour.
- Efficiency of labour is actually referring to an increase in the level of production per capital.

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- **Factors that determines variation of wages.**

- (i) Difference in hours of work:
- (ii) Difference in the cost of training
- (iii) Job Demand some jobs demand a very high sense of responsibility. People in such occupations are paid higher.
- (iv). Government policies:
- (v) **Scarcity** of Labour Supply:

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- **Types of Wages.**

- Nominal wage: This can be described as the total amount of money a labour is paid at a particular period of time.
- Real wage: This means the purchasing power of labour. It is the amount of goods and services the labour can use his money to buy.



- **CONCEPT OF UNEMPLOYMENT**

- The inability of labour to move creates unemployment. This unemployment cannot separate from labour.

- **Types of unemployment**

- **(i) Mass Unemployment:** This is the most serious of all types of unemployment because it affects nearly all the industries at the same time. Mass unemployment is caused by a general deficiency in demand.

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- **(ii) Frictional Unemployment:** This is caused by change in demand. This type of unemployment occurs as a result of immobility of labour.

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- **(iii) Structural Unemployment:** This type of unemployment occurs due to technological progress. The immediate effect of labour saving machinery is to make some workers redundant, thereby causing unemployment.
- **(iv) Seasonal Unemployment:** This type of unemployment occurs in some kind of work for instance, bad weather and caused a temporary suspension of work in the construction industries which at that time render the worker redundant with a resultant effect of unemployment.
- **(v) Residual Unemployment.** This occurs due to all other causes. This includes those people termed as unemployable due ill health or disability.

- **Causes of unemployment**
- **(i) Lack of industrialization:** when a country is not industrialized, it has limited employment opportunity; this makes it difficult for the available labour to be fully absorbed.
- **(ii) Over Population:** This is one of the major causes of unemployment. It is an indication that demand is higher than supply.
- **(iii) Lack of development plans:** Some countries do not have a functional development plan and this creates a lot of problems, as the government does not know how to make provision for the labour force
- **(iv) Geographical immobility of labour:** In some cases, workers find it very difficult to move from one geographical area to another and this results in unemployment.
- **(v) High Cost of Education:** In most developing countries, the cost of acquiring education is very high people can't afford it and be engaged in skilled jobs, hence unemployment
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- **Supply of labour.**
- Supply of labour may be defined as the total number of men, women and children of working age in a country. Supply of labour can also be described as services of labour available for production or available in the labour market.
  
- **Factors that Determine Supply of Labour.**
- **Age distribution of population.**
- **Population: The size of the population** is directly related to the supply of labour.
- **The reward for labour:**
- **Number of hours worked:**

- **Factors Affecting the Size of Labour Force.**
- **The size of country's** population: The higher the size of the population the higher the amount of labour that would be available in the labour force.
- Total number of labour force willing to work
- Mandatory age of retirement:
- The age distribution of the population.
- The number of disabled and sick persons of working age.
- School leaving age
- Number of those Retiring before retirement age
- The number of working women
- Number of working Hours.

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- **Consequences of unemployment**
- **(I) Social problem:** Unemployment increases crime rate in a country
- **(ii) Migration:** When people are not engaged in meaningful employment in a particular area they would be forced to move to other areas in search of jobs
- **(iii) Threat to Peace and stability:** If people are not employed, there is the tendency for them to engage in activities that will create instability and a break down of law and order is very high.
- **(iv) Reduction in investment:** Unemployment reduces the propensity to invest in a country.
- **(v) High Rate of dependency:** Unemployment increases the rate of dependency.
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- **NATIONAL INCOME**
- **Definition:** The total amount of goods and services (in value terms) available to the people over a given period of time which is usually a year.
- **Gross National Product:** The value of goods and services produced by the nationals of the country whether currently residing in the country or living abroad
- **Gross Domestic Product:** The value of goods and services produced by residing in the country irrespective of their nationality.

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- Disposable income: This is calculated by deducting taxes from personal income.
- Disposable income = Personal income - Taxes
- 
- Personal income: This is the current income of households or persons from all sources which include receipts such as transfer payments from which no productive services are produced by recipients.
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- Transfer payment: Money given by the government to its citizens. Example includes social security, unemployment compensation and welfare.
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- **Methods of Measurement:** There are 3 methods of measurements namely:
  - **1. Output-** This is obtained by adding the value of all goods and services produced by all sectors of the economy during the year. Only final goods and services are included. Intermediate goods and services are excluded to avoid double counting.
  - **2. Expenditure-** This is obtained by adding the spending on all final goods and services produced in the economy.
  - **3. Income :** This is done by adding up all the income paid out to the owners of factors of production i.e rent for land, interest for capital, salaries and wages for labour and profit for management.
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- Problems of Measuring National income
- Products to be include
- Excluded market sanctions
- Valuation of products
- Stock appreciation
- Depreciation
  
- **Uses of National Income statistics**
- 
- Measuring the level of production of an economy at appoint in time.
- Measuring the standard of living of different countries using per capita income
- Per capita income = National income/population size.
- Planning and Policy formulation
-

# 9. CONSUMPTION, INVESTMENT AND NET EXPORTS

## DISCUSSION CONTENTS

- Consumption
- The Consumption Function
- The average and Marginal Propensity to Consume and Save.
- Investment
- The Investment Demand Curve
- Gross Exports and Gross Imports

# CONSUMPTION

➤ Consumption is the amount a consumer spends in the purchase of goods and services.

➤ Consumer spending could be Autonomous (spending irrespective of receipt of income) or Induced (spending resulting from income increase).

# Determinants of Consumption

- personal income
- income taxes
- consumer expectations
- consumer indebtedness
- wealth
- the price level

- Consumption is impossible without one earning income either through employment or transfers from businesses or government.

- Although, personal income is the most important variable of consumption, it is also affected by personal income taxes which actually reduces the actual amount available for spending (disposable income).

- The relationship between consumption and disposable income however is not a perfectly linear one showing that other variables influence the consumers decision to consume.

# THE CONSUMPTION FUNCTION

- The consumption function depicts the relationship between consumption and disposable income.  $C = f(Y_d)$ , *Ceteris paribus*. That is, it is usually expressed as a positive and linear relationship when all other non-income determinants of consumption are held constant.

- The consumption function shifts when these non-income determinants change.

Table 1: Hypothetical Consumption Function  
for an Economy.

<b>Disposable Income (<math>Y_d</math>) (Billion Naira)</b>	<b>Consumption (C) (Billion Naira)</b>	<b>Savings (<math>S = Y_d - C</math>)</b>
500	500	0
550	540	10
600	580	20
650	620	30
700	660	40
750	700	50
800	740	60

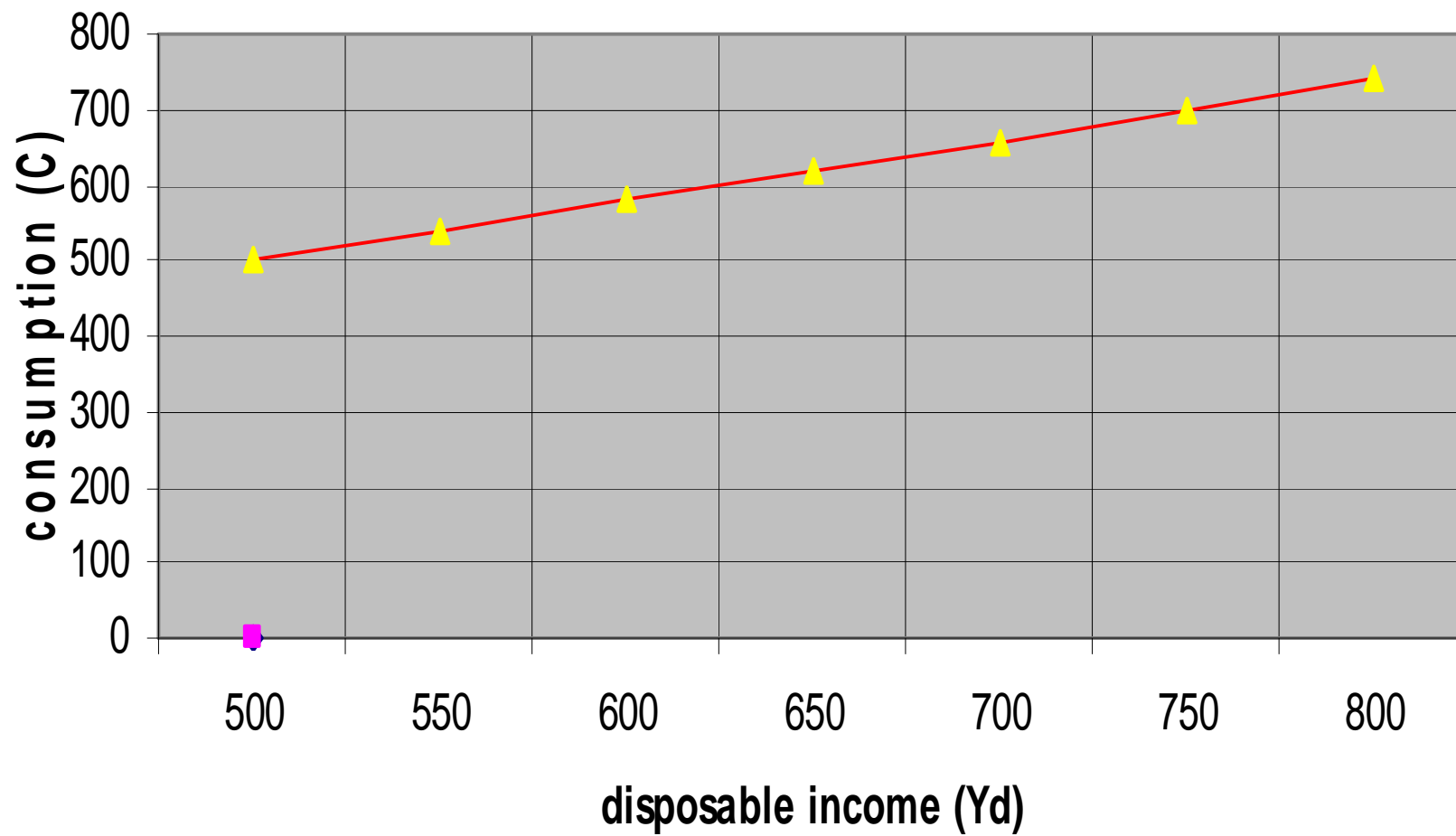


The table can also be presented in a graphical form with consumption on the vertical axis and disposable income on the horizontal axis.

The values of consumer saving (column 3) in table 1 is obtained by subtracting consumption from disposable income.

The table initially shows that the consumer spends all his disposable income and as his disposable income increases he saves more.

## income-consumption relationship



## THE AVERAGE AND MARGINAL PROPENSITY TO CONSUME AND SAVE

The ratios used to express the relationship between consumption, Savings and disposable income include:

*Average Propensity to Consume (APC)*: this is the ratio of consumption to disposable income at a specific level of income.

$$\{APC = C/Y_d\}$$

*Marginal Propensity to Consume (MPC)*: this is the ratio of the change in consumption relative to the change in disposable income.

$$\{MPC = \Delta C/\Delta Y_d\}$$

*Average Propensity to Save (APC)*: this is the ratio of saving to disposable income.

$$\{APS = S/Y_d\}$$

*Marginal Propensity to Save (MPS)*: this is the ratio of the change in saving relative to the change in disposable income.

$$\{MPS = \Delta S/\Delta Y_d\}$$

$$APC + APS = 1$$

$$MPC + MPS = 1$$

Table 2: Ratios computed from the hypothetical example in Table 1

<b>APC (<math>C/Y_d</math>)</b>	<b>APS</b>	<b><math>Y_d</math></b>	<b>C</b>	<b>MPC (<math>\Delta C/\Delta Y_d</math>)</b>	<b>MPS</b>
$500/500 = 1.0$	0	500	500	-	-
$540/550 = 0.98$	0.02	550	540	$40/50 = 0.80$	0.20
$580/600 = 0.97$	0.03	600	580	$40/50 = 0.80$	0.20
$620/650 = 0.95$	0.05	650	620	$40/50 = 0.80$	0.20
$660/700 = 0.94$	0.06	700	660	$40/50 = 0.80$	0.20
$700/750 = 0.93$	0.07	750	700	$40/50 = 0.80$	0.20
$740/800 = 0.92$	0.08	800	740	$40/50 = 0.80$	0.20

- From Table 2, the *APC* decreases from 1.0 to 0.90 as disposable income increases from N500b to N800b but save 8% of their income at N800b.
- The *MPC* is constant throughout at 0.8 while the *MPS* ( $1-MPC$ ) is 0.2.
- Note also from the Table that  $APC + APS = 1$  and  $MPC + MPS = 1$

# INVESTMENT

- *Gross investment* is the sum of residential construction, non residential construction, the purchase of producers' durable equipment by businesses, and the net change in business inventories.
- It is the least stable component of aggregate spending and a principal cause of the business cycle.

## INVESTMENT (contd.)

- In the national income accounts, investment consists of residential construction, non-residential construction, producers' durable equipment, and changes in business inventories.
- Generally speaking, the decision to invest is a negative function of the rate of interest, holding all other factors (non-interest variables) constant.



# INVESTMENT (contd.)

Other non-interest variables affecting investment demand include:

(a) residential construction i.e. purchase of housing units. This is also influenced by:

- demographics
- buyer's level of indebtedness
- wealth of buyers
- current and expected income level
- willingness to incur new debt
- ability of buyers to obtain loan
- cost of housing units, and
- mortgage rate of interest.

## INVESTMENT (contd.)

(b) non-residential construction i.e. offices, hotels and other commercial real estate. Their demand is also influenced by:

- the rate of interest
- the vacancy rate of existing units
- needs for additional commercial space
- ability of business units to meet increased rental costs

## INVESTMENT (contd.)

(c) producers' durable equipment is influenced by:

- borrowing costs
- utilization of existing productive capacity
- availability of more efficient technology
- current and expected sales
- existing and future competition

(d) changes in business inventories are linked to:

- rate of interest
- current and expected sales
- current and expected inventory prices
- certainty of inventory deliveries

## THE INVESTMENT DEMAND CURVE

- It is a curve that shows the relationship between gross investment and the rate of interest, while other variables affecting investment spending are held constant.
  
- Investment spending is inversely related to the rate of interest i.e. the higher the investment the lower the rate of interest and vice versa.

## **GROSS EXPORTS AND GROSS IMPORTS**

- *Gross exports* are the value of goods and services produced in a home country and sold abroad.
- *Gross imports* are the value of goods and services purchased by a home country from abroad.
- Imports usually lowers the aggregate spending of a nation on domestically produced goods.
- *Net exports* are the value of gross exports less gross imports.
- Net exports might be negative or positive. It is positive when the country exports more than it imports and negative when it imports more than it exports.

# Factors affecting Imports and Exports

- Level of income
- Foreign exchange rate
- Domestic price relative to prices in foreign countries
- Import tariffs
- Restrictions on imported goods

# 10. INFLATION, DEFICITS AND DEBT

## DISCUSSION CONTENT

- **Meaning of inflation**
- **Types of inflation**
- **Causes of inflation**
- **Effects of inflation**
- **Control of inflation**
- **Phillips curve**
- **Government deficit**
- **Public debt**

# MEANING OF INFLATION

- **In economics, inflation is a continuous rise in the general level of prices of goods and services in an economy over a period of time**
- **An increase in the general level of prices implies a decrease in the purchasing power of currency**
- **Inflation is usually estimated by inflation rate of price index (consumer price index)**



# Other related economic concepts to inflation

- Inflation rate is the % rate of change of price index overtime of the entire basket of goods in the economy
- **Deflation** – an annual fall in the general price level
- **Disinflation** – a decrease in the rate of inflation
- **Hyperinflation** – an out-of control inflationary spiral
- **Stagflation** – a combination of inflation + slow economic growth and high unemployment
- **Reflation** – an attempt to raise the general level of prices to counteract deflationary pressure

# CLASS WORK

- Does increase in petroleum product prices in Nigeria a signal of inflation? Discuss.
- What relationship do you think inflation has on interest rate?
- In year 2009, the price level was N200 and in year 2010, the price level was N210, the annual percentage of inflation will be what?
- Inflation is always and everywhere a monetary phenomenon. Do you agree with this statement?
- The task of keeping the rate of inflation low & stable is a responsibility of what body?

# TYPES OF INFLATION

- **Creeping or chronic inflation** – A period of gentle but continuous rise in the general price level of  $\leq 5\%/yr$
- **Hyper or galloping inflation** – Rapid rise in the general price level causing serious instability in the economy.
- **Walking inflation** – prices rise moderately and annual inflation rate is a single digit of between 5-10%
- **Running inflation** – prices rise at the rate of 10-20% /annum
- **Pure inflation** – A situation in which all prices including wages and other sources of income rise at an equal rate
- **Shock inflation** – a sudden change in the price level that is caused by a rise in price of an important good

# CAUSES OF INFLATION

- **Demand pull/demand-induced/Excessive demand inflation** – This is characterized by a sharp increase in demand that is not matched with increase in supply
  - It arises from increase in population, increase in income or combination of both
  - A case was the Udoji award of 1975 and the 1981 minimum wage Acts which led to rapid increase in demand without corresponding increase in supply
- **Cost-push (supply-push) inflation** – Originates from increase in the cost of production

# CAUSES OF INFLATION Conts

- It is usually associated with increase in price level, decrease in aggregate output and increase in unemployment
- A case is if the Nigeria Labour Congress (NLC) is able to get significant increase in wages without corresponding increase in production due to higher cost
- **Rural-urban drift / migration** leading to the neglect of agricultural sector
- **War effect-** Efforts are diverted from production of goods to production of war equipment/ armament
- **Bad weather/ drought** such as the 1973 drought
- **Imported inflation** (i.e importing large quantities of goods and services from countries which have inflation)

# EFFECTS OF INFLATION

- **Effect on income and standard of living**
  - Value of money falls
  - Fixed income earners such as recipients of transfer payments (pensions, unemployment insurance, social security, recipients of interest & rent **lose**
  - Those of flexible income group like businessmen, shareholders, industrialists, traders real estate holders, speculators **gain**
- **Effects on income distribution:** the rich tends to be richer & the poor poorer during inflation

# EFFECTS OF INFLATION conts

- **Effects on borrowers and lenders (creditors and debtors)**
  - The creditors are generally worse off because the real value of their future claims is reduced to the extent of inflation
  - Debtors tend to pay less in real terms than they had borrowed. So inflation favours debtors
- Effects on wage earners- these set of people may gain or lose depending on the speed with which their wages adjust to rising prices
- The tasks of both fiscal & monetary policies makers are complicated during inflation

# CONTROL OF INFLATION

- **Contract the economy by using monetary and fiscal policies**
  - forcing a recession / austerity measures/cutting down spending which may lead to hardship, reduction of unemployment benefits
  - Indexation. Here people become partially/ wholly immunized from changes in the general price level through things like cost-of-living adjustment



# CONTROL OF INFLATION conts

- **Tax-based income policy:** This involves subsidizing companies whose wages and prices are rising slowly and taxing those that boost inflation
- **Price control measure:** This involves setting up a price control board by government which fixes maximum prices of certain commodities experiencing inflation
- Total ban on importation of certain items
- Increase in the production of goods and services. Example is the food security program ongoing in Nigeria

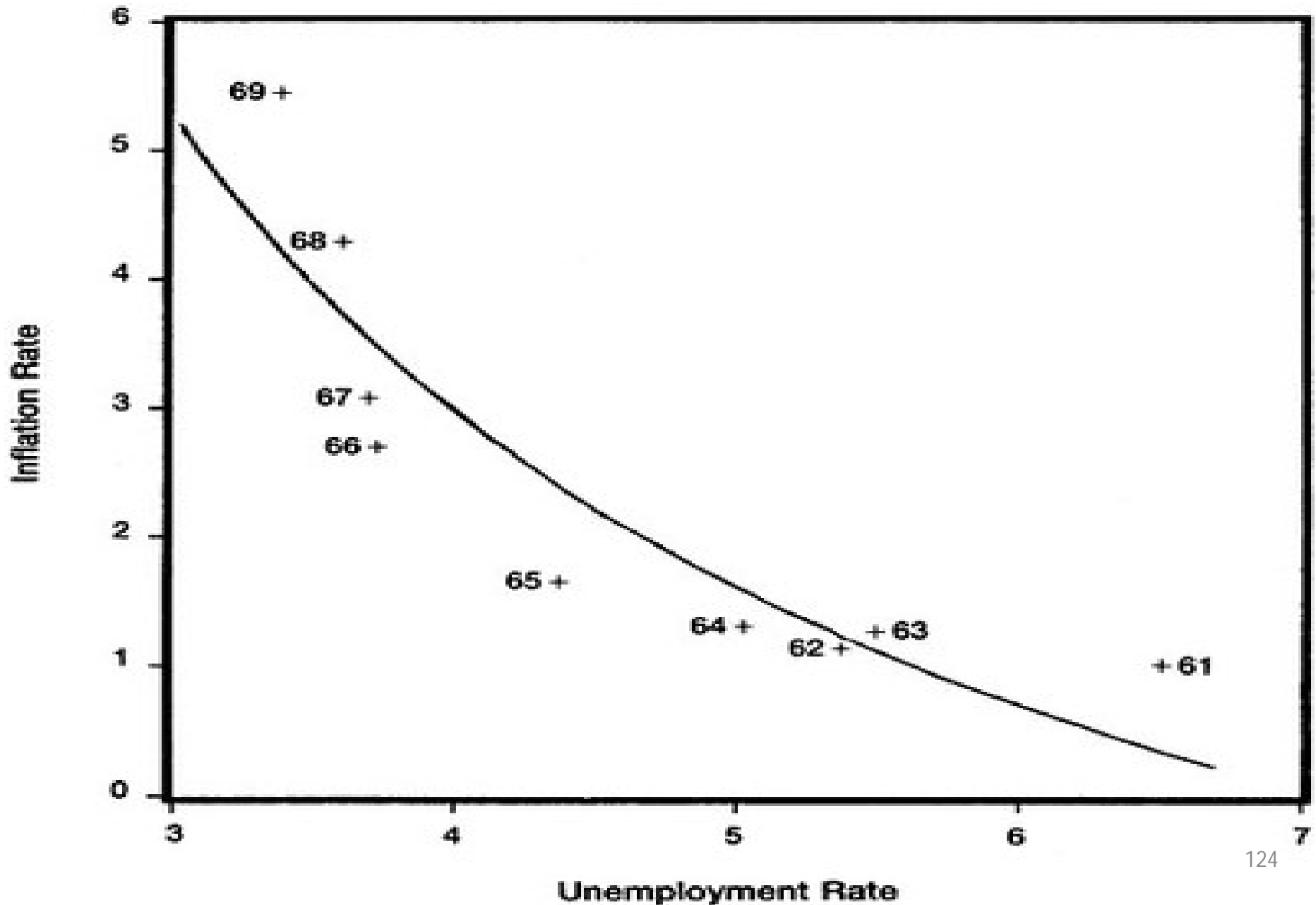
# WHAT IS PHILLIPS CURVE?

- The Phillips Curve is a graphical representation of the inverse, or negative, economic relationship between the rate of unemployment (or more precise, the rate of change in unemployment) and the percentage rate of change in money wages (Inflation rate).
- The theory behind this is fairly straightforward. Falling unemployment might cause rising inflation and a fall in inflation might only be possible by allowing unemployment to rise.

# PHILLIPS CURVE conts

- A low inflation and low unemployment are incompatible; therefore, governments have to choose the best combination of both.
- If the Government wants to reduce the unemployment rate, it could increase aggregate demand but, although this might temporarily increase employment, it could also have inflationary implications in labour and the product markets.

# TYPICAL EXAMPLE OF PHILLIPS CURVE



# CONCEPT OF THE NAIRU

- *NAIRU* is Non-Accelerating Inflation Rate of Unemployment
- The concept was introduced by **Milton Friedman**, who criticized the original Phillips curve
- **NAIRU** is defined as the rate of unemployment when the rate of wage inflation is stable.
- NAIRU arose to explain how stagflation could occur.
- NAIRU also known as the "natural rate of unemployment", distinguishes between the "short-term" Phillips curve and the "long-term" one

# CONCEPT OF THE NAIRU cont'd

- According to the proponents of the concept of the NAIRU, the equilibrium level of unemployment is the outcome of a **bargaining process** between firms and workers.

# DEFICIT SPENDING

- Deficit spending can simply be called "deficit," or "budget deficit," the opposite of budget surplus.
- **Deficit spending** is the amount by which a government, private company, or individual's spending exceeds income over a particular period of time

# PUBLIC DEBT

- Public debt, sometimes called national debt
- It is the cumulative amount money owed at any given time by any branch of the government.
- public debt is distinct from a budget deficit in that it is cumulative, whereas deficit refers to a particular budget year's shortfall
- It encompasses the one owed by the federal government, the state government, and even the municipal and local government



# PUBLIC DEBT conts

- Public debt is made up of **external debt**, which is money that is owed by the government to foreign lenders, either in the form of international organizations, other governments, or groups like sovereign wealth funds.
- It is also made up of internal debt, where citizens and groups within the country lend the government money to continue operating.
- In some ways, this is a lot like lending to oneself, since ultimately the responsibility for public debt falls back on the very people lending money.

# PUBLIC DEBT conts

- Public debt can also be broken down by the length of the loan made
- Short-term public debt last only one or two years, and the turnover rate is fairly high
- Mid-term public debt lasts anywhere between three and ten years.
- Long-term public debt is designed to last more than ten years, with some long term debt lasting considerably longer than that.

# ASSIGNMENT

- What do you think are some reasons for Government Indebtedness?
- In what ways do you think a nation can correct its deficit spending?
- What do you think are the advantages of public debt?