

<b>Course Name</b>	<b>: Micro Economics Theory</b>
<b>Course Code</b>	<b>: BIRD 115</b>
<b>Course level</b>	<b>: level 1</b>
<b>Credit Units</b>	<b>: 4 CU</b>
<b>Contact Hours</b>	<b>: 60 Hrs</b>

### **Course Description**

This course deals with major economic models and theories, the behavior of market forces, main features of the Uganda economy, basic features of international economies as well as understanding Uganda monetary and financial system.

### **Course Objectives**

- To strengthen the student's capacity in determining the market forces of demand and supply in their countries.
- To assist in providing basic economics knowledge for policy makers, government officials as well as people working in the private sector.
- To enable students make rational decisions in their own businesses/organizations in terms of economic decisions.

### **Course content**

#### **Introduction to Micro Economic theory**

- Definition & scope of Economics
- Basic principles of Economics
- The Production Possibility Curve(PPF)
- Its implication on development of an economy
- The concept of a market
- Types of markets
- Price determination in the market
- Types of prices

#### **Demand theory**

- Definition of demand function
- Law of demand
- Factors that influence demand for goods and services
- Market demand
- Derivation of the market demand curve
- Factors that influence a change in demand
- The slope of the demand curve

#### **Supply theory**

- Definition of supply
- Law of supply
- Factors that influence supply of goods and services
- The slope of the supply curve
- Change in quantity supplied Vs change in supply

## **Production theory**

- Definition of production
- Levels/stage of production
- Types of production
- Examining different factors of production
- FOP and their relevance to national development

## **Theory of Costs**

- Types of costs
- Short run costs of production
- Examining the relationship between TFC, TVC and TC
- Long run cost curves
- Derivation of the long run average cost curve

## **Economies of scale**

- Internal economies of scale
- External economies of scale
- Internal diseconomies of scale
- External diseconomies of scale
- The product concept of the firm

## **Market structures**

- Perfect competition
- Monopoly
- Monopolistic competition
- Oligopoly

## **Assessment**

**Course work** 40%

**Exams** 60%

**Total Mark** 100%

## **DEFINING ECONOMICS**

According to Robbins, ‘Economics is a Science which studies human behaviour as relationship between ends and scarce means which have alternative uses’. When defining economics, the following should be noted.

1. Economics is a social science because it studies and predicts human behaviour.
2. Human wants are insatiable (endless). It is assumed that man is borne greedy and that all his wants can never be satisfied.
3. Man satisfies some of his wants by consuming (using) goods and services (commodities). These commodities are produced by using resources (factors or means of production), which are scarce.
4. Means or factors of production have alternative uses. Therefore man has to allocate them well to produce the maximum possible amount of commodities.
5. The economic problem arises when man tries to allocate the scarce resources to produce commodities that would satisfy his wants (ends) the more.
6. Time is also scarce in the production process. There are 24 hours in a day, which have to be allocated to different tasks.

## THE SCOPE OF ECONOMICS

This refers to the limit to which economic problems can be discussed in addition to what is implied in the definition, the following should be noted about the scope of economics.

1. The subject matter of economics. This covers all aspects of economics activity namely. Production, exchange, consumption & distribution of commodities. Production involves the “creation” of goods and services. Exchange is the transfer of goods and services Distribution concerns the division of goods and services among individuals and groups.
2. Economics is both an Art and science. As an art; Economics involves the utilisation of facts of science for practical purposes. As a science, economics is a systematized body of knowledge ascertainable by observation and experiment and it uses a scientific method to process theory.

A scientific method consists of 2 approaches;

- (a) Induction: This involves the use of observation, collection and organisation of facts about events to derive laws (theories) which can be tested.
  - (b) Deduction: This is where assumptions and conclusions about events are tested against actual events.
3. Economics is a positive & normative science. Positive economics is about what the world is, was or will be. It is about facts in real life.

Normative economics is about what the world should be or would be or ought to be – normative economics depends on individual’s opinion. Economics disagree on most normative statements but agree on most positive statements.

4. Economics is related to other social sciences. Other social sciences include political science; sociology psychology etc. problems in these sciences affect economic condition of any country.
5. Economists get technical facts from natural science and engineering natural sciences like physics & chemistry can provide scientific facts, which can be used in economic analysis. However Economics and other social sciences differ from natural science because;
  - (a) Social sciences deal with the behaviour of man, which change over time with changes in economic social and political conditions.
  - (b) Experiment in social sciences cannot be controlled. E.g. When investigating the relationship between the price and quality demanded of a commodity one can not control other factors like income tastes and preferences etc. which also affect demand in such a case it is assumed that other factors remain constant (*ceteris paribus*) while investigating economic phenomenon.

## BASIC PRINCIPLES OF ECONOMICS

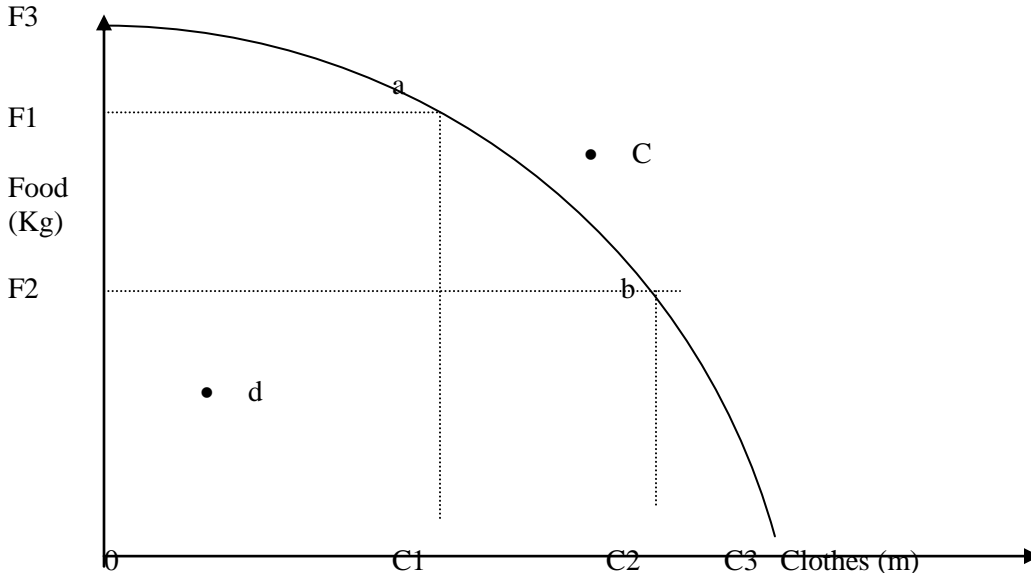
Basic principles of economics explain fundamental economic problems of man. These principles are:

1. **Scarcity:** Scarcity means that all commodities are relatively less than people’s desires for them. This is because resources are not enough to produce all commodities that people want to consume. Scarce goods are called economic goods where as those which exist in abundance are called free goods. Economists are mainly concerned with economic goods. However scarcity is relative term, e.g. Gold is more scarce than sand because it has more demand than supply compared to sand.
2. **Choice:** Choice refers to the taking of the right decision. It arises because of scarcity, which requires one to find consumers to issues like what goods shall be produced? For who shall be produced? How much shall be produced? Etc. If human beings were rational they would rank their wants in their order of preference (priorities) such that they would first satisfy the most pressing wants and end with the least pressing wants. Such a list of wants organised according to priorities is called the scale of preference deadline.
3. **Opportunity cost:** It refers to the next alternatives foregone when choice is made. It also arises because of scarcity e.g. by buying a car, you can forego a house when resources are not enough to buy both. If the

house is the next alternative on your scale of preference, the opportunity cost of having one car would be the number of houses that you forego (do with out). This principle is illustrated on the opportunity cost curve or production possibility frontier (PPF).

### **THE PPF**

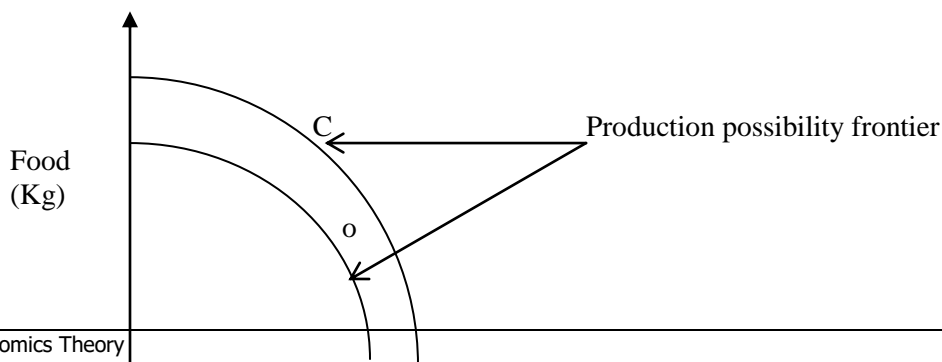
It is a locus of points showing the combinations of commodities that may be produced when all resources are fully utilised E.g. assuming that a country utilises all its resources to produce clothes and food, the production possibility curve would appear as shown below.



The above figure shows that a country can produce either  $OF_3$  Kg of food or  $OC_3$  metres of clothes or various combinations of food and clothes.

The PPF illustrates the following:

1. **Scarcity and choice:** Resources are scarce because the country cannot produce beyond its production possibilities curve using the fixed resources. According to the above figure, to produce  $C_1, C_2$  more metres of cloth, we forego  $F_1, F_2$  kg of food. Hence there is a need to choose between the two and to assume questions; what to produce? How much of each commodity to produce?
2. **Opportunity Cost:** This is illustrated by a movement along the production possibility frontier. E.g. in the figure above, from a to b, to produce  $C_1, C_2$  more metres of cloth, we forego  $F_1, F_2$  kg of food. Therefore, the opportunity cost of producing  $C_1C_2$  extra metres of clothes is  $F_1F_2$  kg of food that we forego.
3. **Efficiency in production:** In figure above points on the curve (e.g. a and b) show efficient utilisation of available resources. Points inside the curve (e.g. d) shows that some resources are not utilised i.e. there is under employment or inefficiency. Points outside the curve (e.g. c) are not attainable using available resources.
4. **Economic growth:** This is illustrated by the shift of the production possibility frontier outwards (to the right as shown below.



—————→  
Clothes (Metres)

The above figure indicates that there is an increase in resources and hence increase in commodities produced. This may be the result of discovering more resources e.g. minerals or importing more resources.

### ECONOMIC THEORY

- (a) This involves presentation and analysis of small economic group or groups of individuals e.g. price of one commodity, SS & dd of one commodity, study of one firm etc.
- (b) Macro economics:- This deals with total or aggregate behaviour of all individuals in each economy. It looks at the economy as one functioning unit e.g. aggregate income, aggregate dd and SS, inflation, unemployment etc.

Obviously macro economics explanations are not necessarily separate from micro economic explanations e.g. the growth of the economy is most likely to have been affected by the allocation of investment funds across the various sectors of the economy; Unemployment will be affected by the decline and rise of individual industries, but the fundamental reason for a distinction being made is the notion that broad aggregates might behave differently from the way that is predicted by theories based on observing the behaviours of individual's markets, e.g. a cut in wages in one industry may make it profitable for employers in that industry to employ more workers but Keynes suggested that a cut in wages across the economy as a whole might reduce the aggregate demand for goods and services hence forcing all employers to cut back on production and hence workers.

- (c) Development theory: this involves the analysis of the whole society it looks at the past trend, analyses the present and predicts what will happen in the future e.g. it looks at change in national income in a changing society.

### ECONOMIC SYSTEM

This refers to the organisation of ownership, allocation and distribution of resources in each economy. The major economic systems include planned/command economies, market economies, subsistence economies and mixed economy.

Planned/Command economies: In a command economy, all or most decisions about resource allocation are made by central planning authority. The government fixes the quantity of each good to be produced and the price at which is sold.

It sets quotas for each individual production unit. It decides how many resources should be employed in producing the goods. The state decides how each worker is to specialise. Such a government believes that it knows best how to organise, distribute and co-ordinate a country's resources.

There is no private profit, because all resources are public owned. The individuals consumer, although being able to express a desire for certain types. Communist economies are command economies. In such planned economy, economic efficiency depends on the accuracy of the government's plan in fore costing society's wants and allocating resources to meet them. Frequently the chosen output mix will be inefficient, for instance the prices of certain consumer goods may be set at a lower level than the free market price for ideological reasons.

In a communist economy people there have only limited freedom, if any in their economic decisions, but in return they have greater security and greater social equality, basic necessities should be made available to every one at the price fixed by the government that they can all afford, but there are frequently shortages of consumer goods, which limit that choice.

## **The disadvantages of a planned/command Economies.**

1. Having the state controlled price system it becomes impossible to judge the wants of households and so what is produced might not be what the household wanted.
2. Planning usually involves large bureaucracies, which are wasteful labour resources.
3. The co-ordination and management of large-scale economic plans are difficult in practice because of the enormous scale of the undertaking.
4. It is arguable that government of individualship lessens the incentives, of individuals and reduces initiatives, efforts and productivity due to absence of profit motive.
5. There is no consumer sovereignty; therefore freedom of choice is violated.
6. Due to opposition of masses, centrally planned economies have always been characterised by lack of domestic institutions.
7. There is absence of competition in a command, which is a discentive to efficiency.

## **Advantages of Command/Planned Economy**

1. It ensures proper allocation of resources
2. There is price and economic stability, which can lead to rapid economic growth e.g. the communes of China.
3. Maximisation of social welfare due to public ownership.
4. The state gets full control and is able to implement economic plans effectively.
5. It reduces income inequalities by removing inequalities of opportunity in society.
6. The production and consumption of un desirable goods (demerit goods) can be prevented.
7. Public goods and merit goods can be provided since production in a planned economy is not for profit motive.

## Capitalist system/Litisses faire/free market economy:

A capitalist free market economy is a complete contrast to a planned economy because economic decisions are left to individuals.

The allocation of resources is the result of countless individual decisions by producers & no role for the government (state) in directing and allocation of resources.

In this system there is freedom of choice in that individuals are free to buy and hire economics resources, to organise these resources for production to sell their products in markets of the own choice. Because of this, individuals are free to enter and leave any industry producers are motivated by profits their production decision.

Thus in a market economy quantities produced, prices and resource allocation are all market determined. However, a free market economy might create un satisfactory outcomes for how wealth is distributed, what goods are produced and how they are produced.

## **Disadvantages of the market Economy**

1. Since all resources are only available at their prevailing market prices some members of the community might be badly deprived, unable to afford even the basic necessities of the life.
2. It might result in a very unsatisfactory and socially un acceptable distribution of income.
3. Some desirable products may not be produced for lack of profitability e.g. construction of roads, Health centres etc.
4. Some un desirable products may be produced e.g., dangerous addictive drugs.
5. Competition may be eliminated by monopolies and other restrictive practices, reflecting the disproportionate economic power of certain firms and groups of society.
6. Competition may lead to a wastage of resources e.g. excessive advertising.

7. Private wealth may be maximised at the expense of others. Where such equalities of wealth exist, resources may be allocated to production of luxury goods to the exclusion of necessities for the poor.
8. Some vital services (e.g. police and courts of law, fire services, etc) would not be provided by private enterprises and must be provided by the government.
9. Some prices of key goods (e.g. agricultural goods) might be volatile, subject to big rise and falls unless measures for prices stabilisation are taken by the government.
10. Some other key goods, such as health and education, might be provided in inadequate quantities in a free market. And provision of those goods by the state will be necessary to create them in adequate quantities.

### **Advantages of the market economy**

1. Good quality products are likely to be generated since in free market economy there is competition, which encourages the improvement in quality of products.
2. It does not require any person to monitor it and thus costs of administration are reduced.
3. It provides an incentive to work hard and efficiency through price and profit signals. Resources go to those who can utilise them better.
4. Goods and services may be available to consumers at cheap prices. Since individuals are not forced to buy goods which he cannot afford especially if they are not essential goods.
5. Consumers sovereignty is promoted. Producers produce goods which consumers buy more.
6. Flexibility in production depending on profitability.
7. There is no resource wastage.

### **Mixed Economics**

There is a system, which combines competitive private enterprises with some degree of central control. The disadvantages of both an entirely command economy or an entirely free market economy suggest that, a certain amount of government planning is valuable, despite the problems of a controlled economy. Thus a mixed economy is that economy where some resources are owned by state (government) and others by private individuals.

### Reasons as to why the government have no intervene in a free economy.

1. To restrain the unfair use of economic power by monopolies or other bodies who might be able to impose their wishes on the rest of society.
2. To correct the inequalities of the free market system, distributing wealth between individuals and regions.
3. To provide goods and services that private enterprises would be reluctant or unable to provide in sufficient quantities and at an acceptable price e.g. special equipment for handicapped people, armed forces and the provision of electricity and railway system.
4. To remove socially undesirable consequences of private production e.g. pollution control, regional imbalance in employment.
5. To direct change in the structure of the nations industries, by retraining programmes, aid to renew industries, investment in research and development etc.
6. To manage inflation rates, employment levels, the balance of payments and the economic growth rates in accordance with social objectives.
7. To moderate the ups and downs in the trade cycle, by trying to deepen dd when it is so high that steep price inflation occurs.

### **PRICE THEORY**

Price theory is the study of prices. Prices are relative values of goods and services in terms of money at a particular time. Price theory is also concerned with the economic behaviour of individual consumers, producers and resource owners. It explains the production, allocation, consumption and pricing of goods & services.

## **THE CONCEPT OF A MARKET.**

In economics, a market is an arrangement in which buyers and sellers negotiate the exchange of a well defined commodity. In the market, buyers and sellers must communicate together.

## **TYPES OF MARKETS**

1. Product markets: These are markets in which goods & a service to consumers are bought and sold.
2. Resource markets: These are markets in which production resources especially labour and capital are bought and sold.
3. Spot market: This is a market where a commodity or a currency is traded for immediate delivery.
4. Forward market: This is also referred to as future market. This is a market where buyers and sellers make a contract to buy or sell commodities or services at a fixed date of the price agreed in the contract.
5. Free market: This is a market where there is no government (central authorities) intervention.
6. Controlled market: This is a market controlled by the government.

## **Types of markets as per structure.**

7. Perfect market: This refers to the market where non of the buyers or sellers had the power to influence prices in a market by either influencing demand or supply.
8. Imperfect market: This is a market where a buyer or a seller has the power to influence the price in the market by either influencing demand or supply.

## **PRICE DETERMINATION IN THE MARKET**

Price: The price of a good or in put shows what has to be given up in order to obtain a good or service. It is usually denoted in money terms, although payment not need be in monetary terms only.

In the market, price is determined in the following ways.

1. Haggling: This is when a seller asks for a given price and a consumer urges for a suitable price. The seller keeps on reducing the price and the buyer keeps on increasing the amount is willing to pay. Both parties will reach a compromise and that will be the price of a commodity. If a consumer have got more power, the price will be in his favour and vis –versa.
2. Fixing by treaties: Here buyers and sellers come together to fix the price of a commodity. The price agreed upon can later be revised by amending the treaty, e.g. the prices of coffee used to be fixed by the international coffee agreement. Prices of commodities can also be fixed by the government.
3. Sales Auction: This takes place when there is one seller and many buyers. Buyers compete for the commodity by offering high prices. The commodity is taken by one who pays the higher prices (the highest bidder) the seller at times fixes the reserve price or the minimum price he/she can accept.
4. Determination of price by forces of demand and supply.
5. Resale price maintenance: Some manufacturers want to control the prices at which the retailers will sell their products. They (manufactures) allow a discount to retailers and indicate to them the price to change consumers e.g. newspapers.

## **TYPES OF PRICES**

- (a) Equilibrium Price: This is a price determined by forces of demand and supply.
- (b) Market Price:- This is the price prevailing in the market at any particular time.
- (c) Normal price:- This is the equilibrium price which is established after along period of fluctuations.
- (d) Reserve Price: This is the minimum price below which a seller will not sell his commodity in a perfectly competitive market.



## ANALYSIS OF DEMAND AND SUPPLY

### DEMAND THEORY

Demand refers to the desire backed by the ability and willingness to have the commodity desired. The total demand in an economy is referred to as “aggregate demand”. Demand backed by actual payment may be described as effective demand”

### DEMAND FUNCTION

This is an algebraic expression of the dd schedule expressed either in general terms or with specific numerical values expressed for various parameters and usually including all factors affecting dd.

i.e.  $Q_d = F(p_i, p_j, y_h, t, E, D_y, A, G, P_n, \text{Setc})$

$Q_d$  = demand of a good

$P_i$  = Price of goods

$P_j$  = price of other goods

$Y_h$  = the size of household income

$T$  = tastes and fashion

$E$  = expectations

$D_y$  = the distribution of income

$A$  = Advertising

$G$  = Government policy

$P_n$  = Population

$S$  = Seasonal changes

Thus the demand for a commodity is influenced by so many factors some of which are the following:

### **Demand and price of the good**

The demand of a good depends on its own price. The higher the price, the lower the quantity demanded and vice versa. When the price increases, consumers will buy less of the commodity whose price have increased and buy more of the substitute whose price will have not changed.

### **The demand schedule.**

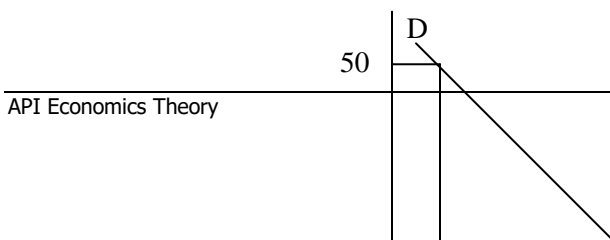
This is a table showing the level of demand for a particular good at various levels of price of the good in question. It relates to the specific period of time (e.g. per annum, per month etc) it is drawn on the basis that other factors affecting the level of demand e.g. income, tastes, price of other goods etc are held constant.

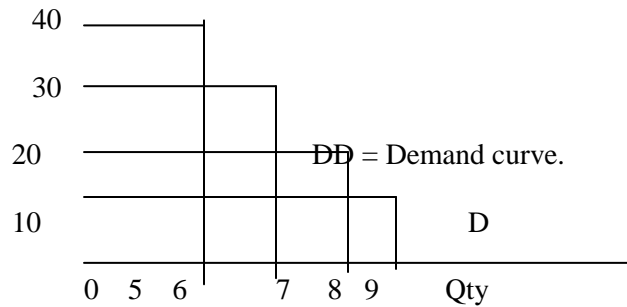
### **Demand schedule for soap powder**

Price per Kg	Quantity demand in 10 kgs
10	9
20	8
30	7
40	6
50	5

We can show this schedule graphically with price on Y-axis and quantity demanded on the X-axis.

### **The demand curve price**





**The demand curve** is drawn by joining the points shown in the figure above by a continuous line DD. Thus the demand curve is a graphical representation of the demand schedule. It is a locus of points showing quantity demanded of the commodity at various prices per period of time. It is drawn on the assumption that the higher the price the lower the quantity demanded and vis-versa other factors remaining constant.

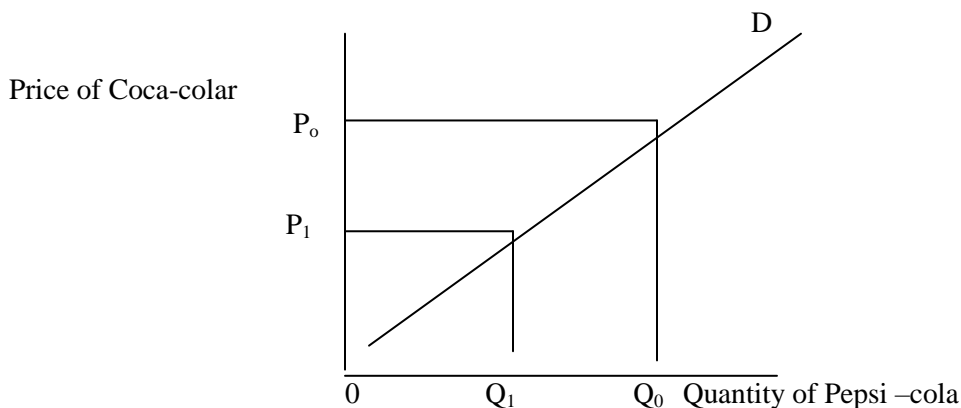
## 2. Demand and the price of the other goods.

The change in one good may not necessarily change the demand for another good e.g. on increase in the price of salt will not affect the demand for motor cars, However there are goods for which the market demand is in some way interconnected these inter-related goods are referred to as either substitutes or complements.

### Substitutes goods

These are goods that are alternative to each other, so that an increase in demand for one is likely to cause a decrease in the demand for another e.g. Coca-cola and Pepsi –cola, bus rides and car rides etc.

### The cross demand curve of substitutes.



In the figure above, a fall in price of coca-cola ( $P_0 - P_1$ ) causes a decrease in the demand for Pepsi-cola from  $Q_0$  to  $Q_1$ .

Goods are regarded as substitutes if a rise (or a fall) in the price of one good results in a rise (or fall) in demand for the other. The extent or amount of substitution that takes place depends on:

- (a) The amount of price change
- (b) The closeness of substitutes.

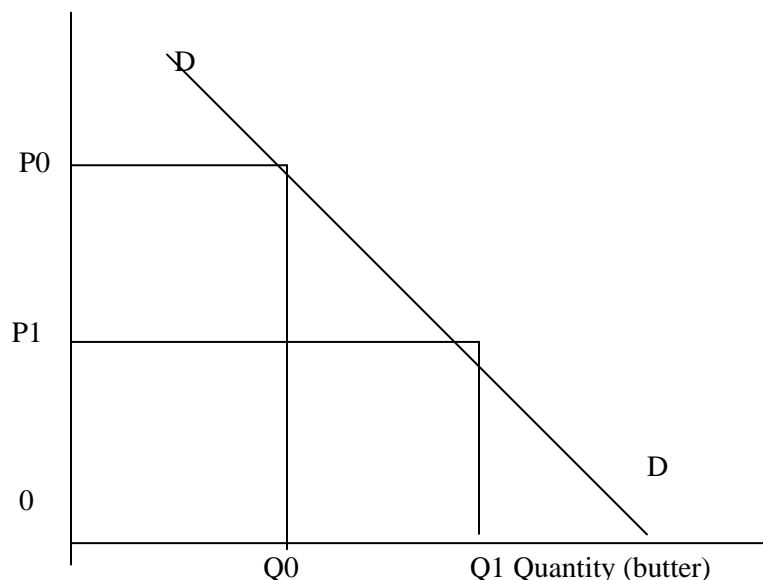
### Complements

These are goods that tend to be bought and used together so that an increase in the demand for one is likely to cause an increase in the demand for the other e.g. motor cars and fuel, bread and butter etc.

In the above figure a fall in the price of bread from  $P_0$  to  $P_1$  will increase the quantity of butter demanded from  $Q_0$  to  $Q_1$  because demand for bread will rise in response to the price change.

### The demand curve of complements

Price of bread

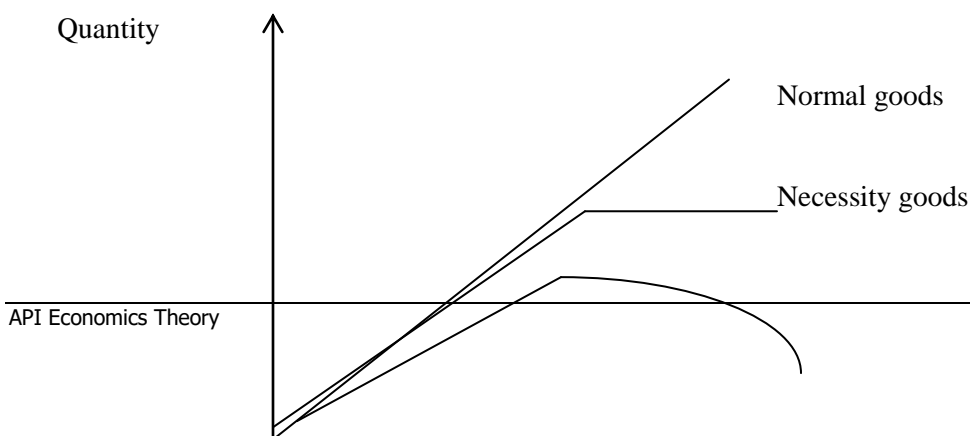


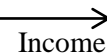
### 3. Demand and the size of the household income

The level of income that a household earns will affect the demand for a good. More income will give household more to spend and they will want to buy more goods at existing prices. However, a rise in household income will not increase the market demand for all goods and services. The effect of a rise in income on demand for an individual good will depend on the nature of the good.

- (a) If a rise in household income increases demand for a good, then such a good is a normal good.
- (b) If demand increases up to a certain point and then remains unchanged as household income continues to rise e.g. basic foodstuffs such as salt, bread etc for which demand can reach a maximum level because there is a limit to what consumers can or want to consume then such goods are necessities.
- (c) Goods whose demand eventually falls as income rises are called inferior goods e.g. tripe, Kasese Waragi etc. The reason for falling demand is that consumers will prefer superior products to inferior products (e.g. beef instead of tripe, Uganda waragi instead of Kasese (crude) then goods are inferior goods.

The above three cases can be illustrated with the figure below:





4. Demand taste and fashion.

A change in fashion will alter the demand for a product. Changes in taste may stem from psychological, social or economic causes e.g. if it becomes fashionable for middle class households in Sheraton Hotel to drink wine with their meals, the flow of expenditure on wine will increase.

Taste of fashion is likely to be unpredictable and so changes in demand might be only temporary e.g. the influence of an advertising campaign may have a temporary effect on demand.

5. Demand and expectations

Where consumers believe that prices will rise, or that shortage will occur, they will attempt to stock up the product, thereby creating excess demand in the short run which will increase the prices. This can then lead to panic buying e.g. fear of war, expectation of the budget, the effects of strikes etc.

6. Demand and the distribution of national income

Market demand for a good is influenced by the way in which the national income is shared between households when income is equitably distributed in the economy, the market demand for the product will be high and vice-versa.

7. Demand and seasonal changes

The demand for certain product changes according to changes in seasons e.g. X-mas cards, tapes etc. When the season is favourable, the demand will be high and vice-versa.

8. Government policy and demand

When the government imposes taxes on goods, prices of goods increases.

This discourages consumers and quantity demanded reduces. The offering of subsidies by the government encourages consumption and therefore quantity demanded increases.

9. Population

The demand for the production is influenced by the size of the population, a big size of population will lead to more effective demand than a small one provided by the population has an ample purchasing power.

The individual demand curve

The individual demand curve focuses the attention on the effects of a change in the prices of one commodity on the consumer's behaviour. It is influenced by factors like:

- (a) The goods own price
- (b) Price of other goods
- (c) The size of household income
- (d) Tastes and fashions
- (e) Expectations
- (f) Advertising.

Market Demand

The market demand is the summation of the individual consumer's demands for a homogeneous commodity. The summation of different quantities of a commodity demanded by a number of individuals at various prices will give "a market demand schedule)".

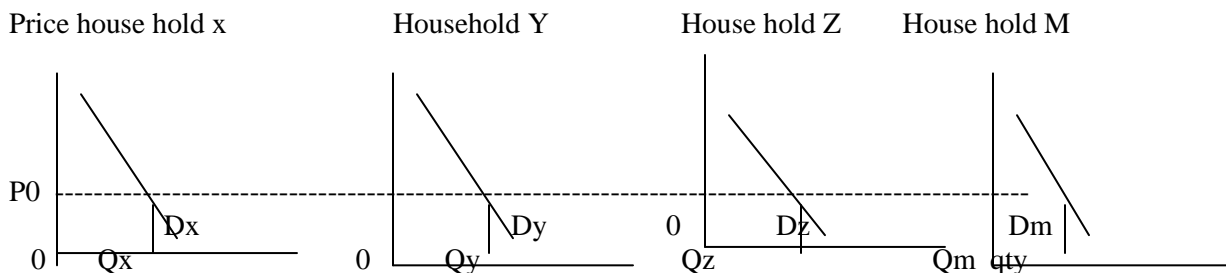
The market demand schedule for three consumers (X,Y,Z)

Price (shs)	Quantities dded in 000kgs			Total demand in 000kg
	X,	Y,	Z	
600	5	3	2	10
500	8	7	5	20
400	11	10	9	30
300	14	14	12	40

Market demand curve

This curve is also drawn from the demand schedule, expressing the expected total quantity of the good that would be demanded by all consumers together at any given price.

Derivation of the market demand curve.



In the Market Qm quantity will be bought which is made up by adding together the quantities (Qx,+Qy+Qz). The market demand curve Dm is obtained by the horizontal summation of the individual demand curve (Dx, Dy, and Dz)

NB: Market demand is influenced by factors like:

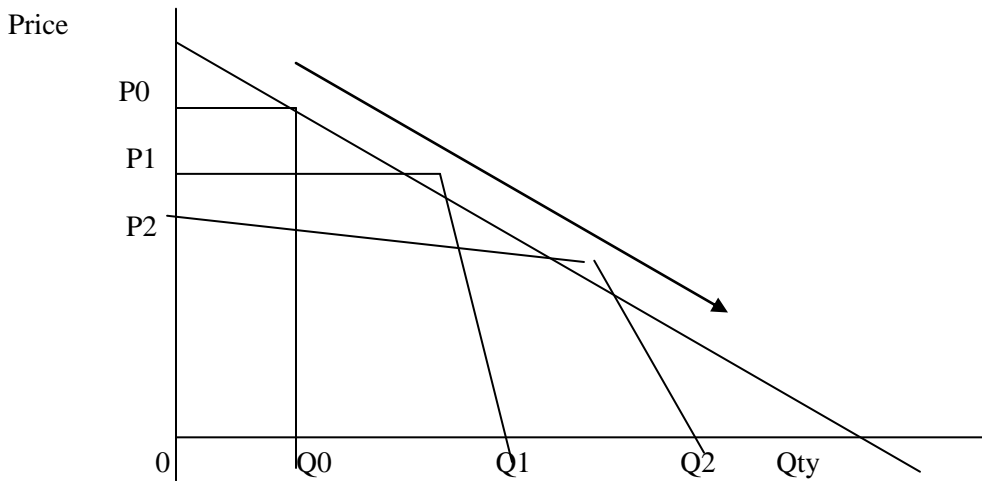
- (a) The market price of the commodity
- (b) Price of other commodities
- (c) Income distribution
- (d) Taste and preference of all households
- (e) Size of population
- (f) Total household income etc.

Movement along the demand curve when the price changes.

Changes in quantity demanded caused by changes in price are represented by movements along the demand curve movement along the demand curve represented by changes in price at the same demand curve.

### Extension of the Demand curve

This is indicated by the downward movement along the same demand curve. It refers to an increase in quantity demanded due to a reduction in the price of the commodity.

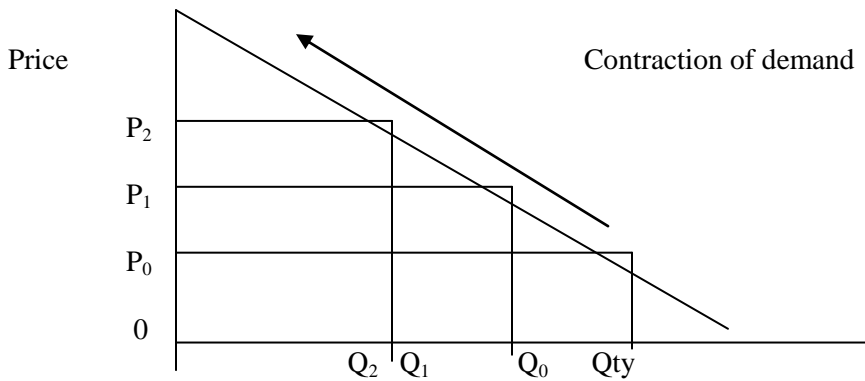


In the figure above, as the price reduce from  $P_0$  to  $P_1$ , to  $P_2$  quantity increases from  $0Q_0$  to  $0Q_1$  to  $0Q_2$ .

### Contraction of demand

This is indicated by the upward movement along the same demand curve. It refers to a decrease in quantity demanded due to an increase in the price of the commodity.

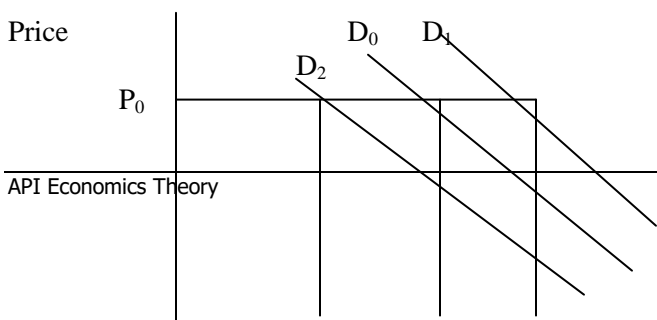
Illustration

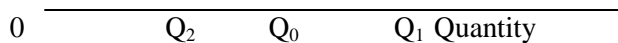


### CHANGE IN DEMAND

It refers to the change in quantity demanded at constant prices brought about by changes in factors which determine demand.

When there is change in other factors that affect demand, the relationship between quantity demanded and price will also change and there will be a different price quantity demanded schedule and so a different demand curve. We refer to these changes as a shift of the demand curve.





The figure above depicts an increase in demand at each price level with the demand curve shifting to the right from  $D_0$  to  $D_1$  e.g. at price  $Op_0$  demand for the good would rise from  $OQ_0$  to  $OQ_1$ . This shift could be caused by any of the following;

- (a) A rise in household income
- (b) A fall in the price of substitutes
- (c) A fall in price of the complements
- (d) A change in tastes towards this product
- (e) An expected rise in the price of the product
- (f) Increase in population
- (g) Subsidisation of consumers
- (h) A more or less equal distribution of income.

The above figure also depicts “decrease in demand” at each price level, which is represented by a shifting to the left of the demand curve from  $D_0$  to  $D_2$ . This may be caused by the reverse of the changes described in the points above. At price  $Op_0$ , the demand will fall from  $OQ_0$  to  $OQ_1$

NB:

1. A shift of the demand curve to the right portrays an increase in the quantity demanded at any given price.
2. A shift of the curve to the left portrays a reduction in the quantity demanded at any given price.

### THE SLOPE OF THE DEMAND CURVE.

The demand curve is a locus of points showing quantity demanded of a commodity at a various prices per period of time. The demand curve slopes down wards from left to right it illustrates the LAW OF DEMAND which states that

The higher the price, the lower the quantity demanded and vice-versa (*ceteris paribus*). This is due to the following factors;

1. The law of diminishing marginal utility: It states that as one consumes more of a commodity, after a certain point, the satisfaction derived from additional units (marginal utility) diminishes (reduces). As the consumer purchases more of the commodity, marginal utility diminishes. He can consume additional units only if the price is reduced.
2. Income effect;

As the price falls real income of the consumer increases i.e. they can purchase more units of the commodity with the same money income. Alternatively an increase in price reduces real income and reduces quantity demanded. Thus real income is money income over price. It is the actual quantity of goods obtained from the money income.

3. Substitution effect

As the price of the commodity falls keeping the prices of substitutes constant, consumers purchase more of it and purchase less of the substitutes. When the price of the commodity increases, consumers abandon it and buy its substitutes, which are relatively cheaper.

4. The price effect;

This is a combination of income effect and substitution effect when the price of the commodity falls, consumers buy more of it because of the substitution and income effects.

5. Presence of low income groups

Ordinary people (low income group) buy more when price falls and less when price rises. The rich do not have any effect on the demand curve because they are capable of buying the same quantity even at a higher price.

6. Different uses of the commodity. If the commodity has many uses, then it means those uses have some substitutes. Therefore the price of the commodity increases, people will divert A to those substitutes and therefore quantity demanded will decrease and vis-versa.

SUPPLY

Supply refers to the quantity of goods and services that existing suppliers would want to produce for the market at a given price in a given period of time.

The supply function

This is the statement which shows the technical relationship between quantity supplied and the major determinants of quantity supplied of the commodity.

$$Q_s = F(P_1, P_2, P_{11}, F_1, F_n, G, T \text{ etc})$$

Where  $P_1$  = The commodity's own price

$P_2, P_n$  = Factors of production

G = Goals of the firm

T = Technology

The factors which influence the quantity supplied

1. Price of commodity itself: In general, suppliers will want to supply a greater quantity of their output at higher prices. Higher prices may mean greater profits and so the firm would be attracted by the prospects of bigger profits into supplying more units of output. This can be shown by the supply schedule below.

The supply schedule

This is a numerical representation showing the amount of the commodity brought to the market at various prices per period of time.

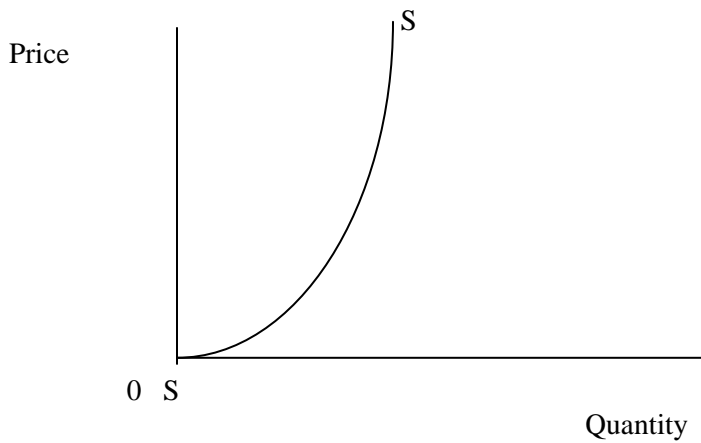
A table showing the supply schedule for product Y

Price per Unit (SHS)	Quantity Supplied per Month (Kgs)
100	10,000
150	20,000
300	30,000
500	40,000

This schedule can be shown graphically with price on Y – axis and quantity supplied on X – axis

The supply curve





SS= Supply Curve

The supply curve is drawn by joining the points shown in the figure above by a continuous line SS. Thus the supply curve is a graphical representation of the supply schedule. It is the locus of points showing quantity supplied of each commodity at a various prices per period of time, the greater the quantity supplied other factors remaining constant.

2. The price of other goods

An increase in the price of other goods would make the supply of a good whose price does not rise more unattractive to suppliers. Keeping other factors constant, when the prices of substitutes increases it becomes more profitable to produce substitutes which fetch higher and profits. When the price of substitutes fall, quantity supplied of the commodity increase because it becomes more profitable to produce the commodity whose price is relatively higher e.g. when the price of cassava fall, producers reallocate resources from cassava production to potato production whose price are relatively high for products which are produced together. An increase in supply of the other e.g. an increase in price of shirts would lead to an increase in supply of cotton, cotton oil dye etc.

3. The cost of production

The cost of production which in turn depends on the prices of factors of production i.e. wages, interest rates, rent and profits. A rise in price of these factor (increases costs of production) which reduces supply and vice-versa.

4. Changes in technology

Technological developments which reduce costs of production and increase productivity will rise the quantity supplied of a good & vice-versa.

5. Natural Factors

Unfavourable natural factors decrease supply and vice-versa (e.g. agricultural goods)

6. Goals of the firm

If the goal of each firm is profit maximisation, then supply will be low so as to change higher prices. If it is sales maximisation, then supply will be high and produces would want to sell as much as even though they are getting little profits.

7. Number of produces

If there are many producers of a commodity quantity supplied is likely to be higher than where there are few producers.

8. Working conditions

Favourable terms of services would like good working condition prestige of work of services, power, professional excellence etc. will increase supply. These terms are referred to as non-pecuniary advantages (are not measurable in monetary units). While poor working conditions (non-pecuniary disadvantages) will reduce supply.

9. Government Policy

Taxation will increase costs of production which lead to low quantity supplied and subsidies would lead to a reduction in cost of production and an increase in quantity supplied.

10. Gestation period

This is the production period (maturing period). The longer gestation period reduces SS and a shorter gestation period increase the SS.

11. Entry of new firms in the industry

Once the market price and profits are conducive enough, this will act as a factor that will attract other firms in the industry leading to an increase in the SS of the commodity on condition that there is free entry and exit (perfect competition). In case of blocked entry (monopoly) SS will be restricted so as to sell at high prices.

**12. Demand**

High market demand calls for increase production and SS and Vice-versa.

**13. Availability of inputs**

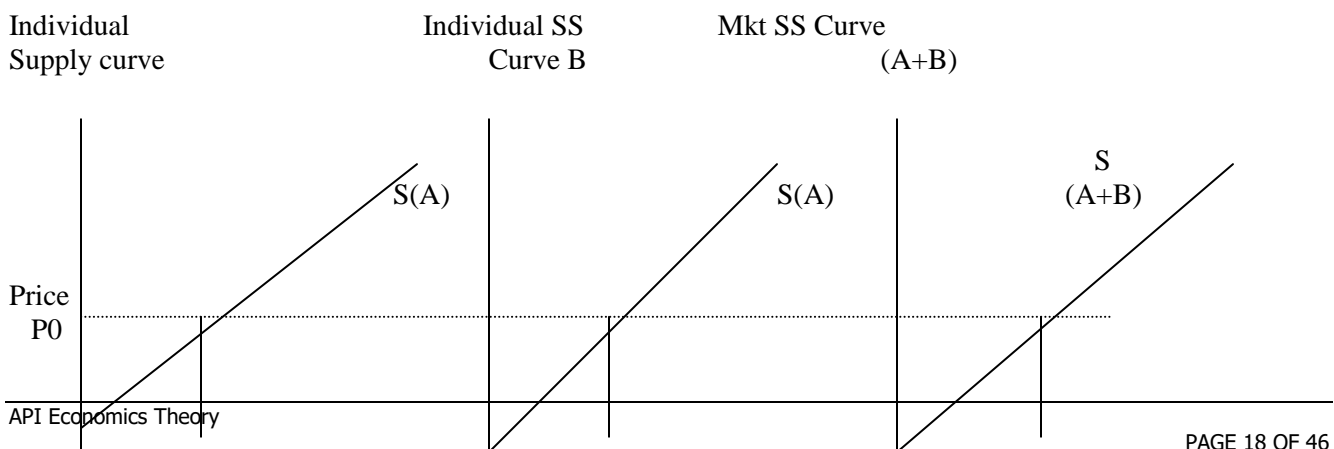
The more available the inputs the greater the supply. Scarcity of factor inputs reduces SS.

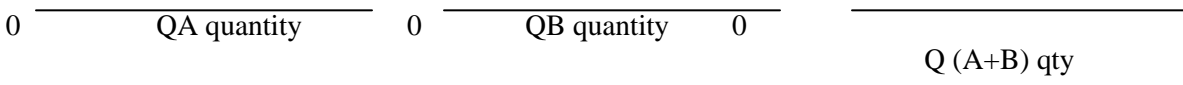
**The Individual SS Curve**

An individual SS curve shows the quantity of a good that the individual firm want to supply to the market at any given price.

**The market supply Curve**

The market supply curve shows the horizontal summation of the SS curves of all individual suppliers in a commodity. The market supply curve is more elastic than the supply curves of the various individual's suppliers. This can be illustrated in the figure below.

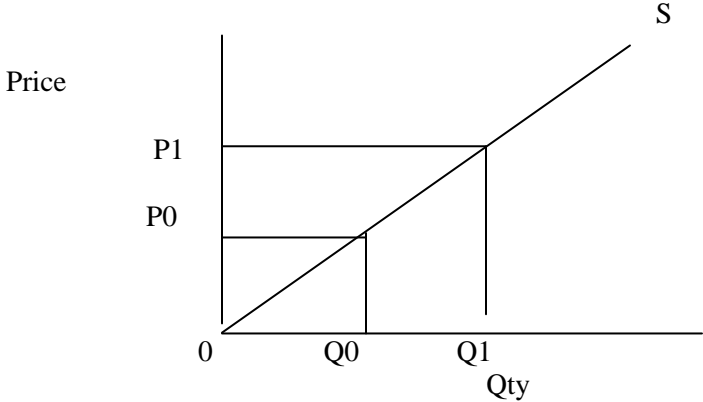




In the figure above the quantity supplied in the market is the summation of the quantities supplied by (A) and (B) i.e.  $Q (A+B)$ .

**THE LAW OF SUPPLY**

This law states, keeping other factors constant, the higher the price the greater the amount of the commodity supplied and vice-versa. It is illustrated by the supply curve.



In the figure above, when the price increases from  $OP_0$  to  $OP_1$  quantity supplied increases from  $OQ_0$  to  $OQ_1$  and vice versa.

**The slope of the supply curve.**

The SS curve is positively sloped (it sloped upwards from left to right) showing the direct relationship between price and quantity supplied. (see the figure above)

**The positive slope is explained by the following factors:**

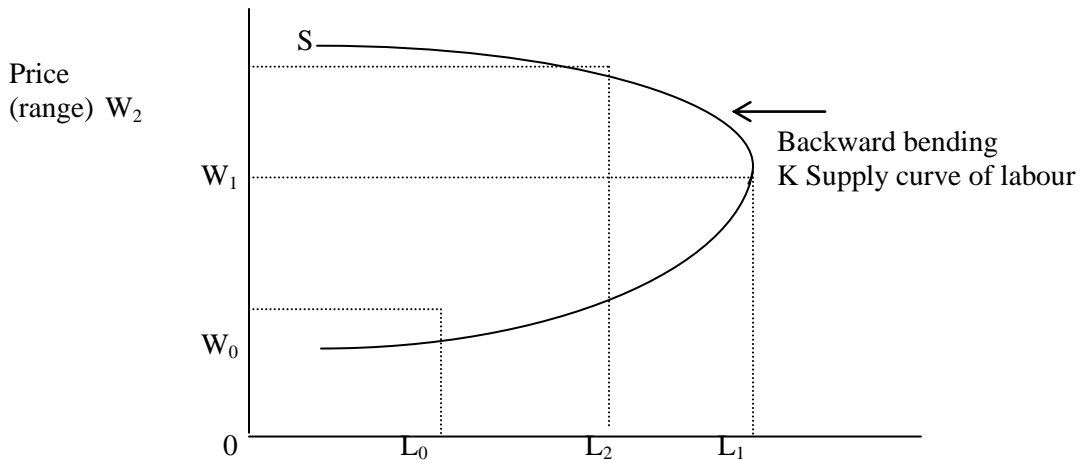
1. Entry of new firms in the industry;  
  
When the price of a commodity increase new firms will be attracted to enter the industry due to prospects of increase profits. This will lead to an increase in SS as the price increases.
2. Profit Motive;  
  
If the goal of the firm is to earn more profits, then as the price of the commodity increase suppliers will SS more in order to make more profits.
3. The attempt by firms to maintain equilibrium under project competition.
4. The struggle to maintain equilibrium in the free market condition.  
As demand increases, prices will due to a shortage, firms will increase output in order to cover the shortage.
5. Ease of diverting resources from the production of the commodity whose price has reduced to the production of the commodity whose price has increased e.g. if the price of groundnut increase keeping the price of beans constant producers will easily divert resources (land, labour, capital) from the production of beans to the production of groundnuts. This will lead to an increase in SS of groundnut as the price increases since producers will be expecting higher profits.
6. The attempt by firms to maintain equilibrium under perfect completion:

Under such conditions firms aim at producing at a point where  $P=MR=AR=MC$ . So firms always struggles to adjust output so as to equate price and marginal cost.

ABNORMAL/RESRESSING/EXCEPTIONAL SUPPLY CURVE.

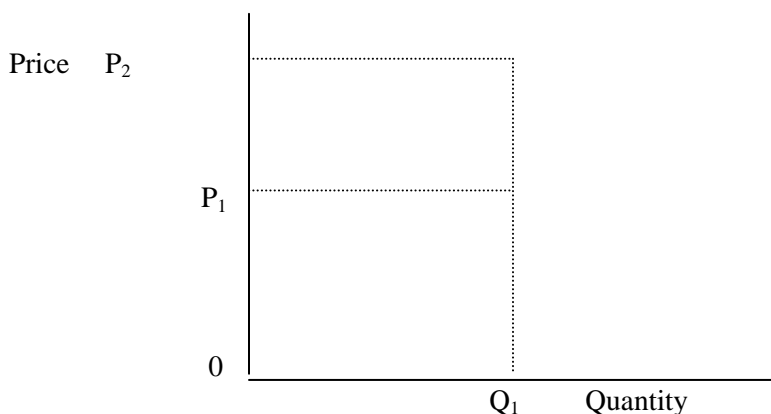
Normal supply curve usually slopes upwards from left to right. In this case the regressive supply curves do not obey the law of supply and they do not slope upwards from left to right. Examples are:

1. The supply curve of labour



In the figure when the range is increased from  $OW_0$  to  $OW_1$ , labour supplied increase from  $OL_0$  to  $OL_1$ . After point  $K$ , as the range increases from  $OW_1$  to  $OW_2$ , labour supply reduces from  $OL_1$  to  $OL_2$ . After point  $K$ , makes start working less hours because the range  $OW_1$  was enough to meet their targets. Some workers may later abandon work after working enough money. Such workers are called target workers because they work only to full fill certain targets after which they leave work or work less hours. Also as people work more money, they prefer leisure to work.

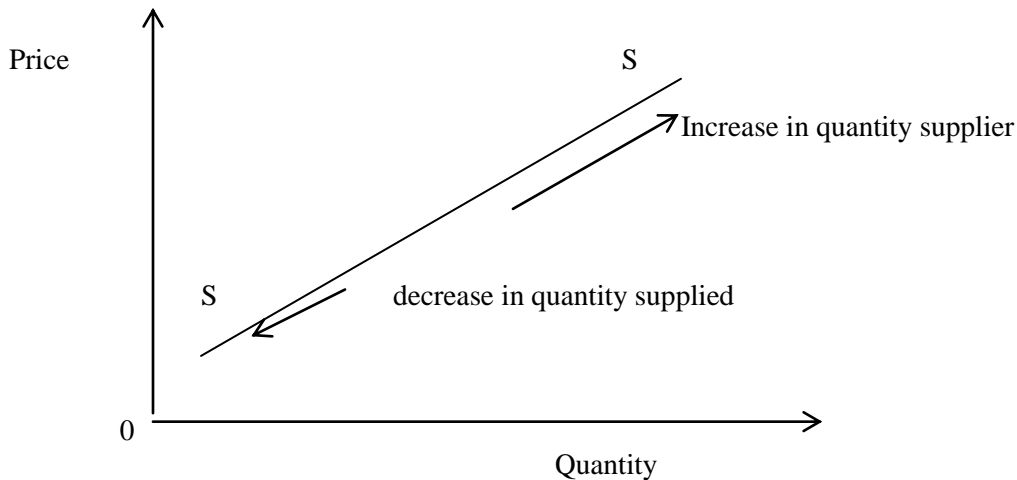
2. Fixed supply: This is another case of abnormal supply curves



In the figure despite the increase in price from  $OP_1$  to  $OP_2$ , quantity supplied remains the same ( $OQ_1$ ) e.g. the supply of Agricultural products in the short run.

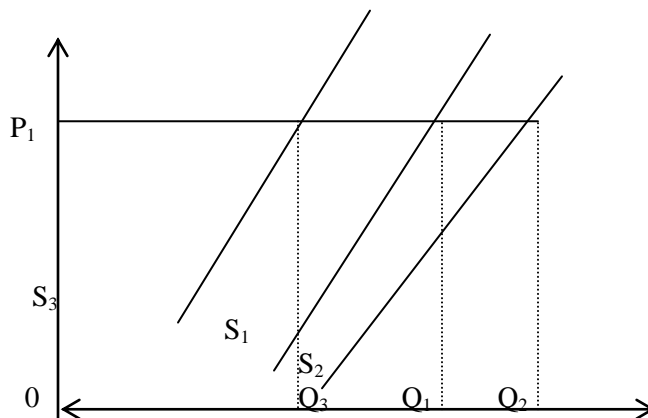
CHANGE IN QUANTITY SUPPLIED AND CHANGE IN SUPPLY

1. Change in quantity supplied. This occurs when there is a change in price of a commodity when other determinants of quantity supplier are assured to remain constant. It is illustrated by movements along the same supply curve as shown below:



2. Change in supply

This refers to the change in the state of supply at constant prices which arises from changes in variables which are assumed constant by the law of supply e.g. technology, price of competing commodities, etc. It is illustrated by the strict of the supply curve.



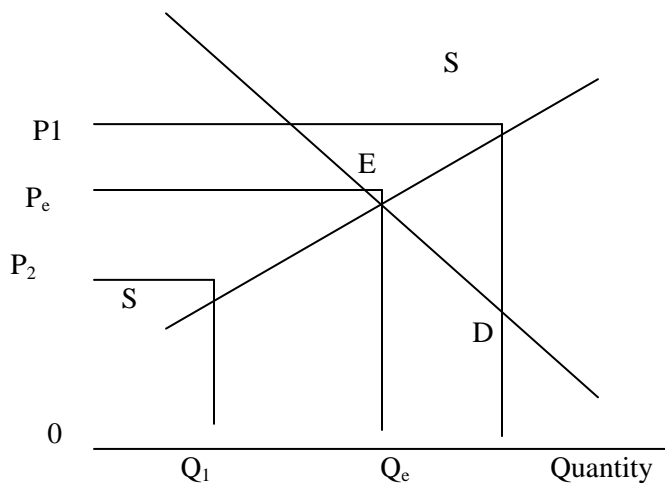
From the figure, at each possible price e.g.  $OP_1$ , quantity supplied can increase or decrease because of changes in other determinants a quantity supplied. Increase in supply curve to the right ( $S_1$  to  $S_2$ ). Quantity supplied increase from  $OQ_1$  to  $Q_2$  at a constant price  $OP_1$ . Decrease in supply is illustrated by strict of the supply curve to the left ( $S_1$  to  $S_3$ ). Quantity supplied decreases from  $OQ_1$  to  $OQ_3$  at a constant price  $OP_1$ .

PRICE DETERMIANTION BY FORCES OF DEMAND AND SUPPLY.

In a competitive market, prices are determined by the mechanism which is the coordination of different objectives and activities of buyers and sellers by 'invisible forces' of demand and supply. This can be illustrated graphically as shown below.



Price



In the figure at a high price,  $OP_1$ , supply exceeds demand i.e. we have excess supply ( $Q_1, Q_2$ ) because producers supply too much because of the high price. Suppliers reduce the price to  $OP_2$  so as to sell the excess supply. At a low price  $OP_2$ , there is high demand which leads to excess demand i.e. a situation where demand exceeds supply. Excess demand implies that there is a shortage of commodities which results into an increase in the price. The trend of increasing and falling price continues until quantity demanded is equal to quantity supplied. This point (E) is called equilibrium. From the figure above,  $OQ_e$  is equilibrium quantity bought and sold.  $OP_e$  is equilibrium price. When equilibrium price is stable for some time (i.e. in the long run) it is called the normal price or the natural price.

NB: Equilibrium price may be different from the market price. Market price refers to any price determined by buyers and sellers in the market. Irrespective of whether supply is equal to demand or not. Therefore, equilibrium price is the market price where what is brought to the market by suppliers is cleared by buyers without learning any excess supply or excess demand.

## **PRODUCTION THEORY**

Production refers to the process through which utility is created in the goods and services in order to satisfy human wants which may be private or public. It involves the following:-

- Change of form e.g raw materials to finished products or intermediate goods.
- Change of place. This involves the transportation of raw materials and finished products
- Change of ownerships which involves exchange of goods and services.
- Provision of direct services such as those of a teacher an engineer, a doctor etc.

## **LEVELS OF STAGES OF PRODUCTION**

1. Primary production: This refers to the extraction of basic raw materials from land, seas, air, etc and application of labour on these resources to produce primary products, such production includes farming, mining, hunting, fishing etc.
2. Secondary production. This involves the transformation of raw materials into finished commodities which are ready for use. It is the actual creation of utility in goods to make them provide satisfaction. It includes manufacturing, construction etc.
3. Tertiary production. This involves the production of services. These services may be direct as those of a teacher, doctor, lawyer, etc or commercial services which facilitate trade e.g insurance, transport, banking, warehousing etc. The provision of these services is necessary in order to bridge the gap between the producer and consumer

## **TYPES OF PRODUCTION.**

- a) Direct production: This involves the production good and services for one's own satisfaction. This type of production is also called substance production e.g making of tools for one's own use, treating your own child etc.
- b) Indirect production: This is the production of goods and services for exchange (for market)
- c) Round about production. This is the production of items not for consumption but for further production e.g production of machines, inputs like chemicals used in some industries, etc.

The products of this type of production are known as producer goods

### **FACTORS OF PRODUCTION**

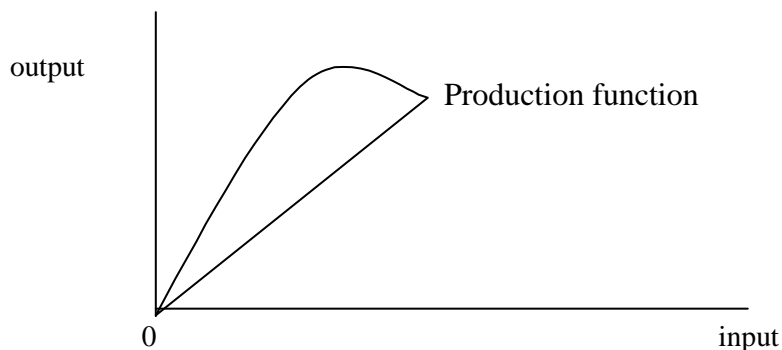
These are known as agents of production. They refer to the resources or inputs required in the production of goods and services. They include land, labour, capital, and entrepreneur.

Every time a unit of output is produced, inputs must be combined to bring about transformation. The technical relationship (physical) between producer inputs and the output per unit of time is known as the production function e.g in producing 5 bags of beans, one can require one acre of land, 2 hoes, 2 workers, fertilisers, etc, mathematically, it is represented as:-

$$Q_x = f(L, K, N, T, \dots\dots)$$

- Where QX = quantity produced (output)  
 L = land  
 K = Capital  
 N = Labour  
 F = Functional relationship  
 T = Technical progress

Graphical representation of production function



The above figure shows the relationship between output and input.

### **CAPITAL**

This refers to any man made resource which is used in the production process e.g machinery, roads, buildings, money etc. the payment to capital is interest.

### **Capital accumulation**

It refers to a process through which the capital of a country increases over time. Capital accumulation is necessary because it increases resources utilisation, standards of living and acts as an engine for development.

## **LABOUR**

This refers to all human effort both mental and physical inherited or acquired which is used in the production process labour can be skilled, unskilled, semi-skilled, productive and unproductive labour

## **LABOUR SUPPLY**

Labour supply refers to the number of all able bodies individuals willing to work at the ongoing wage rate. It also refers to the number of hours a labourer is willing to offer for work. Its payment is a wage or salary.

### **FACTORS AFFECTING LABOUR SUPPLY.**

1. The age structure of the population. The labour force of a country is constituted by people of age between 16 – 64 years. The age category of 0 – 15 years and of 65 years plus is considered unproductive labour. In a country where the first category is higher, labour supply will be high and where the second category is high, labour supply will be low.
2. The size of population is likely to have a high supply of labour than that one with a small size of population
3. Education level. This determines the supply of skilled and educated labour. Once the level of education is low, supply of skilled labour will be low and vis-versa.
4. Degree of job security. Jobs with job security attract more labour than those without. Workers are often attracted in occupations with limited changes of being chased anyhow.
5. Rate of investment in the economy where there is a high rate of investment especially in the industrial sector, supply of labour will increase due to availability of training facilities for labour.
6. Period of training where the period of training is long, labour supply will be low and vis-versa. This is especially true with skilled labour.
7. Job esteem (respect). Jobs with low esteem attract less labour for example there are very few people willing to work as toilet cleaners, therefore labour supply in such occupations is low due to the low level of respect in such jobs.
8. Political stability. In areas with political instability and insecurity will not attract labour. This factor explains the levels of labour supply especially in form of foreign expatriates in countries besieged with political instabilities.

## **LAND**

It refers to all natural resources which aid in production found any where on the earth or above it. It includes soil, minerals, forests, swamps, rivers, lakes, seas and atmosphere. Its payment is rent.

## **THE ENTREPRENEUR**

This is a person or group of persons who combine the other three factors of production into an organised relationship to make the production process possible.

### **FUNCTIONS OF AN ENTREPRENEUR**

1. Co-ordinator. He combines all other factors of production together, he puts them in a 'pot' of production and he generates goods and services. Right quantities of each input and the best proportions are chosen to ensure efficiency and the best quality of products.
2. Controller. He controls or manages the enterprise. He takes care of the staff discipline, supervise them and he looks into staff welfare and ensure proper use of finance.
3. Decision maker. He takes a high level of decisions concerning the running of the business i.e he decide what to produce, how to produce, for whom to produce, where to produce and what price to charge etc.



4. Risk and uncertainty bearing. There are many risks and uncertainties in business e.g theft, a fall in demand, change of government policy etc. The entrepreneur risks his capital against such risks and uncertainties. He insures against risks or spreads them by producing many products in which case it is called hedging so as to reduce losses.
5. Innovator. An entrepreneur looks into the future of his business to predict whether it is bright or gloomy. He designs appropriate measures to make improvements or tackle problems. He looks out for new methods of production, new methods of combining factors of production to produce the same commodity in the cheapest manner.
6. Director. He directs all the factors of production.

The payment to entrepreneur is profit.

### **THE THEORY OF COSTS**

Costs of production refers to what is incurred to produce a given amount of output. Costs of production include:

1. **Implicit costs:** These are costs which cannot be computed in monetary terms. They are not included in the calculation of the costs of the firm. Such costs are incurred by the producer's own labour, estimated rent for his building, the interest on capital invested by the entrepreneur himself, the salary he would get if he was not content with the profits, the salary he would pay his house wife, etc.
2. **Explicit costs:** These are costs (expenses) which are production. They are calculated in monetary terms. They include: Labour costs, raw material costs, power, transport, etc.
3. **Economic costs:** These are payments made by the producers to resource suppliers in order to ascertain continuous supply of raw materials.
4. Social costs; They refer to the disadvantages which are imposed on society as a result of private production. Such costs include pollution, resource depletion, etc. Sometimes these costs are referred to as externalities of production.

### **SHORTRUN COSTS OF PRODUCTION**

Shortrun is a period in the production process in which a firm cannot alter its size, equipment and scale of organisation to meet increasing demand such costs include:

- (a) **Fixed costs(FC):** These are costs which do not vary with the level of out put. They are costs which are incurred irrespective of out put levels. They include: Rent, interest on capital, salaries of top management, etc. Fixed costs are also referred to as supplementary costs, over head costs, un avoidable costs or indispensable costs of production.

Total fixed costs(TFC) is the summation of all the fixed costs.

- (b) **Variable costs (VC):** These are costs of production which vary with the level of output. As output changes costs also change. They are also referred to as prime costs, direct costs or avoidable costs of production. Total variable cost (TVC) is the summation of all the variable costs of production.

- (c) Total cost (TC): This is the overall cost the firm incurs in order to produce its output. It is the sum of the variable costs and the fixed costs. This can be expressed.

Total cost (TC) = Total Fixed Cost (TFC) + Total Variable Costs (TVC)

i.e.  $TC = TFC + TVC$

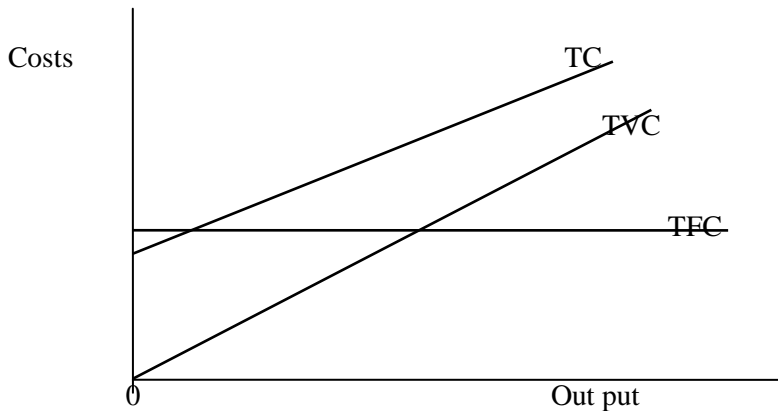
## RELATIONSHIP BETWEEN TFC, TVC AND TC

1. The total fixed curve is a straight line because total fixed costs do not vary with output levels.
2. The TFC curve begins above zero because of the fixed costs, i.e. even when output is zero some costs have to be incurred.
3. The TC curve lies above the TVC because it is a sum total of both the TVC and TFC i.e.  $TC = TFC + TVC$ .
4. When output is zero, there are no costs incurred ( $TVC = 0$ , so  $TC = TFC$ ).
5. The TVC curves slopes upwards from left to right because variable costs increase as output increases.

## A TABLE SHOWING TFC, TVC AND TC

Out put (O)	TFC	TVC	TC = TFC + TVC
0	60	0	60
1	60	30	90
2	60	40	100
3	60	45	105
4	60	55	115
5	60	75	135
6	60	120	180

This relationship can graphically be shown as below



## PER UNIT COST OF PRODUCTION

1. Average total cost (ATC): This refers to the total cost of production per unit output. This can be expressed as:

$$ATC = \frac{TC}{Q}$$

Where Q is the output.

2. **Average fixed costs (AFC):** This refers to the fixed costs incurred in producing each unit of output. It is equal to the total fixed costs divided by total output i.e.

$$AFC = \frac{TFC}{Q}$$

3. **Average variable costs (AVC):** This refers to the variable costs incurred in producing each unit of output

$$AVC = \frac{TVC}{Q}$$

4. **Marginal cost (MC):** This refers to the additional costs incurred in producing an extra unit of output. It is expressed as:

$$MC = \frac{\text{Change in Total Cost}}{\text{Change in output}} = \frac{\Delta TC}{\Delta Q}$$

Where  $\Delta$  = Change

### Illustration Table

Output	TFC	TVC	TC	AFC	AVC	AC	MC
1	60	30	90	60	30	90	-
2	60	40	100	30	20	50	10
3	60	45	105	20	15	35	5
4	60	55	115	15	13.75	28.75	10
5	60	75	135	12	15	27	20
6	60	120	180	10	20	30	45

### Graphical Representation

#### RELATIONSHIP BETWEEN MC, AC, AFC AND AVC

1. AC, MC and AVC curves all take a U-shape i.e. they first decrease, reach a minimum and later rise as output increases implying that initial costs drop and later rise. This U-shape is attributed to the law of variable proportions.
2. As production expands, AVC tends closer to AC curve because of the continuous fall in the AFC, i.e. AFC tends to zero as output rises.
3. The AFC curve slopes downwards continuously because the fixed costs are divided by the increasing output. This implies that increasing output will make the AFC curve to fall continuously.
4. AVC always lies below the AC when the fixed costs still exist. This is because AC at any output includes AVC and AFC at that output. From the cost theory of the firm,  $AC = AFC + AVC$ .
5. After the AVC has reached its lowest point and starts rising, its rise over a certain range is offset by the fall in the AFC so that the AC continues to fall (over that range) despite the increase in AVC.
6. MC curves cuts the AC and AVC at their lowest points and from below.
7. The point where  $MC = AC$  is referred to as the optimum point of the firm and at this point average costs are lowest (at minimum).

#### IMPORTANCE OF THE CONCEPT OF MARGINAL COST IN FORMULATION OF THE THEORY OF THE FIRM

The concept of marginal cost has great relevance in the formulation of the theory of the firm. Its importance include:

1. It is very vital in the determination of the equilibrium point of the firm. Using marginal cost approach a firm is in equilibrium where marginal cost (MC) is equal to marginal revenue (MR) i.e.  $MC = MR$ .
2. Marginal costs help a firm to determine the optimum out put or size of the firm. This is determined at a point where marginal cost (MC) is equal to equal average cost (AC) i.e.  $MC = AC$ .
3. Marginal cost curve is helpful in the derivation of the supply curve of a firm under perfect competition where we take part of the marginal cost curve above the AVC.

## **LONG RUN COST CURVES**

This is also known as a planning curve or an envelope curve. It is referred to as envelope curve because it is formed by a series of short run average cost curves. Each point on the longrun average cost curve (LAC) corresponds to a point on the shortrun average cost curve (SAC) which is tangent to the LAC at that point. It is also known as a planning curve because it enables the firm to have trial factor combination until it achieves the best size. Each time when there is a change in out put as a result of changed scale of operation, there is a new shortrun average cost curve, the firm will continue with these trials until it achieves the best size i.e. it gets the lowest shortrun average cost curve which is tangential to the longrun average cost curve.

## **DERIVATION OF THE LONG RUN AVERAGE COST CURVE**

When does a firm decide to use a larger plant?

Assuming that the available technology to the firm at a particular time includes three methods of production, each with different plant size. I.e. a small plant, medium plant and large plant. These plants can be illustrated in the figure below:

In the figure above, a small plant operate with costs demoted by the curve SAC1, the medium size plant operates with the costs on SAC2, and large with SAC3 respectively. If the firm plans to produce output OQ1, it will choose a small plant if it plans to produce OQ2, it will choose the medium plant. If it wishes to produce OQ3, it will choose the large size plant.

If the firm starts with a small plant and its demand gradually increases, it will produce at lower costs (up to level Q1) beyond that point costs start increasing. If its demand reaches the level Q1, the firm can either continue to produce with the small plant or it can install the medium size plant. The decision at this point depends not on costs but on the firms expectations about its future demand.

In the limit if there is very large number (infinite number) of plants, we obtain a continuous curve which is the planning long run average cost curve of the firm. Each point on this curve shows the minimum (optimal) cost of producing the corresponding level of out put.

Therefore, the longrun average cost curve (LAC) is the locus of points denoting the least cost of producing the corresponding level of out put. The LAC is U-shaped and it is often called the “envelope curve” because it envelopes the short run average cost curves (SAC).

In the longrun, there are no fixed costs. Time is long enough such that the firm is able to vary all the factors of production and therefore all costs become variable. To increase out put therefore, the firm expands in size. Cost per unit can increase or remain constant or reduce as the firm expands in size depending on whether the firms is enjoying the advantage of expansion (economies of scale) or disadvantages of expansion (diseconomies of scale).

## **ECONOMIES OF SCALE**

Economies of scale refers to the advantages accruing to the firm in form of reduced average cost of production resulting from increasing the size of the firm. This is illustrated in the figure below:

From the figure, at the lowest point of the shortrun AC curve (SAC) i.e. At a, the firm begins to face the law of diminishing returns. In the longrun, the firm is expanded by hiring more units of all the factors. The expansion in size of the firm leads to the reduction in average costs from OC1, to OC2 and eventually to OC3. The trend of increasing the size of the firm and reducing average cost continues (because of economies of scale) until point C when costs per unit output begin to increase as the firm over expands in size. This eventual increase in average cost of production is due to diseconomies of scale and is due to over expansion of the firm.

From the figure, OQ3 is the optimum size of the firm in the longrun. Therefore, the longrun average cost curve (AC) is U-shaped because of economies and diseconomies of scale while the shortrun average cost curve (SAC) is U-shaped because of the law of diminishing returns.

Economies of scale can be classified as:

1. Internal economies of scale
2. External economies of scale

### **INTERNAL ECONOMIES OF SCALE**

Internal economies of scale refers to the fall in Average costs of production arising from specialisation which is encouraged in the large firm. Internal economies are enjoyed by the firm in the following forms.

#### **1. Technical Economies:**

These arise out of specialisation of capital (machines) which result into reduced average cost of production. E.g. a large firm can afford to purchase specialised machines like tractors, milking machines, etc. which lead to increased output and reduced average costs (since  $AC = \frac{TC}{Q}$ , increase in Q reduces AC).

#### **2. Managerial (Administrative) Economies:**

These arise out of specialization of labour which leads to efficiency; increased output and reduced average costs. A large firm can afford to employ specialists like accountants, engineers, etc.

#### **3. Financial Economies:**

A large firm can easily secure loans from financial institutions because it has securities. Financial institutions usually trust large firms.

#### **4. Marketing Economies:**

A large firm can afford to buy factors of production in bulk from many areas. It can also afford to sell commodities in bulk in several markets since it can own trucks for purchasing and distributing tasks by diversifying its input markets, a large firm buys in bulk at favourable prices which leads to reduced average costs. A large firm can also afford to advertise e.g. giving samples.

#### **5. Transport economies:**

When raw materials or commodities are transported in bulk, the costs per unit output is always low e.g. when hiring a vehicle, a large firm transporting say 10 tonnes per trip is likely to pay almost the same amount as a small firm transporting 5 tonnes per trip.

## 6. **Storage economies:**

Storage costs per unit out put reduce when commodities or raw materials are stored in bulk. E.g. when a large firm rents a store to keep 100 tonnes of commodities, it would pay the same amount as a small firms which stores 10 tonnes in the same store.

## 7. **Research Economies:**

A large firm can afford to finance research e.g. by establishing a laboratory or hiring research assistants. Research can lead to new technology, increased out put and hence reduction in average costs.

## 8. **Welfare Economies (Social economies);**

Large firms can afford to provide their workers with facilities like houses, medical facilities, etc. These can lead to improved efficiency of labour which leads to increased out put and reduced average costs.

## 9. **Risk-bearing Economies:**

A large firm can afford to pay premiums and to produce a variety of products. All these reduce risks of loss.

## **EXTERNAL ECONOMIES OF SCALE**

These are advantages accruing to the firm in form of reduced average costs of production resulting from the expansion of the industry as a whole. In other words, they arise from the concentration of many firms in one area. They are enjoyed by all firms in the industry.

### **External economies of scale include:**

1. Economies of concentration: This is where firms in one area:-

- (a) Share training facilitate.
- (b) Share the same transport facilitates and other infrastructure.
- (c) Carry out technical implements together etc. All these result into reduced cost of production in each firm since firms share costs.

2. Economies of information. Firms in one area can co-operate to enhance the formation of associations which provide information for improvements.

### 3. **External technical economies:**

Firms in one area can share specialised maintenance facilities e.g. garage, carpentry workshops etc. The sharing of costs leads to reduction in average costs in each firm.

### 4. **External financial economies:**

Firms in one area can attract new financial institutions like banks, building societies, etc.

NB: Economies of scale can also be classified as:

- 1. Pecuniary Economies: These arise out of paying lower prices for inputs and distribution of the product at a low cost by the large firm. They are as a result of bulk buying and bulk buying and bulk selling.

2. Real economies: These are associated with reduction in physical quantity of inputs per unit output arising out of large scale production.

## **DISECONOMIES OF SCALE**

These are disadvantages accruing to the firm in form of increased costs of production per unit output arising from over expanding the scale of production. Diseconomies of scale can also be classified as:

1. Internal diseconomies and
2. External diseconomies of scale

### **INTERNAL DISECONOMIES OF SCALE**

These arise out of over expansion of the firm. They include:-

1. **Managerial diseconomies:**

Supervision of workers and decision making becomes difficult co-ordination between workers and management becomes difficult. This results into inefficiency and increased costs per unit output.

2. **Technical diseconomies:**

As the firm over expands, wear and tear of machines increases. Also the cost of maintaining gadgets increases.

3. **Financial diseconomies:**

As the result of over expansion of the firm, it becomes very difficult to get enough funds to run the firm. Also the cost will be increased by the high cost of borrowing (interest).

4. **Marketing diseconomies:**

It becomes difficult to get enough quantities of raw materials for the large firm. As a result, the price of raw materials may go up resulting into high cost of production. Also it becomes difficult to get enough market for commodities. This leads to high distribution costs and advertising costs.

### **EXTERNAL DISECONOMIES OF SCALE**

This refers to increase in average costs of production of the firm as a result of over expansion of the industry as a whole. They are the result of many firms concentrating in one area. As a result of over expansion of the industry, the following would lead to increase in average cost of production.

1. Land rent would be high because of increased competition.
2. Accommodation and cost of living would be high because of competition.
3. Transport costs would increase and there would be congestion of vehicles and human beings.
4. Pollution would result out of congested factories and would affect the health of workers. Also the firm would incur costs to fight pollution e.g. purifying water, etc.

All the above factors affect all the firms in the same locality and lead to increase in cost per unit output.

## **THE PRODUCT CONCEPT OF THE FIRM**

In production economics, there is a strong relationship between cost of a firm and its out put. The out put can be categorised as follows:

**(a) Total product (TP)**

This is the total amount of a particular commodity resulting from employment of all factors of production (variable and fixed).

**(b) Marginal product (MP)**

In production economics, the term margin refers to addition to total. Marginal product therefore refers to the additional output resulting from employment of an extra unit of available factor.

$$MP = \frac{\text{Change in total product}}{\text{Change in variable input}}$$

If we take labour as the variable factor

$$MP = \frac{\Delta TP}{\Delta L}$$

Where Δ represent change

i.e. ΔTP = change in total product

ΔL = change in labour units

(c) Average product (AP); This is output per unit of the variable factor. It is the total product divided by the variable in puts employed.

$$AP = \frac{\text{Total product}}{\text{Total variable factor}} = \frac{TP}{TVF}$$

**Table of Illustration**

Variable factor	Total product (TP)	Average product (AP)	Marginal product (MP)
1	8	8	8
2	24	12	16
3	54	18	30
4	82	20.5	28
5	95	19	13
6	100	16.7	5
7	100	14.3	0
8	96	12	-4

The table above illustrate the relationship between MP, AP and TP.

**Graphical Illustration**





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### **Relationship between AP, MP and TP**

- (i) When total product is at maximum marginal product is zero.
- (ii) As MP becomes negative, TP begins to decline.
- (iii) When MP rises, AP is also rising and when MP begins falling, AP will be increasing at a decreasing rate.
- (iv) The MP curve cuts the AP curve at its maximum point.
- (v) All the MP, TP and AP at first increase at an increasing rate, then increase at a constant rate and finally begins to decline. This is explained by the law of variable proportions.

### **THE LAW OF VARIABLE PROPORTIONS**

This law states that, as more and more units of the variable factor are employed, holding the quantities of the fixed factor constant, a point is reached beyond which the marginal product, average product, and total product will increase at an increasing rate then increase at a constant rate and eventually they diminish. In order to understand the law of variable proportions, it is necessary to see the relationship between the fixed and variable factors at the different stages as seen above on the figure.

#### **STAGE I**

This is a stage of increasing returns. The TP, AP and MP are increasing. In this stage the fixed factors are too much in relationship to labour (variable factor) and as capital is used intensively it becomes efficient hence TP, MP and AP will increase.

#### **STAGE II**

This is a stage of diminishing marginal product. It begins where the AP is at maximum because labour becomes inefficient as less of the fixed factor is available, i.e. additional output per worker is reducing.

#### **STAGE III**

During this stage, MP, AP and TP will all decline until MP becomes zero and the efficiency of the workers could have declined.

#### **Conclusion from the law**

1. Fixed factors like land have a limit beyond which output cannot be increased even if there is employment of more variable factor.
2. When TP, MP and AP begin to decline, it becomes unprofitable to continue producing, therefore the ratio of the variable factor must constantly be reviewed to avoid losses.

3. Employment of more units of labour does not make output increase indefinitely. The productivity of each worker decreases when the ratio of labour to the fixed factor increases.

NB: The law of variable proportions is the same as the law of diminishing returns.

### **SURVIVAL OF SMALL SCALE FIRMS**

Despite the fact that large firms enjoy economies of scale, small firms survive alongside the large firms because:

1. Small firms do not need to advertise extensively as large firms and hence incur less costs.
2. Small firms are easy to manage. This results into efficiency and reduced costs of production.
3. Small firms do not face the problems of internal diseconomies of scale.
4. At times small firms are located far from large firms and hence they monopolize local markets despite the fact that they may be selling at higher prices than large firms which are far.
5. Some small firms use by-product of large firms e.g. sweets use the by-products of the sugar industry. The two firms cannot compete with each other.
6. Owners of small firms can easily develop personal contacts with customers. Later they can start giving credit facilities. In such a case they would maintain their market despite the fact that they may be selling at a high price.
7. Small firms may sell to customers the appropriate small quantities whereas large firms tend to sell in bulk (wholesale).
8. Where the market size is small it necessitates establishment of a small firm.
9. Some activities do not require large firms e.g. shoe shining, hair salons, etc.

### **THE REVENUE OF THE FIRMS**

Revenue refers to the proceeds or returns realised or derived from the sale of a commodity at given price. Revenue of the firm can be looked at in 3 ways:

1. Total revenue (TR): This is the total amount of money received by the firm as a result of selling its total output produced per unit of time.

$$TR = P \times Q$$

Where Q is quantity sold and P is the price per unit

2. Average revenue (AR): This refers to revenue per unit output. It is the same as the average price.

$$AR = \frac{TR}{Q} = \frac{PQ}{Q} = P$$

Where Q is quantity

3. Marginal Revenue (MR): This is the additional revenue resulting from selling an extra unit of out put.

$$MR = \frac{\Delta TR}{\Delta Q}$$

$\Delta Q$

Where  $\Delta Q$  is change in output sold.

## **THE PROFIT OF THE FIRM**

The term profit has been defined in very many ways by economists, accountants and even policies economists. In simple terms;

Profit ( $\Pi$ ) = Total Revenue (TR) - Total Cost (TC)

i.e.  $\Pi = TR - TC$

Since  $TR = P \times Q$ . A firm can maximise profits in 2 ways.

1. By maximizing revenue through out put maximization and increase in price of commodities.
2. By minimising costs.

### **Normal profits**

This refers to where the firm's average cost is equal to the price (AR) at which it sells output. In other words, a firm which earns normal profits covers its opportunity cost of production or in lay man's language, it earns zero profits (i.e.  $TR - TC = 0$ ).

### **Abnormal profits**

This is earned by the firm which sells its out put at a price greater than the average cost ( $P > AC$ ). In other wards, the firm sells at the price which is greater than the opportunity cost of production.

## **A FIRM AND AN INDUSTRY**

A firm is a productive unit under unified control and management. It may be a sole proprietor, a partnership, a company or a government owned firm, e.g. a factory.

An industry is a description of several or many firm's which are engaged in producing the same kind of commodities (although each firm may be under its ownership and management, or may use its label). E.g. a tea producing industry would include all firms (factories producing tea).

## **DERIVING THE SUPPLY CURVE OF AN INDUSTRY**

Since the industry is a combination of firms, its supply curve can be derived by horizontal summation of supply curves of the various firms in the industry. This is illustrated graphically in the figure below;

From the figure, Firm A supplies 5 units at 4 shillings per unit. While firm B supplies 6 units at the same price. In the whole industry,  $5+6 = 11$  units will be supplied at 4 shillings. Note that the industry supply curve is more elastic than the supply curves of various firms in that industry.

## **EQUILIBRIUM OF THE FIRM AND EQUILIBRIUM OF AN INDUSTRY**

The term equilibrium refers to the state of stability when there is no tendency to change.

Equilibrium of the firm refers to the point of profit maximisation when the firm has no tendency to increase or reduce output. At this point, marginal cost (MC) is equal to marginal revenue (MR). If the firm increases out put and produces beyond this point, marginal cost would be greater than marginal revenue and hence the firm would be operating at a loss. When the firm produces below the point where  $MC = MR$ , profits would be less

because less units of output are produced. The condition for profit maximisation ( $MC = MR$  at the highest level of out put) applies to all firms.

Equilibrium of an industry is reached when there is no tendency for its out put, to increase or reduce. At this point, there are neither new firms entering the industry nor old firms leaving the industry. In other words all firms are earning normal profits which do not attract new firms or force firms out of the industry immediately.

## MARKET STRUCTURES

Market structures can be classified according to the number of firms in the industry as follows:

1. Perfect competition
2. Monopoly
3. Monopolistic competition
4. Oligopoly

## PERFECT COMPETITION

### Assumptions of perfect competition

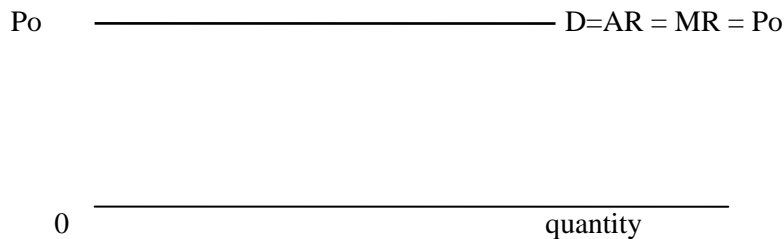
Perfect competition is a market structure which fulfils the following assumptions.

1. Many firms (sellers) of the same size. This means that one firm cannot influence the price in factor or commodity markets. Sellers are therefore price takers and not price makers. It is also assumed that there are many buyers.
2. Homogenous products: There is no product differentiation or any other form of non-price competition. Therefore competition is centred on only prices. Also consumers cannot differentiate the products produced by any firm. Due to this under perfect competition, there is no advertisement.
3. Free entry and exit: when firms earn abnormal profits (supernormal profits), other firms are free to join the market and exhaust the profits. In the long run, where there are no profits, firms are free to leave the industry.
4. Perfect knowledge i.e. no ignorance on side of buyers and producers about factor and commodity markets, or about future trends relevant to their decision - making now. Consumers are aware of prices charged in the whole market and the know the quantity of products.
5. Perfect mobility of factors of production. I.e. factors of production can move freely from one firm to another throughout the economy and raw materials are not monopolised. In otherwards, there is perfect competition in the factor market.
6. No government regulation. I.e. no government intervention I form of tariffs, subsidies, rationing, etc.
7. Profit and utility maximization. The goal of all firms is profit maximisation. All consumers (buyers), aim at maximising satisfaction (utility) and therefore buy from the cheapest source.

Note; Perfect competition satisfies all the above conditions. In pure competition, conditions number 4 and 5 are not fulfilled and thus there is an element of monopoly though sellers are price-takers.

## THE DEMAND CURVE OF A FIRM IN PERFECT COMPETITION

Price
API Economics Theory



The demand curve of a firm in perfect competition is perfectly elastic because of competition. No firm can influence the overall price in the market. The price tends to be constant at  $OPo$  (in the figure above). Above  $OPo$  nobody buys from the firm, i.e. buyers would buy from other sellers. If a firm reduces the price below  $OPo$ , other firms would also do the same.

### SHORT RUN EQUILIBRIUM PRICE, OUTPUT WITH PROFITS IN PERFECT COMPETITION

Profit maximization (equilibrium) is attained at the profit where Marginal Cost (MC) equals Marginal Revenue (MR).

#### A diagram showing short run equilibrium of the firm under perfect competition

From the figure,  $OP1$  is the cost price per unit. With output  $OQo$ , Total cost (TC) =  $OP1B Qo$ .

$OPo$  is the selling price per unit with the output  $OQo$ , Total Revenue (TR) =  $OPo AQo$ .

$$\text{Profit } (\Pi) = \text{TR} - \text{TC}$$

$$\begin{aligned} &= OPo AQo - OP1BQ \\ &= P1PoAB \text{ (the shaded region)} \end{aligned}$$

Therefore,  $OPo$  is the profit maximising price (equilibrium price),  $OQo$  is the profit maximising output (equilibrium output) and  $P1PoAB$  is abnormal profits (supernormal profits).

### LONGRUN PROFIT MAXIMISATION IN PERFECT COMPETITION

Because there is free entry of firms, in the longrun, other firms are attracted by the abnormal profits to join the market and hence form the industry. As a result, total output would increase leading to fall in price and fall in profit until when all firms start to earn normal profit.

The figure shows that, in the longrun, profit maximisation of a firm in perfect competition is at point (e) where longrun marginal cost (LMC) is equal to marginal revenue (MR). This point is at the lowest point of the longrun. Average cost curve (LAC) output  $OQ1$  is produced at cost of  $OP1$  per unit and sold at the price  $OP1$ . Since  $P = Ac$ , (and  $TR = TC$ ), the firm is earning normal profit (zero profit). This applies to all firms in the industry. A firm which covers only its average cost (which sells at  $P = Ac$ ) is called a marginal firm.

### THE SHUT DOWN POINT AND BREAK EVEN POINT

From the figure we note the following:

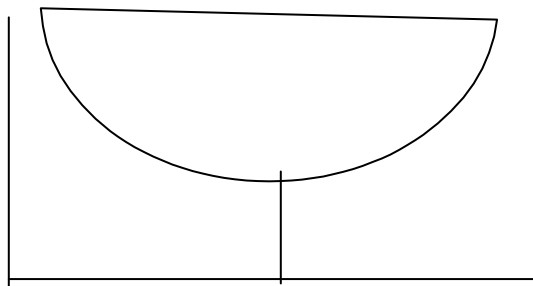
1. In shortrun, the firm in perfect competition produces output  $OQ1$  and sells it at price  $OP1$ , earning abnormal profits  $P1P4DA$ .
2. In the longrun, the abnormal profit attracts new firms to join the market and form the industry. This leads to increase in total output which results into fall in price from  $OP1$  to  $OP2$ . All the firms earn normal profits.

(Since  $P = AC$ ) at point B. This point B where the firm neither incurs losses nor earns profits is called the **Break-even point**.

3. Because of competition and increased total output, the price can even fall to  $OP_3$ . This point (C) below which the firm cannot operate is called **shut down point**. At this point,  $P = AVC$ . In other words the firm just covers the variable costs of production. Below the shut down point,  $P < AVC$  and therefore, the firm would not operate because it cannot cover variable costs e.g. cost of raw materials, wages, etc.
4. The supply curve of a firm in perfect competition is that part of the marginal cost curve above the point where price ( $P_3$ ) =  $AVC$  i.e. above point C or above shut down point. Below point C, the firm cannot supply anything since it cannot cover variable costs.
5. A firm can keep on operating even if it does not cover the total costs of production (between B and C) This is because of the following factors:
  - (a) In the short run, the firm would keep on operating provided it covers variable costs. E.g. it can buy raw materials, pay wages etc., though it cannot cover fixed costs like insurance, rent, etc.
  - (b) It may expect to enjoy economies of scale in the long run, i.e. to produce at low costs and earn profits.
  - (c) If a firm is run by the government, and is vital to society, it would afford to operate at a loss, e.g. water supply, roads, electricity supply, etc.
  - (d) The goal of the firm may be to provide employment for members of the family. In such a case it would keep on operating at a loss in the short run.
  - (e) When the producer has invested in many assets in the business, he/she may be reluctant to sell them and hence keep on operating hoping to make improvements.
  - (f) The firm may have prospects of securing a loan from financial institutions so as to make improvements, reduce costs and earn profits.
  - (g) The entrepreneur may want to maintain his/her reputation and good faith to the public and to his/her customers.
  - (h) The entrepreneur may adopt new and better methods of production. He/she can try to reduce costs of production by reducing the number of workers, changing the administration, etc.

### ADVANTAGES OF PERFECT COMPETITION

1. In the long run, there is efficiency in production and full utilisation of factors of production. Every firm produces at the minimum point of the Average cost curve as shown in the figure below.



$OQ_o$  = Optimum output  
 At  $L$ , there is no excess capacity

2. In the longrun, consumers enjoy high standard of living because more commodities are produced and sold.
3. There is no wastage of funds in advertising which would lead to high costs and high prices.
4. There is high out put because of free entry of firms in the market.
5. Competition leads to quality improvement in all firms.
6. Resources are well utilised by efficient firms, inefficient (high cost) firms are pushed out of the market.

### **DISADVANTAGES OF PERFECT COMPETITION**

1. Commodities produced are homogenous and therefore consumers cannot enjoy a variety of differentiated products.
2. In the longrun, expansion of the firm may be very difficult because there are no enough profits to “plough back”.
3. Research may be impossible because the profit realised is not enough to cater for research activities.
4. Prices tend to be constant and demand is elastic. This limits sellers to carry out price discrimination.
5. There is a high risk of unemployment when inefficient firms are pushed out of the market.
6. Public utilities like water supply, roads, etc. may not survive in perfect competition. This calls for government intervention.
7. Assumptions of perfect competition are unrealistic and may be misleading and difficult to attain in the real situation.

### **MONOPOLY**

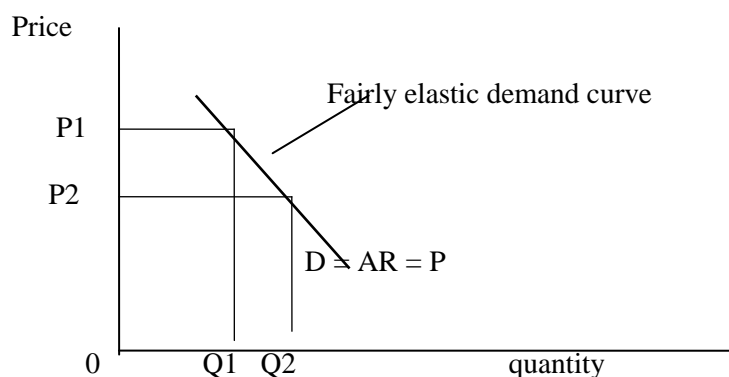
Monopoly is a market situation where there is one seller of a product which has no close substitutes. Entry of new firms is restricted and there is no persuasive advertising. In pure monopoly, there is one firm which deals in a product that has no substitutes at all. In practice, there is no pure monopoly because there is no commodity which has no close substitutes at all. Monopoly is a market situation where there is one buyer of a commodity or a factor of production e.g. one employer.

### **FACTORS WHICH GIVE RISE TO MONOPOLY (the basis of monopoly)**

1. Patent rights e.g. writers of books, where the law forbids other firms to deal in the commodity.
2. Ownership of strategic raw materials, usually under government control e.g. minerals.
3. Exclusive methods of production e.g. doctors.
4. Long distance among producer’s where each producer monopolizes the market in his/her locality (spatial monopoly).
5. Advantages of large scale production which do not allow small competitors to compete successfully with large firms. Also where there is room for only one seller e.g. roads and railways in Uganda. Such undertakings are usually controlled by the government i.e. they are public utilities. In such cases, the market is said to have created natural monopolies.

6. Protectionism. This is when trade barriers are imposed on the product to exclude foreign competitors. In such cases the home producer may become a monopolist.
7. Take overs and mergers. "Take over" is when one firm takes over the assets and organisation of another where as mergers are formed when firms combine their assets and organisations into one to achieve strong market position. Both situations may result into a monopolist firm.
8. Collective monopoly or collusive monopoly. This is where firms come together in a formal or informal agreement (cartel) to achieve monopoly power. Such firms can fix quotas (maximum out put each may put on the market). They may also set the price very low with the objective of preventing new entry of other firms. This is called limit pricing. An example of a monopolist firm in Uganda is Uganda railways corporation (URC) which handles railway transport.

### THE DEMAND CURVE FOR A MONOPOLIST



The demand curve for a monopolist firm is fairly elastic. The seller can determine either price or quantity but not both i.e. if he/she fixes a high price (OP1), quantity demanded would be low (OQ1). If he/she supplies much of the commodity (O Q2), the price would be low (OP2). In such a situation the seller is a price maker because he/she can influence the price in the market.

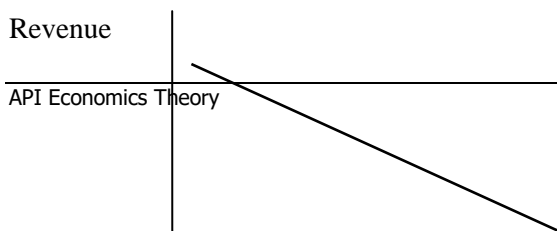
### AVERAGE REVENUE AND MARGINAL REVENUE UNDER MONOPOLISTIC COMPETITION

Unlike perfect competition where MR and AR are equal, under monopoly, AR lies above MR. The reason is that since demand is downward sloping in order to sell an extra unit, the price must be decreased. The additional revenue therefore is less than the price at which that unit is sold.

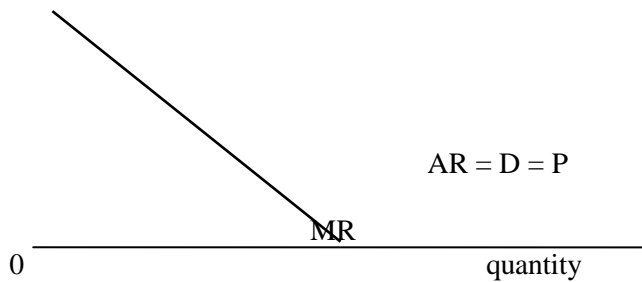
In monopoly, AR falls as more units of output are produced and sold. MR is always less than AR.

Out put	Price (AR)	Total Revenue (TR)	Marginal Revenue (MR)
1	10	10	-
2	9	18	8
3	8	24	6
4	7	28	4
5	6	30	2
6	5	30	0
7	4	28	-2

### Graphical representation







## MARKET SITUATION FOR A MONOPOLIST

As in other firms, the monopolist maximises profit when  $MR = MC$ , at the highest level of out put.

### A diagram showing profit maximisation of the firm under monopoly

In the figure,  $OP_1$  is the cost price per unit and  $OQ_e$  is the total quantity bought. Therefore Total cost =  $OP_1 CQ_e$   $OP_e$  is the selling price per unit, with, output  $OQ_e$ , Total revenue =  $OP_e A Q_e$ .

Profit = TR ( $OP_e A Q_e$ ) - TC ( $OP_1 C Q_e$ )  $Q_e = P_1 P_e AC$

Point (B) is equilibrium point where  $MC = MR$ .

The monopolist firm produces at excess capacity i.e.  $OQ_e$  is below the lowest point of the AC curve which is at point D. Since costs are still falling, the firm could still produce more out put up to  $OQ_1$ . But in order to keep the price up, it produces less than optimum.

## ADVANTAGES OF MONOPOLY

1. There is no duplication of services and this saves resources e.g. if there is one Hydroelectric power plant there may not be the need to set up another one in the same area.
2. Economies of scale can be enjoyed by the firm because it is capable of expanding using the abnormal profits earned.
3. There is a possibility of price discrimination (i.e. selling the same commodity at different prices) which benefits the low income earners.
4. Research can easily be carried out using the abnormal profits.
5. There is no wastage of resources in persuasive advertising which leads to increase in prices.
6. Public utilities like roads, telephone, etc. are easily controlled by the state as a monopolist.
7. "Infant" industries can grow up when they are monopolies and are protected from competition.

## DISADVANTAGES OF MONOPOLY

1. Because there is no competition, the firm can become inefficient and produce low quality products.
2. Monopolist firms produce at excess capacity i.e. they under utilise their plants so as to produce less out put and sell at a high price.

3. Monopoly firms may charge higher prices than firms in perfect competition.
4. In case a monopolist stops producing, there would be shortage of the commodity.
5. Monopolist firms tend to exert pressure on the government and at times they can influence decision making because they are controllers of production.

### **MEASURES TO CONTROL MONOPOLY**

Because of the above disadvantages of monopolies, the following methods can be used to control their activities.

1. The government can fix prices of commodities.
2. Taxation. The government can impose taxes on monopolist firms to tax away the abnormal profits. However, the monopolist can shift the burden of taxes on to the buyers in for of high prices.
3. Anti-monopoly (Anti trust) legislation i.e. laws imposed to control monopolies. Such laws can prohibit monopolisation, and collusion among firms to raise prices or inhibit competition.
4. Nationalisation of monopoly firms by the government.
5. Subsidization. New firms can be subsidized so that they compete with the monopolist firm.
6. Removing the basis of monopoly e.g. removing tariffs on imported goods.

### **PRICE DISCRIMINATION UNDER MONOPOLY**

Price discrimination exists when a commodity is sold at different prices irrespective of the cost of production. Examples include different seats in a theatre or stadium, different grads in a hospital (grade A and Grade B), doctors services, etc.

### **DEGREES OF PRICE DISCRIMINATION**

There are three degrees (types) of price discrimination

#### **(a) First degree or perfect discrimination**

This type exists if a monopolist is able to charge each consumer for his good the maximum price that the buyer would be willing to pay rather than go without the good. The monopolist is able to sell each unit of his goods the maximum price. At this degree of price discrimination all the consumers surplus is taken away by the seller.

#### **(b) Second degree price discrimination**

This is when a monopolist charges the consumers a lower price when he purchases larger quantity of the good conversely, a higher price is charged to a consumer who buys a smaller quantity. At this degree part of the consumers' surplus is taken away.

#### **(c) Third degree of price discrimination**

This is when the monopolist gets more revenue by separating his market into sub-markets and a different price is charged in each market.

### **CONDITIONS FOR PRICE DISCRIMINATION**

1. The commodity must be sold by a monopolist.
2. Elasticity of demand should be different in different markets. A higher price should be charged in the market where elasticity of demand is low and where elasticity of demand is high, a lower price should be charged.
3. The cost of dividing the markets should be very low e.g. in cases of dumping, costs of transport should be low.
4. Buyers should not know how much is charged on others. This is possible especially where goods are sold on order.
5. It should be impossible for buyers to transfer the commodity from where the price is low to where the price is high. This is possible especially with services of doctors, teachers, etc.

**NB** Price discrimination may also be used to sell units of the same commodity at different prices to the same customer e.g. telephone charges high on 3 minutes and then low on other minutes.

### ADVANTAGES OF PRICE DISCRIMINATION

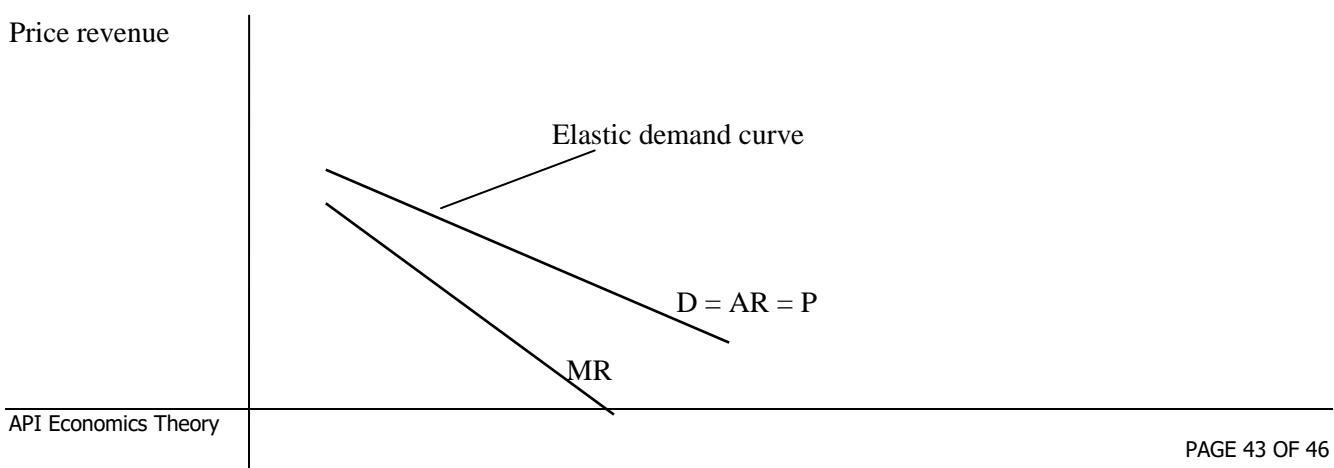
1. It enables the poor to get essential services at low prices e.g. cheap houses to civil servants, doctors charging low prices on poor patients.
2. To the producers, it increases total revenue because output sold increases.
3. It is one way in which the rich subsidize the poor thus a method of income distribution. The rich are charged highly on commodities while the poor are subsidized on the same commodities.
4. It increases sales and consumption e.g. for electricity, the first units, may be charged higher price than other extra units. Therefore, the more units of electricity you use the less charge you would pay for extra units.
5. It helps producers to dispose off surplus commodities e.g. dumping.

### MONOPOLISTIC COMPETITION

Monopolistic competition market structure has characteristics similar to that of perfect competition except that the commodity dealt within monopolistic competition is not homogeneous. Products are differentiated (but they are close substitutes). Product differentiation may be in form of packing, design, quality, branding, etc.

There is need for persuasive advertising in monopolistic competition. Because of product differentiation, the seller has some control over the market price. Examples are small restaurants, hair salons, shoe repairs, etc.

### THE DEMAND CURVE OF A FIRM IN MONOPOLISTIC COMPETITION



0 ————— quantity

The demand curve for a monopolistic competitor is more elastic than that of monopoly because of the presence of close substitutes in the former. MR is below the AR as in case of monopoly. The demand curve is downward sloping because each firm has monopoly power over its product and is not a price taker.

### SHORT-RUN EQUILIBRIUM OF A FIRM IN MONOPOLISTIC COMPETITION

Profit maximization (equilibrium) for a monopolistic competitor in the short run is reached where  $MR = MC$ . At this (C) equilibrium quantity is  $OQ_e$  and equilibrium price is  $OP_e$ . In the short-run, abnormal profit ( $P1PeAB$ ) is earned. The firm produces at excess capacity (excess capacity is  $QeQ1$ ) because it produces less output than the optimum ( $OQ1$ ).

### **LONG - RUN EQUILIBRIUM OF A FIRM IN MONOPOLISTIC COMPETITION**

From the figure we note the following:-

1. In the long run equilibrium is attained at point  $E1$  where longrun marginal cost curve ( $LMC$ ) =  $MR$ . Output  $OQ_e$  is produced and sold at price  $OP_e$ , normal (zero) profit is earned by all firms. (Since  $P = AC$ ).
2. Because of free entry of new firms, in the longrun the demand for the product is shared among more brands. Therefore, the demand curve would keep on shifting to the left until a point is reached where the demand curve is tangent to the  $ATC$  ( $LAC$ ) curve. At equilibrium, normal (zero) profit is earned and there is excess capacity, ( $OQ1, -OQ_e = Q_e Q1$ ) because the firms is producing out put less than the optimum (Lowest point of the  $AC$  curve). So production efficiency is not achieved under monopolistic competition. In order to maintain the market share, the seller has to advertise.

### **ADVANTAGES OF MONOPOLISTIC COMPETITION**

1. Produce differentiated products that enables consumers to get a variety of products.
2. Firms compete to make improvement on the quality of products.
3. In case one firm collapses, substitute are available.
4. The price charged is lower than that of a monopolistic because of competition from substitutes.

### **DISADVANTAGES OF MONOPOLISTIC COMPETITION**

1. There is under utilization of the plant in the short-run and in the long-run. There is excess capacity and output produced is lower than that produced by a firm in perfect competition.
2. In the long run, there is no profit to make improvements so the firms may not expand to enjoy economies of scale.
3. The price charged on buyer is higher than in perfect competition.
4. In the longrun, there are no profits to invest in research since the firm earns normal (zero) profits.
5. To maintain the market share, the seller has to advertise. This increases costs and the price.

## **OLIGOPOLY**

This refers to a market structure within which firms are aware of the mutual interdependence of sales, production, investment and advertising plans. Hence manipulation by any firm of variables under its control is likely to evoke retaliation from competing firms. These features are commonly described to markets in which the number of sellers are few. Where such competition is between two firms, the market is called DUOPOLY.

### **CHARACTERISTICS OF OLIGOPOLY**

Oligopoly is a market structure characterised by the following:-

1. Few, un equal, competing forms. Each firm, though faced with competition from other firms, has enough market and therefore cannot be a price taker.
2. Non-price competition e.g. advertising, quality of services, etc. If one firm reduces the price, others would do the same and all firms would end up losing.
3. Each firm is concerned with the activities of other firms so as to act accordingly e.g. it can reduce the price when others reduce the price.
4. In most cases there is product differentiation.
5. The demand curve under oligopoly is kinked. It is elastic above the kink and inelastic below the kink.
6. Different pricing behaviour take place like
  - Imperfect collusion
  - Perfect collusion
  - Price administration

### **THE DEMAND CURVE, MR CURVE AND EQUILIBRIUM OF A FIRM IN OLIGOPOLY**

The market situation of a firm in oligopoly is illustrated in the figure above.

The demand curve is ABD and marginal revenue curve is ACD MR. From the figure we note the following:-

1. The price and demand curve. The price (OP1) is administered by the biggest price firm or by the low cost firm. If a firm increases the price above OP1 it would lose its market. Therefore, the demand curve is fairly elastic above the administered price (OP1). If a firm reduces the price below OP1, other firms would do the same leaving the market for each firm constant. So the demand curve is less elastic below the administered price. When the 2 demand curves are combined, they make a kinked demand curve.
2. The marginal Revenue curve: Because of the 2 demand curves, the marginal Revenue (MR) curve also has 2 parts. The 2MR curves are separated by a gap (CD). When the firm increases the price above OP1, its market share would reduce thus a reduction in MR is large above OP1. When the firms reduces the price below OP1 its market share remains almost constant and therefore the gain in revenue (MR) is less below OP1.
3. Equilibrium; Equilibrium is attained at the point where  $MR = MC$ . The MC meets MR curve in the discontinuous gap (CD) and the position of MC in the gap does not affect equilibrium. At equilibrium, OQ1 is produced and sold at administered price OP1. The above analysis is on shortrun market situation of oligopoly.

In order to avoid under selling each other (“the price war”), firms may come to an agreement (a carter) where they fix quotas and at times fix the price to restrain competition such collusion makes oligopolists behave like a monopolist.

1.

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**African Population Institute**  
**M&E Consult unit**  
**P. O. Box 10842, Kampala Uganda**  
Website: [www.africapopulation.net](http://www.africapopulation.net) Email: [info@africapopulation.net](mailto:info@africapopulation.net)  
[Tel:+256-772/712/702-836998](tel:+256-772-712-836998)