encourages wastage of resources especially when the government/central planning authority makes poor judgments of what the people want i.e. it may end up producing what people do not want.
11. Leads to inefficiency of firms due to absence of competition in production and lack of profit
motives since production by the government is for welfare maximisation.

A MIXED ECONOMY

This is an economic system where both the state and private sector participate in resource allocation with neither sector being dominant of the other. In a mixed economy, government intervenes to modify the operations of the market forces so that both the price mechanism and government play a role in resource allocation. Hence a mixed economy is a mixture of the market and command economy features and thus has both merits and demerits of both systems depending on where the economy leans. All economies in the world are mixed economies. It is only the proportion of the mix that differs

Features of a mixed economy

1. Economic decisions are made by both the state and private individuals.
2. Existence of controlled economic freedom. Eventually everyone enjoys freedom of consumption, occupation, production, ownership of property and this freedom can be controlled in the interest of the public.
3. The state regulation of the private sector is indirect through taxation, subsidisation etc.
4. Existence of regulated competition in production and consumption.
5. Ownership of resources is by both the private individuals and the government/state.
6. Production is aimed at both profit maximisation for private individuals and welfare maximisation on the part of government/ state.
7. There is co-existence of the private and public sectors
8. There is existence of indicative planning i.e. where the government identifies appropriate investment areas and provides incentives and required information to individual economic units to achieve predetermined forests and targets.

Merits of a mixed economy

1. There is limited wastage due to regulated competition.
2. Improved quality of products because of competition between the public and private sector.
3. The state provides essential services that the private sector would not provide.
4. A variety of goods are produced by both the public and private sectors.
5. There are reduced income and wealth inequalities due to state control.
6. Individual self-interest is regulated by government.
7. There is increase in employment opportunities as employment is created by both the public and private sectors.
8. There is economic stability due to government intervention in the economy.

Demerits of a mixed economy

1. There is no cooperation between the public and private sectors. The private sector is heavily taxed while the public sector is favoured.
2. There is inefficiency due to bureaucracy especially in the public sector.
3. There are high levels of corruption in the public sector leading to poor performance of the public sector.

4. A mixed economy is always characterised by a weak and inefficient public sector which becomes a burden to the private sector, failing to provide the required infrastructure thus leading to inefficiency in the production process.

PRICE THEORY

This is the basis of economics. Price theory involves the study of prices.

Price refers to the exchange monetary value of a good or service.

OR: The amount of money that has to be given up in order to obtain a good or service or a factor input.

TYPES OF PRICES

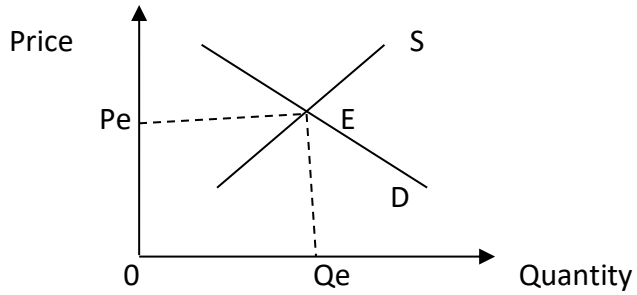
1. **Normal price;** this is the one which is obtained where supply and demand are equal in the long run period .i.e. The long run equilibrium price.
2. **Market price**; this is the ruling/prevailing/reigning price of a product at a particular time.

OR: It refers to any price determined by buyers and sellers in the market in the short run period.

The market price may or may not necessarily be the equilibrium price since it is determined by a number of factors.

3. **Equilibrium price**; this is the price at which quantity supplied equals quantity demanded. It is determined by the interaction of the market forces of demand and supply. I.e. it is set or fixed at a point of intersection of demand and supply curves in a free enterprise economy.

Illustration of Equilibrium Price



From the above illustration **OPe** is the equilibrium price and **OQe**. is the equilibrium quantity and point **E** is the point of equilibrium

4. **Reserve price**; this is the price below which a seller is not willing to sell his/her product.

OR. It is the **least /lowest** possible acceptable price a seller can sell his or her product.

Determinants of Reserve Price

a) Expectation of future demand for the product. If the seller expects the demand for the product to rise in future, he/she fixes a high reserve price so that more is sold in future thus earns more profits. However, if the seller expects the demand for the product to fall in future, he sets a lower reserve price so as to sell more currently and earn more profits.
b) Durability or Perishability of the product. Durable goods can be kept for a longer period of time and therefore a higher reserve price is fixed since the seller is not afraid of his/her product getting spoilt. On the other hand, for perishable goods a lower reserve price is set because they cannot be kept for long period of time.
c) Cash flow requirements in the business. The greater the need for cash in business the lower the reserve price set by the sellers' products because there is an urgent need for money in

the business. On the other hand, the less the need for cash in business the higher the reserve price set by the sellers; this is so because there is less urgent need for cash in the business.

d) The storage costs in relation to future price. The higher the storage costs, the lower the reserve price set by the seller this is so because the seller wants to sell off the products as fast as possible in order to reduce on the storage cost. On the other hand, the lower the storage costs, the higher the reserve price set by the seller because the seller is not in a hurry to sell off his products since
the storages costs are manageable

e) The length of time it takes before a new supply of goods reaches the market. (Gestation period). The longer the period it takes for a new supply of goods to reach the market the higher the reserve price set by the seller; this is so because the seller scared of new supply of goods outcompeting the old stock. However, the shorter the time it takes for new supply of goods to reach the market the lower the reserve price since the seller wants to get rid of the old stock before the new stock reaches the market.

f) The future cost of production. The higher the future cost of production, the lower the reserve price set by the seller, this is because producer would prefer to produce and sell more when production costs are low. On the other hand, the lower future cost of production the higher the reserve price, this is because producer would prefer to produce and sell more in future at low costs of production.

METHODS OF PRICE DETERMINATION

1. Sales by auctioning. In auctioning, buyers compete to buy a commodity through bidding and normally the commodity is taken by the highest bidder. In many cases the seller is not willing to part with his goods/ sell his commodity below the reserve price.

2. Through treaties. Here buyers and sellers sit together, negotiate and fix a price. They sign a treaty and the sale must be conducted according to the treaty. The resultant price depends on the skill of buyers and sellers and the ability of buyers to pay the price.

3. Through bargaining/ haggling. This is where a seller and buyer negotiate until they reach an agreeable price. The buyer persuades the seller to reduce the price till they agree. If they fail to agree on the price no transaction takes place.

4. Collusion. this is where different firms producing a similar commodity come together and agree on the price to charge for their product. It is common where there are a few sellers who wish to reduce competition amongst them and avoid price wars.

5. Resale price maintenance. This is where the manufacturer fixes price for his products up to the last stage of distribution i.e. Retail trade e.g. newspapers, stamps, magazines etc. resale price maintenance has the following merits.

Merits of resale price maintenance

(i) It reduces competition between small scale and large scale retailers. i.e Protects small scale retailers against price cutting by large scale retailers.
(ii) Price stability is maintained. i.e It is non-inflationary since there is no effect of price increase.
(iii) It protects the consumers from being overcharged.
(iv) Producers' profit margin is assured.
(v) Avoids time wastage through haggling.
(vi) Business profits are easy to compute.

6. Price leadership. Here one firm sets the prices for other firms to follow. Usually a dominant (large) firm or low cost firm sets the price which is followed by other firms.

7. Price legislation. This is where government sets the price for a commodity to be followed by buyers and sellers.

8. Forces of demand and supply. Here the price is fixed at a point where demand is equal to supply (equilibrium price). Buyers and sellers collectively influence the price at which a commodity is sold.

9. Offers at fixed prices by individuals, governments and institutions. Here government, individuals or institutions set the price for which a commodity is sold.

Functions of price in the market

1. Measuring the value of commodities; the worth of commodities is expressed in terms of money. Guiding producers on what to produce. Producers normally go for commodities which fetch high prices.
2. Guiding consumers in making consumption decisions/plans. Consumers put into consideration the prices attached to the various needs/wants before buying goods and services.
3. Determining income distribution i.e. producers who sell their goods at higher prices earn more income than those who sell at low prices.
4. Guiding producers on how to produce /determining the technique of production to use i.e. producers normally go for an affordable method of production in order to minimise the cost of production so as to maximise profits.
5. Guiding producers on where to produce/ choosing the best location for the business. Producers always set up firms in those areas which have attractive markets and where consumers can afford to pay high prices for their goods so as to maximise profits.
6. Guiding the producer on deciding for whom to produce/ providing automatic adjustments between demand and supply.

THE CONCEPT OF A MARKET

A market is an arrangement that brings together buyers and sellers to transact business at a particular period of time.

OR It is the total number of buyers and sellers involved in the exchange of a given product at a particular period of time.

Characteristics of markets:

- There should be buyers and sellers who participate in the exchange of a commodity.
- There should be commodities to exchange
- There should be a medium of exchange agreed upon and acceptable to all participants.
- There should be a price at which commodities are exchanged.

TYPES OF MARKETS

1. **Product/ commodity markets**; these are markets in which goods or services are traded.
2. **Resource/factor markets**; these are markets in which production resources/factors of production especially labour and capital are traded.
3. **Spot markets**; these are markets where a commodity or a currency is traded for immediate delivery.
4. **Forward/future markets**; these are markets where buyers and sellers make a contract to buy or sell commodities at a fixed date at the price agreed upon in the contract/agreement.
5. **Free markets**; these are markets where government exerts no control/ intervention.

6. **Controlled market**; these are markets where the government or central authorities exerts a degree of control, for example by fixing prices, setting quotas etc.
7. **Perfect market**; this is the market where none of the buyers or sellers have the powers to influence prices in the market by either influencing demand or supply.
8. **Imperfect markets**; this is where the buyer or seller has the power to influence the price in the market by either influencing demand or supply.
9. **Organised markets;** these are formal markets, such as a commodity market each dealing in a worldwide commodity, e.g. coffee, sugar, cocoa, rubber, etc.

THE DEMAND THOERY

Demand is the amount of goods and services that buyers are willing to purchase at a given price at a given period of time.

The demand function

The demand function is a statement which shows a technical relationship between quantity demanded of a commodity and factors which influence it, such as price of a commodity (p), level of consumer's income (Y), prices of related commodities (p_r), tastes and preferences (T_p) etc.

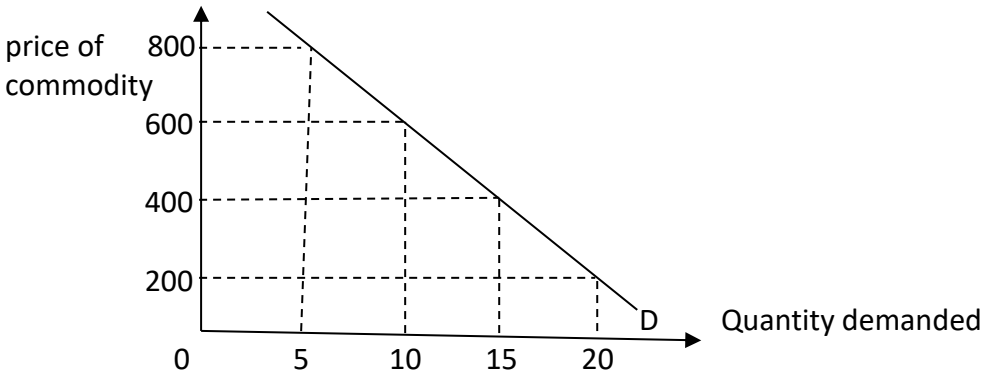
i.e. Qd = f (P, Y, P_r, T_p …….n).

THE DEMAND SCHEDULE

This is a table showing quantities demanded for a commodity at different alternative prices during a particular period of time.

Price	Quantity demanded
800	5
600	10
400	15
200	20

From the above schedule, a demand curve can be drawn as below



A demand curve is a graphical representation of the demand schedule. It is a locus of points showing the quantity demanded of a commodity at various prices per period of time.

NOTE:

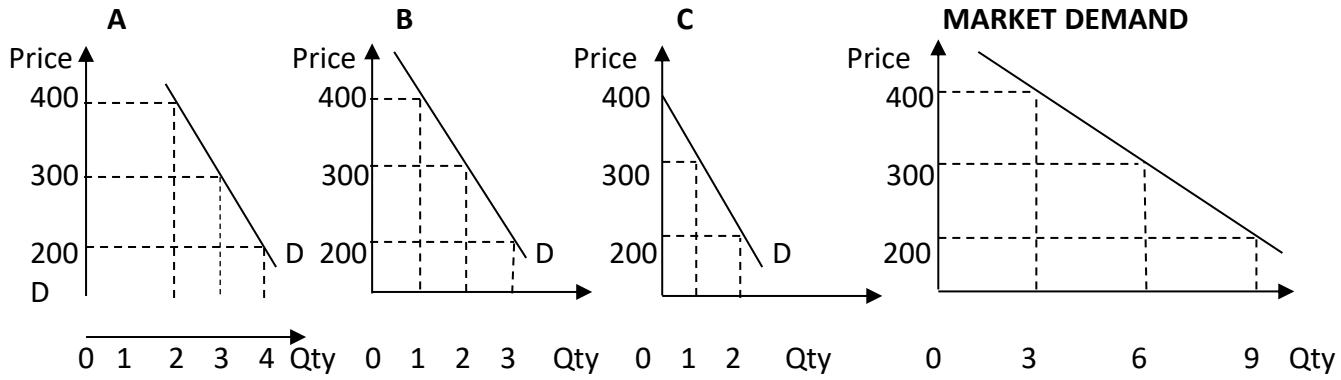
1. **Individual demand curve.** Is a demand curve that shows quantities demanded at various prices by an individual.
2. **Market demand.** This is the overall (total) demand for a commodity by all consumers at a given price in a given period of time.
   Under market demand, the individual demands are put together and compiled on one graph to form a market demand curve.

A normal demand curve slopes from left to right which can derive the law of demand.
The law of demand states that, ceteris paribus, the higher the price, the lower the quantity demanded and the lower the price the higher the quantity demanded.

MARKET DEMAND

Market demand is the horizontal summation of demand of individual consumers

PRICE	A	B	C	Market demand
200	4	3	2	9
300	3	2	1	6
400	2	1	0	3



Factors affecting demand for a commodity

1. Price of a commodity. The higher the price of a commodity the lower the quantity demanded. This is because at a high price consumers' find the commodity not easily affordable. On the other hand, the lower the price the higher the quantity demanded because the consumers find the commodity affordable.
2. Level of consumer's income. For normal goods high income leads to high quantity demanded because the consumer is able to buy more of a given commodity with the available income. On the other hand, low income leads to low quantity demanded because of the low purchasing power of the consumer.
3. Tastes and preferences. Tastes refer to one's likes or habits. The demand for some goods depends on one's gender, level of education, religion, culture, age etc. so when tastes are in favour of a commodity there is high demand for that commodity because the consumer derives a lot of satisfaction from consuming the good. On the other hand, goods that are out of fashion have low demand because consumers derive low satisfaction from the consumption of such goods.
4. The population/the market size; A high population size leads to a large market for goods thus leading to high demand for such goods because there many potential buyers for such goods. On the other hand, a low population size leads to low demand for goods because there a few potential buyers for such goods.
5. Government policy as regards taxation or subsidisation of a commodity; High level of taxation of a commodity leads to low demand for a commodity, this is so because high taxation makes the commodity expensive due to high cost of production. On the other

hand, subsidisation of the commodity leads to high demand for it, this is so because a subsidy makes the commodity cheap due to low cost of production.
Alternatively, government may decide to impose high direct taxes on incomes of consumers, this leads to low disposable income and low aggregate demand.

6. Price of complements. Complements are jointly demanded goods or goods consumed together e.g. cars and fuel, sim card and mobile phone, torch and dry cells, bow and arrow etc. High price of a complementary good leads to low demand for the commodity in question, this is so because less of the complementary good is bought which leads to low demand for the commodity in question since the two are used together in the satisfaction of human wants. However low price of a complementary good leads to high demand for a commodity in question, this is so because high quantity of a complementary good is bought since the two commodities are used together in the satisfaction of human wants.
7. Price of substitutes. Substitutes are goods that are consumed competitively and they can satisfy the same need. High price of a substitute good leads to high demand of the commodity in question, this is so because consumers find it cheaper and more affordable to buy the commodity in question. However, a low price of a substitute good leads to low demand for the commodity in question since consumers find it expensive to buy the commodity in question since the substitute is more affordable.
8. Distribution of income/The level/nature of income distribution; equitable distribution of income leads to high demand for goods, this is so because of the high purchasing power of the majority of the people. However uneven distribution of income leads to low demand for goods because of the low purchasing power of the majority of the people.
9. Future price expectation; An expectation of high price of the commodity in future leads to a high demand for goods, this is so because consumers buy a large quantity of goods currently so as to avoid buying at high prices. On the other hand, expectation of a low price of a commodity in future leads to a low demand for goods, this is so because consumers buy small amounts so as to buy large amounts in future at a lower price.
10. Seasonal factors. Favourable season for a given commodity leads to high demand for a commodity because there is apparent need for it. On the other hand, unfavourable season/end of season leads to low demand for a good, this is so because there is no/limited apparent need for the commodity.
11. Level of advertising. A high degree of intensive and persuasive advertising leads to high demand for a good because of a high level of awareness by the consumers and being convinced to buy the good by the advertisement. On the other hand, a low degree of advertising leads to low demand for a good, this is so because many consumers are not made aware of the existence of the good and not in any way convinced to buy.
12. Availability and terms of credit. Presence of credit facilities leads to high demand for a commodity because consumers can afford to buy beyond their levels of income. On the other hand, absence of credit facilities limits the quantity demanded by consumers because they are limited to consuming only what their income can afford to purchase.

Question; Account for low demand for a commodity

Why may consumers buy less of a commodity when it's price falls?

- When the commodity is a giffen good.
- When there is anticipated further price reduction in future
- When consumers prefer goods of ostentation/Snob effect.
- When a fall in price is associated with a fall in quality.

- During a period of economic depression

Why may consumers buy more of a commodity when its price increases?

- When the commodity is a good of ostentation.
- When there is anticipated further increase in price in the future.
- In case of ignorance effect
- When there is persuasive advertising.
- During a period of economic prosperity.

NOTE.

Effective demand is the desire to acquire or possess a commodity backed by the ability to pay for it.

Or it is the actual amount of goods and services purchased by the consumer at a given price at a given period of time.

Aggregate demand refers to the total demand for goods and services in an economy at a given price in a given period of time.

Components of Aggregate demand in an open economy:

- Consumption expenditure by households(C)
- Investment expenditure by firms (I)
- Government expenditure on goods and services (G)
- Net foreign expenditure (X-M)

Determinants of aggregate demand

- The income levels in the economy/amount of money in circulation.
- The general price levels.
- The existing stock of capital
- The size of the population/market size.
- Taxation and subsidization policies.
- Availability of credit

REASONS WHY PEOPLE DEMAND FOR GOODS

1. **Functional effect**; some people buy certain goods because of the purpose they serve e.g. food
2. for eating.
3. **Veblem/exclusive consumption**; one buys a commodity because he/she wants to be the only person identified with it i.e. the desire to be unique.
4. **Snob effect/conspicuous consumption**; this is where an individual buys goods which are expensive just to show his economic power or status e.g. buying expensive designer clothes, expensive vehicle, unique phones etc.
5. **Bandwagon effect**; this is when a person buys a commodity because there are others buying it i.e. one buys a commodity in order to emulate others who have already bought it.
6. **Impulsive buying**; this is where an individual buys a commodity because he/she has seen it displayed i.e. the good is bought out of a sudden desire because the good is attractively displayed.

THE UTILITY THEORY

Utility is the satisfaction derived from consuming a good or band of goods at specific periods of time. Total utility is the total satisfaction derived by a consumer from different units of a

commodity consumed. Marginal utility is the additional satisfaction obtained from the consumption of an additional unit of a commodity per unit of time.

The concept of marginal utility works under the following assumptions.

1. The existence of a single commodity with homogeneous units. i.e Equal weight and quality.
2. There is no change in taste and preference of the consumer.
3. There is continuity in consumption of successive units.
4. The units of a commodity should be sizable. E.g comparing a spoon and a glass of water.
5. The good should be a normal good not a luxury.
6. The commodity should be divisible.
7. The price of different units should remain the same.

The marginal utility of a consumer decreases as he consumes more of that particular commodity. This affects the quantity demanded of a commodity in that as the marginal utility decreases the quantity demanded also decreases.

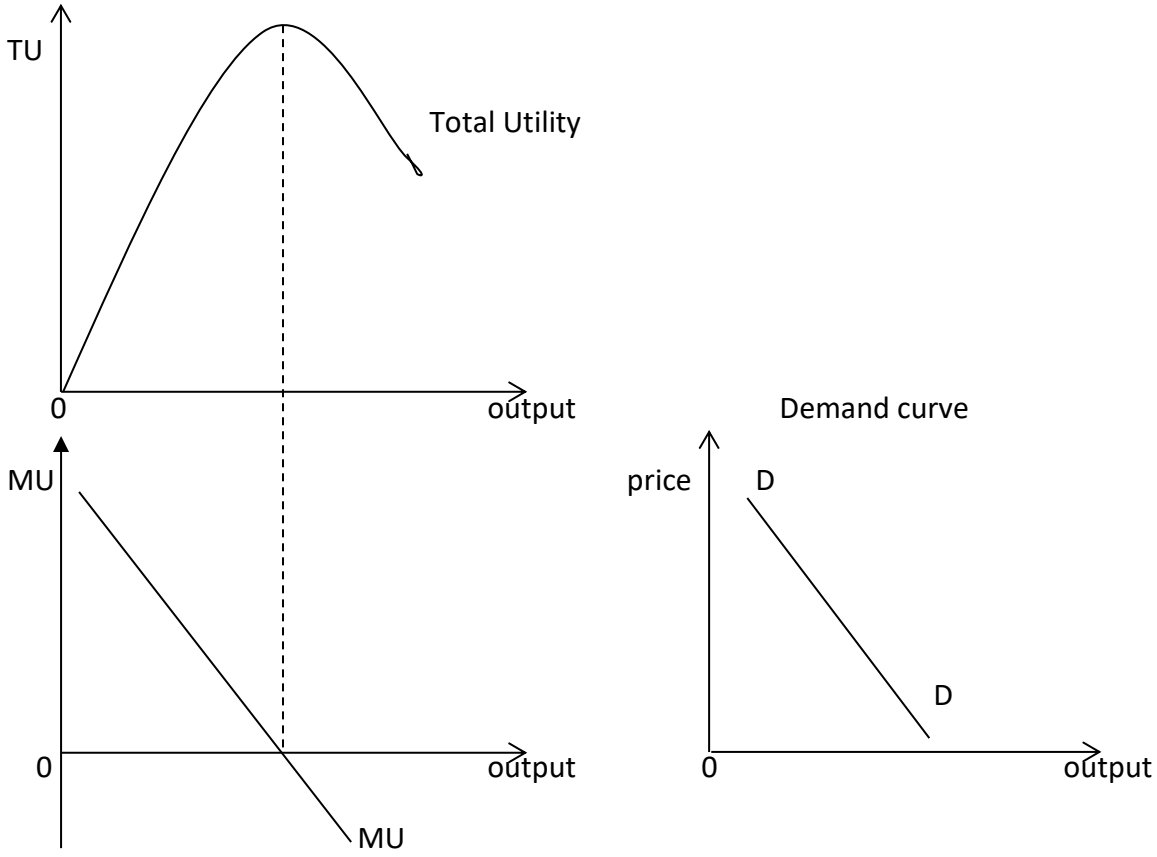
The utility schedule

Quantity Consumed(X)	Total utility	Marginal utility
0	0	0
1	10	10
2	18	8
3	24	6
4	28	4
5	30	2
6	30	0
7	28	-2

Relationship between Total utility, Marginal utility and Price

From the above schedule it can be seen that Marginal utility is highest (10) when total utility is lowest (10). As total utility increases, marginal utility declines. Total utility is highest (saturation/ bliss point) when marginal utility is zero. As total utility begins to decline, marginal
utility is negative.

This information can be summarized on the following graphs.



The marginal utility curve is downward sloping like the demand curve. The price of a commodity is equal to its marginal utility.

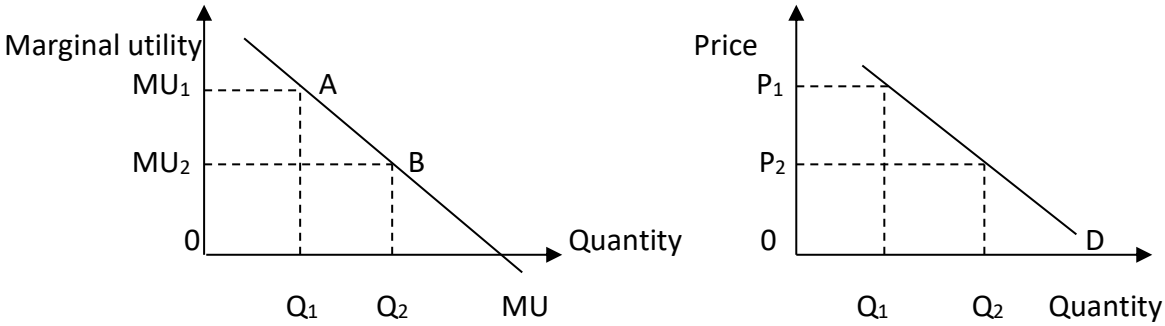
The law of diminishing marginal utility states that as successive units of a given commodity are consumed, the addition satisfaction derived from consuming each additional unit (marginal utility) diminishes.

THE SLOPE OF THE DEMAND CURVE

The demand curve slopes from left to right downwards because of the following:-

1. The substitution effect. When the price of any good falls, while the price of its substitute remains unchanged, there is a natural tendency to buy more of it instead of substitutes. When the price of a commodity increases, consumers leave it and buy its substitutes which are relatively cheaper.
2. The income effect. When an individual has fixed income and the price of a commodity he buys falls, his real income or purchasing power rises i.e. he can now purchase more units of the commodity with the same income. On the other hand, increase in prices reduces real income and quantity demanded also reduces.
3. Price effect. This is a combination of the income and substitution effect. Such that when the price of a commodity falls the consumer buys more of it because of the above two effects. So when the price of a good falls, even the poor people can afford to buy it since they can now afford it at a lower price. When the price increases some consumers leave the consumption of that commodity because they can't afford it at a high price.
4. The law of diminishing marginal utility. According to this law as more and more of a commodity is consumed, the satisfaction derived from consuming an additional unit

diminishes. Therefore, as a consumer purchases more of a commodity, the marginal utility reduces. He can consume additional units only if the price is reduced.



At point A less units (OQ_1) are consumed, consumers are willing to pay a high price of OP, because marginal utility is high. At point B more units OQ_2 are consumed, marginal utility diminishes and consumers are willing to pay a low price of OP_2.

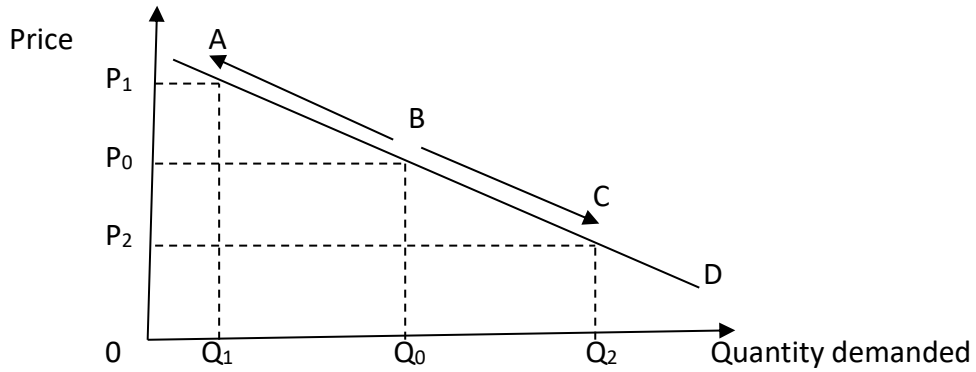
5. Presence of low income groups. Low income groups buy more when prices are low and buy less when prices are high. On the contrary, the law of demand may not hold if we have many rich people because the rich can afford to buy the same quantity of a commodity at any price.
6. Different uses of certain commodities. When prices of commodities with many uses are high e.g electricity consumers use these commodities for vital purposes only and when prices are low consumers use them for other luxurious purposes.

MOVEMENT ALONG AND A SHIFT IN THE DEMAND CURVE

A movement along the demand curve (change in quantity demanded) is the increase or decrease in quantity demanded of a commodity caused by a change in the price of a good other factors affecting quantity demanded remaining constant.

It is an extension or contraction in the demand curve caused by a change in the price of a good other factors affecting quantity demanded remaining constant.

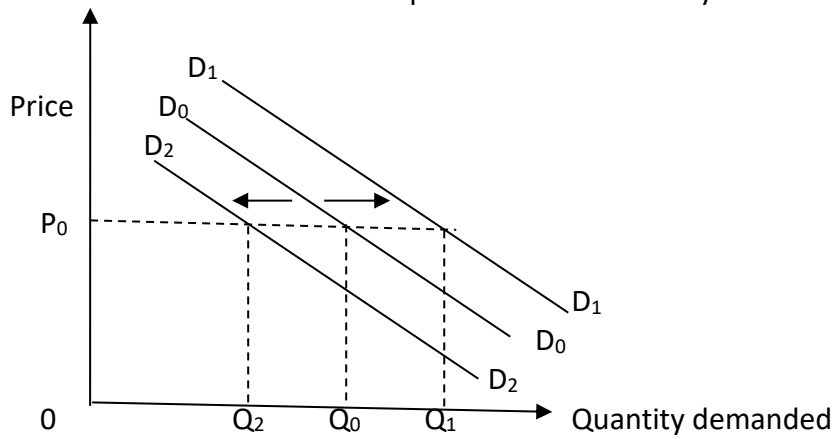
As price keeps on increasing the demand keeps on contracting and when the price keeps on reducing the demand keeps on expanding. It involves changes of points on the same demand curve e.g. from point A to B.



As price falls from OP_0 to OP_2 the quantity demanded increases from OQ_0 to OQ_2. Conversely if the price rises from OP_0 to OP_1, the quantity demanded reduced from OQ_0 to OQ_1, thus a movement along the demand curve from point B to C and B to A respectively.

A shift in demand (change in demand) is the increase or decrease in demand for a commodity due to changes in the factors that determine demand other than price of the commodity.

It is the shift of the demand curve either to the right or to the left due to changes in the factors that determine demand other than price of the commodity.



Price has remained constant at P_0 but the quantity demanded has changed from OQ_0 to OQ_1 representing an increase in demand (shift in the demand curve to the right) or from OQ_0 to OQ_2 representing a decrease in demand (shift in the demand curve to the left)

CAUSES OF CHANGES IN DEMAND

1. Change in consumer's income. An increase in consumer's income leads to increase in demand due to an increase in the purchasing power of the consumers. Fall in in consumer's income leads to decrease in demand for commodity due to fall in their purchasing power.
2. Changes in tastes and preferences. Favourable changes in tastes and preferences leads to increase in demand for a commodity due to increase in utility or satisfaction derived from the consumption of the commodity. While unfavourable change in tastes and preferences leads to a decrease in demand for a commodity due to decline in satisfaction consumers derive from it.
3. Changes in income distribution among households. An improved level of income distribution among households leads to an increase in demand for a good, this is so because of the increased purchasing power of the majority of the people. However, income distribution becoming uneven among households leads to a decrease in demand for a good because of the reduced purchasing power of the majority of the people.
4. Change in the price of a substitute. An increase in the price of a substitute leads to an increase in the demand of the commodity in question because it becomes more affordable than the substitute. Fall in price of a substitute leads to a decline in the demand for the commodity in question because the substitute becomes more affordable. (when the price of beans falls it becomes cheaper than the peas, more beans are demanded than the peas because beans become more affordable).
5. Change(s) in the price of complements. An increase in price of a complementary good leads to a decrease in demand for the commodity in question, this is so because less of the complementary good is bought which leads to a decrease in demand for the commodity in question since the two are used together in the satisfaction of human wants. However, a decrease in price of a complementary good leads to an increase in demand for a commodity in question, this is so because more quantity of a complementary good is bought since the two commodities are used together in the satisfaction of human wants.
6. Change in the level of advertisement. An increase in the level of advertisement leads to an increase in the demand for the commodity due to increased number of people informed about the availability of the commodity and are persuaded to buy it. Decrease in the level of advertisement leads to a decrease in demand for a commodity due to the decline in the

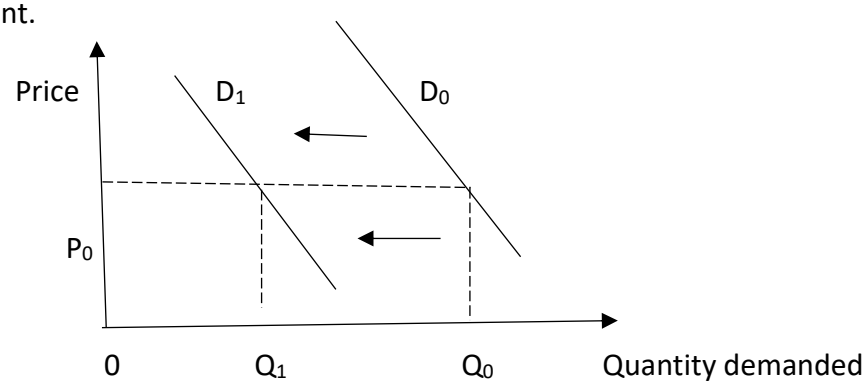
number of consumers informed of its availability and are persuaded to consume the commodity.

7. Change in seasons. Favourable changes in the seasons lead to increase in demand for certain goods due to increased need to use them. On the other hand, unfavourable change in season/ season coming to an end leads to a decrease in demand for a good, this is so because there is reduced need for the commodity.
8. Change in population size. An increase in population size leads to an increase in the market for a good thus leading to an increase in demand for such a good because there more potential buyers for such a good. On the other hand, a decrease in population size leads to decrease in demand for a good because of the reduced number of potential buyers for such a good.
9. Expectation of price change(s) in future. An expectation of an increase in price of the commodity in future leads to an increase in demand for a good, this is so because consumers buy more quantity of a good currently so as to avoid buying at an increased price. On the other hand, expectation of a decrease in price of a commodity in future leads to a decrease in demand for a good, this is so because consumers buy less quantity of a good currently so as to buy more quantity in future at a reduced price.
10. Change(s) in government policy on the commodity consumption. An increase in taxation of consumer's income leads to a decrease in the disposable income of the consumer hence decline in the demand because of the reduced purchasing power. On the other hand, Subsidization of consumers increases their purchasing leading to an increase in demand.
11. Change in availability of credit facilities; increased accessibility to credit facilities leads to an increase in demand of a given commodity, this is so because of the increased purchasing power of the consumer. On the other hand, reduced accessibility to credit facilities leads to a decrease in demand for a commodity, this is so because of the reduced purchasing power of the consumer.

DECREASE IN DEMAND AND DECREASE IN QUANTITY DEMANDED

DECREASE IN DEMAND

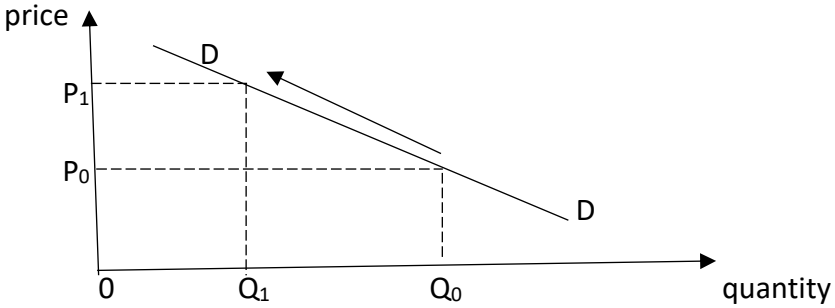
Decrease in demand refers to a fall in the amount of a commodity demanded due to unfavourable changes in the factors that influence demand for a commodity while holding its price constant.



The demand curve shifts from D_0D_0 to D_1D_1 and quantity demanded decrease from OQ_0 to OQ_1 due to conditions of demand becoming unfavourable, while holding price P_0 of the commodity constant.

DECREASE IN QUANTITY DEMANDED

It refers to fall in demand for a commodity due to rise in its price other factors affecting demand remaining constant.



An increase in commodity price from P_0 to P_1 leads to fall in demand from OQ_0 to OQ_1, ceteris paribus it is a contraction of the demand curve D_0D_0.

CAUSES OF DECREASE IN DEMAND

1. Decrease in income. Decrease in income leads to decrease in demand for a commodity due to decrease in the purchasing power of the consumer.
2. Decrease in the price of the substitute. Fall in the price of the substitute leads to decrease in demand for the commodity in question because the substitute becomes more affordable.
3. Increase in the price of complement. An increase in price of a complementary good leads to a decrease in demand for the commodity in question, this is so because less of the complementary good is bought which leads to a decrease in demand for the commodity in question since the two are used together in the satisfaction of human wants.
4. Decline in the levels of advertisement. A decrease in the level of advertising leads to a decrease in demand for a good, this is so because of the reduced level of awareness among the consumers.
5. Decline in population size. A decrease in population size leads to decrease in demand for a good because of the reduced number of potential buyers for such a good.
6. Seasons becoming unfavourable. Unfavourable change in season/ season coming to an end leads to a decrease in demand for a good, this is so because there is reduced need for the commodity.
7. Tastes and preferences becoming unfavourable. unfavourable change in tastes and preferences leads to a decrease in demand for commodity because fewer people are now in need of that commodity.
8. Expectation of price increase in future. Expectation of a decrease in price of a commodity in future leads to a decrease in demand for a good, this is so because consumers buy less quantity of a good currently so as to buy more quantity in future at a reduced price.
9. Increased taxation of the consumer's income. An increase in taxation of consumer's income leads to a decrease in the disposable income of the consumer hence decline in the demand because of the reduced purchasing power.

INCREASE IN QUANTITY DEMANDED refers to a rise in the amount of a commodity demanded due to a fall in price of the commodity other factors affecting demand remaining constant.

While

INCREASE IN DEMAND refers to the rise in the amount of a commodity demanded at a constant price due to favourable changes in the factors affecting demand.

CAUSES OF AN INCREASE IN DEMAND

1. Increase in consumer's income.
2. Increase in the price of the substitute.
3. Decrease in the price of complement.
4. Increase in the levels of advertisement.
5. Increase in population size.
6. Seasons becoming favourable.
7. Tastes and preferences becoming favourable.
8. Expectation of price decrease in future.
9. Decrease in taxation of the consumer's income.

Question

(a) Distinguish between an increase in demand and an increase in quantity demanded of a commodity.

(b) Explain the factors that lead to an increase in demand for a commodity.

INTER – RELATED DEMAND

Demand is said to be related when the demand for one commodity affects the demand for another commodity positively or negatively.

This relationship is important to both producers and consumers because it affects demand, supply and the price of a commodity.

1. **Joint/complementary demand;** this is demand for commodities that are used together in the satisfaction of human wants i.e. the buying of one commodity necessities the buying of the other e.g. demand for a gun and bullets, demand for a car and fuel etc. Therefore, the fall in the price of one commodity increases the quantity demanded of its complement and an increase in the price of one commodity leads to a fall in the quantity demanded of its complement.
2. **Derived demand.** This refers to the demand for a commodity due to the demand for what it helps to produce. e.g. the demand for cotton is largely due to the demand for clothing.
3. **Composite demand;** this is the total demand for a good with many uses/which can be used for more than one purpose.

   Examples of composite demand include;

   - Demand for electricity used for ironing, lighting, cooking.
   - The demand for wool for cloth making, cushioning, cleaning etc.
   - The demand for sugar for baking, sweetening drinks, brewing etc.
   - Demand for Iron and steel for construction, furniture making, manufacturing etc
   - Demand for clay for making pots, bricks, cups, stoves etc
   - Demand for skins and hides for making shoes, bags, belts etc
   - Demand for cloth for adornment, protection, warmth etc.
   - Demand for an axe for hewing/splitting, cutting, tool of defence
4. **Competitive demand.** This is the demand for goods that are substitutes and therefore satisfy the same need or be used for the same purpose. An increase in the demand for one commodity leads to a fall in demand for the other. E.g. demand for butter and blue band, the demand for tea and coffee which are substitutes to each other.
5. **Independent demand.** Independent demand is where the price and quantity demanded of various goods or services are not in any way related. Hence changes in the price of one good do not affect the quantity demanded of another.

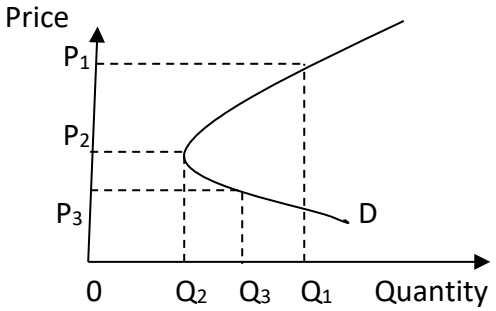
ABNORMAL/ REGRESSIVE DEMAND CURVES

A normal demand curve slopes from left to right implying that as the price of a good falls, more of a good is demanded, but in real life there may be exceptions to this rule.

Abnormal/ regressive demand curves are demand curves which do not obey the law of demand.

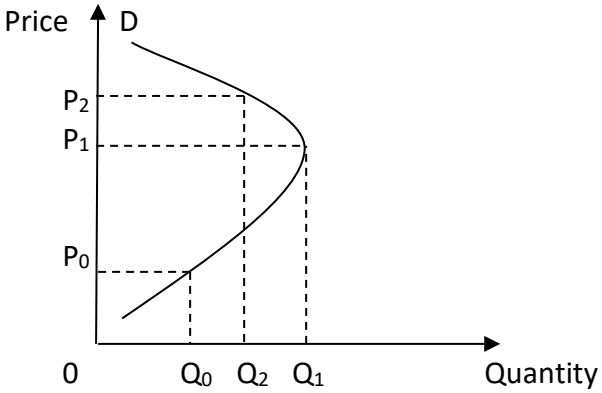
Abnormal demand curves occur under the following;

1. **Articles of ostentation.** These are goods purchased to impress other people or to emphasize one's status in society. The higher the price the higher the demand. when the price of such goods falls more people are able to afford them but the original purchasers stop buying them (snob effect) because they are considered sub-standard.



When the price decreases from OP_1 to OP_2 the demand falls from OQ_1 to OQ_2. However, a further decrease in price to OP_3 leads to increase in demand to OQ_3

2. **Ignorance effect.** Some commodities may be mistaken for other commodities or to be of a higher value due to their high prices, packaging, colour etc. in such a case if prices increase quantity demanded also increase.
3. **Effects of a depression.** A depression is a period of low prices, low incomes, low purchasing power, low economic activities, low aggregate demand and unemployment. In such circumstances demand does not increase even if prices are reduced.
4. **Future price expectation.** When there is fear of further price rise in the future, consumers increase their demand for a good as its price increases for fear of buying the commodity at even a higher price. Likewise, if people expect prices to fall further in future they buy less even if prices are lowered.
5. **Giffen goods.** These refer to basic food stuffs consumed by the poor. The demand for these goods increases when their price increases because the consumer's income is so inadequate that he can't afford alternative goods and therefore he spends his available income on giffen goods. This is represented by the curve below;



A rise in the price of a commodity leads to an increase in demand for a commodity up to price OP_1. Beyond OP_1 further increase in price leads to a decrease in the quantity demanded to $0Q_2$. This has come to be called **the giffen paradox**.

CONSUMER SURPLUS

Consumer surplus is the difference between what the consumer is willing to pay for a commodity and what he actually pays.

OR It is the extra utility/ additional satisfaction a consumer enjoys without paying for it.

It is determined by the market price. It comes about when a consumer finds that the market price is lower than what he is willing to pay. Therefore, the lower the market price the higher the consumer surplus. It is given by the following formula:

Consumer surplus = Planned expenditure - Actual expenditure

Example: study the table below.

Price (shs)	Quantity demanded
1,000	1
800	2
600	3
400	4
200	5

Using 400/= as a fixed market price, calculate the consumer surplus.

Consumer surplus = Planned expenditure - Actual expenditure

= (1000+800+600+400) – (400x4)

= 2800 - 1600

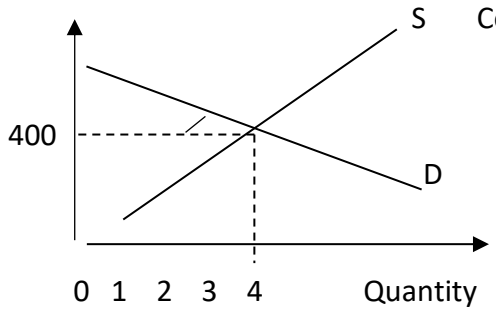
= shs. 1200/=

OR **Consumer surplus** = planned expenditure – actual expenditure

= (1000-400) +(800-400)+(600-400)+(400-400)

= Shs. 1200/=

The above information can be illustrated in a graph as follows.



Consumer surplus is the area above the equilibrium Price and below the demand curve (shaded area)

PRODUCER SURPLUS

This refers to the difference between what the producer is willing to charge and what he actually charges for the commodity.

Or Producer's surplus refers to the excess earnings between what the producer was willing to receive for the commodity and what he/she actually receives after selling it.

The producer's surplus occurs when a producer receives a price for his product which is above the additional costs he incurred to produce it.

Producer's surplus is given by the following formula

Producer's surplus = **Actual revenue –Expected revenue.**

The producer surplus is determined by the market price, the higher the market price the bigger the surplus and vice-versa.

Example: study the table below:

PRICE	QUANTITY SUPPLIED
50	1
100	2
150	3
200	4
250	5

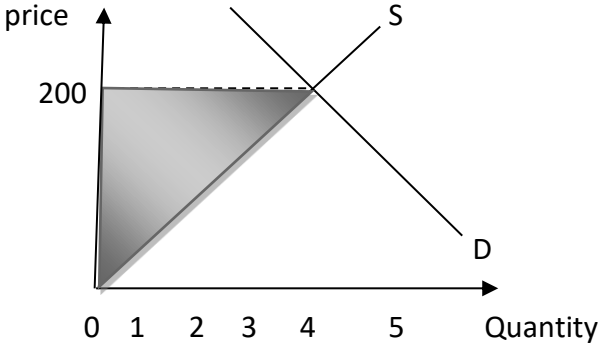
Assuming the market price is 200/=. Calculate the producer's surplus.

Producer Surplus = Actual revenue - Expected revenue
= (200x4) - (50+100+150+200)
= 800-500
= Shs 300/=

OR

Producer surplus = (200-200) + (200-150) + (200-100) + (200-50)
= 0+50+100+150
=Shs 300/=

An illustration showing producer surplus



ELASTICITY

Elasticity refers to the measure of the degree of responsiveness of the dependent variable to changes in the independent variables.

Dependent variables may be the quantity demanded or quantity supplied while independent variables are the factors which influence the above dependent variables e.g. Price of the commodity, Price of other commodities, consumer's income etc

Elasticity can be taken to mean reaction or response of producers or consumers.

Elasticity is of two types:

a. Elasticity of demand
b. Elasticity of supply

ELASTICITY OF DEMAND

Elasticity of demand is the measure of the degree of responsiveness of quantity demanded of a commodity to changes in the factors that affect demand i.e. income, price, price of other commodities etc.

PRICE ELASTICITY OF DEMAND

This is the measure of the degree of responsiveness of quantity demanded of a commodity to changes in the price of that commodity. Price elasticity of demand is computed as a percentage change in quantity demanded divided by percentage change in price.

$$\text{PED} = \frac{percentage\ change\ in\ quantity\ demanded\ of\ a\ commodity}{percentange\ change\ in\ price\ of\ that\ commodity}$$

$$= \frac{\Delta Q}{Q}\ X\ 100\ \div\ \frac{\Delta P}{P}\ X\ 100$$

PED = (-) $\frac{\Delta Q}{Q} X \frac{P}{\Delta P}$

Elasticity ranges from zero to infinity. Elasticity coefficient bears a negative sign but during computing an absolute value is taken. It is negative because price is negatively correlated with quantity.

When the price elasticity of demand is

1. Greater than 1 then demand is elastic.
2. Less than one but more than zero, demand is said to be inelastic.
3. Equal to one then demand has unit elasticity.
4. Zero the demand is perfectly inelastic.
5. Infinity then demand is perfectly elastic.

Example 1

When the price of a commodity in the market increases from 25,000/= to 30,000/= the quantity demanded reduced from 4kgs to 2kgs. Calculate the price elasticity of demand.

PED = $\frac{\Delta Q}{Q} X \frac{P}{\Delta P}$

ΔQ = 2 – 4 = -2

Q = 4kg

ΔP = 3000 – 2500 = 500/=

P = 2,500/=

PED = $\frac{-2}{4}$ X $\frac{2500}{500}$

= 2.5

Example II

If the price of matooke increases from 6,000/= to 8,000/= a bunch and as a result the quantity demanded of matooke reduced by 50%. Calculate the price elasticity of demand.

Solution

PED = $\frac{\text{percentage change in quantity demanded}}{\text{percentange change in price}}$

Percentage change in quantity demanded = -50

Percentage change in the price = $\frac{\Delta P}{P}$ X 100

= $\frac{(8000-6000}{6000} X\ 100$

= $\frac{2000}{6000} X\ 100$

=33.33

PED = $\frac{-50}{33.33}$ = -1.5

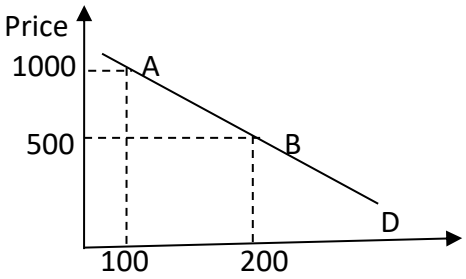
PED = 1.5

MEASUREMENTS OF ELASTICITY

ARC ELASTICITY

This is elasticity computed between two points on the demand curve. Consider the example below of two points A and B on the same demand curve with prices 1,000/= and 500/= and the

quantities 100 and 200



ARC elasticity of demand $= \frac{\Delta Q}{\text{average quantity}} \times \frac{average\ price}{\Delta P}$

$= \frac{\Delta Q}{(Q1+Q2)/2} \times \frac{(P1+P2)/2}{\Delta P}$

= ΔQ = 200 – 100 = 100/=

Average quantity= (200+100)÷2=150

= ΔP = 500 – 100 = -500/=

Average price= (500+1000)÷2=750

$= \frac{\Delta Q}{(Q1+Q2)/2} \times \frac{(P1+P2)/2}{\Delta P}$

$= \frac{100}{150} \times \frac{750}{-500}$

= 1

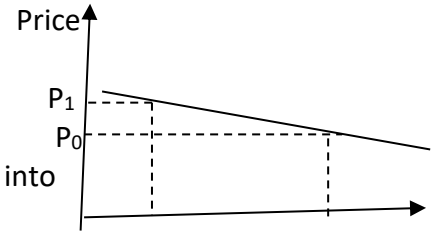
POINT ELASTICITY

This refers to elasticity at one point on the demand curve. This differs from elasticity in that the difference between the two points is made infinitely small. The slope of the demand curve measures the point elasticity.

$$\text{Point elasticity} = \frac{\text{percentage change in quantity demanded}}{\text{percentange change in price}}$$

TYPES OF ELASTICITY OF DEMAND

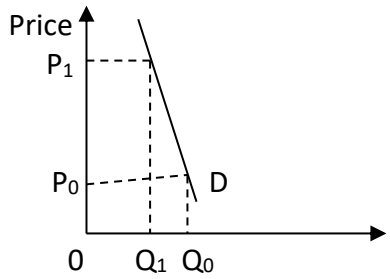
1. **Elastic demand.** This occurs when the value of elasticity is greater than one and less than infinity. A proportionate change in quantity demanded is greater than a proportionate change in price. An increase in price reduces total revenue, a fall in price increases total revenue.



The increase in price from OP_0 to OP_1 has resulted into

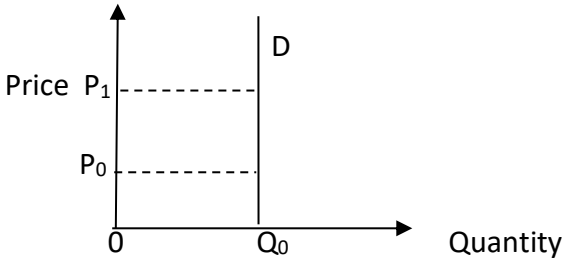
a more than proportionate decrease in quantity demanded from OQ_0 to OQ_1

2. **Inelastic demand.** Here elasticity of demand is greater than zero but less than one. A given change in price of a given product leads to a less than proportionate change in demand for that product.



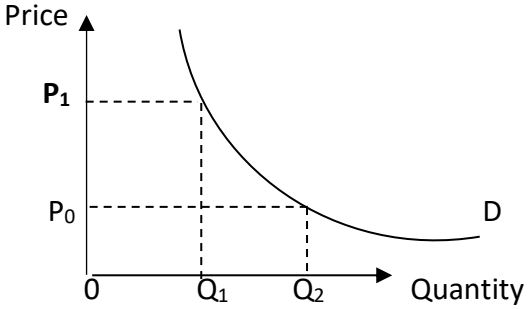
Price has increased from OP_0 to OP_1. The fall in demand from OQ_0 to OQ_1 is less than proportionate to the price increase. Examples of goods with inelastic demand are cigarettes

3. **Perfectly inelastic demand.** This occurs when elasticity of demand is zero. A change in price of a product has no effect on quantity demanded. Consumers buy the same amount whatever the price may be.



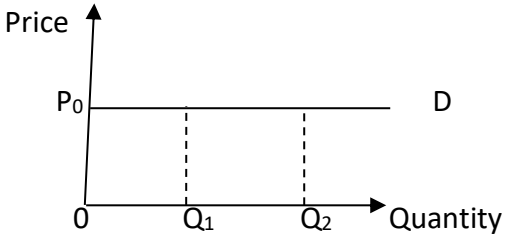
Price has increased from OP_0 to OP_1 but the quantity demanded has remained at OQ_0.

4. **Unit elasticity of demand.** In this case elasticity of demand is equal to one. A change in price leads to an exact proportionate change in quantity demanded. This is represented by a curve known as a rectangular hyperbola.



The increase in price from OP_0 to OP_1 is proportionate to the decrease in quantity demanded from OQ_0 to OQ_1

5. **Perfectly elastic demand.** Here elasticity of demand is equal to infinity. This shows that a consumer is willing to buy any amount of a commodity at a given price, but even if prices rise fractionally, demand falls to zero. The change in quantity demanded is not influenced by a change in price.



FACTORRS DETERMINING/AFFECTING/INFLUENCING PRICE ELASTICITY OF DEMAND

1. Availability of substitutes, Commodities with close substitutes have price elastic demand because an increase in the price of the commodity with close substitutes leads to a big reduction in quantity demanded of that commodity. This is so because consumers have alternative goods which they can turn to. However, commodities with no close substitutes have price inelastic demand because as the price increases, consumers continue purchasing that commodity since there no alternative commodities to turn to.
2. Degree of necessity of the commodity, Demand is price inelastic for essential goods (necessities) because with increase in price of such commodities consumers continue buying almost the same amount since they cannot do without them. On the other hand, demand for luxuries/non-essential goods is price elastic because with an increase in price of such goods consumers reduce their consumption drastically, since they can do without them.
3. Level of durability/perishability of the commodity, The demand for durable commodities is price inelastic because as their prices reduce consumers do not buy, this is because they can be used for a long time without replacement e.g, television sets, refrigerators, cookers and furniture. On the other hand, the demand for perishable commodities is price elastic, this is because with a fall in their prices more of them are bought since they cannot be kept for a long time and hence they need constant replacement e.g. food stuffs.
4. The proportion of income spent on the commodity/the commodity takes, A commodity that takes a small proportion of the consumer's income has inelastic demand, this is so because as their prices increase, the consumer continues buying them since they do not feel the pinch of the price increase. On the other hand, the demand for commodities that take a big proportion of one's income is price elastic, this is so because as their prices increase, the consumers reduce their consumption since they feel the pinch of the price increase.
5. Level of addiction in the use of the commodity, Demand for the commodities consumed out of a habit e.g. alcohol, cigarettes is price inelastic this is so because with an increase in the price of such commodities consumers continue buying almost the same amount of the commodity since it is not easy to break/abandon the habit once developed. On the other hand, non-addictive goods have elastic demand, this is so because as their prices increase consumers reduce their consumption with ease since they have no strong attachment to them.
6. Level of income of the consumer. The demand for commodities among high income earners is price inelastic, this is so because with increase in the price of the commodity, such a consumer continues buying the same amount of the commodity, since he/she can afford to buy more or less the same quantity of the commodity at whatever price. On the other hand, the demand for commodities among low income earners is price elastic, this is so because with the increase in the price of the commodity, such a consumer reduces the amount consumed of the commodity demanded since he/she cannot afford to buy at a high price.
7. The number of uses the commodity has, The demand for commodities with several uses e.g. electricity for cooking, lighting, ironing etc is price elastic, this is so because with an increase in price of the commodity the consumer reduces on some of the uses and remains with only those that are essential. On the other hand, the demand for commodities with one or few uses is price inelastic, this is so because as their prices increase the consumer continues buying them since they need them for those few uses.
8. Level of convenience of getting the commodity, The demand for commodities that are conveniently acquired is price inelastic, this is because as their prices increase, consumers

continue buying them since they can easily be got by the consumer. On the other hand, the demand for goods that are got with inconvenience is price elastic, this is so because as their prices increase, consumers reduce their consumption since they are not easily accessible.

9. Time period (short run or long run), The demand for a commodity is price inelastic in the short run, this is so because with increase in the price of the commodity, the consumer continues buying, since he/she cannot easily change the habit or find a cheaper substitute. On the other hand, the demand for a commodity is price elastic in the long run, this is so because with increase in price of a commodity the consumer reduces the amount consumed of the commodity, since the time is long enough to change the habit and find a cheaper substitute.
10. Speculation about price changes, The demand for a commodity is price inelastic when there is an expectation of further increase in price in the future, this is so because with increase in the price of the commodity, the consumer continues buying so as to avoid buying it in future at a much higher price. On the hand, the demand for a commodity is price elastic when there is an expectation of a further reduction in price in the future, this is so because with a decrease in the price of the commodity the consumer reduces the amount bought, so as to buy more at a much lower price in the future
11. Seasonal changes; The demand for a commodity during a favourable season is price inelastic, this is so because with an increase in price of a commodity, the consumer continues buying almost the same amount of such a commodity due to the apparent need for that commodity. On the other hand, the demand for a commodity during unfavourable season is price elastic, this is so because with a reduction in the price of the commodity, the consumer reduces the amount consumed of a commodity due to the reduced apparent need for the commodity.
12. Possibility of postponement of use of a commodity, The demand for goods whose use can be postponed is price elastic, this is so because as their prices increase consumers reduce their consumption since their use is not very urgent. On the other hand, the demand for a good whose use cannot be postponed is price inelastic, this is because as their prices increase consumers continue buying them because their use is very urgent.
13. Level of awareness of availability of cheaper goods/ level of advertising. The demand for commodities which are highly advertised is price inelastic this is so because with an increase in price of a commodity, the consumers continue buying the commodity since advertising positively influences them to continue buying the commodity. On the other hand, the demand for a commodity which is not intensively advertised is price elastic, this is so because with increase in the price of the commodity, the consumer reduces the amount consumed of the commodity, this is so because they are not positively influenced to continue buying the commodity.
14. Degree of complementarity, The demand for goods which have a high degree of complementarity is price inelastic, this is so because with increase in price of one of them, the consumer continues buying it because one cannot be used without the other e.g. one who wants to continue using his/her car must continue buying the fuel even at an increased price. On the other hand, the demand for commodities which have a low degree of complementarity is price elastic, this is so because with an increase in price of the commodity the consumer reduces the quantity demanded of the commodity, this is so because one can be used without the other.

CAUSES OF HIGH PRICE ELASTICITY OF DEMAND

1. The commodity having many uses. The demand for commodities with several uses e.g. electricity for cooking, lighting, ironing etc is price elastic, this is so because with an increase in price of the commodity the consumer reduces on some of the uses and remains with only those that are essential.
2. Luxurious goods. The demand for luxuries/non-essential goods is price elastic because with an increase in price of such goods consumers reduce their consumption drastically, since they can do without them.
3. Goods having many substitutes. Commodities with close substitutes have price elastic demand because an increase in the price of the commodity with close substitutes leads to a big reduction in quantity demanded of that commodity. This is so because consumers have alternative goods which they can turn to.
4. Consumers income being low. The demand for commodities among low income earners is price elastic, this is so because with the increase in the price of the commodity, such a consumer reduces the amount consumed of the commodity demanded since he/she cannot afford to buy at a high price.
5. The high proportion of income spent on the commodity. The demand for commodities that take a big proportion of one's income is price elastic, this is so because as their prices increase, the consumers reduce their consumption since they feel the pinch of the price increase.
6. Consumption of the good which can be postponed. The demand for goods whose use can be postponed is price elastic, this is so because as their prices increase consumers reduce their consumption since their use is not very urgent.
7. Long run situations. The demand for a commodity is price elastic in the long run, this is so because with increase in price of a commodity the consumer reduces the amount consumed of the commodity, since the time is long enough to change the habit and find a cheaper substitute.
8. Commodity being perishable. the demand for perishable commodities is price elastic, this is because with a fall in their prices more of them are bought since they cannot be kept for a long time and hence they need constant replacement e.g. food stuffs.
9. High degree of inconvenience to acquire a good. the demand for goods that are got with inconvenience is price elastic, this is so because as their prices increase, consumers reduce their consumption since they are not easily accessible.
10. The commodity being lowly advertised. The demand for a commodity which is not intensively advertised is price elastic, this is so because with increase in the price of the commodity, the consumer reduces the amount consumed of the commodity, this is so because they are not positively influenced to continue buying the commodity.
11. The commodity not being habit forming. Non-addictive goods have elastic demand, this is so because as their prices increase consumers reduce their consumption with ease since they have no strong attachment to them.

Factors Responsible for Inelastic Demand for a Commodity:

1. Presence of few substitutes.
2. Presence of complementary commodities
3. High degree of necessity.
4. High degree of addiction.
5. Existence of durable commodities.
6. Small proportion of income spent on a commodity.

7. High level of consumer's income.
8. Fewer number of uses of a commodity.
9. High level of convenience of getting a commodity.
10. Short-run period.
11. Expectation of future price increase.
12. Favourable seasonal demand.
13. High level of advertising
14. Commodities whose use cannot be postponed to future use

Question; Account for low elasticity of demand for a commodity.

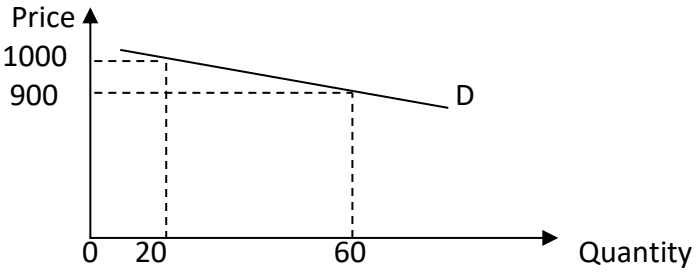
Importance of the concept of price elasticity of demand

a. To government

1. Taxation. Elasticity helps government in taxation. The government raises more revenue by imposing high taxes on commodities with price inelastic demand. This is because increase in price due to the tax does not greatly affect the quantity demanded by consumers hence government gets high revenue. But for goods with price elastic demand, high tax rates reduce quantity demanded and thus reduce tax revenue received from them.
2. Devaluation. This is the deliberate reduction in the value of a country's currency in terms of other countries' currencies. For a country to successfully use devaluation of the local currency to improve its balance of payment position, It has to have imports and exports that have price elastic demand. This is because a slight fall in export prices would increase the quantity demanded considerably while a slight increase in import prices would result into a more than proportionate decrease in the quantity demanded. This would result into a fall in imports and an increase in exports thereby correcting the balance of payment deficit.
3. Protection of domestic infant industries. Protection policy can only be successful when tariffs (taxes on imports) are imposed on commodities with price elastic demand, this causes the price to increase and ultimately discourage demand for these commodities. However, where demand is price inelastic, imposition of tariffs has limited effect on the quantity of imports demanded thus making the protection policy fail.
4. Determining subsidies. Subsidies are negative taxes that reduce costs of production and the price of commodities. In determining which producer and consumer to subsidize government uses the concept of price elasticity of demand. Government subsidizes consumers of goods with price elastic demand because a small reduction in price resulting from the subsidy results into a more than proportionate increase in the quantity demanded. However, when demand is inelastic, reduction in price is usually big but increase in the quantity demanded is small.
5. It guides in nationalization policy. Commodities whose demand is inelastic such as clean and safe water, gas and electricity are provided by the state because consumers are likely to buy them at relatively high prices in case they are left in the hands of the private investors therefore government has to nationalize such enterprises.
6. Price control. Government price control policies are based on the concept of elasticity of demand. Government fixes maximum price on essential commodities with inelastic demand to protect consumers from being exploited by sellers through high prices.

b. To the producer

1. Tax incidence. The concept of elasticity helps the producer determine the incidence of a tax i.e. how the tax burden is shared between producers and consumers i.e. when demand is price inelastic the tax burden is heavier on the buyer and less on the seller. While when demand is price elastic the tax burden falls more on the seller and less on the buyer.
2. Price discrimination. Price elasticity helps the monopolist (producer) in his practice of price discrimination i.e. the selling of the same type of goods to different consumers at different prices. A monopolist maximizes profits by charging low prices in the sub market where price elasticity of demand is elastic and high prices in sub markets where price elasticity of demand is inelastic.
3. Pricing output for revenue maximization. Producers base their decisions on whether to increase or reduce their prices so as to maximize revenue on the concept of price elasticity.
   For commodities with elastic demand, producers maximize revenue by slightly lowering prices which results into a significant increase in quantity demanded (sales) and total revenue.



   To increase revenue a producer reduces the price from shs 1000 to shs 900. The quantity demanded increases from 20 to 60 Kgs and the total revenue increases from shs 20,000 to shs 54,000.
   For commodities with inelastic demand, the producers maximize profits by increasing prices since increase in price would result into a less than proportionate decrease in the quantity
   demanded thereby raising the total revenue.

   For unit elasticity a change in price leaves the revenue unchanged because a price change results into a proportionate change in quantity demanded.
4. Wage determination. Producers use the concept of price elasticity to determine wages. Low wages are paid to unskilled labour with elastic demand and high wages to skilled labour whose demand is inelastic. If the demand for labour in an industry is elastic strikes cannot help in raising wages, however where demand for labour is inelastic even a threat of a strike can induce the employers to increase wages.
5. Advertising. Producers base their advertising decisions on the concept of price elasticity. Advertising and other sales promotion campaigns are only effective when the demand for the commodity is price elastic.

c. To the consumer

1. **The concept of elasticity helps the consumer plan for his expenditure.** Expenditure is likely

to be high if the demand for a good is inelastic and expenditure is low if the demand for a good is price elastic.

2. **Tax incidence.** A consumer pays more tax on a commodity if the demand for a commodity is inelastic and less tax is paid for commodities with elastic demand.

CROSS ELASTICITY OF DEMAND

This is a measure of the degree of responsiveness of quantity demanded of one commodity to changes in the price of another commodity. It is the percentage change in quantity of one commodity to percentage changes in price of another commodity.

$$\text{CED} = \frac{\text{percentage change in quantity demanded of commodity X}}{\text{percentage change in price of commodity Y}}$$

$$\text{CED} = \frac{\Delta \text{Qx}}{Qx} \; X \; \frac{Py}{\Delta \text{Py}}$$

NOTE:

1. **Substitutes** have **positive** cross elasticity because of the positive correlation between the price of the good and the quantity demanded of the substitute i.e. an increase in price of one results into an increase in quantity demanded of the substitute.
2. **Complements** have **negative** cross elasticity because of the negative correlation between the price of one good and the quantity demanded of the complement.
3. When cross elasticity is **zero**, the goods are **not related**.

Example:

If the price of commodity x increased from 10,000/= to 12,000/= and as a result the quantity demanded of y increased from 10kgs to 15kg per week. Calculate the cross elasticity of demand.

Solution;

$$\text{CED} = \frac{\Delta \text{Qy}}{Qy} \; X \; \frac{Px}{\Delta \text{Px}}$$

Change in quantity demanded for commodity Y (ΔQ_y) = (15 – 10) = 5

Original quantity demanded for commodity Y (Q_y) = 10

Change in price for commodity X (ΔP_x) = (12,000 – 10,000) = 2,000

Original price for commodity X (P_x) = 10,000

$$\text{CED} = \frac{5}{10} \; X \; \frac{10000}{2000}$$

= 2.5

Importance of cross elasticity of demand

1. Helpful in determining whether goods are substitutes or complements.
2. Helps government in taxation. Substitutes generate less tax revenue while complements generate more tax revenue.

INCOME ELASTICITY OF DEMAND

It refers to the measure of degree of responsiveness of quantity demanded of a commodity to changes in the consumer's income.

It is the percentage change in quantity demanded to a percentage in income.

$$\text{YED} = \frac{percentage\ change\ in\ quantity\ demanded\ of\ a\ commodity}{percentagee\ change\ in\ incom}$$

$$= \frac{\Delta Q/Q \times 100}{\Delta Y/Y \times 100}$$

$$\text{YED} = \frac{\Delta \text{Q}}{Q} \; X \; \frac{Y}{\Delta \text{Y}}$$

NOTE:

(a) **Negative** income elasticity implies the good in question is an **inferior good**.
(b) **Positive** income elasticity implies the good is a **normal good**.
(c) When income elasticity of demand is greater than one the good is a luxury.
(d) When income elasticity is greater than zero and less than one, the good in question is a necessity.
(e) **Zero** income elasticity implies the good in question is a **necessity**.

Example: If a consumer's income increases from 50,000/= to 60,000/= and as a result his demand for beef increased from 2kgs to 4kgs per day. Calculate the income elasticity of demand.

Solution;

$$\text{YED} = \frac{\Delta Q}{Q} X \frac{Y}{\Delta Y}$$

Change in quantity demanded for commodity (ΔQ) = (4 – 2) = 2
Original quantity demanded for commodity (Q) = 2
Change in consumer's income (ΔY) = (60,000 – 50,000) = 10,000
Original consumer's income (Y) = 50,000

$$\text{CED} = \frac{2}{2} X \frac{50000}{10000}$$

= 5

Importance of income elasticity of demand

1. Helps in determining the type of commodity whether luxury, inferior or necessity.
2. It guides in taxation policies. For high income groups taxes tend to high whereas for low income groups taxes are low.
3. Helps the producer in price determination based on income. High prices are charged in markets with high income groups and low prices are charged in markets with low income groups.
4. Helps the producer to predict the direction of demand for his commodity in case of change in income.
5. Helps the producer to determine what commodity to produce for different groups of consumers with different income elasticity of demand.
6. Helps the producer determine how much to supply to the market. A producer dealing in a commodity which is income inelastic should supply less when the consumers income increases in order to earn more revenue.

THE THEORY OF SUPPLY

Supply in economics means the quantity of any commodity that is put on the market by sellers at a given price in a given period of time.

Individual supply; this is the quantity of a commodity that a firm/producers are willing to sell at various prices during a given time.
Market supply; this refers to quantities of a commodity that all producers are willing to offer for sale to a particular market at various prices during a given time.

The Law of supply

It states that ceteris paribus, the higher the price, the greater the quantity supplied of a commodity and the lower the price the lower the quantity supplied of a commodity.

THE SUPPLY FUNCTION

This is a statement which shows a technical relationship between quantity supplied and the major determinants of quantity supplied, such as price of a commodity (p), level of technology (T), prices of related commodities (p_r), cost of production (C) etc.

i.e. Qs = f (P, T, P_r, C …….n).

THE SUPPLY SCHEDULE

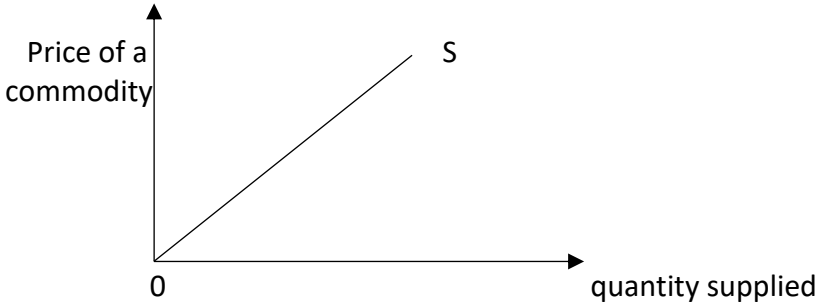
This is a table or list of prices with their corresponding quantities of a commodity supplied for a period of time.

PRICE (SHS)	SUPPLY (kgs)
20	10
25	20
30	30
35	40
40	50
45	60
50	70

In this schedule, when the price rises, quantity supplied increases and vice-versa.

The supply curve

This is a diagrammatical representation of the data embodied in the supply schedule. It shows the relationship between the price of a commodity and the quantity supplied. It is drawn on the assumption that other factors that affect quantity supplied remain constant. Its positive slope indicates that the higher the price the higher the quantity supplied.



THE SLOPE OF THE SUPPLY CURVE

The supply curve is positively sloped i.e. it slopes from left to right showing the direct relationship between the price and quantity supplied of a commodity.

The positive slope is explained by the following factors.

1. Entry of new firms in the industry. When the price of a commodity increases, new firms are attracted to enter in the industry in order to enjoy the prospects of increasing profits, this leads to an increase in supply as price increases.
2. Profit motive. As producers aim at maximizing profits, they supply more at higher prices in order to increase the profitability of the business. A fall in price of the commodity reduces the quantity supplied because it is no longer profitable for them to sell more at lower prices.
3. The struggle to maintain equilibrium in free market conditions. As demand increases, price increases as well. Due to shortage, firms increase output in order to cover the shortage.
4. Ease of diverting resources from the production of a commodity whose price has reduced to the production of a commodity whose price has increased. For example, when the price of

groundnuts increases, keeping the price of beans constant, producers easily divert resources i.e. land, labour, and capital, from production of beans to production of groundnuts. This leads to an increase in the supply of groundnuts as the price increases since producers expect higher profits.

FACTORS THAT AFFECT/ INFLUENCE/DETERMINE/ SUPPLY:

These factors are responsible for the changes in the amount of goods supplied. More of it is supplied when the factors are favourable and less is supplied when they are not favourable.

The factors include;

1. The price of a commodity; high price of a commodity leads to high supply of a commodity, this is so because higher prices mean greater profits and so firms are attracted to supply high quantity of the commodity. On other hand, low price of a commodity leads to low supply because of the low profits earned which discourages production hence low supply.
2. Price of a jointly supplied good. High price of a jointly supplied good leads to high supply of the commodity in question, this is so because the high price of the jointly supplied good leads to high quantity supplied of that commodity which leads to high supply of the commodity in question since they are both supplied from the same source/process of production. On other hand, low price of a jointly supplied good leads to low supply of the commodity in question, this is so because the low price of the jointly supplied goods leads to low quantity supplied of that commodity which leads to low supply of the commodity in question because they are both supplied from the same source/ process of production
3. Price of a competitively supplied commodity/good. High price of a competitively supplied good leads to low supply of the commodity in question; this is so because the high price of the competitively supplied good leads to high supply of it which leads to low supply of the commodity in question because it is more profitable to produce the competitively supplied good since they use the same resource for their production. On the other hand, low price of a competitively supplied good leads to high supply of the commodity in question, this is so because the low price of the competitively supplied good leads low supply of it due the low profits earned from it which leads to high supply of the commodity in question because they use the same resource for their production.
4. The cost of production; high cost of production leads to low supply of a commodity, this is so because of the low profit margin enjoyed by the producers. On the other hand, low cost of production leads to high supply of a commodity, this is so because of the high profit margin enjoyed by the producers.
5. The level / state of technology; the use of advanced techniques /methods of production leads to high output/supply of a given commodity, this is so because of the high level of efficiency in production. On the other hand, use of poor/ primitive/rudimentary techniques of production leads to low output/supply of a commodity, this is so because of the low level of efficiency in production.
6. The goal/objective of the producer; A producer whose aim is profit maximisation produces low output, this is so because he/she wants to restrict output and sell at high price in order to maximise profits. On the other hand, a producer whose aim is sales maximisation produces high quantity of output because he wants to earn more revenue through selling big volumes of output.
7. Government policy on production of the commodity; Favourable government policy on production of a commodity in terms of low taxes imposed on a commodity leads to high supply of a given commodity, this is so because it leads to low cost of production which implies high profits. On the other hand, unfavourable government policy on production in

terms of high taxes leads to low supply of a given commodity this is so because it leads to high cost of production which implies low profits.

8. The gestation period of a commodity. A long gestation period leads to low supply of a given commodity, this so because it takes a long time to produce and supply such a commodity. On other hand, a short gestation period leads to high supply of a given commodity since it takes a short period to produce and supply such a commodity.
9. Number of producers/ suppliers in the market. A large number of producers leads to a high supply of a good, this is so because supply is from many producers, However, a small number of producers leads to a low supply of a good since there are few producers to supply the commodity.
10. Natural conditions/ factors. Favourable natural factors lead to high supply of especially agricultural products; this is so because it favours the production of such products. However unfavourable natural conditions lead to low supply of especially of agricultural products because they discourage/limit their production.
11. The political climate/ atmosphere; Political stability leads to high supply of a given commodity, this is so because peace and stability enables people to engage in production of goods since they are not scared of losing their lives and property. However, political instability leads to low supply of goods, this is so because it discourages production of goods, since people are scared of losing their lives and property.
12. The market size/ demand for the commodity. A large market size leads to high supply of a commodity; this is so because large market implies high profit margins thus motivating them to produce high output levels. On the other hand, a small market size leads to low supply of a commodity because a small market size leads to low profit margins hence discouraging production.
13. Level of entrepreneurial skills. Presence of good entrepreneur skills leads to high supply of a commodity because they are many people to initiate businesses and sustain them. On the other hand, low level of entrepreneurial skills leads to low supply of a commodity, this is so because there are few people to initiate businesses and sustain them.
14. Terms of service/ working conditions. Favourable terms of service like good working conditions, prestige of work lead to high supply of a given commodity, this is so because it motives workers to work hard leading to high output levels. On the other hand, poor working conditions lead to low supply of a given commodity, this is so because it discourages workers to work hard thus leading to low output levels.
15. The land tenure system. A favourable land tenure system promotes production leading to high supply of a given good; this is so because producers have easy access to land leading to high production levels. On the other hand, poor land tenure system discourages production leading to low supply of a given good, this is so because of the difficulty in accessing land thus leading to low production levels.
16. Degree of freedom of entry of firms in production. Free entry of new firms into enter the industry increase supply of a commodity since it is possible for producers to come in and increase quantity supplied. However, restricted entry of new firms into the industry reduce supply since it is only a few firms or even one that are producing for the market.
17. Future price expectation. When prices are expected to rise in future supply tends to be low as producers refer to retain their stock and wait to gain from high prices in future. When prices are expected to fall in future supply is high as producers try to clear the available stock to avoid supplying at low prices in future and incur loses.

18. Level of infrastructural development. Well-developed infrastructure in the economy, encourages production therefore high due to the ease of mobility of the output. while poorly developed infrastructure discourages production leading to low supply due to difficulty in the movement of output resulting in low supply.

Factors that lead to high supply of a commodity:

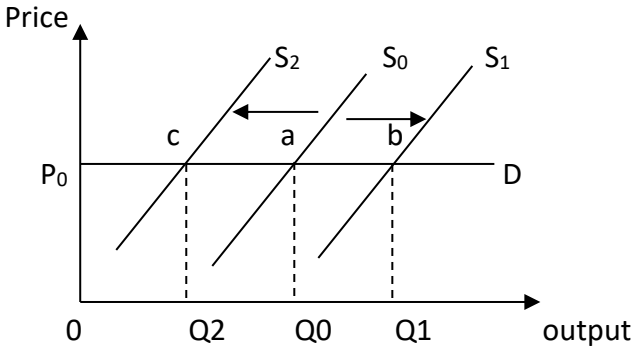
1. High price of the commodity
2. High price of a jointly supplied good
3. Low price a competitively supplied good
4. Low cost of production
5. Advanced/High state of technology
6. The goal of the producer being sales revenue maximisation
7. Favourable government policy on production of a commodity\
8. Short gestation period
9. Large number of producers
10. Favourable natural factors
11. Political stability/Favourable political climate/atmosphere
12. A large market size
13. High level of entrepreneurial skills
14. Favourable terms of service/Good working conditions
15. Favourable land tenure system

Factors that lead low supply of a commodity:

1. Low price of the commodity
2. Low price of a jointly supplied good\
3. High price of a competitively supplied good
4. High cost of production
5. Poor state of technology
6. The goal of the produce being profit maximisation
7. Unfavourable government policy on production
8. Long gestation
9. Small number of producers
10. Unfavourable natural factors/conditions
11. Political instability/Unfavourable political climate/atmosphere
12. A small market size.
13. Limited/low levels of entrepreneurial skills
14. Poor terms of service/Poor working conditions
15. Poor land tenure system

Change in supply (shift in the supply curve)

A change in supply is an increase or decrease in the amount of a good put on the market as a result of changes in factors affecting supply price of the commodity remaining constant. With a change in supply the price of a commodity remains constant and it is denoted by a shift of the supply curve to the left in case of a decrease in supply and to the right the case of an increase in supply.



Despite the constant price of OP_0 supply decreased to OQ_2 as a result of a shift of the supply curve to the left S_2S_2 and it increased to OQ_1 when the supply curve shifted to S_1S_1. The whole supply curve in this case shifts to the right or left.

FACTORS THAT CAUSE A CHANGE IN SUPPLY OF A COMMODITY:

1. Change in the price of a jointly supplied good. An increase in the price of a jointly supplied good leads to an increase in supply of the commodity in question, this is so because an increased price of the jointly supplied good leads to an increased quantity supplied of that commodity which leads to an increase in supply of the commodity in question since they are both supplied from the same source/process of production. On other hand, a decrease in the price of a jointly supplied good leads to a decrease in supply of the commodity in question, this is so because the reduced price of the jointly supplied goods leads to a decrease in quantity supplied of that commodity which leads to a fall in supply of the commodity in question because they are both supplied from the same source/ process of production.
2. Change in the price of a competitively supplied commodity/good. An increase in the price of a competitively supplied good leads to a decrease in supply of the commodity in question; this is so because the increased price of the competitively supplied good leads to increased supply of it which leads to a decrease in supply of the commodity in question because they use the same resource for their production. On the other hand, a decrease in the price of a competitively supplied good leads to an increase in supply of the commodity in question, this is so because the reduced price of the competitively supplied good leads reduced supply of it which leads to increased supply of the commodity in question because they use the resource for their production.
3. Change in the cost of production; An increase in the cost of production leads to a decrease in supply of a given commodity, this is so because of the reduced profit margin enjoyed by the producers. On the other hand, reduced cost of production leads to an increase in supply of a given commodity, this is so because of the increased profit margin enjoyed by the producers.
4. Change in the level / state of technology; Improvement in the techniques /methods of production leads to increased output, this is so because of the increased level of efficiency in production. On the other hand, decline in the state of techniques of production leads to a decrease in supply, this is so because of the reduced level of efficiency in production.
5. Change in the goal/objective of the producer; A change in the goal of the producer from sales revenue maximisation to profit maximisation leads to decrease in supply of a given commodity, this is so because the producers want to produce fewer out so as to charge an increased price per unit sold, On the other hand the change in the goal of the producer from profit maximisation to sales revenue maximisation leads to an increase in supply of given commodity because producers want to increase sales by charging reduced prices.

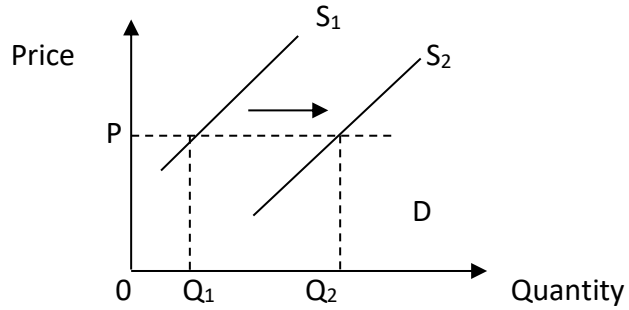
6. Change in government policy on production of the commodity; Favourable change in government policy on production of a commodity in terms of reduced taxes imposed on a commodity leads to an increase in supply of a given commodity; this is so because it leads to reduced costs of production which leads to increased profits. On the other hand, unfavourable change in government policy on production in terms of increased taxes leads to a reduction in supply of a given commodity, this is so because it leads to increased costs of production which leads to reduced profits.
7. Change in the number of producers/ suppliers in the market; An increase in the number of the producers leads to an increase in the supply of a given good, this is so because of increased number of firms producing a given good. However, a decrease in the number of producers, leads to decline in supply of a given good, this is so because of the reduced number of firms producing the good.
8. Change in the natural conditions/ factors. Favourable change in natural factors lead to an increase in supply of a given good especially agricultural products; this is so because it favours increased production of such products. However unfavourable change in natural conditions lead to a decline in supply of especially of agricultural products because they discourage/limit increased production of such a good.
9. Change in the political climate/ atmosphere; Favourable change in Political climate leads to increased supply of a given commodity, this is so because peace and stability enables people to increase production of a given good since they are not scared of losing their lives and property. However unfavourable change in political climate leads to reduced supply of a given good, this is so because it discourages increased production of a given good, since people are scared of losing their lives and property.
10. Change in the market size/ demand for the commodity. A reduction in the market size leads to a reduction in supply of a given commodity; this is so because it reduces the profit margins thus discouraging producers to increase output levels. On the other hand, an increase in the market size leads to an increase in supply of a commodity because the increased market size leads to reduced profit margins hence discouraging producers from increasing output.
11. Change in the level of entrepreneurial skills. Improved/increased level of entrepreneurship leads to increased supply of a given commodity, this is so because of increased ability to initiate businesses and sustain them. However, a decline in the level of entrepreneurship leads to a decrease in the supply of a given commodity, this is so because of the reduced ability to initiate businesses and sustain them.
12. Change in the terms of service/ working conditions. Improved terms of service lead to increased supply of a given commodity, this is so because of the increased motivation of the workers, On the other hand decline in the terms of service leads to a decline in the supply of a given commodity since the workers are discouraged by the poor working conditions.
13. Change in the land tenure system. An improvement in the land tenure system promotes production leading to an increase in supply of a given good; this is so because of the increased access to land by producers leading to increased production levels. On the other unfavourable change in the land tenure system discourages production leading to a decrease in supply of a given good, this is so because of the difficulty in accessing land thus leading to reduced production levels.
14. Expectation of future price changes. Expectation of an increase in price of a commodity in future leads to fall in its supply because firms put less of the commodity on the market when profit and prices are lower so as to benefit more in future after increase in price. On

the other hand, when price is expected to fall, supply increases because producers want to complete their output before prices fall to avoid making losses.

15. Change in the state of infrastructure. Improvement in infrastructural development leads to increase in supply of a commodity due to the reduced cost of production which is brought about by easy movement of factors of production and finished products. On the other hand, decline in infrastructural development leads to a decrease in supply of a commodity due to the increased cost of production which is brought about by difficulty in movement of factors of production and finished products.

AN INCREASE IN THE SUPPLY OF A COMMODITY

This is a situation when more of a commodity is supplied due to favourable changes in other factors that affect supply when price is constant. It involves a shift of the supply curve to the right. **An illustration of an increase of a commodity.**



From the above illustration an increase in supply is indicated by the shift of the supply curve from S_1S_1 to S_2S_2, leading to an increase in supply from OQ_1 to OQ_2.

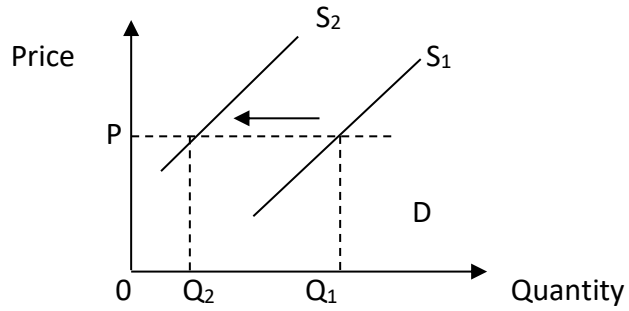
Factors that lead to an increase in supply of a commodity

1. Natural factors becoming favourable
2. An improvement in techniques of production.
3. A fall/reduction in the cost of production.
4. An increase in the number of suppliers in the industry.
5. An increase in the market size/ An increase in the demand for the commodity.
6. Reduction in the gestation period for a commodity.
7. Change in the goal of the firm/producer from profit maximization to sales revenue maximisation.
8. Favourable government policy on production of a commodity e.g. reduced taxes/ Increased subsidisation.
9. An improvement in the political climate.
10. An improvement in the entrepreneurial skills
11. An improvement in the land tenure system.
12. An improvement in terms of service/ working conditions.
13. An improvement in the state of infrastructure/ distribution system
14. An increase in the price of the jointly supplied good
15. A decrease in the price of a competitively supplied good

Decrease in supply

This refers to a situation when less of a commodity is supplied due to unfavourable changes in other factors that affect supply when price is constant. It is indicated by a shift of the supply curve to the left.

An illustration of the decrease in supply.



From the illustration above, the decrease in supply is indicated by a shift of the supply curve S1S1 to S2S2 leading to a decline in supply from OQ1 to OQ2.

Factors that lead to a decrease in supply of a commodity.

1. An increase in the cost of production
2. Natural factors/conditions becoming unfavourable
3. A decline in the level of technology/methods of production
4. A reduction in the number of suppliers/producers in an industry/Exit of some firms from the industry.
5. Political atmosphere/ climate becoming unfavourable
6. A decrease in the market size/ a decrease in the demand for a commodity
7. Change in the goal of a firm/producer from sales revenue maximization to profit maximization.
8. Government policy on the production of the commodity becoming unfavourable e.g. increased taxes/reduced subsidies.
9. A fall in the entrepreneurial skills/ability
10. Worsening terms of service/ Decline in the working conditions.
11. Breakdown of infrastructures
12. Decrease in the price a jointly supplied product
13. Increase in the price of a competitively supplied commodity.
14. Decrease in the supply of factor inputs e.g. capital, raw materials etc

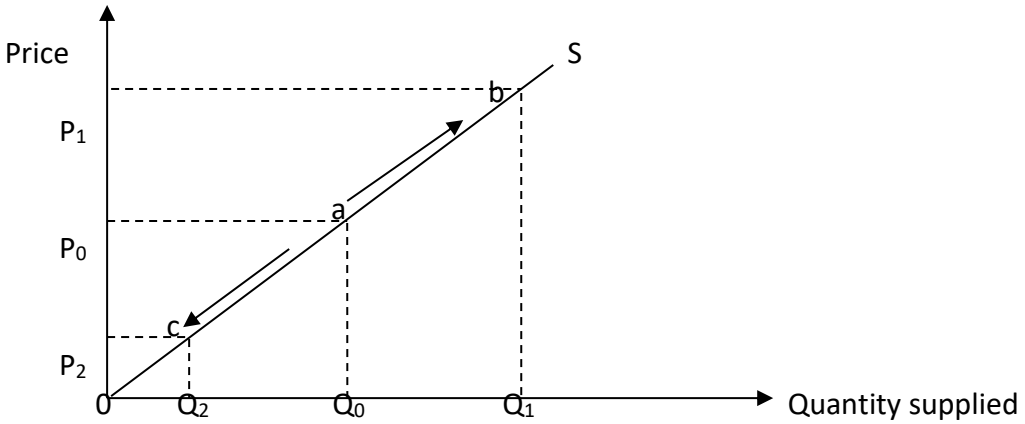
Question

(a) Distinguish between a decrease in supply and a decrease in quantity supply of a commodity.

(b) Explain the factors that lead to a decrease in supply of a commodity.

Movement along the supply curve (change in quantity supplied)

A change in quantity supplied is the increase or decrease in the amount of a good put on the market caused by a change in price of the commodity other factors affecting supply remaining constant (ceteris paribus). The supply expands or contracts along the same supply curve.

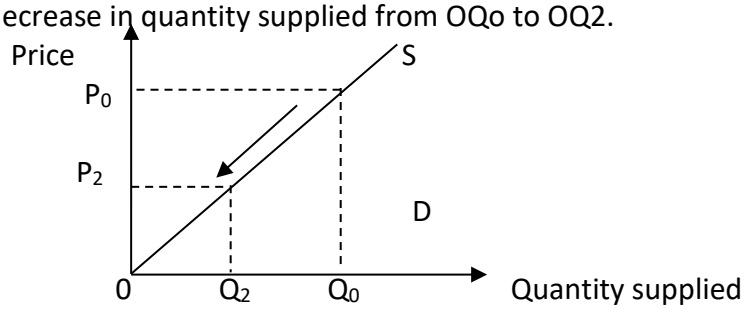


As price increases from OP_0 to OP_1 supply extends from OQ_0 to OQ_1 leading to an increase in supply and as price falls from OP_0 to OP_2, supply contracts from OQ_0 to OQ_2 leading to a decrease in supply.

NOTE

Decrease in quantity supplied is a situation when less of a commodity is supplied due to a decrease in the price of the commodity, when other factors that affect supply are held constant.

The downward movement along the same supply curve indicates a contraction in supply/a decrease in the quantity supplied. i.e. (A to C). This is due to a decrease in price from OPo to OP2 indicating a decrease in quantity supplied from OQo to OQ2.



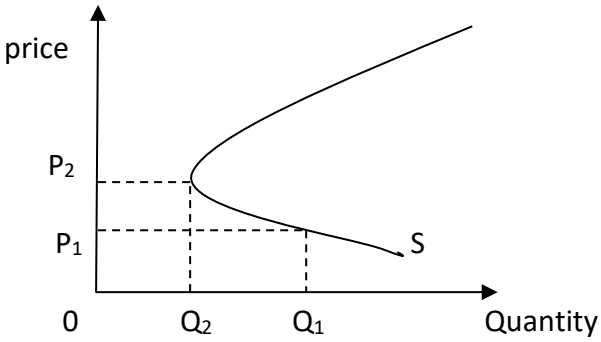
An increase in quantity supplied is a situation when more of a commodity is supplied due to an increase in the price of a commodity, when other factors that affect supply remain constant.

ABNORMAL (REGRESSIVE) SUPPLY CURVES

These are supply curves which do not obey the law of supply i.e. the higher the price the higher the quantity supplied and the lower the price the lower the quantity supplied. Abnormal supply curves show that at high prices less is supplied and at low prices more is supplied.

This occurs under the following circumstances.

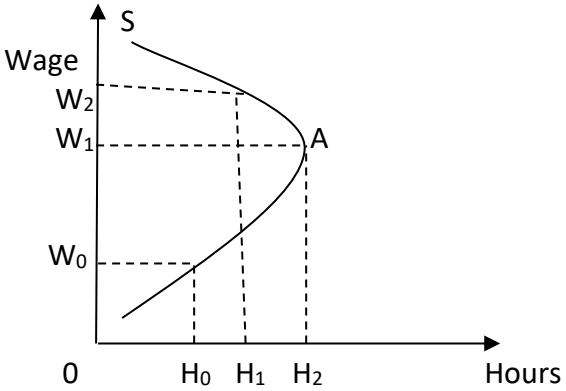
1. **Speculation (variable supply)**
   A producer/ seller may expect a higher price in future so he hoards his commodity. An increase in price may not be matched by an increase in supply. On the other hand, if the producers expect the prices to fall further, they try as much as possible to clear their stocks in order to avoid losses, so a fall in price may be matched by an increase in supply.



An increase in price from OP_1 to OP_2 leads to a decrease in supply from OQ_1 to Q_2 because suppliers expect the price to rise further.

2. Labour supply

Labour supply is the number of hours workers are willing to work at a given wage during a given period of time. It also refers to the number of workers who are willing to work at a given wage rate at a given period of time. The supply curve for labour is normal at lower levels and abnormal at higher levels.



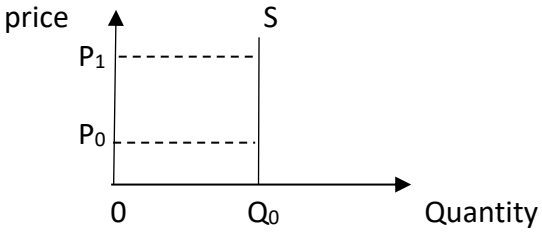
At lower wage levels, labourers' work for longer hours. As wages rise from OW_0 to OW_1, labour supply (hours worked) increase from OH_0 to OH_1, as the wage is increased further from OW_1 to OW_2 labour supply decreases from OH_1 to OH_2. This means that
after point A workers start working less hours.

Why the supply curve of labour is regressive: -

a) Presence of target workers, once the target is achieved labour sees no use of working harder.
b) Preference for leisure.
c) Where the real wage reduces due to inflation.
d) Where there is a progressive tax system such that the proportion of income deducted as tax increases as incomes increase.
e) When there is political instability in an area.
f) Poor health of workers. This is common in ageing population where people need enough time to rest.
g) Poor conditions of work and poor relation between workers and management at work places.

3. Fixed supply

This is when a firm can supply only a fixed amount of a commodity irrespective of the increase in the price of a commodity. The supply is said to be perfectly inelastic.



Fixed supply is caused due to difficulty in responding to increase in price due to short notice or difficulty in acquiring fixed assets in production.

INTER-RELATED SUPPLY

1. Joint supply. This refers to the supply of two or more commodities from the same process of production/same source such that an increase in supply of one commodity leads to an increase in supply of the other. E.g. Supply of meat and skin from slaughtered animals, an increase in the supply of meat therefore increases the supply of skins. Supply of petrol, diesel and paraffin from crude oil through fractional distillation.

2. Competitive supply. This is the supply of two or more commodities that use the same resources for their production such that an increase in the supply of one product leads to decline in the supply/production of the other. E.gs include; Supply of eggs and meat from chicken, Supply of milk and meat from cows, Supply of crops and animals from a piece of land, the use of a fixed area of land for both cattle keeping and crop growing. Increase in cattle keeping reduces the land available for crop cultivation and vice- versa.

3. Composite supply. It refers to the supply of two or goods or services which are combined to make a bundle. It includes a main component which is essential to the purpose of the bundle. Eg, a hotel provides breakfast, a swimming pool and spa services along with one's hotel room.

ELASTICITY OF SUPPLY

This is a measure of the degree of responsiveness of the quantity of a commodity supplied to changes in the factors that affect supply.

PRICE ELASTICITY OF SUPPLY

This is a measure of the degree of responsiveness of the quantity of a commodity supplied to changes in the price of that commodity.

It is the percentage change in quantity supplied to the percentage changes in price.

$$\text{PES} = \frac{percentage\ change\ in\ quantity\ supplied\ of\ a\ commodity}{percentagee\ change\ in\ price\ of\ that\ commodity}$$

$$= \frac{\Delta Q}{Q}\ X\ 100\ \div\ \frac{\Delta P}{P}\ X\ 100$$

$$\text{PES} = \frac{\Delta Q}{Q}\ X\ \frac{P}{\Delta P}$$

Example: If the price of a commodity is increased from 5,000/= to 7,000/= per kg and as a result the quantity supplied increased from 100kg to 120kg. Calculate the elasticity of supply.

Solution

$$\text{PES} = \frac{\Delta Q}{Q}\ X\ \frac{P}{\Delta P}$$

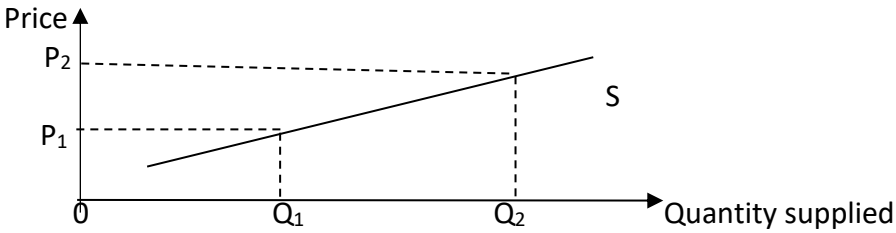
$$\text{PES} = \frac{(120-100)}{100}\ X\ \frac{5000}{(7000-5000}$$

$$\text{PES} = \frac{20}{100}\ X\ \frac{5000}{2000}$$

$$= 0.5$$

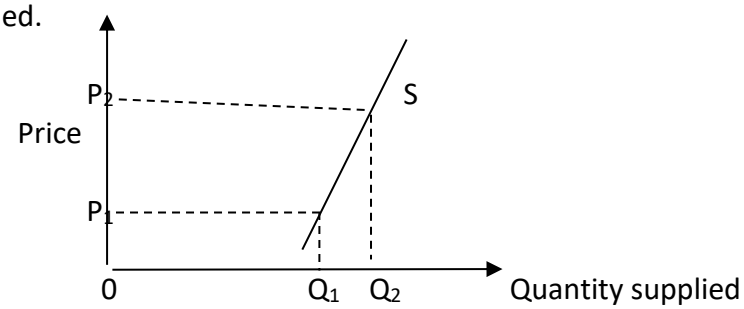
Types of elasticity of supply

1. **Elastic supply.** This occurs when elasticity of supply is greater than one but less than infinity. A small change in price results into a more than proportionate change in quantity supplied.

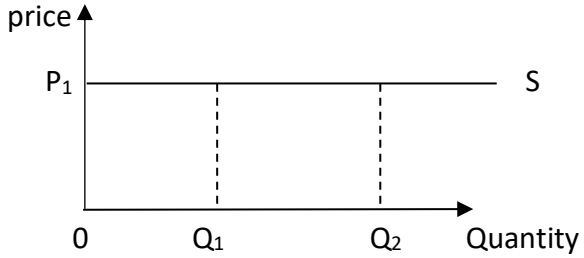


A small increase in price from OP_1 to OP_2 results into a more than proportionate change in quantity supplied from OQ_1 to OQ_2.

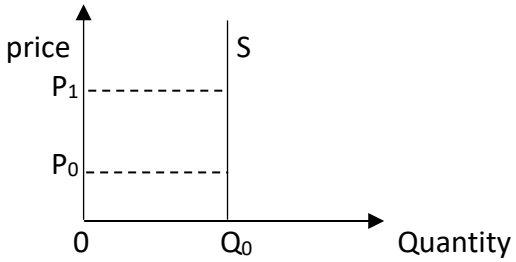
2. **Inelastic supply.** This occurs when the elasticity of supply is greater than zero but less than one. A large change in price leads to a less than proportionate change in quantity demanded.



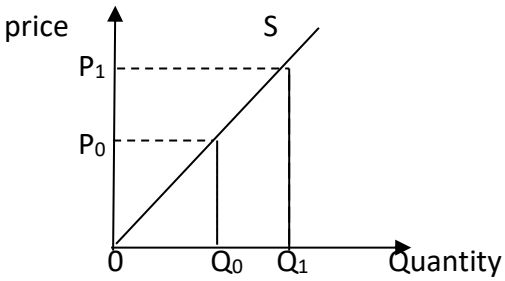
3. **Perfectly elastic supply.** Here the price elasticity of supply is equal to infinity. A change in price has an infinite effect on supply.



4. **Perfectly inelastic supply.** Here the price elasticity of supply is zero. A change in price has no effect in the quantity supplied.



5. Unitary supply. This is when the elasticity of supply is equal to one. A change in price leads to a proportionate change in quantity supplied.



Factors influencing Price Elasticity of supply

1. The cost of production. The supply of a commodity is price inelastic when the costs of production are high, this is so because with increase in the price of the commodity, producer are reluctant to increase supply, due to the low profit margin. On the other hand, supply of a commodity is price elastic when the costs of production are low, this is so because with increase in the price of the commodity, producers quickly supply due to high profit margin.
2. Gestation period. The supply of a commodity with a short gestation period is price elastic, this is so because with increase in the price of such a commodity, producers are in position to increase supply within a short period of time. On the other hand, the supply of a commodity with a long gestation period is price inelastic, this is so because with increase in price of such a commodity, producers are not able to increase supply in a short period of time
3. Level of technology. The supply of a commodity produced using advanced technology is price elastic; this is so because with increase in the price of such a commodity, the producers increase the supply of such a commodity due to the use of efficient modern technology. On the other hand, the supply of a commodity produced using poor technology is price inelastic, this is so because with increase in the price of such a commodity, the producers are not able to increase supply due to the inefficiency of such technology.
4. Perishability/Durability of a commodity: The supply of perishable commodities is price inelastic, this is so because with increase in the price of such a commodity, the producers cannot increase supply once existing stock have been exhausted since such goods cannot be stored for a long time. On the other hand, the supply of durable commodities is price elastic, this is so because with increase in the price of such goods, the producers are able to supply by getting from the stores since the goods can be stored from the stores.
5. Time period. The supply of a commodity is price inelastic in the short run. This is so because with increase in the price of the commodity, the producers cannot easily increase the supply of the commodity, since the time is too short to increase the supply. On the hand the supply of a commodity is price elastic in the long run period, this is so because with increase in the price of the commodity, the producers can easily increase supply since the time is long enough to allow production and supply of more goods.
6. Natural factors especially in agricultural sector. The supply of a commodity is price elastic during favorable natural factors such as adequate rainfall, fertile soils; this is so because with an increase in price of a commodity, the producers increase production and supply of a commodity since the conditions favor its growth. On other hand, the supply of a commodity during unfavorable natural factors such as prolonged drought, infertile soils etc is price elastic, this is so because with increase in the price of the commodity the

producers are not able to increase production and supply of the commodity since the conditions are unfavorable for the activity.

7. Degree of freedom of entry of firms in production/ Ease of entry of new firms in the industry. The supply of a commodity is price elastic when there is freedom of entry of firms in an industry; this is so because with increase in the price of such a commodity it induces other firms to join production since there are no restrictions on entry. On the other hand, the supply of a commodity is price inelastic when there is restricted entry into the industry; this is so because with increase in the price of the commodity supply is not easily increased since there are few producers due to restricted entry into the industry.
8. Political climate. The supply of a commodity is price elastic when there is political stability this is so because with increase in the price of the commodity, the producers easily increase production and supply of a commodity, since such situations allow producers to produce more output as they live a settled life. On the other hand, supply of a commodity is price inelastic; this is so because with an increase in the price of the commodity, the producers are not in position to increase supplies of the commodity since such situations do not allow production to easily take place as people do not live a settled life.
9. Future price expectations. The supply of a commodity is price inelastic when there is an expectation of a further future price increase this is so because with an increase in the price of the commodity, producers are reluctant to supply more of the commodity since they want to supply more in future at a much higher price. On the other hand, the supply of the commodity is price elastic when there is expectation of a further future price reduction, this is so because with a decrease in the price of the commodity, the producers supply more of the commodity due to fear to sell their output at a much lower price.
10. Availability of excess capacity: The supply of a commodity is price elastic when the firms are operating at excess capacity, this is so because with increase in the price of a commodity, the producers easily increase production and supply of the commodity since the resources are not yet exhausted. On the other hand, the supply of a commodity is price inelastic when the firms are operating at full capacity, this is so because with increase in the price of the commodity, the producers are not able to increase production and supply of the commodity since all resources are used up.
11. Government policies of subsidization and taxation. The supply of the commodity is price elastic when government subsidizes producers this is so because subsidies artificially reduce costs of production which encourages producers to produce and supply more of the commodity. On the other hand, the supply of the commodity is price inelastic when the government highly taxes the producers, this is so because high taxes increases the costs of production which discourages producers due to reduced profit margin thus reducing the supply of a given commodity.

Factors responsible for elastic supply of a commodity

1. Low costs of production.
2. Shorter gestation period.
3. Improved state of technology.
4. Existence of durable commodities.
5. Long-run period.
6. Favourable natural factors especially in agricultural sector.
7. Freedom of entry of firms in production.

8. Favourable political climate.
9. Expectation of further future price fall.
10. Presence of excess capacity.
11. Favourable government policy of subsidization.

Factors responsible for inelastic supply of a commodity

1. High costs of production.
2. Longer gestation period.
3. Low level of technology.
4. Presence of perishable commodities.
5. Short-run period.
6. Unfavourable natural factors especially in agricultural sector.
7. Restricted entry of firms in production.
8. Unfavourable political climate
9. Expectation of further future price rise.
10. Existence of full utilization of available resource.
11. Unfavourable government policy of taxation.

Practical application of elasticity of supply

1. Useful to government in devaluation policy. Devaluation is successful if the supply of exports and imports is price elastic.
2. Useful in determining the incidence of a tax. A producer faces a heavier burden than a consumer if the good in question has inelastic supply.
3. Useful to government in the taxation policy. Government gets more revenue if it taxes a commodity with inelastic supply than a commodity with elastic supply.
4. Useful in determining wages. Labour with inelastic supply will be paid higher wages compared to labour with elastic supply because it is difficult to increase supply of labour with inelastic supply.

MARKET EQUILIBRIUM

Equilibrium is a situation in which the economic forces as they exist at a time have no tendency to change.

Equilibrium price is price established in the market when quantity demanded is to equal quantity supplied of a commodity. This price changes from time to time depending on the market forces of demand and supply that may prevail at that time. It is also known as **market clearing price**. i.e. it is set or fixed at a point of intersection of demand and supply curves in a free enterprise economy

Important of Equilibrium price in the economy:

- It shows efficiency in resource allocation as there are no surpluses or shortages in the market.
- It shows economic welfare maximization because decisions of producers agree with those of the consumers.
- It helps the government in the policy of price control by avoiding the effects of minimum and maximum price

Equilibrium quantity

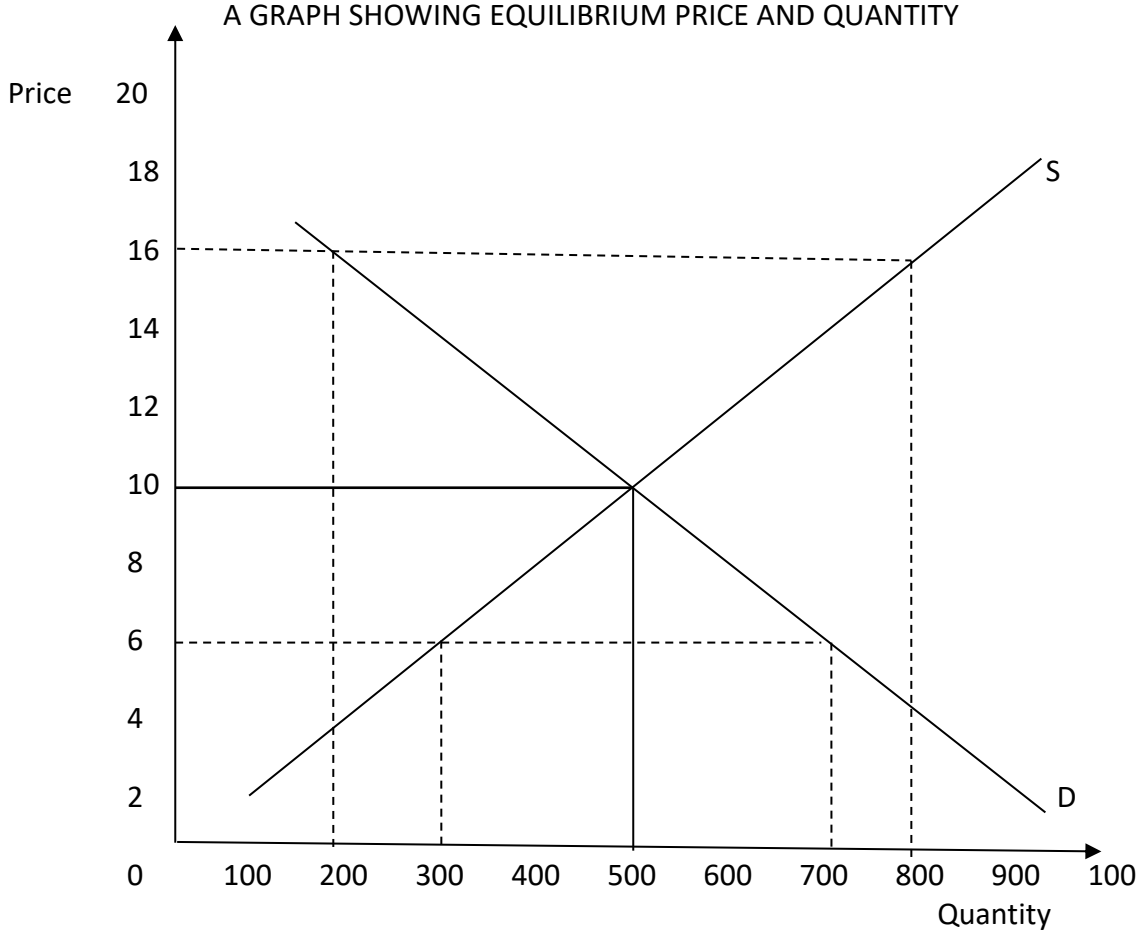
This is the quantity exchanged when the market is in balance, quantity demanded and quantity supplied are equal, therefore there is no shortage or surplus in the market which means that neither buyers or sellers are inclined to change the price or the quantity which is

an essential condition for equilibrium. The only quantity that accomplishes this task is at the intersection of the demand curve and supply curve as illustrated below.

Example, given the market demand and supply schedule for beef

PRICES	QTY DD (kg)	QTY SS (kg)
20	50	1000
18	100	900
16	200	800
14	300	700
12	400	600
10	500	500
8	600	400
6	700	300
4	800	200
2	900	100

A GRAPH SHOWING EQUILIBRIUM PRICE AND QUANTITY



supplied

Where demand and supply are equal we get the equilibrium price. In the diagram the equilibrium price is 10/=. At this price, suppliers are willing to supply 500kg of beef and consumers are willing to buy 500kg hence demand equals supply. The price 10/= is the equilibrium price.

If the price is arbitrary fixed at 16/=, then there is an excess in supply of 600kgs since suppliers are willing to supply 800kgs per month and consumers are willing to buy 200kgs per month. Conversely if the price is set below the equilibrium there is an excess of demand e.g. if the price is fixed at 6/= per kg, demand increases to 700kg and yet total supply is only 300kg (there is a deficit of 400kg)

The equilibrium remains as long as the factors that affect demand and supply remain constant. If these change then equilibrium also changes. An increase in income leads to consumers' demand for more beef and if supply conditions remain unchanged, the price of beef increases.

Deriving the market equilibrium using the demand and supply functions:
Market equilibrium is also derived by using the demand function and the supply function where quantity demanded (Qd) is equal to quantity supplied (Qs)
When solving for equilibrium price and quantity you need to have a demand function and a supply function.

Example. if the monthly demand function is Qd= 1000- 50P and the monthly quantity supply function is Qs= 50P, Then set Qd= Qs and solve.

Solution:

Qd = Qs
i.e. 1000-50P= 50P
1000-50P+50P=50P+50P
1000=100P
Therefore;
P= 1000/100
=10.
Equilibrium price = 10
NB: Equilibrium price has no units.

To find equilibrium quantity we substitute equilibrium price (10) into either the demand function or supply function as follows;

(a)Using the demand function

Qd =1000-50P
=1000-(50 X10)
=1000- 500
=500.

(b) Using the supply function:

Qs =50P
=50X10
=500

Therefore Qd = Qs(as shown by the above substitution above):

Exercis:
Given that (i) Qs = -12+12p and Qd = 36-4P
(ii) Qd= 24-4P and Qs= -8+8P
(iii)Qd= 500-50P and Qs =50+25P
(iii)Qd= 24-2P and Qs= -12+4P
Calculate the; (a) Equilibrium price
(b) Equilibrium quantity.

Types of equilibrium

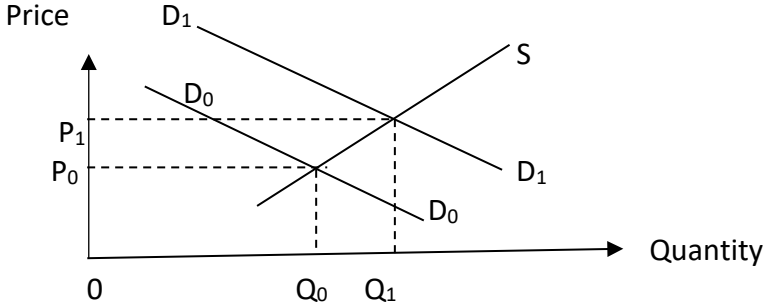
1. Stable and unstable equilibrium.

Equilibrium is said to be stable if any deviation from equilibrium brings into operation market forces which push the price back to equilibrium.
Unstable equilibrium is a condition in which any deviation from the equilibrium brings into operation market forces which push the prices away from the equilibrium.

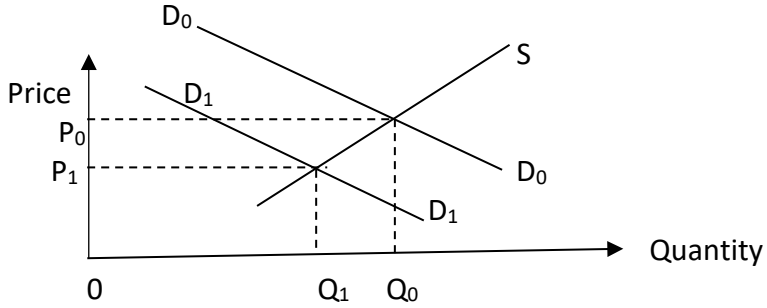
2. Short term and long term equilibrium.
   Short term equilibrium exists when the time available to adjust supply to demand is too short, while long term equilibrium exists over a long period of time whereby supply has changed in response to change in demand after long periods of fluctuations. (Normal price).
3. Partial and general equilibrium.
   Partial equilibrium refers to a position of rest of a particular economic unit like equilibrium of a firm, consumer, industry etc. while general equilibrium refers to the equilibrium of an economy as a whole.

The effects of changes in demand and supply on the equilibrium price.

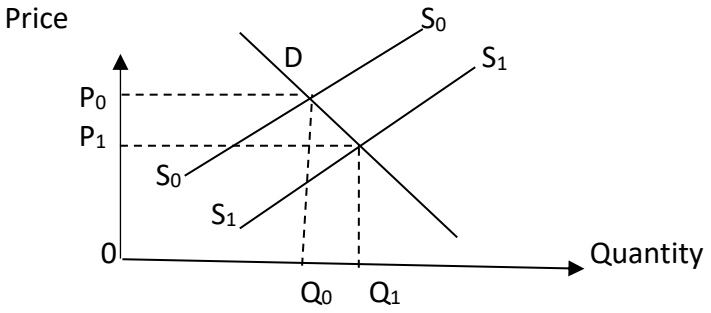
1. An increase in demand for the product causes the price to increase and supply to extend.



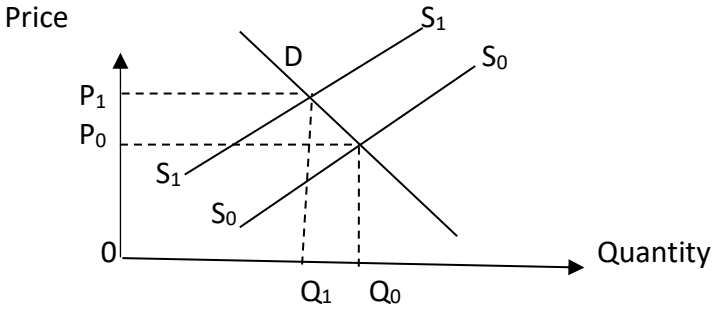
   In the diagram because of increase in demand from D_0D_0 to D_1D_1 price has increased from OP0 to OP1 and supply has increased from OQ_0 to OQ_1.
2. A fall in demand causes the price to fall and supply to contract. In the diagram above a fall in demand is indicated by the demand curve D_2D_2, price falls from OP_0 to OP_2 and supply contracts from OQ_0 to OQ_2.



3. An increase in the supply of the product causes the price to fall and demand to extend. In the diagram below, the fall in supply is shown by the new supply curve S_1S_1. Price falls from OP_0 to OP_1 and the demand extends from OQ_0 to OQ_1.



4. A fall in the supply of the product. This causes the price to increase and demand to contract as seen in the diagram. The fall in supply is shown by the new supply curve S_2S_2 the price rises from OP_0 to OP_2.



THE PRICE MECHANISM AND RESOURCE ALLOCATION

The price mechanism is a system of economic organization in which resources are privately owned with no government interference and resource allocation/price determination is done by the market forces of demand and supply. It is a system where prices act as automatic signals in the allocation of resources.

Under the price mechanism, there is **consumer sovereignty** i.e. it is what the consumers want that is produced. Consumers exercise their sovereignty through purchase of goods and services and they express their desires and choice through the prices they are ready to pay for the various commodities. High prices indicate high demand for the commodity hence, prompting suppliers to supply the commodity. But as prices fall it shows a fall in demand and thus producers/ sellers transfer resources from such goods to the production of goods whose demand is high.

Assumptions

1. Private ownership of property.
2. Freedom of choice and enterprise.
3. Absence of government interference.
4. Existence of consumer sovereignty.
5. Equitable distribution of income among consumers.
6. Factors of production are mobile.
7. Perfect knowledge of the market.
8. Producers aim at maximising profits.
9. The prices of goods and services are all determined by the forces of demand and supply.
10. Consumers and producers are rational.
11. There is free entry and exit of firms in the production of goods and services.

12. There are many buyers and sellers in the market

Role played by prices in resource allocation.

POSITIVE ROLE:

1. It determines the income distribution. Producers buy resources from resource owners and therefore income is distributed among the producers and resource owners. Those who own resources which are highly priced earn higher incomes as compared to those who own resources that are not highly priced.
2. Determines where to produce /determines the location of the production unit. Producers establish their business units where they can easily access customers who are ready to pay high prices for their products so as to enable them maximise profits.
3. Determines when to produce. Production always takes place at the time when consumers' demand dictates so and therefore they are ready to pay high prices. This is common with products that are demanded seasonally.
4. Provides automatic adjustment between demand and supply. This is because an increase in demand for a commodity attracts more new firms into production of that commodity results into increased supply thereby overcoming the shortage.
5. Determines how produce. The producers employ the method of production which is efficient but at the same time affordable so as to produce high quality of products so as to attract more buyers and hence make more profits.
6. Promotes consumer sovereignty/determines for whom to produce i.e. producers supply goods for those who can afford to buy them or for those who are ready and willing to buy at high price so as to enable them maximise profits.
7. Guides in resource allocation (factor market). Factors of production are attracted to areas where they are highly priced or highly paid.
8. Promotes/encourages innovations and inventions. This is intended to improve the method so as to minimise the costs of production in order to maximise profits.
9. Provides variety of goods. This is so because there are many producers in the market who produce a variety of goods so meet the different tastes and preference of the consumers in order to maximise profits, hence widening consumer's choice.
10. Ensures production of better quality goods/ products. This is so because of competition in production as a result of many producers engaging in production.
11. Guides on what to produce. Resources are allocated to production of those commodities that command high prices in the market so as to enable producers maximise profits.
12. Ensures efficiency of firms. Resources are usually allocated to the production of those commodities where minimum costs are incurred in order to fetch high prices and maximise profits.

NEGATIVE ROLE

1. Leads to distortion of consumer choices through persuasive advertisements/ encourages impulsive purchases.
2. Inability to allocate resources to public and merit goods. This is mainly because it would be impossible to charge them prices since free riders are not excluded in their consumption. In price mechanism producers aim at maximising profits so they tend to ignore such goods.
3. Leads to misallocation of resources. Price mechanism may not allocate resources to priority areas /socially profitable ventures since it is guided by profit motive. This may lead to disappearances of cheap commodities on which the ordinary people survive

4. It leads to uneven distribution of income or Promotes income inequality/disparity. People with more productive resources earn more income than those with less productive resources.
5. It leads to the emergency of monopoly power and its associated evils. This happens when inefficient firms are outcompeted and driven out of the industry and the few that remain enjoy monopoly power which may lead to production of poor quality products, overcharging consumers etc.
6. It leads to consumer exploitation and this is due to ignorance of the consumers about the market conditions which results into charging them very high prices for goods and services.
7. It leads to emergency of unemployment. This happens when inefficient firms are outcompeted in business. Unemployment may also arise when firms adopt capital intensive techniques of production in bid to maximise profits by minimising costs. This results into technological unemployment.
8. There is divergence between the private and social benefits and costs. This is because price mechanism emphasizes the element of profit. Therefore, producers aim at achieving their private benefits while creating social costs for the society pollution (water, air, and noise).
9. It does not adjust/respond to rapid structural changes in the economy. This is because it depends on the forces of demand and supply and for producers to make any changes may wait for signals from the consumers.
10. It leads to wastage of resources this is due to wasteful competition and duplication of activities.
11. It makes the economy susceptible to economic instabilities like price fluctuations (leads to economic instabilities) i.e. inflationary and deflationary tendencies. This is because producers tend to increase prices of goods and services with increased demand.

ADVANTANTAGES/ MERITS/POSITIVE IMPLICATIONS OF PRICE MECHANISM:

1. It encourages the production of better quality goods because production is competitive which encourages improvement in the quality of the products.
2. It promotes incentives for hard work leading to increased production. The profit motive encourages hard work, innovations and inventions hence increased productivity.
3. It encourages efficient allocations of resources because producers produce in response to consumer's demand therefore cases of over production and under production are avoided hence no wastage of resources.
4. It avails a wide variety of goods and services to consumers because there are many producers producing different commodities and this widens consumer's choice.
5. It encourages flexibility in production because producers adjust to changes in the market conditions basing on changing price for the commodity.
6. It is a cheap system to maintain/ it reduces the costs of administration because of limited government control since adjustments are automatic i.e. by forces of demand and supply.
7. It encourages arbitrage i.e. it facilitates regional distribution of goods which benefits producers since goods are transferred from areas of plenty where prices are low to areas of scarcity where prices are high.
8. Provides an incentive to economic growth. Higher prices and profits encourage large industrial establishments to spend huge sums of money on research, new and better techniques of production which leads to more production of goods and services hence economic growth.

9. It helps in the distribution of income. Income goes only to those who own resources. People owning large quantities of resources which are highly priced earn more income than those owning few resources.
10. It decentralises economic powers. This is so because individual households make their own economic decisions/Promotes consumer sovereignty.
11. It leads to increased employment opportunities. This is due to increased economic activities/ increased investment as people strive to make more profits.

Defects/problems/demerits of the price mechanism

1. It promotes income inequality where the incomes go to those who own resources and efficient firms while the poor become poorer. Besides, individual firms that are highly paid tend to become stronger and stronger while the poorly paid ones have the tendency of becoming weaker and poorer.
2. The price mechanism leads to monopoly. This arises out of the fact that inefficient firms are knocked out of business leaving only a few efficient firms in production which leads to monopoly.
3. It leads to consumer exploitation due to consumer ignorance. Perfect knowledge of the market conditions usually does not exist. Consumers don't know all the conditions in the market like prices, quality etc. they are usually misled through persuasive advertising. Consumers end up buying from expensive sources hence being exploited.
4. There is divergence between social costs and private benefits. In this system the desire to maximize profits by producers leads to over exploitation of resources for private benefits without considering costs to society e.g. over exploitation of forests for charcoal and timber leading to problems of desertification, soil erosion which affect society.
5. Inability to cope with rapid structural changes. In cases when there is need for rapid structural changes, the price mechanism may fail to allocate resources effectively and may retard development. This occurs when there are new products produced or when there is a drastic fall in demand for the product. Alternatively, in times of war, famine and other unforeseen circumstances the price mechanism fails to allocate resources.
6. The price mechanism creates instability and unemployment, competition drives out inefficient firms from production rendering labour and capital unemployed.
7. It leads to the foregoing of socially unprofitable but useful activities because it concentrates on goods and services where profits are high yet certain goods and services like health are not profitable but useful in society.
8. The price mechanism leads to duplication of activities leading to resource wastage. Duplication comes about because of having more than one firm producing a similar good.
9. It leads to inflation because of reliance on the forces of demand and supply, where demand exceeds supply hence the prices rise leading to inflation.
10. The price mechanism leads to distortion of consumer choices through advertising hence enticing consumers to buy products they may not want or need i.e. it encourages impulsive buying.
11. The price mechanism leads to resource misallocation. This occurs when there is severe income inequality, the rich attract resources for the production of luxuries resulting into the disappearance of vital products demanded by the poor from the market. This worsens the welfare of the poor.

REASONS FOR GOVERNMENT INTEVENTION IN THE OPERATION PRICE MECHANISM

1. To reduce on the level of income inequalities that result from private ownership of resources and freedom of competition. The government interferes through progressive taxation so as to reallocate resources and attain equity in income distribution.
2. To cover consumer ignorance due to market imperfections. This is done through encouraging formation of consumer associations.
3. To reduce on social costs such as pollution and resource exhaustion that affect people's welfare. This is through setting up regulatory bodies that regulate the actions of firms in resource exploitation.
4. To cater for the provision of public and merit goods that cannot be provided through market forces of demand and supply because they are profitable.
5. To carry out proper economic planning for the entire economy and promote economic growth. This is through effecting necessary adjustments in time of structural changes for example, war, famine, floods etc.
6. To reduce unemployment. The price mechanism causes unemployment by pushing out inefficient firms out of production and government interference aims at ensuring availability of jobs to citizens by ensuring that inefficient firms are not thrown out of business.
7. To ensure economic stability. The government intervenes through price control to ensure stability in prices of goods and incomes of producers.
8. To ensure production of essential goods and services, as these may not be produced under the price mechanism.
9. To regulate production and provision of undesirable products (demerit goods) which do not promote economic and social welfare although they are profitable for example pornographic literature, dangerous cheap liquor, fire arms, drugs etc.
10. To control the growth and regulate the activities of monopolies brought about by competition among producers. The government intervenes through high taxation of monopolists to avoid overcharging of the consumers and the production of low quality goods and services.

HOW TO CORRECT THE DEFECTS OF THE PRICE MECHANISM.

1. Price control. In controlling price fluctuations government may legislate prices by setting maximum and minimum prices as may be appropriate. This would mean that even when demand and supply conditions change, prices would remain the same.
2. Formation of consumer associations to educate consumers about market prices and reduce consumer exploitation through consumer ignorance.
3. Taxation. Government can resort to taxation as a result of inducing investment such that it imposes prohibitive taxes on investments and activities it wants to discourage while at the same time imposing very low or no taxes on investments and activities it wants to encourage.
4. Licensing. Licensing could be used as a means of controlling production or sale of certain products. This implies that with no government license one is not allowed to produce or sell a commodity. Government therefore issues a few licenses so as to control overexploitation of resources.
5. Subsidization of weak firms. As a way of ensuring that weak firms are not pushed out of the industry, the government may subsidise such firms so as to keep them in production and ensure continued competition in the economy while at the same time giving employment to the nationals and selling essential goods at affordable prices.

6. Provision of public goods by government. Government can provide public goods using revenue, from taxation. Hence provision of goods and services like defence, health, judiciary etc. has become the role of the government.
7. Use of progressive direct tax system where the rich especially the monopolists are taxed more than the poor, in order to reduce the gap between the rich and poor. The revenue got can be used for subsidizing the poor hence enabling them to consume goods that they would not have consumed.
8. The government can do rationing; this involves direct action by public authorities of apportioning scarce supplies to all households on a regular basis. Rationing helps in checking fluctuations due to acute shortages most especially for goods that are necessities.
9. Controlling monopoly. Laws should be enacted to reduce the emergence of monopoly firms. In cases where they are inevitable government should use other measures to control the powers and disadvantages of monopoly e.g. taxation, nationalization etc.
10. Planning. Government should plan for the economy to cater for the structural changes in the economy and prepare for the unseen future needs. Planning is also necessary to stimulate economic growth and regulate the rates of growth especially for developing countries.
11. The government could set up firms to compete with monopolies especially those that are producing essential commodities necessary for the well-being of the nationals.
12. Setting up regulatory bodies. Government can set up bodies that regulate the activities of private individuals and firms in the course of producing goods. Such bodies reduce over exploitation of resources, pollution and other instances that degrade the environment and cause social costs in pursuit of private benefits e.g. NEMA such bodies are usually backed by laws on which they base their actions.

LIMITATIONS OF THE PRICE MECHANISM

1. Government interference. i.e. Government sets price controls where it becomes illegal to sell above or below the established price, therefore the forces of demand and supply can't set the price.
2. Existence of consumer ignorance. Perfect knowledge of market conditions is assumed but because of consumer ignorance, consumers may unknowingly buy from high cost firms enabling them to continue producing.
3. Immobility of factors of production. High degree of factor immobility limits proper allocation of resources as factors of production need significant training to acquire appropriate skills to perform certain tasks in alternative economic activities.
4. Existence of monopoly. This is where we have only one firm producing a commodity, it has total control over the price and quantity supplied, and therefore forces of demand and supply can't set the price.
5. Irrationality of consumers and producers. Consumers are assumed to be rational, but sometimes people tend to buy goods from others because of convenience or other factors and not necessarily utility maximisation at the lowest cost possible.
6. Limited capital for increasing output or supply of the desired goods. This in most cases results into inflation.
7. Limited skilled labour to produce the highly demanded commodity resulting in shortages. This limits the operation of the price mechanism.

8. Poor state of technology. Poor state of technology promotes high level of inefficiency due to increased costs of production thereby hindering efficient allocation of resources by price mechanism.
9. Political instability. This makes the production of goods and services very difficult because investments are destroyed while new investors are scared
10. Limited entrepreneurial ability and skills for investment once demand is high. Low level of entrepreneurial abilities limits initiative to undertake business ventures in fear of risks involved thereby hindering efficient allocation of resources.
11. Inability to forecast future trends. Price mechanism fails to allocate resources effectively where producers are unable to predict changes in conditions of demand and supply in future.
12. Poor infrastructures. Poor infrastructure in the form of poor roads, inadequate storage facilities and power shortages limits the ability of producers to exploit available resources and limits arbitrage leading to inefficient allocation of resources.

PRICE FLUCTUATION IN THE AGRICULTURAL SECTOR

Price fluctuation is the tendency of prices to rise and fall in given periods due to variation in demand and supply conditions.

Causes of price fluctuation of agricultural products

1. Heavy dependence on natural factors. The level of output in agriculture is highly affected by natural factors like climate, pests and diseases etc. whenever natural factors are favourable output increases leading to a fall in price and when they are unfavourable output reduces leading to a rise in price. Hence prices vary depending on how favourable natural factors are.
2. Long gestation period. Agricultural products take a long time to be ready for consumption; hence there is a lot of output on market just after harvest leading to a fall in prices. However, after the planting season supply is low leading to a rise in price of the products in the market hence price fluctuation.
3. Perishability. Agricultural products are perishable and difficult to store. Hence during harvest all output is put on the market to avoid losses leading to a fall in price and after harvest scarcity results leading to a rise in price. Perishability limits the farmers' ability to control supply on the market which leads to price fluctuation.
4. Bulkiness of agricultural products hence difficult to transport. Agricultural products are bulky hence can't be easily transported from areas of surplus to areas of scarcity. Therefore, prices tend to fall in the period of plenty due to the excess supply and in periods of scarcity prices increase due to shortage.
5. Price inelastic demand for agricultural products. The demand for agricultural products is inelastic meaning that the quantity demanded remains almost the same despite changes

in prices. This results into a sharp price decrease when output increases and a sharp increase in price when output reduces. This is because shortages and surpluses are hard to deal with and require big increments and reduction in prices to absorb them respectively.

6. Low income elasticity of demand. Due to low income elasticity of demand, the demand for agricultural products does not increase as incomes increase and hence demand remains low. Sometimes as incomes increase the demand for some products reduces. This calls for sharp price reductions and increments in case of surpluses and shortages respectively and thus price fluctuations.
7. Agricultural products form a small part of the manufactured products which therefore means that industries demand just a small quantity of the products whose price changes would not substantially affect the demand for the final products hence industry would not easily absorb the excess output leading to a fall in price, and in case of fall in supply, shortages would be severe pushing prices up. This causes fluctuations of prices of raw materials.
8. There are many people engaged in agriculture which makes planning for the market difficult. Individual farmers therefore make independent decisions which tend to result into surpluses thus lowering prices and shortages on the market thus rising prices, hence price fluctuations.
9. Weak bargaining position on the world market. Exporters of agricultural products on the world market have a weak bargaining position due to the fact that they are many and uncoordinated. Therefore, whenever they dictate low prices in the market; the price in the local market falls. On the other hand, whenever the buyers dictate the high price, the price in the local market rises, hence price fluctuations.
10. Weak commodity agreements. In cases where commodity agreements are made, they are weak and not strictly followed by a number of countries. They therefore fail to stabilize prices since they do not stick to the set quotas. Hence as supply and demand on the world market change even prices change.
11. Raw material saving innovations. As developed countries improve on their technology, they come up with production techniques that require less and less raw material inputs. This not only reduces the demand for agricultural products but even makes it more inelastic which in the end worsens fluctuation.
12. Poor surplus disposal machinery due to poor transport. It becomes difficult to dispose off the surplus output therefore prices tend to fall during harvest because of surplus production and rise thereafter because of limited supply hence price fluctuation.
13. Divergence between planned and actual output. Farmers tend to plan to produce a given amount of output so as to meet the anticipated demand. Whenever actual output is greater than planned output, the prices of agricultural products fall because of flooded market and when the actual output is less than the planned output the prices rise because of the decrease in the output on the market.
14. Changes in the cost of production. An increase in the cost of production leads to a rise in prices to increase the profit margin while a decrease in the costs of production leads to a fall in prices since the profit margin is sufficient.

Effects of price fluctuations

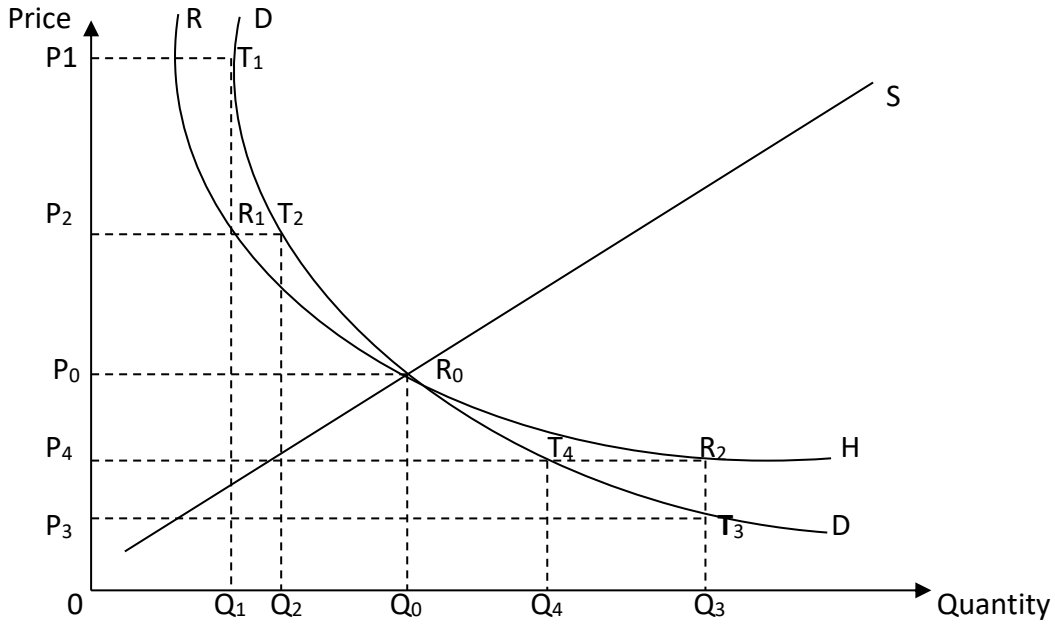
1. It leads to fluctuations in farmers' incomes. When prices rise incomes increase and when prices fall incomes decrease. This is especially true for commodities having inelastic demand.
2. It makes long term planning difficult. Instabilities in prices make it hard to plan ahead since it is hard to predetermine the earnings of the people and government in future. Targeted objectives may not be achieved due to a fall in earnings as a result of falling prices.
3. Results into unstable terms of trade. Falling prices of agricultural exports result into deteriorating terms of trade and as the export prices increase, the country's terms of trade improve. Thus countries mainly depending on agricultural products have their terms of trade fluctuating depending on the price of exports.
4. Rural urban migration is accelerated in periods of price fluctuations. Price fluctuation results into unstable incomes for the farmers who in turn feel they should move to urban areas to get jobs with stable incomes. This makes them move to urban areas in search of better paying jobs which are not available, thus accelerating the problem of open urban unemployment.
5. Price fluctuations lead to balance of payment instabilities. Price fluctuations cause unstable export earnings which in turn imply that the balance of payments is unstable. In times of a rise in export prices the balance of payment position improves. However, when export prices fall the balance of payments position deteriorates thus leading to balance of payment instabilities.
6. Agricultural price fluctuations lead to fluctuation in government revenue. Rising prices of agricultural products leads increased earnings of the farmers which widens the tax base. On the other hand, falling prices of agricultural products leads to reduced earnings of the farmers, which leads reduced tax base and thus reduced government revenue.
7. Investment in agriculture becomes uncertain because investors are not sure what prices will be like during the time of harvest. This reduces investment in the agriculture sector which reduces the rate of growth of the agriculture sector.
8. Agricultural price fluctuation leads to instability in the foreign exchange rate by causing unstable supply of foreign exchange. As the supply of foreign exchange increases the local currency appreciates and as the supply of foreign exchange reduces, the local currency depreciates. This is true if a country is operating a floating exchange rate.
9. Price fluctuations lead to worsening of income inequalities between peasant farmers and those in other sectors. Price fluctuations tend to hit the poor hardest and when prices fall the incomes of the farmers fall so low, yet the incomes of the people not in farming are either stable or rising. The end result is an ever widening gap between farmers and people in other sectors thus worsening income inequality.
10. Leads to seasonal unemployment. Uncertainties in the prices of agricultural products worsens the problem of unemployment because the uncertainties drive out many people from the agricultural sector and they may not be able to get other jobs in other sectors thus rendering farmers unemployed.
11. Unstable export earnings. Agricultural price fluctuations lead to instability in the export earnings especially where the country depends on agricultural exports. A rise in export prices leads to increase in foreign exchange earned from exports and a fall in export prices leads to a fall in foreign exchange earnings from exports. The fluctuation of a country's

export earnings affects the capacity to import which leads to borrowing in times of when prices falls.

Ways of stabilizing prices of agricultural products

1. Price legislation by government. This is where government sets prices at which goods are to be sold/ bought. It is illegal for anybody to buy/sell at any other price. Government mainly uses minimum price.
2. Improving the storage system. In order to regulate supply, the storage system is improved so that they put on market what is demanded. This would reduce the price fluctuations of perishable goods. Farmers would be able to store part of the output and put it on market when supply is low or demand increases.
3. Improving of the transport (disposal) system so that goods can be transported from areas of surplus to areas of scarcity. As a result, supply would be even and thus prices would be more stable.
4. Modernization of agriculture to reduce its dependence and vulnerability to natural factors. Agricultural modernization would ensure cultivation of crops even in periods of low rainfall using irrigation this stabilises the supply of agricultural products and their prices.
5. Diversification of agriculture by introducing more crops such as vanilla, sunflowers etc. this reduces dependence on specific crops which reduces over production and un-necessary competition. The effect of a fall in price of a commodity may be offset by higher prices of other goods.
6. Setting up or joining or strengthening international commodity agreements/adopting strict quota system, where the quantity to be produced is regulated by fixing quotas so as to avoid over flooding the market or even creating shortages when demand increases. By regulating supply prices are stabilised, besides the commodity agreements improve on the bargaining power of exporters of agricultural products.
7. Establishment of agro-based processing industries to add value to agricultural exports and make them more competitive. Such industries would save the countries from exporting primary products and sell processed products which have higher value and price. Hence reducing price fluctuations.
8. Expansion/ diversification of markets. Exporters with the help of their governments could try to open up new markets in order to reduce the geographical concentration/ selling in the same market. This would reduce flooding of market and price fluctuations.
9. Stabilising costs of production, through subsidising farmers during periods of high costs of production.
10. Educating/sensitising farmers, about price fluctuations to avoid over production after a price rise and under production after a price fall.
11. Use of contract farming/future market arrangement. Farmers should be encouraged to look for market before they start producing to avoid the problems of surpluses or shortages.
12. Operation of a buffer stock. This is a policy where the government through marketing boards buys surplus output during a bumper harvest, stores and resells during shortages in the market. The purpose of a buffer stock is to regulate supply on the market and minimize the effects of changes in supply on market price.

Operation of a buffer stock



The demand curve is inelastic and supply curve is drawn to determine the equilibrium quantity OQ_0 and the equilibrium price OP_0. The expected revenue of the producer is $OQ_0R_0P_0$.

The government expects output OQ_0 to come to the market. However, output OQ_0 may not come on the market since agriculture depends on natural factors. When natural factors are unfavourable less output OQ_1 comes on the market. The price increases to OP_1 and the revenue also increases to $OQ_1T_1P_1$. To stabilize the producer's income, the government employs a unitary elasticity demand curve (rectangular hyperbola) RH. It is drawn passing through point R_0. The major characteristics of a unitary elasticity demand curve is that all the price output combination result into the same amount of revenue. With output OQ_1 the government should ensure a price OP_2, the revenue of the producer is $OQ_1R_1P_2$ which is equal to $OQ_0R_0P_0$ and hence income stabilization. At price OP_2 quantity demanded is OQ_2 and the quantity supplied is OQ_1 and therefore there is a shortage of Q_1Q_2. The government now sells what it had stored.

When conditions are favourable, more output OQ_3 comes onto the market, the price reduces to OP_3 and revenue reduces to $OQ_3T_3P_3$. The government ensures the price OP_4 so as to stabilize the producers' income. At price OP_4 quantity demanded is OQ_4 and quantity supplied is OQ_3. This results into a surplus Q_4Q_3. The revenue of the producer is $OQ_3R_2P_4$ which is equal to $OQ_0R_OP_0$. However, it should be noted that part of the revenue comes from government ($Q_4Q_3R_2T_4$) and the other from consumers $OQ_4T_4P_4$.

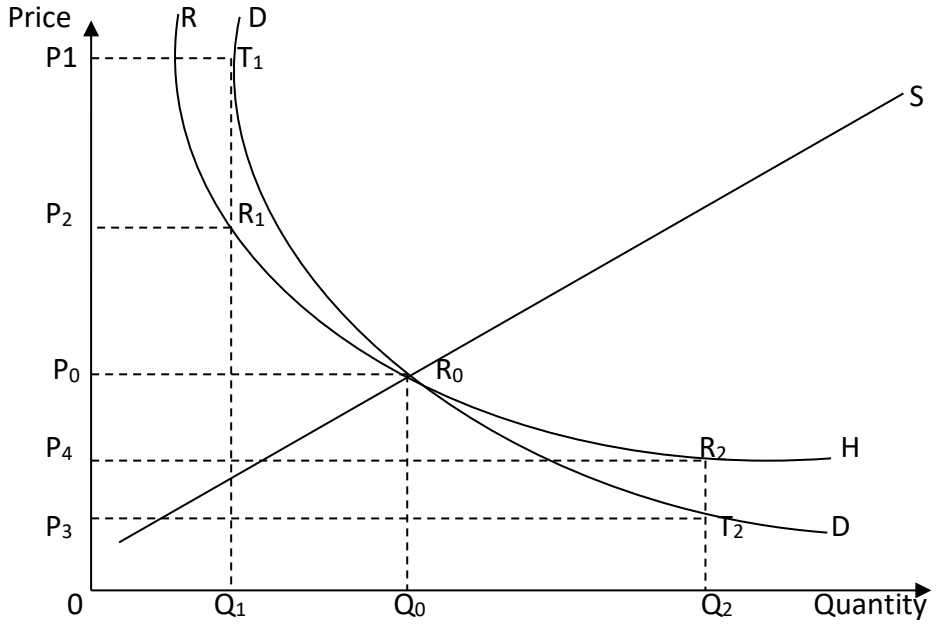
Advantages of buffer stocks

(i) Producers' incomes are stabilized. The producer is able to plan effectively.
(ii) It encourages production because all the produce is bought.
(iii) Consumers benefit from buffer stocks since they do not suffer any shortages.
(iv) It reduces price fluctuation of agricultural products.

Problems of buffer stock

(i) Perishability of products makes storage difficult.
(ii) The buffer stock is expensive to operate since it requires construction of modern storage facilities.
(iii) Government may fail to buy off the surplus if there is a constant bumper harvest, alternatively it may fail to provide if there is persistent scarcity.
(iv) Inadequate data about the demand and supply conditions i.e. it is difficult to determine what amount to buy from the market when there is too much produced or what amount to sell to the market during periods of scarcity.
(v) Corruption and embezzlement of funds meant for buying the produce during surplus periods.

13. **Operation of stabilizing fund policy.** Here the government through a marketing board operates a fund so as to stabilize producers' income. Here government sets a price at which farmers produce should be bought by marketing boards. Such a price should neither be too high nor too low so that when the price in the open market rises, the marketing board would pay a lower price to farmers and keeps the profits made. However, in periods of low prices, farmers are paid a price which is higher than in the world market using the excess that was got in periods of high prices.



When less output comes onto the market, the marketing board buys at a lower price OP_2 and sells at a higher price OP_1. The revenue of the producer is $OQ_1R_1P_2$ which is equal to $OQ_0R_0P_0$. The revenue of the marketing board is $OQ_1T_1P_1$ and therefore it makes a profit of $P_2R_1T_1P_1$.

When more output comes to the market the marketing board buys at a higher price of OP_4 and sells it at a lower price of OP_3. The revenue of the marketing board is $OQ_2T_2P_3$. The producers' revenue is $OQ_2R_2P_4$ and the marketing board makes a loss of $P_3T_2R_2P_4$.

Advantages of stabilizing fund

1. Producers' incomes are stabilized.
2. It generates profits to government.
3. It motivates producers to continue producing in event of bumper harvest government pays farmers a price higher than the world market.

Problems of stabilization of fund

1. The marketing board may be faced by permanent loss. This is because prices in the world market are ever falling. The marketing board may buy the product at a lower price hoping to sell it at a higher price. However, the high price may not exist in the world market.
2. Consumers suffer from shortages since the marketing board does not consider the amount of goods available to consumers but only stability of producers' revenue.
3. Embezzlement of funds is bound to arise; the funds may also be used up for development purposes.

THE COBWEB THEOREM

The cobweb theorem is an economic model used to explain how small economic shocks can become amplified (strengthened) by the behaviour of producers. The amplification is, essentially the result of information failure, where producers base their current output on the average price they obtain in the market during the previous year/season.
This is an illustration of agriculture price fluctuations.

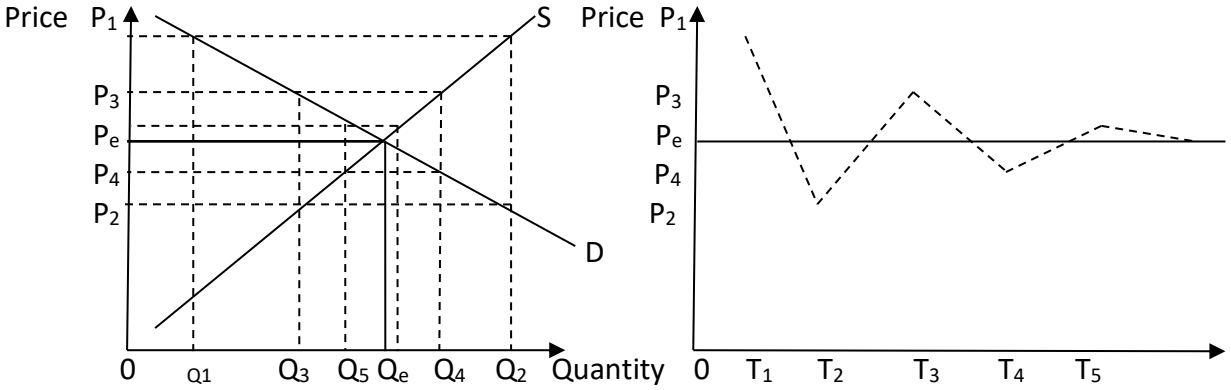
The cobweb theorem is based on the following assumptions.

1. The farmers can't plan their output i.e. they base their production on the ruling market price.
2. Planned output is never equal to actual output.
3. The agricultural products have a long gestation period so there is no quick adjustment to supply.
4. All what is produced is put on the market i.e. no storage facilities.
5. The demand for agriculture products is inelastic.
6. There is neither speculation nor arbitrage (transfer of goods from an area of surplus to an area of scarcity).

From the above assumptions three types of cobwebs are derived

(a) Convergent cobweb

In this type of cobweb, prices fluctuate towards the equilibrium price, this occurs where the demand curve is more price elastic than the supply curve i.e. price elastic demand and price inelastic supply.

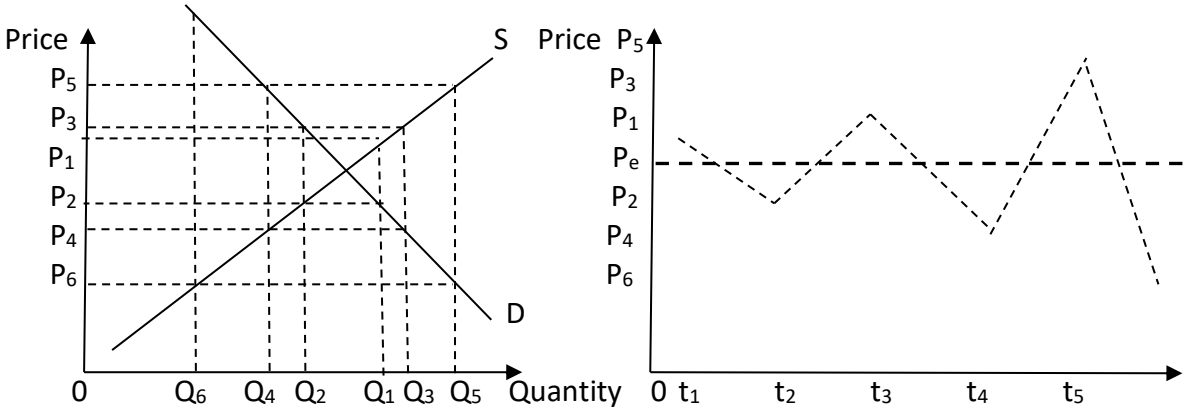


Suppose at one time the amount put on the market is OQ_1, this output will sell at price OP_1. Because of the high price, producers in the next period will plan to produce more, so output OQ_2 is produced, however at output OQ_2 the price reduces to OP_2 which is lower. This disappoints producers, so that in the next period of time they supply less output OQ_3 which will again sell at a high price OP_3 higher than the previous price OP_2

which producers expected. The high price will also induce producers to supply more in the next season in which output OQ_4 is produced which will sell at a lower price OP_4, lower than the expected price OP_3, these adjustments will continue until the equilibrium price is reached where demand is equal to supply.

(b) Divergent cobweb

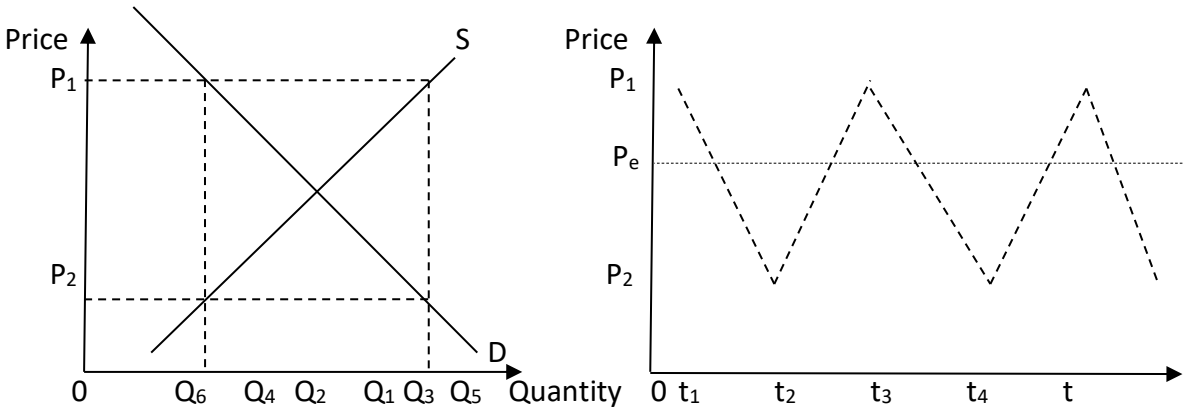
This is sometimes called an explosive cobweb. It occurs when demand is more price inelastic than supply. In this model at successive periods price and quantity is diverting away from the equilibrium.



In the figure, it is assumed that price in the initial period t_o is P_0. Because planned output is never equal to actual output OQ_1 is produced which is sold at OP_1. Farmers believing that this price will prevail in the following period t_2 will produce OQ_2; this output however will be sold at a lower price OP_2. Farmers will be discouraged and will now produce output OQ_3 which will be sold at a higher price OP_3, higher than the previous OP_2. These adjustments continue and the price fluctuations became greater hence moving away from equilibrium.

(c) Regular cobweb.

This occurs when the price elasticity of supply is equal to that of demand. The change in price is proportionate to a change in quantity demanded. Price fluctuates by the same amount on either side of the equilibrium as shown below.



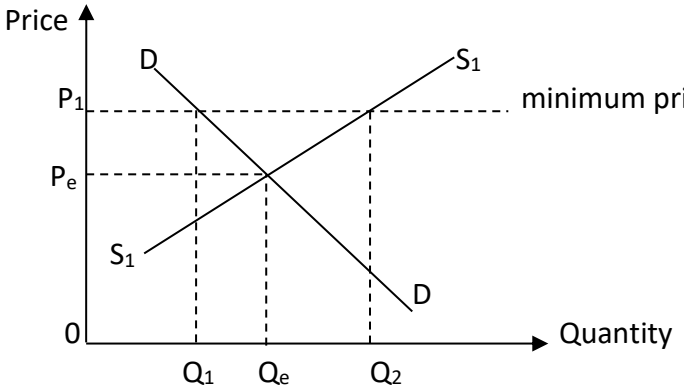
PRICE LEGISILATION (PRICE CONTROL)

This is a situation where government fixes the prices of commodities either above the equilibrium price to protect the producer (Minimum price) or below the equilibrium price to protect the consumer (Maximum price).

MINIMUM PRICE LEGISILATION (PRICE FLOOR)

This is the establishment of a price by government above the equilibrium price to protect producers and it is illegal to buy or sell an item below that price.

Minimum price refers to a legal price set by the government above the equilibrium price to protect producers and it is illegal to buy or sell an item below that price.



Price OP_1 (minimum price) is set above the equilibrium price OP_e which results into excess output in the market, since quantity OQ_1 is demanded and OQ_e is supplied resulting into a surplus of Q_1Q_e Sometimes government buys the surplus output on the market arising from the fixing of a minimum price in order to maintain it, this is called **price support**.

Price support: This is where the government buys the surplus output in the market arising out of fixing the minimum price in order to avoid discouraging producers.

Advantages of minimum price

1. It encourages production. The high minimum price encourages production since producers are assured of high prices leading to increased output levels. Hence in cases where producers are discouraged to produce because of low prices, minimum price encourages them to produce.
2. It enables producers to have stable incomes. Fluctuation of prices tends to destabilize producer incomes, price legislation helps in stabilizing incomes and prices.
3. It encourages exploitation of idle resources because of high prices. The high price offered encourages production which leads to resource exploitation.
4. Minimum price reduces smuggling of goods to neighbouring countries. The high prices offered at home encourage the selling of the products at home hence limiting the smuggling of goods to other countries.
5. It minimizes the exploitation of producers by middlemen who tend to pay producers less than the government legislated price.
6. It helps maintain industrial peace (minimum wage) and minimizes strikes among workers because the wages offered tend to be high enough to enable workers meet their basic needs.
7. It reduces income inequality between agricultural producers and producers in other sectors because producers' incomes are stabilized and high so the gap between the rich and the poor is reduced.
8. Minimum price enables an economy to offset an economic depression or recession by increasing incomes of producers' thereby increasing aggregate demand.
9. Minimum price can be used to discourage the consumption of undesired goods, by making such goods very expensive i.e. offering high minimum price which discourages consumption of such goods.

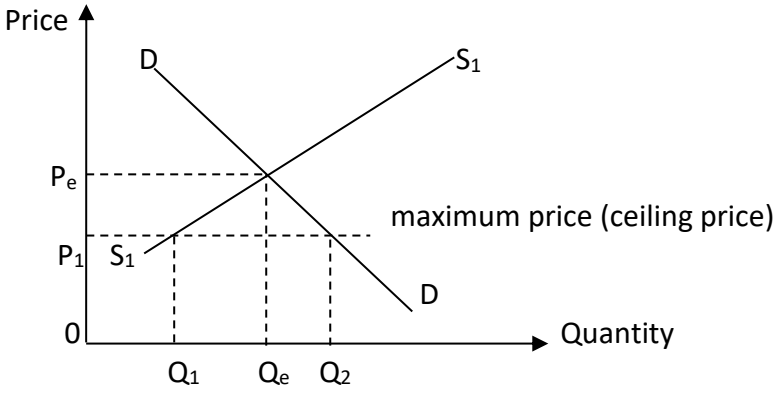
Disadvantages of minimum price

1. It leads to inflation because of the high prices for goods. Besides the high costs of raw materials and high wages lead to increased costs of production which may trigger off inflation.
2. Minimum price creates problems of surplus output which leads to storage problems. Producers and government have to keep storage facilities to avoid losing the output with the hope that it may be sold at later dates. Failure to put up the storage facilities may mean losing the output or selling it at very low uneconomical prices.
3. A high minimum price discourages the consumption of some goods because of the high prices at which the goods are being sold. This leads to reduction in economic welfare as consumers are forced to do without consuming some commodities because of the high price.
4. Enforcing a minimum price is expensive for government because it requires supervision. This leads to high administrative costs which have to be incurred by government to do a job that the price mechanism could do. Moreover, such personnel may not be very efficient in enforcing a minimum price.
5. High minimum prices increase on the production costs of goods whose raw material cost prices have been set above the equilibrium. This is because the cost of raw materials will have risen hence producers incur high costs of production and reduced profits. This reduces incentive for the private entrepreneurs and slows down economic growth.
6. Minimum price legislation causes excess supply of labour in the labour market leading to unemployment. Employers tend to react by reducing the number of workers employed while more workers are willing to offer labour at the going wage rate. If government can't employ the excess labour, then workers will stay unemployed. Besides the high wages may prompt employers to use capital intensive techniques of production making more labour unemployed.

MAXIMUM PRICE LEGISILATION (PRICE CEILING)

This is the establishment of a price by government below the equilibrium price to protect consumers and it is illegal to sell or buy above the maximum price.

Maximum price refers to a legal price set by the government below the equilibrium price to protect consumers and it is illegal to sell or buy above the maximum price.



At maximum price OP_1 demand is more than supply by Q_2Q_1 implying there is a shortage in the
market because of the excess demand over supply.

Merits of maximum price

1. It protects the consumer from being exploited by producers since low and fair prices are charged. Consumers are able to consume at relatively low prices set by government instead of the high price set by the forces of demand and supply.
2. It helps fight inflation by suppressing prices not to go beyond the established ceiling. Both sellers and buyers know the price at which to exchange commodities at a given time. Price fluctuations are therefore done away with.
3. It helps make commodities available to all groups of people in the economy including the poor. Maximum price legislation helps in improving the standards of living of the poor because they are able to consume the goods they would not have consumed. This is advantageous for essential and merit goods.
4. It helps control monopoly power by setting a very low price which reduces on monopoly profits. Hence all monopoly power derived from earning supernormal profits is curtailed hence making it easier to control monopoly firms in the economy.

Demerits of maximum price

1. It discourages producers from producing because of low prices. Private entrepreneurs always aim at profit maximisation the establishment of a maximum price means reduced profits, hence discouraging production.
2. Leads to trade mal-practices e.g. hoarding, black market etc. Because of low prices suppliers may decide to hoard the commodities and sell them expensively.
   NB: **A black market** is a situation where producers / sellers sell goods illegally at a price higher than the price fixed by the government.
3. Leads to shortages in supply due to increased demand. Maximum price increases demand levels while discouraging suppliers hence shortage in the market.
4. It is expensive for government to enforce a maximum price because of high administrative costs.
5. Leads to production at excess capacity because the maximum price is less profitable making resources underutilized.
6. Leads to unemployment due to reduced investment. Maximum price discourages production and investment, due to the low price some investments close resulting into unemployment