

AS – ECONOMICS (9708)

MICRO

CHAPTER 2

Demand, Supply and Equilibrium

Topics

Topic 1: Demand

Topic 2: Supply

Topic 3: Market Equilibrium

Topic 4: Consumer and Producer Surplus

TOPIC 1: DEMAND

Definition | Demand: It is regarded as the willingness and ability of consumers to buy goods and services at given prices over a certain period of time. The willingness and ability - highlight effective demand and separate it from a want or desire.

1. Law of Demand

Definition: If other things do not change i.e. ceteris paribus, quantity demanded falls as prices rises and vice versa. This marks that demand has an inverse (i.e. negative) relationship with price.

invers

$$P \uparrow \quad Q_d \downarrow$$

$$P \downarrow \quad Q_d \uparrow$$

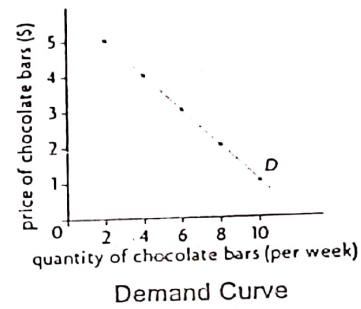
2. Demand Curve

Definition: It is a curve that shows relationship between price and quantity demanded of a product. It helps to highlight the inverse relationship between price and quantity demanded. Taking the price on y-axis and quantity demanded on x-axis, a downward sloping (-ve sloped) curve is known as a demand curve.

Price of chocolate bars (\$)	Quantity of chocolate bars demanded (per week)
5	2
4	4
3	6
2	8
1	10

Demand Schedule

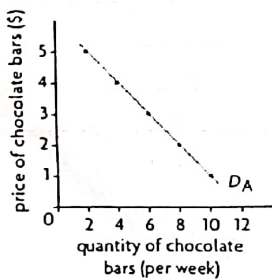
(i) Demand curve for an individual consumer



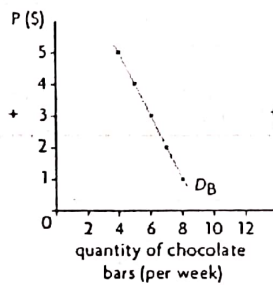
3. Market Demand

Definition: It is the sum of all individual demand at a given price of a product. It can be obtained by adding all the individual demand curves. It is usually flatter than individual demand curves.

(a) Demand of consumer A

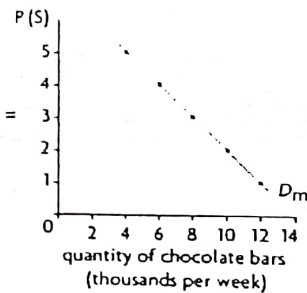


(b) Demand curve of consumer B



+ demands of other consumers in the market

(c) Market demand



demand schedule
step next all
demand
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4. Determinants of Demand

Other than price there are several factors that affect the level of quantity demanded:

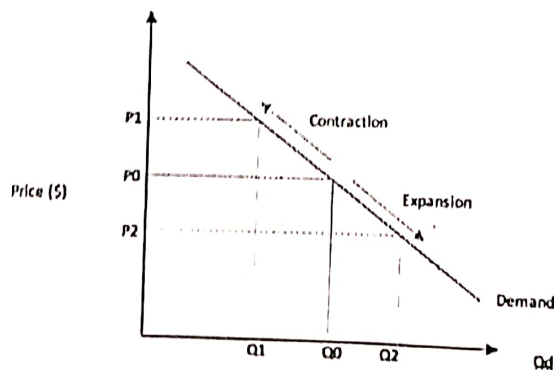
Factor	Description
1. Income of Consumers	Higher the income, higher the demand. This is only valid for normal goods like cars, quality clothing, housing etc. However, it should be noted that when income increases demand for inferior goods fall. These are goods whose demand decrease as the income increase. Example: Poor quality clothing, second hand phones etc.
2. Price of substitutes	Substitutes are alternatively demanded goods. Example Pepsi and Coke. If price of Pepsi goes up, Qd for coke will go up.
3. Price of complements	Complements are jointly demanded goods like car and petrol. If price of petrol goes up, Qd for cars would fall.
4. Level of advertising	If level of advertisement goes up, Qd is likely to increase since more consumers would be informed about the product and would be persuaded to buy the product.
5. Government policies	If sales tax increases on a product it would make it expensive, hence reducing the demand, on the other hand if govt. offers subsidy on a product like electric cars that would make them cheaper hence demand would increase.
6. State of the Economy	If the economy is booming it is likely to increase the demand for goods since consumers would have money to spend on goods and services. However, if the economy is in a recession consumer's incomes are falling and they lack confidence in the economy hence reducing demand.
7. Fashions and Taste	If the product is in fashion the quantity demanded would go up. Examples include smart watches and smart phones are in fashion hence the demand goes up. However, if the product is out of fashion the demand would fall. Example: Old clothing designs.

Non price factor

5. Movement and Shift in Demand

- A Change in Price | Expansion and Contraction

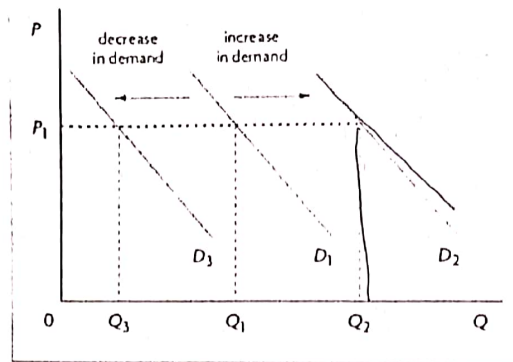
A change in price causes a movement along the same demand curve. A price decrease causes an expansion whereas a price increase causes a contraction on the demand curve.



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- Changes in Non-price factors | Shift inwards and outwards

When the demand for a product changes due to some non-price factors (e.g. fashion, income, price of substitutes etc.) it is known as shift of demand curve. If the demand increases the demand curve shifts rightwards and if the demand decreases the demand curve shifts leftwards.



6. Snob Effect

Definition: For some goods, a concept known as the snob effect may lead to demand curve upward sloping. This is usually in the case of luxury brands that are used to conspicuous consumption and where high price leads to more status symbol. Example: Rolex watch, luxury houses etc.

AATIK TASNEEM

TOPIC 2: SUPPLY

Definition | Supply: It is regarded as the willingness and the ability of sellers to sell goods and services at various prices over a period of time.

1. Law of Supply

Definition: If other things do not change i.e. *ceteris paribus*, higher would be the quantity supplied at higher prices and vice versa. This marks that supply has a positive relationship with price.

$P \uparrow \rightarrow Q_s \uparrow$
 $P \downarrow \rightarrow Q_s \downarrow$

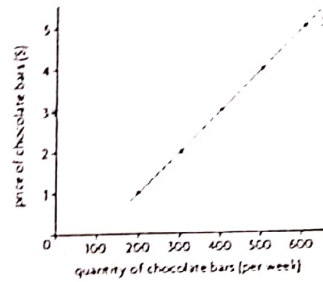
po + ve

2. Supply Curve

Definition: It is a curve that shows relationship between price and quantity supplied of a product. Taking the price on the y-axis and quantity supplied on the x-axis, an upward sloping (+ve sloped) curve is known as supply curve.

5	600
4	500
3	400
2	300
1	200

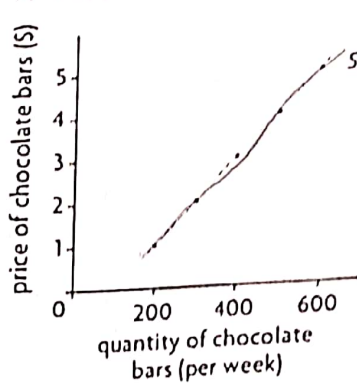
Table 2.2 Supply schedule for a firm



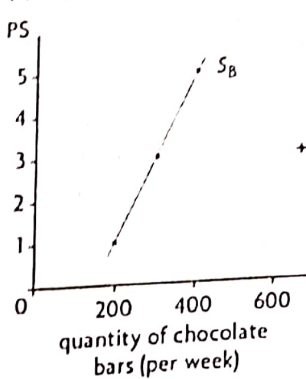
3. Market Supply

Definition: It is regarded as the sum of all producer's supply at a given price of a product. It can be derived from adding all the sellers supply curve.

(a) Supply of firm A

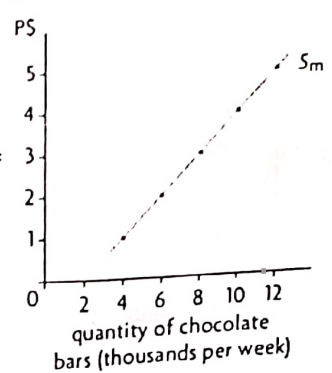


(b) Supply of firm B



+ supplies of other firms in the market =

(c) Market supply



4. Determinants of Supply

Cost

Factor	Description
1. Cost of Production	If a factor price rises, production costs increase, production becomes less profitable and the firm produces less; the supply curve shifts to the left. If a factor price falls, costs of production fall, production becomes more profitable and the firm produces more; the supply curve shifts to the right.
2. Technology	A new improved technology lowers costs of production, thus making production more profitable. Supply increases and the supply curve shifts to the right. In the (less likely) event that a firm uses a less productive technology, costs of production increase and the supply curve shifts leftward.
3. Competitive supply	Competitive supply of two or more products refers to production of one or the other by a firm; the goods compete for the use of the same resources, and producing more of one means producing less of the other. For example, a farmer, who can grow wheat or corn, chooses to grow wheat. If the price of corn increases, the farmer may switch to corn production as this is now more profitable, resulting in a fall in wheat supply and a leftward shift of the supply curve. A fall in the price of corn results in.
4. Joint supply	Joint supply of two or more products refers to production of goods that are derived from a single product, so that it is not possible to produce more of one without producing more of the other. For example, butter and skimmed milk are both produced from whole milk; petrol (gasoline), diesel oil and heating oil are all produced from crude oil. This means that an increase in the price of one leads to an increase in its quantity supplied and also to an increase in supply of the other joint product(s).
5. Producer (firm) expectations	If firms expect the price of their product to rise, they may withhold some of their current supply from the market (not offer it for sale), with the expectation that they will be able to sell it at the higher price in the future; in this case, a fall in supply in the present results, and hence a leftward shift in the supply curve. If the expectation is that the price of their product will fall, they increase their supply in the present to take advantage of the current higher price, and hence there is a rightward shift in the supply curve.
6. Taxes (indirect taxes or taxes on profits).	Firms treat taxes as if they were costs of production. Therefore, the imposition of a new tax or the increase of an existing tax represents an increase in production costs, so supply will fall and the supply curve shifts to the left. The elimination of a tax or a decrease in an existing tax represents a fall in production costs; supply increases and the supply curve shifts to the right.
7. Subsidies	A subsidy is a payment made to the firm by the government, and so has the opposite effect of a tax. The introduction of a subsidy or an increase in an existing subsidy is equivalent to a fall in production costs, and gives rise to a rightward shift in the supply curve, while the elimination of a subsidy or a decrease in a subsidy leads to a leftward shift in the supply curve.
8. The number of firms	An increase in the number of firms producing the good increases supply and gives rise to a rightward shift in the supply curve; a decrease in the number of firms decreases supply and produces a leftward shift. This follows from the fact that market supply is the sum of all individual supplies.
9. 'Shocks', or sudden unpredictable events	Sudden, unpredictable events, called 'shocks', can affect supply, such as weather conditions in the case of agricultural products, war, or natural/man-made catastrophes.

Supply is sudden events in the market like
 direct change, unfavorable weather, war, etc.
 lead to a sudden drop in the supply

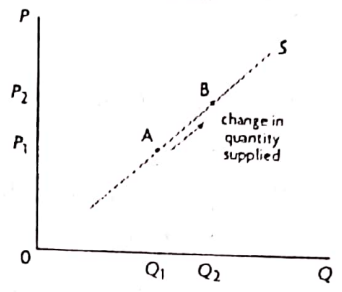
Movement and Shift in Supply

1. A Change in Price | Expansion and Contraction

A change in price causes a movement along the same supply curve. A price decrease causes a contraction, where as a price increase causes an expansion in the demand curve.

Supply

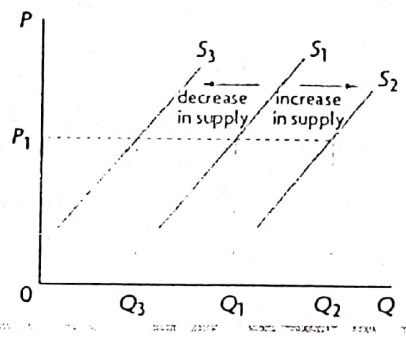
(a) A movement along the supply curve, caused by a change in price, is called a 'change in quantity supplied'



2. Changes in Non-price factors | Shift inwards and outwards

When the demand for a product changes due to some non-price factors (e.g. cost of production, weather, taxes, subsidies etc.) it is known as shift of supply curve. If the supply increases the supply curve shifts rightwards and if the supply decreases the demand curve shifts leftwards.

(b) A shift of the supply curve, caused by a change in a determinant of supply, is called a 'change in supply'



TOPIC 3: MARKET EQUILIBRIUM

Definition | Market: It is a set of arrangement that allows transactions to take place. In other words, it is an arrangement where commodities are traded, or the buyers and sellers meet.

Definition | Equilibrium: It is defined as a state of balance between different forces, such that there is no tendency to change.

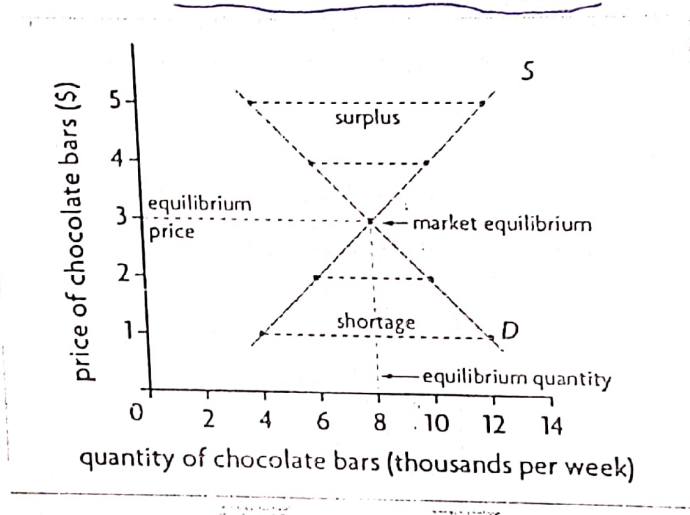
Definition | Disequilibrium: A situation where demand and supply are not equal.

$$Q_d = Q_s$$

Definition | Market Equilibrium: When quantity demanded is equal to quantity supplied, there is market equilibrium; the forces of supply and demand are in balance, and there is no tendency for the price to change.

$$Q_d = Q_s$$

Graphically it is a position where demand curve intersects supply curve.



1. CHANGES IN EQUILIBRIUM

The equilibrium can change due to only THREE changes.

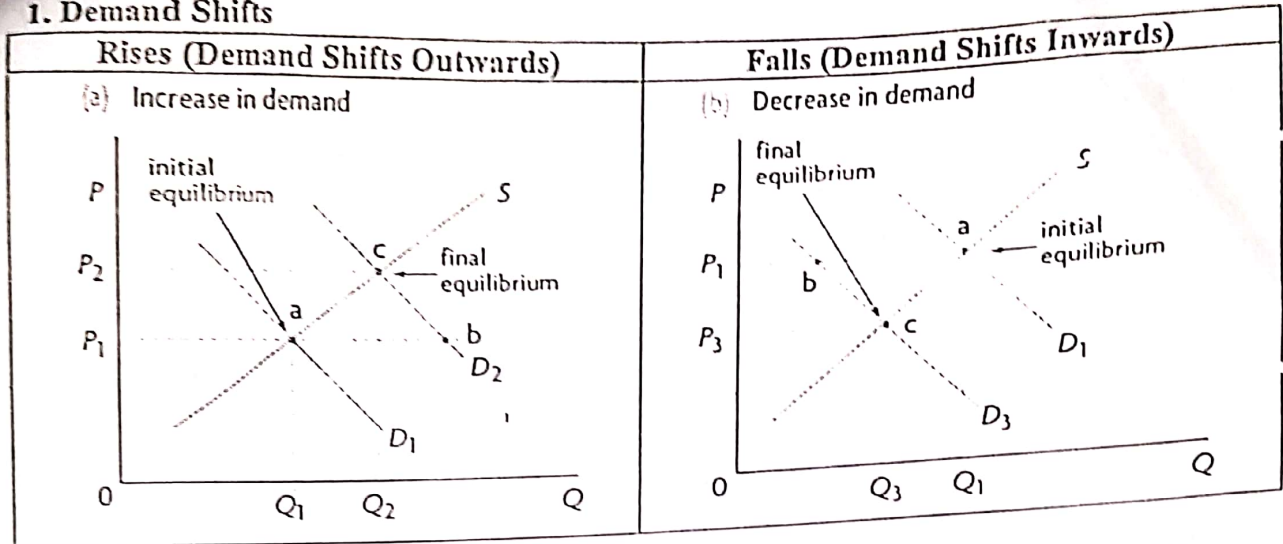
1. Demand shifts
2. Supply Shifts
3. Simultaneously demand and supply shifts

(6) mark

(4) next

(MCQs)

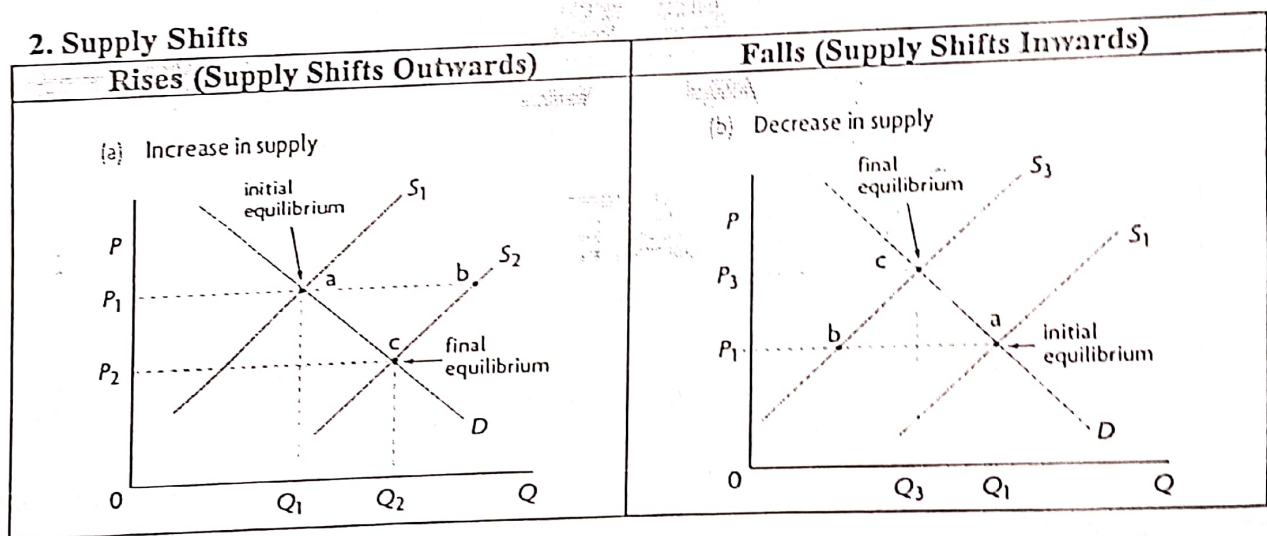
1. Demand Shifts



In diagram 1 suppose consumer income increased. This caused the demand curve to shift from D_1 to D_2 . This caused a shortage at price P_1 , hence price needed to be increased. This establishes the new equilibrium at point C at Price P_2 .

In diagram 2 suppose a good is out of fashion. This caused the demand curve to shift from D_1 to D_3 . This caused a surplus at price P_1 , hence price needed to be decreased until demand equaled to supply. This establishes the new equilibrium at C , at Price P_3 .

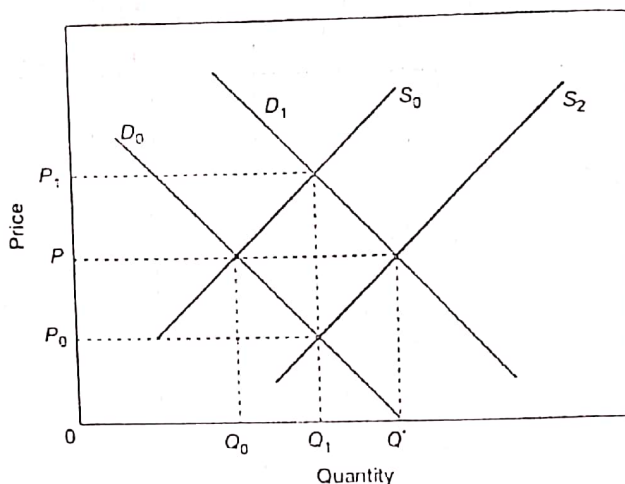
2. Supply Shifts



In diagram 1 suppose govt. increased subsidies. This caused the supply curve to shift from S_0 to S_1 . This caused a surplus at price P_0 , hence price needed to be decreased. This establishes the new equilibrium at E_1 at Price P_1 .

In diagram 2 suppose fuel costs increased. This caused the supply curve to shift from S_0 to S_2 . This caused a shortage at price P_0 , hence price needed to be increased until demand equaled to supply. This establishes the new equilibrium at E_2 , at Price P_2 .

3. Simultaneously demand and supply shifts



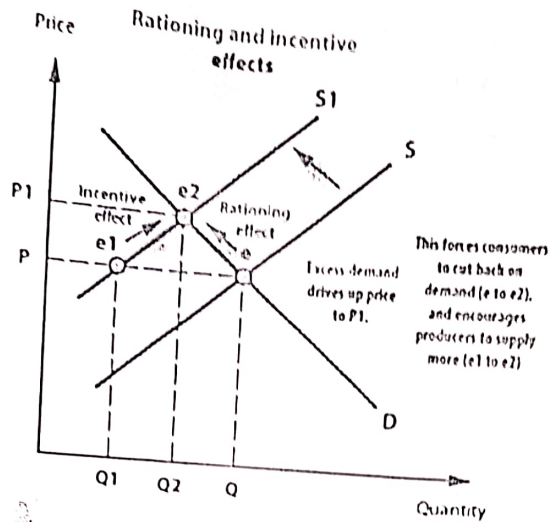
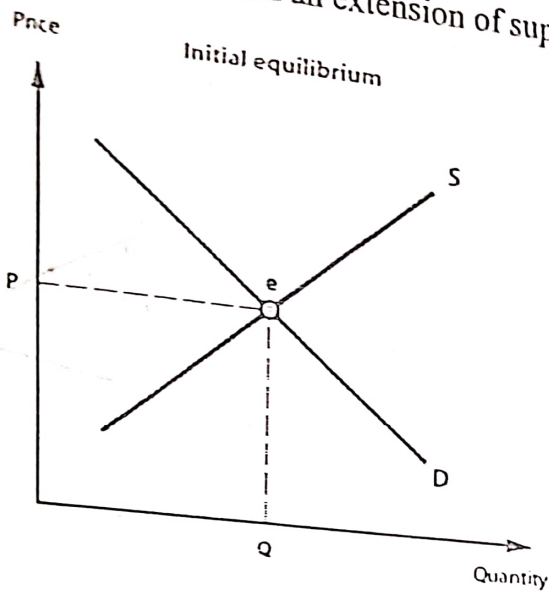
Sometimes in an economy both the demand and supply shift simultaneously. Example: The government gave a subsidy on the production of electric cars, which resulted in the supply to shift from S_0 to S_2 . Furthermore, the advertisement of electric cars and the consumer awareness increased about environmental friendly cars resulted in the demand to shift from D_0 to D_1 . This resulted in the equilibrium quantity to shift from Q_0 to Q^* .

2. THE WORKING OF THE PRICE MECHANISM

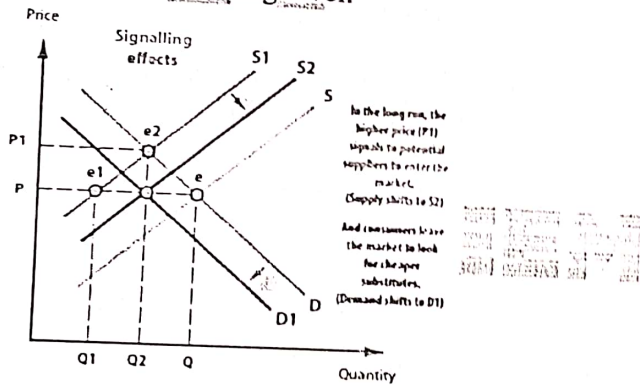
Definition | Price Mechanism: Price mechanism refers to the system where the forces of demand and supply determine the prices of commodities and the changes therein. It is the buyers and sellers who actually determine the price of a commodity. A concept of **invisible hand** which operates in a competitive market through the pursuit of self-interest to allocate scarce resources in society's best interest. There are **THREE** main functions of price mechanism:

Functions	Description
1. Rationing	Due to scarce resources firms increase prices to eliminate excess of demand. The increase in price discourages demand and consequently rations resources. For example, plane ticket prices might rise as seats are sold, because spaces are running out. This is a disincentive to some consumers to purchase the tickets, which rations the tickets. The rationing function of a price rise is associated with a contraction of demand along the demand curve.
2. Signaling <i>To producer and consumer</i> <i>non-price factors</i>	Price changes send contrasting messages to consumers and producers about whether to enter or leave a market. Rising prices give a signal to consumers to reduce demand or withdraw from a market completely, and they give a signal to potential producers to enter a market. Conversely, falling prices give a positive message to consumers to enter a market while sending a negative signal to producers to leave a market. The signaling function is associated with shifts in demand and supply curves.
3. Incentives	An incentive is something that motivates a producer or consumer to follow a course of action or to change behavior. Higher prices provide an incentive to existing producers to supply more because they provide the possibility of more revenue and increased profits. The incentive function of a price rise is associated with an extension of supply along the existing supply curve.

A market starts with a stable equilibrium, where demand equals supply. A supply shock reduces supply at each and every price. This creates an excess of demand at the existing price. The price is now forced up to a new price (P_1) where the market clears. At the new price, demand and supply are brought into equilibrium through a contraction of demand (the rationing effect) and an extension of supply (the incentive effect).



In the long run, the higher price sends out signals, either for existing firms to introduce better production methods or by new firms entering the market. This causes the supply curve to shift to the right. Similarly some consumers might have left the market to look for cheaper goods. Eventually, price may return to its existing level.

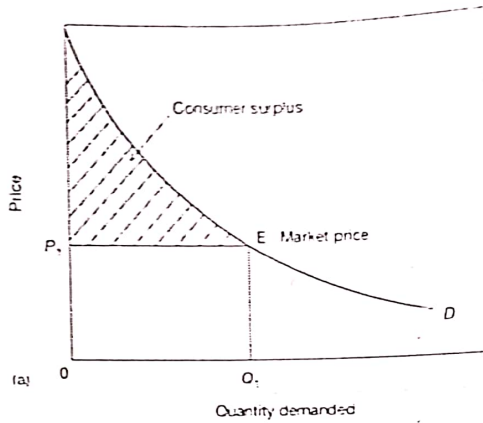


In conclusion, the price mechanism is said to work effectively through a combination of rationing, incentives and signals.

TOPIC 4: CONSUMER AND PRODUCER SURPLUS

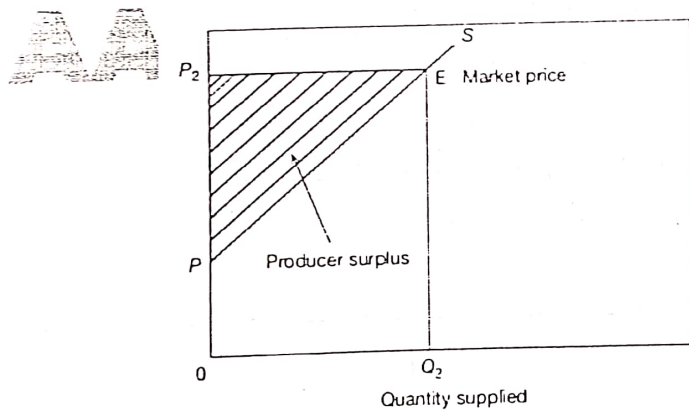
1. CONSUMER SURPLUS

Definition | Consumer Surplus: Consumer surplus is defined as the highest price consumers are willing to pay for a good minus the price actually paid. Consumer surplus is shown in the diagram below as the shaded area between the demand (or marginal benefit) curve, and the equilibrium price P_1 .

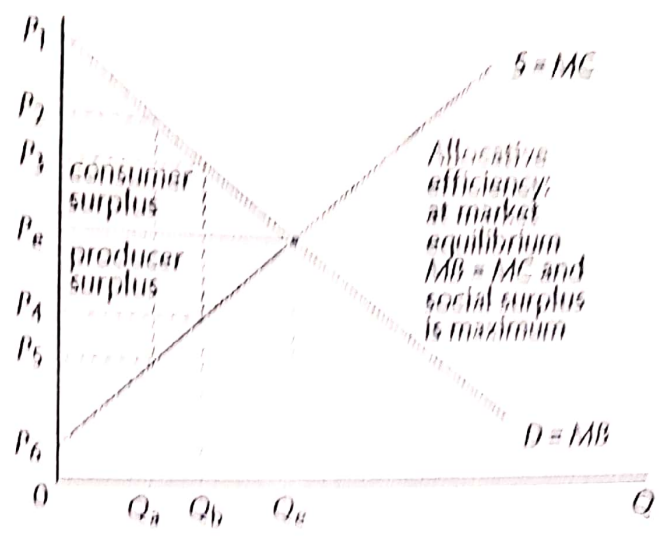


2. PRODUCER SURPLUS

Definition | Producer Surplus: Producer surplus is defined as the price received by firms for selling their good minus the lowest price that they are willing to accept to produce the good. The lowest price they are willing to accept represents the firms' cost of producing an extra unit of the good (or marginal cost), and is shown by the supply curve. The logic behind this is very simple: the lowest price that the firm is willing to accept must be just enough to cover its cost of producing each extra unit; this cost is known as marginal cost, abbreviated as MC. Producer surplus is shown as the area above the firms' supply curve and below the price received by firms, P_2 , which is determined in the market.



when we combine the above two diagrams we get:



How consumer and Producer surplus changes with the market price

Change in Consumer Surplus	Change in Producer Surplus
<p>From the diagram above we see that when the market price shifts from P1 to P2 the consumer surplus shrinks.</p> <p>Market Price \uparrow Consumer Surplus \downarrow Market Price \downarrow Consumer Surplus \uparrow</p>	<p>From the diagram above we see that when the market price shifts from P2 to P3 the producer surplus increase. The increase is shown by the grey region.</p> <p>Market Price \uparrow Producer Surplus \uparrow Market Price \downarrow Producer Surplus \downarrow</p>