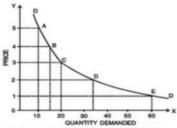
DEMAND SCHEDULE

A demand schedule is a table which presents the different prices of a good and the corresponding quantity demanded per unit of time.

ANA	Price (Rs)	Qty Demanded (in units)
A	5	10
В	4	15
С	3	20
D	2	35
E	1	60

DEMAND CURVE

A demand curve is a graphical presentation of the demand schedule. It is obtained by plotting Price on Y-axis & Quantity Demanded on X-axis.



- The market demand, is the total quantity that all consumers of a commodity are willing to buy per unit of time at a given price, all other things remaining constant.
- A market demand curve is a graphical presentation of the market demand schedule. It is obtained by plotting Price on Y-axis & Total Market Demanded on X-axis.

MV Sir

MOVEMENTS ON THE DEMAND CURVE

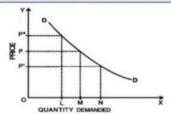
Expansion of Demand

When the demand of a good increase as a result of an decrease in its price, we say that there is an "increase in the quantity demanded" or there is a "downward movement on the demand curve" or "expansion of demand".

Contraction of Demand

MV Sir

When the demand of a good decrease as a result of an increase in its price, we say that there is an "decrease in the quantity demanded" or there is a the demand curve" "contraction of demand".

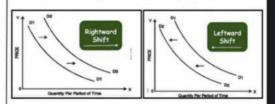


SHIFTS IN THE DEMAND CURVE

Increase in Demand

When the demand curve bodily shifts towards the right as a result of a change in one of the factors that influence the quantity demanded other than the commodity's own price, we say there is an increase in demand.

> <u>Decrease in Demand</u>
When factors other than price cause the <u>demand</u> curve to shift to the left, we call it decrease in demand



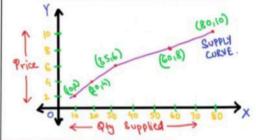
SUPPLY SCHEDULE

A supply schedule is the tabular presentation of the law of supply. It shows the different prices of a commodity and the corresponding quantities that suppliers are willing to offer for sale.

	Price (Rs)	Qty Supplied (in units)
A	2	10
В	4	20
С	6	35
D	8	60
Е	10	80

SUPPLY CURVE

A supply curve is the graphical presentation of supply schedule. Here price is plotted on the Y-axis & quantity supplied on the X-axis.



- The market supply, like market demand, is the sum of supplies of a commodity made by all individual firms or their supply agencies.
- The market supply curve for 'X' can be obtained by adding horizontally the supply curves of various firms.

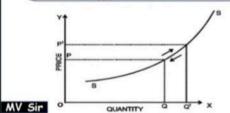
MV Sir

MOVEMENTS ON THE SUPPLY CURVE

Expansion of Supply

When the supply of a good increase as a result of an increase in its price, we say that there is an "increase in the quantity supplied" or there is a "upward movement on the supply curve" or "expansion of supply".

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When the supply of a good decrease as a result of an decrease in its price, we say that there is an "decrease in the quantity supplied" or there is a "decrease in the quantity supplied" or there is a movement on the supply curve" or "downward movement "contraction of supply"

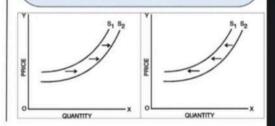


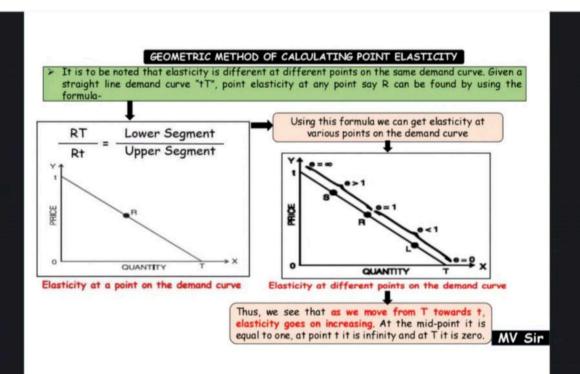
SHIFTS IN THE SUPPLY CURVE

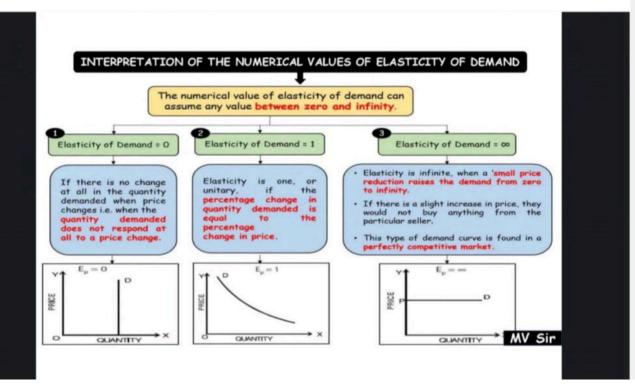
Increase in Supply

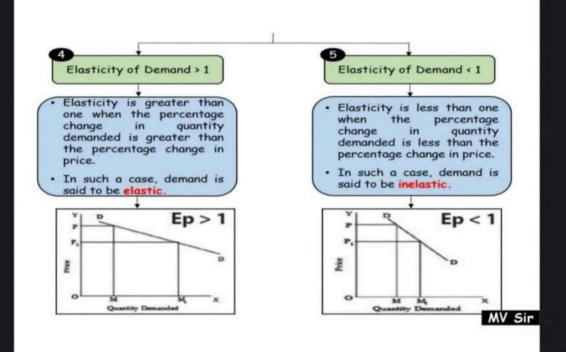
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Decrease in Supply When these factors cause the supply curve to shift to the left, we call it decrease in supply











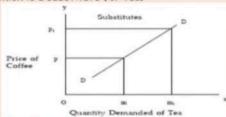
- The demand for a particular commodity may change due to changes in the prices of related goods. These related goods may be either complementary goods or substitute goods. This type of relationship is studied under 'Cross Demand'.
- Cross demand refers to the quantities of a commodity or service which will be purchased with reference to changes in price, not of that particular commodity, but of other inter-related commodities, other things remaining the same.
- It may be defined as the quantities of a commodity that consumers buy per unit of time, at different prices of a 'related article', 'other things remaining the same'. The assumption 'other things remaining the same' means that the income of the consumer and also the price of the commodity in question will remain constant.

Substitute Products

Complementary Products

Substitute Products

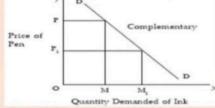
- In the case of substitute commodities, the cross demand curve slopes upwards (i.e. positively) showing that more quantities of a commodity, will be demanded whenever there is a rise in the price of a substitute commodity.
- > In below figure, the quantity demanded of tea is given on the X axis. Y axis represents the price of coffee which is a substitute for tea.



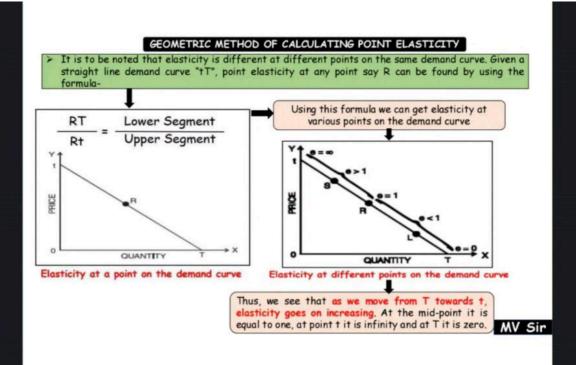
When the price of coffee increases, due to the operation of the law of demand, the demand for coffee falls. The consumers will substitute tea in the place of coffee. The price of tea is assumed to be constant. Therefore, whenever there is an increase in the price of one commodity, the demand for the substitute commodity will increase.
MV Sir

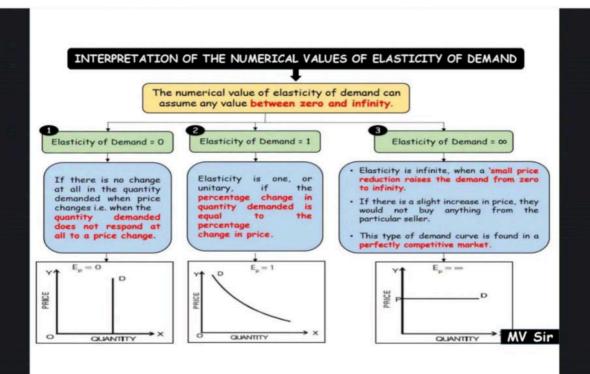
Complimentary Products

> In the case of complementary goods, as shown in the figure below, a change in the price of a good will have an opposite reaction on the demand for the other commodity which is closely related or complementary.



- For instance, an increase in demand for pen will necessarily increase the demand for ink. The same is the case with complementary goods such as bread and butter; car and petrol electricity and electrical gadgets etc.
- Whenever there is a fall in the demand for fountain pens due to a rise in prices of fountain pens, the demand for ink will fall, not because the price of ink has gone up, but because the price of fountain pen has gone up. So, we find that there is an inverse relationship between price of a commodity and the demand for its complementary good (other things remaining the same).





Elasticity of Demand > 1 Elasticity of Demand < 1 Elasticity is greater than one when the percentage Elasticity is less than one when the percentage percentage change in quantity change in quantity demanded is greater than demanded is less than the the percentage change in percentage change in price. In such a case, demand is said to be inelastic. In such a case, demand is said to be elastic. Ep > 1Ep < 1P ž Price MV Sir

CROSS ELASTICITY OF DEMAND

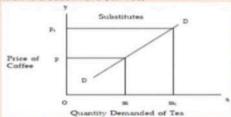
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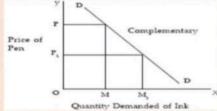
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 MV Sir

CROSS ELASTICITY OF DEMAND

> A change in the demand for one good in response to a change in the price of another good represents cross elasticity of demand of the former good for the latter good. Here, we consider the effect of changes in relative prices within a market on the pattern of demand.

> % Change in Price of Y

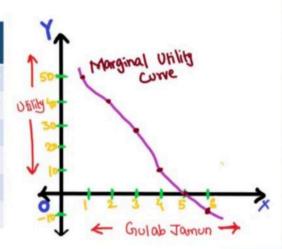
$$\mathsf{Ec} = \frac{\triangle \mathsf{Q}_\mathsf{X}}{\mathsf{Q}_\mathsf{X}} \times \frac{\mathsf{P}_\mathsf{Y}}{\triangle \mathsf{P}_\mathsf{Y}} = \frac{\triangle \mathsf{Q}_\mathsf{X}}{\triangle \mathsf{P}_\mathsf{Y}} \times \frac{\mathsf{P}_\mathsf{Y}}{\mathsf{Q}_\mathsf{X}}$$

Where, Ec = Cross Elasticity
Qx = Original Quantity of Commodity X
Py = Original Price of Commodity Y

MV Sir

Marginal Utility Curve

<i>G</i> ulab Jamun	Marginal Utility (MU) (in Utils)	Total Utility (TU) (in Utils)
1st Piece	50	50
2 nd Piece	40	90
3rd Piece	28	118
4th Piece	10	128
5th Piece	0	128
6th Piece	-5	123



Consumer Surplus

MV Sir

MRS

6

2

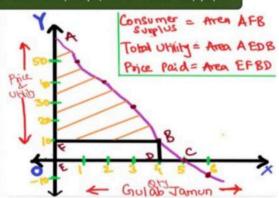
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MV Sir

<u>Alfred Marshall</u> defined the concept of consumer's surplus as the "excess of the price which a consumer would be willing to pay rather than go without a thing over that which he actually does pay is called consumer's surplus."

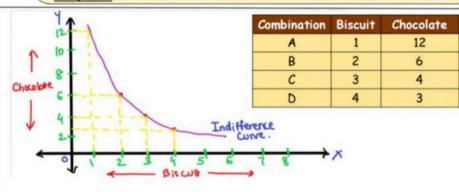
Consumer's Surplus = what a consumer is ready to pay - what he actually pays.

<i>G</i> ulab Jamun	Marginal Utility (in Utils)	Price (Rs)	Consumer Surplus
1st Piece	50	10	40
2 nd Piece	40	10	30
3rd Piece	28	10	18
4th Piece	10	10	0
5 th Piece	0	10	
6th Piece	-5	10	



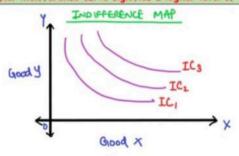
INDIFFERENCE CURVE

- An indifference curve is a curve which represents all those combinations of <u>two goods</u> which give same satisfaction to the consumer.
- > Since all the combinations on an indifference curve give equal satisfaction to the consumer, the consumer is indifferent among them.
- If a consumer equally prefers two product bundles, then the consumer is indifferent between the two bundles. An Indifference curve is also called iso- utility curve or equal utility curve.



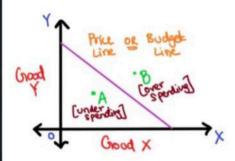
INDIFFERENCE MAP

- An Indifference map represents a collection of many indifference curves where each curve represents a certain level of satisfaction. In short, a set of indifference curves is called an indifference map.
- > An indifference map depicts the complete picture of consumer's tastes and preferences.
- It should be noted that while the consumer is indifferent among the combinations lying on the same indifference curve, he certainly prefers the combinations on the higher indifference curve to the combinations lying on a lower indifference curve because a higher indifference curve signifies a higher level of satisfaction.



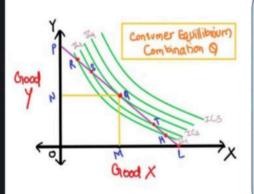
MV Sir

BUDGET LINE

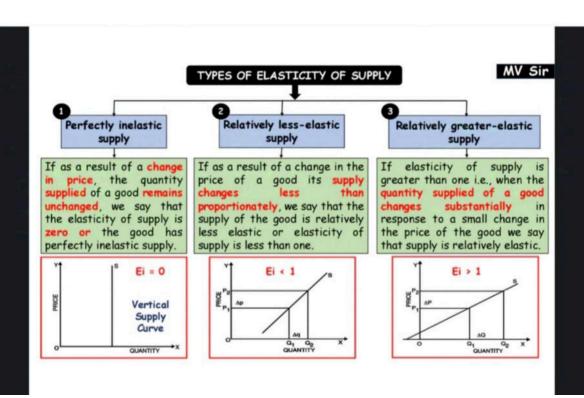


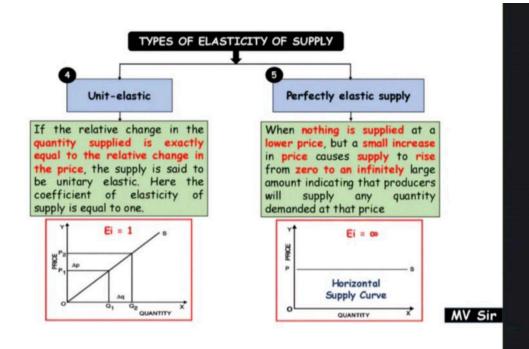
- The budget constraint can be explained by the budget line or price line.
- A budget line shows all those combinations of two goods which the consumer can buy spending his given money income on the two goods at their given prices.
- All those combinations which are within the reach of the consumer (assuming that he spends all his money income) will lie on the budget line.
- It should be noted that any point autside the given price line, say B, will be beyond the reach of the consumer and any combination lying within the line, say A, shows under spending by the consumer.
- This slope of budget line is equal to 'Price Ratio' of two goods, i.e. Px / Py

CONSUMER'S EQUILLIBRIUM



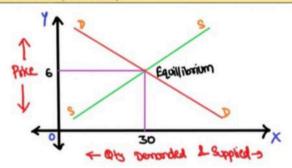
- IC1, IC2, IC3, IC4 and IC5 are shown together with budget line PL for good X and good Y. Every combination on the budget line PL costs the same. Thus combinations R, S, Q, T and H cost the same to the consumer.
- The consumer's aim is to maximise his satisfaction and for this, he will try to reach the highest indifference curve. Since there is a budget constraint, he will be forced to remain on the given budget line, that is he will have to choose combinations from among only those which lie on the given price line.
- Combination Q is the best choice because this combination lies not only on his budget line but also puts him on the highest possible indifference curve i.e., IC3. The consumer can very well wish to reach IC4 or IC5, but these indifference curves are beyond his reach given his money income. Thus, the consumer will be at equilibrium at point Q on IC3.
- We notice that at this point, his budget line PL is tangent to the indifference curve IC3. In this equilibrium position (at Q), the consumer will buy OM of X and ON of Y.

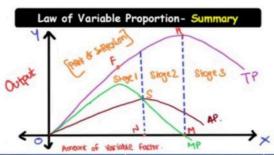




EQUILLIBRIUM PRICE

- > Equilibrium refers to a market situation where quantity demanded is equal to quantity supplied.
- > The intersection of demand and supply determines the equilibrium price. At this price the amount that the buyers want to buy is equal to the amount that sellers want to sell.
- Only at the equilibrium price, both the buyers and sellers are satisfied. Equilibrium price is also called market clearing price.
- The determination of market price is the central theme of micro economic analysis. Hence, micro-economic theory is also called price theory.

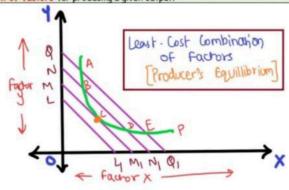




Phon 3	Stages TP		MP	AP		
1	Increasing Returns	TP increases at increasing rate till POI, After that it increases with decreasing rate.	MP rises & is maximum corresponding to POI, and the falls. MP > AP, throughout.	AP is rising. Stage ends= AP is max & AP = MP		
2	Diminshing Returns	TP increases with decreasing rate Stage ends= TP is max.	 MP is decreasing but positive. Stage ends= MP is 0 	AP is decreasing but positive.		
3	Negative Returns	TP is decreasing	 MP is decreasing & negative. 	AP is decreasing but positive. MV Si		

PRODUCTION OPTIMISATION

- Suppose the firm has decided to produce 1,000 units (represented by iso-quant P). These units can be produced by any factor combination lying on P such as A, B, C, D, E, etc. The cost of producing 1,000 units would be minimum at the factor combination represented by point C where the iso-cost line MM1 is tangent to the given isoquant P.
- > At all other points such as A, B, D, E the cost is more as these points lie on higher isocost lines compared to MM1.
- > It is thus clear that the tangency point of the given isoquant with an isocost line represents the least cost combination of factors for producing a given output.



VARIABLE FACTOR & VARIABLE COST

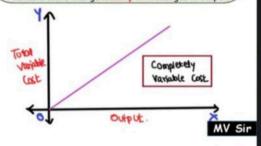
Variable Factors

A firm can readily employ more workers if it has to increase output. Similarly, it can purchase more raw materials if it has to expand production. Such factors which can be easily varied with a change in the level of output are called variable factors.



Variable Cost

- Variable costs are those costs which change with changes in output.
- These costs include payments such as wages of casual labour employed, prices of raw material, fuel and power used, transportation cost etc.
- If a firm shuts down for a short period, it may not use the variable factors of production and therefore, will not therefore incur any variable cost.
- Variable cost curve drawn under the assumption that variable costs change linearly with changes in output.



FIXED FACTOR & FIXED COST

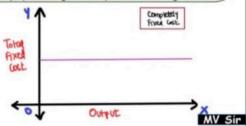
Fixed Factors

- Some factors such as building, capital equipment, or top management team which cannot be so easily varied.
- It takes time to install new machinery. Similarly, it takes time to build a new factory. Such factors which cannot be readily varied and require a longer period to adjust are called fixed factors.



Fixed Costs

- Fixed costs are those costs which are independent of output, i.e., they do not change with changes in output.
- These costs are a "fixed amount" which are incurred by a firm in the short run, whether the output is small or large.
- Even if the firm closes down for some time in the short run but remains in business, these costs have to be borne by it.
- Fixed costs include such charges as contractual rent, insurance fee, property taxes, interest on capital employed, managers' salary, watchman's wages etc.



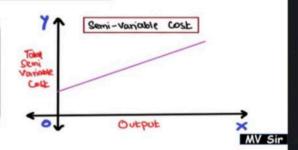
SHORT RUN Vs LONG RUN

- Short run is a period of time in which output can be increased or decreased by changing only the amount of variable factors such as, labour, raw materials, etc. In the short run, quantities of fixed factors cannot be varied (remain unaltered) in accordance with changes in output.
- > On the other hand, long run is a period of time in which the quantities of all factors may be varied. In other words, all factors become variable in the long run.

SEMI - VARIABLE COST

Semi - Variable Cost

- There are some costs which are neither perfectly variable, nor absolutely fixed in relation to the changes in the size of output.
- These are known as semi-variable costs. Example: Electricity charges include both a fixed charge and a charge based on consumption, Postpaid Telephone Bill etc

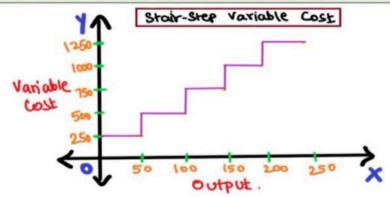


MV Sir

STAIR-STEP VARIABLE COST

Stair-step variable cost

- > There are some costs which may increase in a stair-step fashion, i.e., they remain fixed over certain range of output; but suddenly jump to a new higher level when output goes beyond a given limit.
- E.g. One box which can accommodate only 50 chocolates. Cost per Box= Rs 250. For 70 or 80 or 90 chocolates, 2 boxes will be required.



SHORT RUN TOTAL COSTS

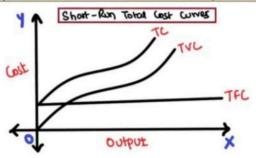
TC = TFC + TVC

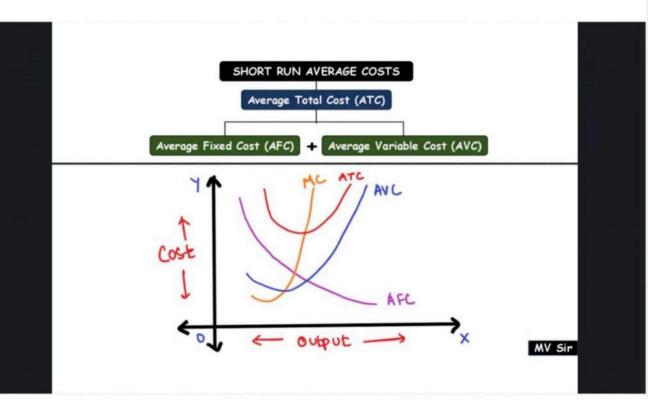
- Total Fixed Cost curve (TFC)
 horizontal straight line parallel to X-axis
 Starts from a point on the Y-axis

Total Variable Cost (TVC)
Initially increases at a decreasing rate and then at an increasing rate,

> Total Cost Curve (TC)

- Obtained by adding vertically the TFC curve and the TVC curve.
 Slopes of TC and TVC are the same
 At each point the TC & TVC curves have vertical distance equal to total fixed cost.





Average Fixed Cost (AFC)

AFC is obtained by dividing the total fixed cost by the number of units of output produced, i.e.

AFC = TFC / Q

- Thus, AFC is the fixed cost per unit of output. For example, if a firm is producing with a total fixed cost of Rs 2,000.
 - · When output is 100 units, AFC= Rs 20.
 - If output increases to 200 units, AFC= Rs 10.
- Since total fixed cost is a constant amount, average fixed cost will steadily fall as output increases.
- AFC curve will slope downwards throughout its length but will not touch the X-axis as AFC cannot be zero.

Average Variable Cost (AVC)

- AVC is found out by dividing the total variable cost by the number of units of output produced, i.e.

 AVC = TVC / Q
- > Thus, AVC is the variable cost per unit of output.
- AVC normally falls as output increases from zero to normal capacity output due to occurrence of increasing returns to variable factors.
- But beyond the normal capacity output, average variable cost will rise steeply because of the operation of diminishing returns.
- > AVC curve will first fall, then reach a minimum and then rise.

F ATC = AFC + AVC

- > It is the total cost divided by the number of units produced, i.e. ATC = TC / Q
- In the beginning, both AVC and AFC curves fall, thus, ATC curve will also fall sharply. When AVC curve begins to rise, but AFC curve still falls steeply, ATC curve continues to fall.
- This is because, during this stage, the fall in AFC curve is greater than the rise in the AVC curve, but as output increases further, there is a sharp rise in AVC which more than offsets the fall in AFC.
- Therefore, ATC curve first falls, reaches its minimum and then rises. Thus, the average total cost curve is a "U" shaped curve.

 MV Sir

Marginal Cost Curve (MC)

Marginal cost is the addition made to the total cost by the production of an additional unit of output.

MC = Change in TC / Change in Output

MCn = TCn - TCn-1

> For example,

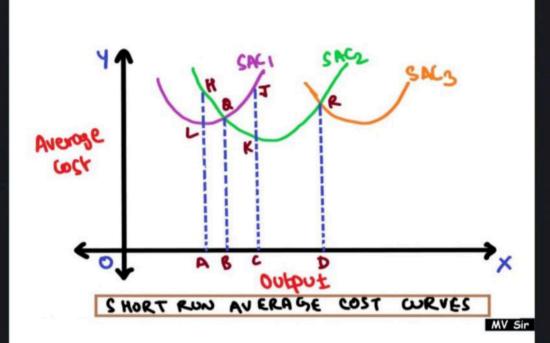
Average Total Cost (ATC)

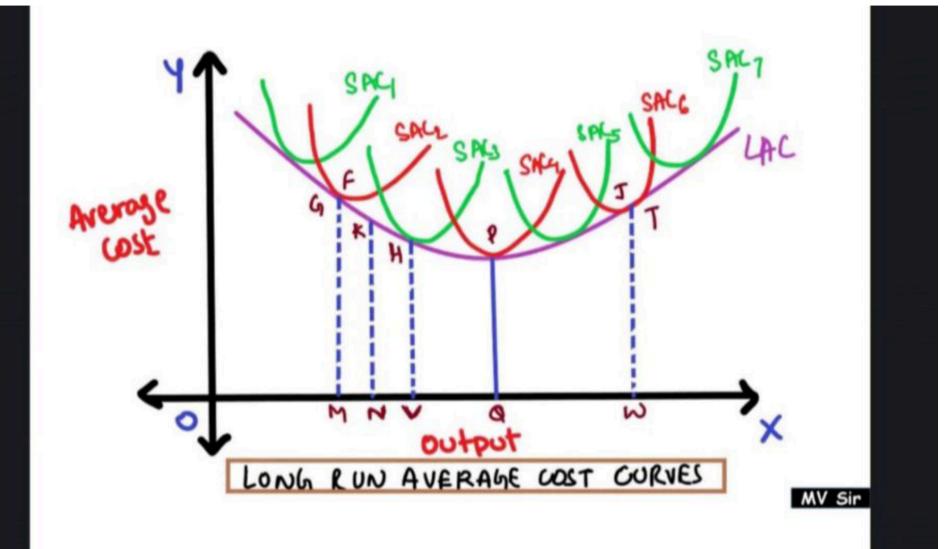
- If we are producing 5 units at a cost of Rs 200 and now suppose the 6th unit is produced and the total cost is Rs 250, then the marginal cost is 250 - 200 = Rs 50.
- Marginal Cost will be Rs 24, if 10 units are produced at a total cost of Rs 320 [(320-200) / (10-5)].
- Marginal Cost is independent of fixed cost. This is because fixed costs do not change with output. It is only the variable costs which change with a change in the level of output in the short run. Therefore, marginal cost is in fact due to the changes in variable costs.
- Marginal cost curve falls as output increases in the beginning. It starts rising after a certain level of output. This happens because of the influence of the law of variable proportions.
- The MC curve becomes minimum corresponding to the point of inflection on the total cost curve. The fact that marginal product rises first, reaches a maximum and then declines ensures that the marginal cost curve of a firm declines first, reaches its minimum and then rises. In other words marginal cost curve of a firm is "U" shaped.

- > The graph shows that:
 - Fixed costs do not change with increase in output upto a given level. Average fixed cost, therefore, comes down with every increase in output.
 - Variable costs increase, but not necessarily in the same proportion as the increase in output.
 Thereafter it starts increasing.
 - Marginal cost is the additional cost divided by the additional units produced. This also comes down first and then starts increasing.

Relationship between Average Cost and Marginal Cost

- When average cost falls as a result of an increase in output, marginal cost is less than average cost.
- 2) When average cost rises as a result of an increase in output, marginal cost is more than average cost.
- When average cost is minimum, marginal cost is equal to the average cost. In other words, marginal cost curve cuts average cost curve at its minimum point (i.e. optimum point).





LONG RUN AVERAGE COST CURVE

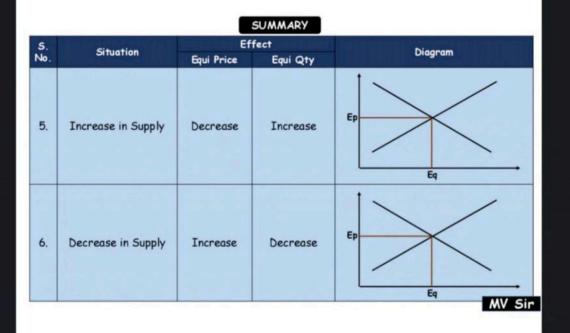
- For example, to produce OM, the firm will be using SAC 2 only; if it uses SAC 3, it will result in higher unit cost than SAC 2. But, larger output OV can be produced most economically with a larger plant represented by the SAC 3. If we produce OV with a smaller plant, it will result in higher cost per unit.
- > Similarly, if we produce larger output with a smaller plant it will involve higher costs because of its limited capacity.
- It is to be noted that LAC curve is NOT tangent to the minimum points of the SAC curves. When the LAC curve is declining, it is tangent to the falling portions of the short run cost curves and when the LAC curve is rising, it is tangent to the rising portions of the short run cost curves.
- > Thus, for producing output less than "OQ" at the lowest possible unit cost, the firm will construct the relevant plant and operate it at less than its full capacity, i.e., at less than its minimum average cost of production. On the other hand, for outputs larger than OQ the firm will construct a plant and operate it beyond its optimum capacity.
- > "OQ" is the optimum output. This is because "OQ" is being produced at the minimum point of LAC and corresponding SAC 4. Other plants are either used at less than their full capacity or more than their full capacity. Only SAC 4 is being operated at the minimum point.
- > The long run average cost curve is often called as 'planning curve' because a firm plans to produce any output in the long run by choosing a plant on the LAC curve corresponding to the given output at the least possible cost.

SUMMARY

5. No.	Situation		Effect	Diagram	
1.	Market Price > Equi Price i.e., Qty Supplied > Qty Demanded (Surplus)	Downward Pressure on Price	Qty Supplied decreases & Qty Demanded increases Upto Equillibrium	the Peak Eq. Pink S Eq. Birg	
2.	Market Price < Equi Price i.e., Qty Supplied < Qty Demanded (Shortage)	Upward Pressure on Price	Qty Supplied increases & Qty Demanded decreases Upto Equillibrium	Eq. Print 1 S S S S S S S S S S S S S S S S S S	

SUMMARY

5. No.	Situation	Effect		Diagram
		Equi Price	Equi Qty	Diagram
3.	Increase in Demand	Increase	Increase	Ep
4.	Decrease in Demand	Decrease	Decrease	Ep Eq MV Si



SUMMARY

5.	Situation	Effect		Diagram	
No.	Situation	Equi Price	Equi Qty	Diagram	
7.	Increase in Demand is equal to Increase in Supply	Remains Same	Increase	Ep	
8.	Increase in Demand is greater than Increase in Supply	Increase	Increase	Ep	

SUMMARY

5.	Situation	Effect		
No.	No. Equi Price Equi Qty		Diagram	
9.	Decrease in Demand is greater than Decrease in Supply	Decrease	Decrease	Ep
10.	Increase in Supply is greater than Increase in Demand	Decrease	Increase	Ep Eq MV Sin

SUMMARY

5.	Situation	Effect		Diagram	
No.	Situation	Equi Price	Equi Qty	Diagram	
11.	Decrease in Supply is greater than Decrease in Demand	Increase	Decrease	Ep	
12.	Decrease in Supply is equal to Decrease in Demand	Remains same	Decrease	Ep	

SUMMARY If both Demand & Supply Increases Decreases Equi Quantity Increases Equi Quantity Decreases But, Equi Price may > Increase or > Decrease or > Remain same

