

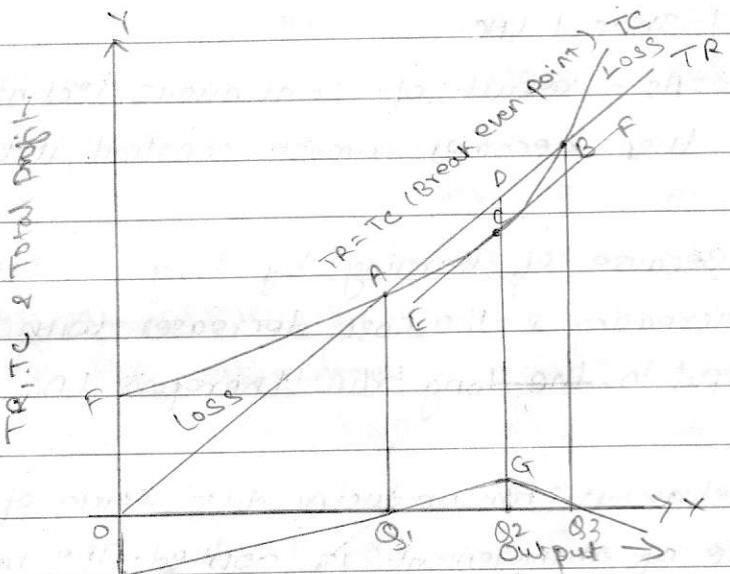
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The reasons for L-shaped LAC.

- 1) Technical progress: As a result of continuous technical progress LAC falls initially & then becomes almost constant, it will be L-shaped.
- 2) Learning by doing: Because of learning by doing the efficiency of labourers goes on increasing & the cost decreases with the increase in the scale of output in the long run therefore LAC becomes L-shaped.
- 3) Managerial cost behaviour: For producing diff scale of output diff appropriate technique of management is applied. The managerial cost decreased, as a result LAC decreases & then remains almost constant.
- 4) Economies: The LAC curve slopes downward coz with the expansion of output the firm experiences various economies of scale such as larger scope for specialization of labour & machines Availability of cheaper raw materials & equipments improvement in skill, lower requirement & transport etc. As a result product cost decreases & LAC turns down & then over a large range of output it remains constant. Hence, LAC become constant.

Chapter 7 - Theory of Product Pricing

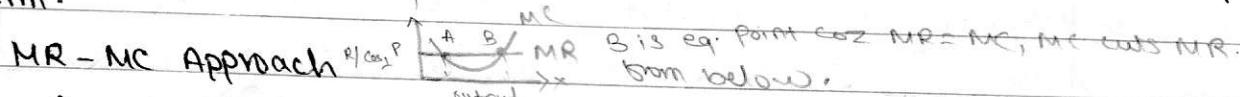
Equilibrium of the firm in the long-run under perfect competition TR-TC approach → According to this approach the firm will be in equilibrium when it gets maximum profit. It occurs at the maximum difference betw TR & TC.



In the fig. TR originates from the origin O & slopes upward to the right. coz of the constancy of AR/price. TC starts from some point F on Y-axis as it is equal to TFC when the output is 0. And OQ_1 level of output $TR = TC$ at the point A. It is the break-even point which is not a 0 profit point but a normal profit. Before the point A & after the point B the firm has loss as $TC > TR$.

In order to determine the equilibrium point that is maximum profit point or st. line has to be drawn tangent to TC & parallel to TR at OQ_2 level of output the distance betn TR & TC is the highest $\pi = TR - TC = Q_2D - Q_2C = CD$. Therefore, firm will be in equilibrium, the profit CD is maximum. Here, the slope of $STC(MC)$ & the slope of $TC(MC)$ are equal. Therefore, $MR = MC$. Total profit curve can be drawn on the same fig. at the output Q_1 & Q_3 the firm is having neither gain nor loss i.e. break even point. earlier the output Q_1 & after the output Q_3 it has loss. At the output OQ_2 it gets maximum profit equal to Q_2G or CD .

TR & TC analysis is not convenient to determine the equilibrium point of the firm. Firstly, tangent to TC has to be drawn making it parallel to TR for knowing the point of maximum profit. Secondly, the figure doesn't give us the idea of AR or price per unit. Hence, NR & NC analysis is a scientific tool to determine the equilibrium of the firm.



According to this approach, the firm will be in equi. at that level of output at which $NR = MC$, MC cuts MR from below. Under perfect competition, price of the commodity is determined by demand & supply of an industry. Each firm has to sell its product at this uniform price. Thus, the firm is price taker & industry is price maker. Hence, AR or demand curve of a firm is horizontal & parallel to x-axis. Here, we assume identical cost condition. Under it each firm shares same condition of AC & NC curves.

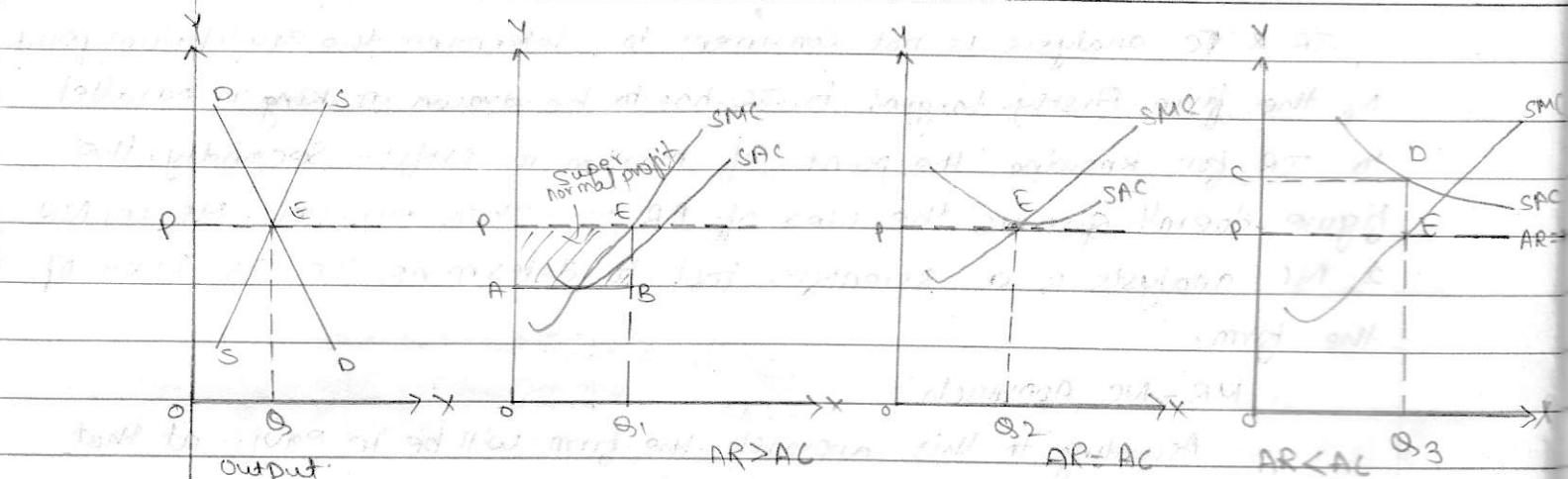
In such a condition all the firms in the industry will have super normal / abnormal / excess profit or normal profit or loss. Therefore, a firm would be in equilibrium when the following two conditions are fulfilled.

- 1 $MR = MC$ (1^{st} order & necessary condition)
- 2 MC cuts NR from below (2^{nd} order & sufficient condition)

Price & Output Determination under Perfect competition.

Short-Run Equilibrium of a firm.

- i $AR = AC \Rightarrow$ Normal profit
- ii $AR > AC \Rightarrow$ Super normal / excess profit
- iii $AR < AC \Rightarrow$ Loss.



In figure (A) market demand curve DD & supply curve SS intersected with each other at point E. So, at this point E industry is in the equilibrium where the eq^m price OP & eq^m output OQ are determined.

In fig. (B) the firm is in eq^m at point E where MC & AR are equal & MC curve has cut AR from below. Here, AR > AC so firm earn excess profit. Mathematically,

$$\pi = TR - TC = (P \times Q) - (AC \times Q) = OPEQ_1 - OABCQ_1 = APEB_{11}.$$

In fig (C) the firm is in eq^m at point E. In this case, AR = AC so, firm earn normal profit. Mathematically,

$$\pi = TR - TC = OPEQ_2 - OPEQ_2 = 0.$$

In fig (D), the firm is in eq^m at point E. In this case, AR is less than AC i.e AR < AC so firm faces loss. Mathematically,

$$\begin{aligned}\pi = TR - TC &= OPEQ_3 - OEDQ_3 \\ &= -PCDE_{11}.\end{aligned}$$

Long - Run Equilibrium of a firm

Under perfect competition, the following conditions should be fulfilled for a firm to be in eq^m in the long run.

i. $LNC = MR$

ii. LMC curve must cut MR curve from below.

Due to free entry & exit, all the firms under perfect competition earn only normal profit in the long run. If the firms are earning super normal profit in the short run there will be the entry of new firms in the long-run, no. of firms increases. In the case of loss firms will be closed down, no. of firms decreases.



In the fig B. the firm under perfect competition is in the long run eq^m at the point E₁ at which $MR = LMC$ & LMC cuts MR from below. It earns only normal profit at the price OP, $AR = LAC$. & at the price higher than OP the firms earn super normal profit. There will be the tendency for new firms to enter the industry, attracted by super normal profit. As a result the supplied increases & the price will be forced down on the other hand cost will go up as a result of more competition for factors of prod^m. This process continues till price will be equal to LAC & all firms earn only normal profit.

When the price is lower than OP there will have loss because $AR(P) < LAC$. To avoid the loss some of the firms will leave the firm in long-run & supply decreases price rises & on the other hand demand for factor of prodⁿ decreases, cost of prodⁿ falls as a result of less competition for factors of prodⁿ. This process goes on till the price equal to LAC & the firm earns only normal profit.

Thus, eq^m of the firm occurs at the mini-point of LAC i.e. E_1 . OQ_1 is the optimum capacity output. At eq^m point E_1 $\text{mini } LAC = AR(P) = MR = MC = SMC = SAC$.

\Rightarrow An industry is a grp of firms producing homogeneous product, it will be eq^m in the long-run when this condition are fulfilled.

1. Equality betⁿ long run supply & demand.
2. All the firms should be in eq^m ($MR = MC$ NC cuts NR from below).
3. Normal profit. ($AR = LAC$)

X// Supply curve under Perfect Competition

The supply curve of an industry shows that various quantities of the product that it would offer to sale at various prices at a given time. The quantities that an industry offer to sales depend mainly on the price of product in relⁿ to the cost condition of the firm.

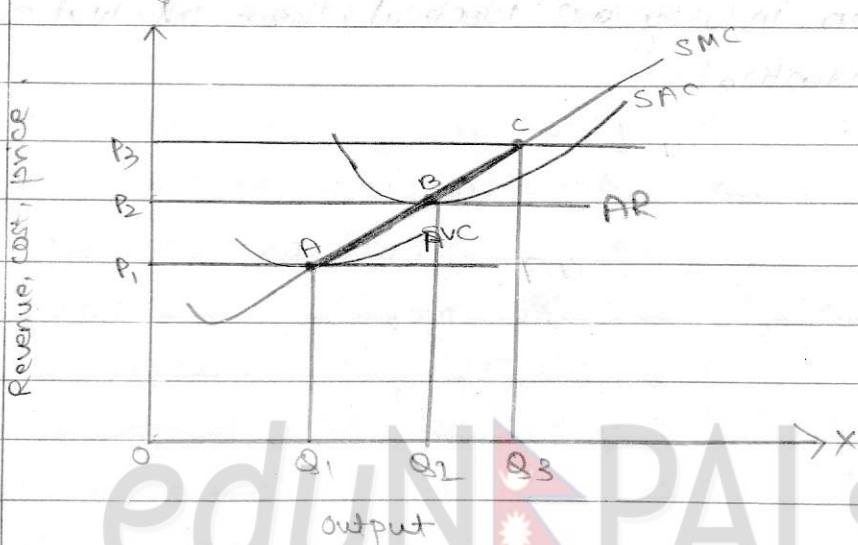
✓ Derivation of short run supply curve of the firm & industry

1. Derivation of short-run supply curve of the firm

In the short run the firm can increase output only by increasing variable factors as price is constant in perfect

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competition. AR(0) curve of the firm is horizontal st. line. The short run eqⁿ of the firms is at the point where $NR = SMC$, SMC cuts NR from below. A perfectly competitive firm sales that amt of output at which $NC = \text{Price or AR}$.

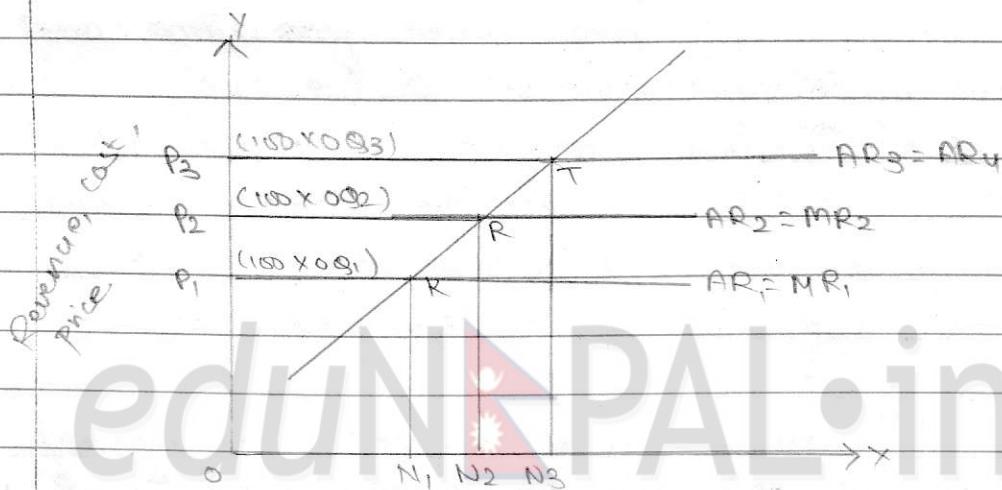


In the fig. at OP_2 price, OQ_2 output is produced at the eqⁿ point B, the firm is getting normal profit as $AR/Price = SAC$. At the higher price OP_3 , OQ_3 output is produced at eqⁿ. point C, the firm is earning super normal profit as $AR/Price > SAC$. At lower price OP_1 , the eqⁿ point is A & OQ_1 output is produced, the firm is having loss coz $AR/Price < SAC$ the price doesn't cover AFC. But it continues its prodⁿ as it covers the mini AVC at the point A. It is the shot-down point. At below OP_1 price, the firm stops prodⁿ even in the short run, as it doesn't cover even the AVC.

The firm's short-run-supply-curve is the thick segment of SMC curve drawn above the minimum point of AVC .

✓ Derivation of Short-run supply curve of an Industry

The grp of firms producing homogeneous goods is called an industry. The industry supply curve is the horizontal summation of the supply curves of the individual firms. If cost curves of the individual firms of an industry are identical, their individual supply curves are also identical.



In the fig, the short run supply of the perfect competitive industry is derived by the horizontal / lateral / summation of only the rising portion of SMCs of all firm above the minimum AVC, the nos. of firms can't be changed in short run.

Let us suppose there are 100 firms producing homo product as in fig, the amt supplied by the industry will be equal to $100 \times Q_1$ or ON_1 at the price OP_1 , $100 \times Q_2$ or ON_2 at the price OP_2 & $100 \times Q_3$ or ON_3 at the price OP_3 . By joining the points KRT the short run supply curve of the industry is derived.

Supply
Short Run Curve

Short run supply always slopes upward from the lowest point of the AVC. The rising short-run-supply curve of the industry indicates that the industry supplies large qty of the output at the higher price in the short run & vice-versa.

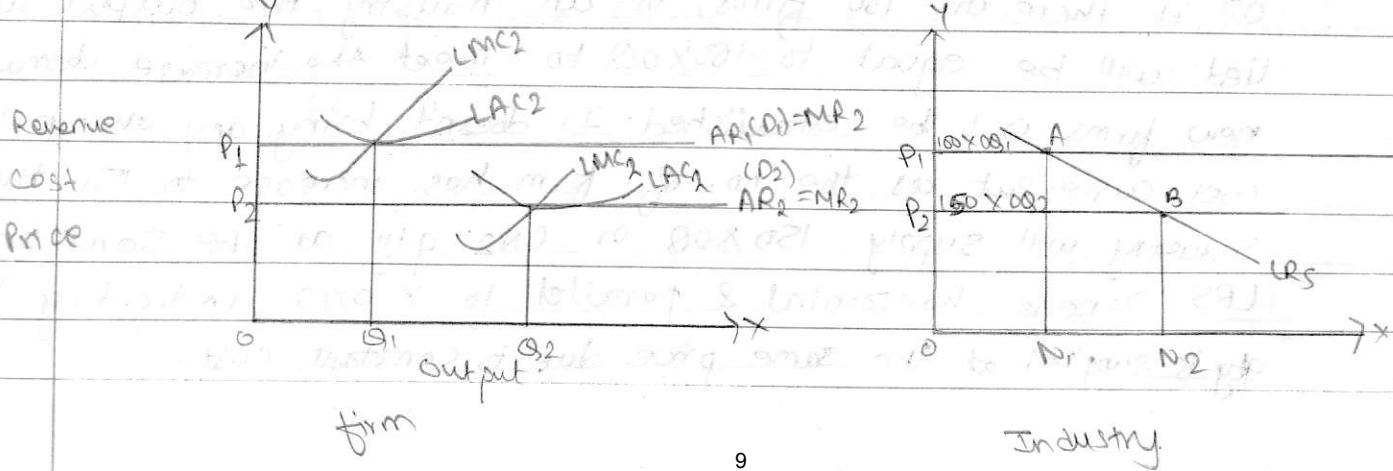
Derivation of Long Run Supply (LRS) curve.

LRS curve indicates the qty afford for sale at various prices in the long run. In the long run all the factors plant size & no. of firms can be change. LRS curve is not the horizontal summation of upward sloping LMCs of all firms coz of the following reasons.

- No. of firms can be change in L.R.
- Only one point of LMC which is equal to the mini. point of LAC is included in LRS.
- In the LR returns to scale operate. Cost cost curves shift upward or downward due to external economies & diseconomies. The industry will be having decrease cost or increase return to scale, constant cost /return to scale, increase cost or decrease return to scale.

1. Supply curve of the decreasing cost industry

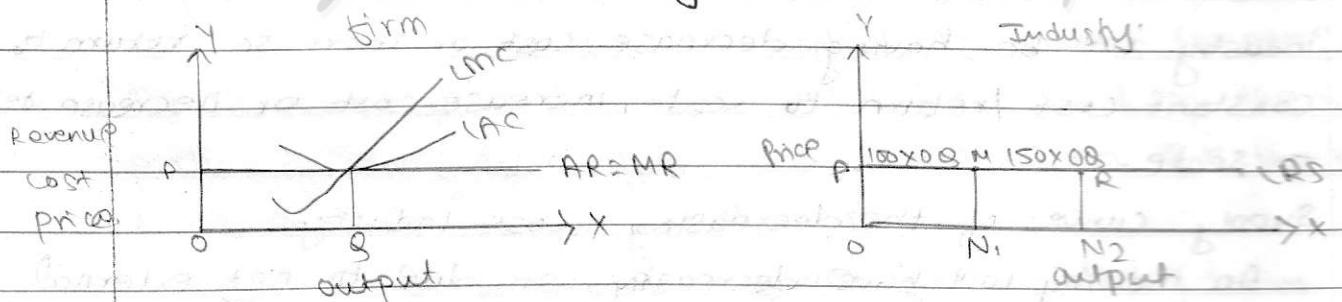
An industry will have decreasing cost due to net external economies. Cost curve shift downward to the right



At OP_1 price a firm produces OQ_1 output since there are 100 firms within industry it supplies $100 \times OQ_1$ or ON_1 output to meet the increase demand, new firms are established since the industry is enjoy external economies. Cost curves LAC & LMC shift downward to the right, the firm produces OQ_2 output at the lower price OP_2 . As the no. of firm now is 150 the total output supplied by the industry will be $150 \times OQ_2$ or ON_2 . Joining the points A & B LRS curve is derived, its slope downward to the right. It implies that at lower price larger qty is supplied when the cost falls due to ext. economies in the decrease cost in industry.

2. Supply curve of the constant cost industry

An industry is said to be a constant cost industry if its expansion generates by the neither ext. economies nor ext. diseconomies or when they balance with each other.

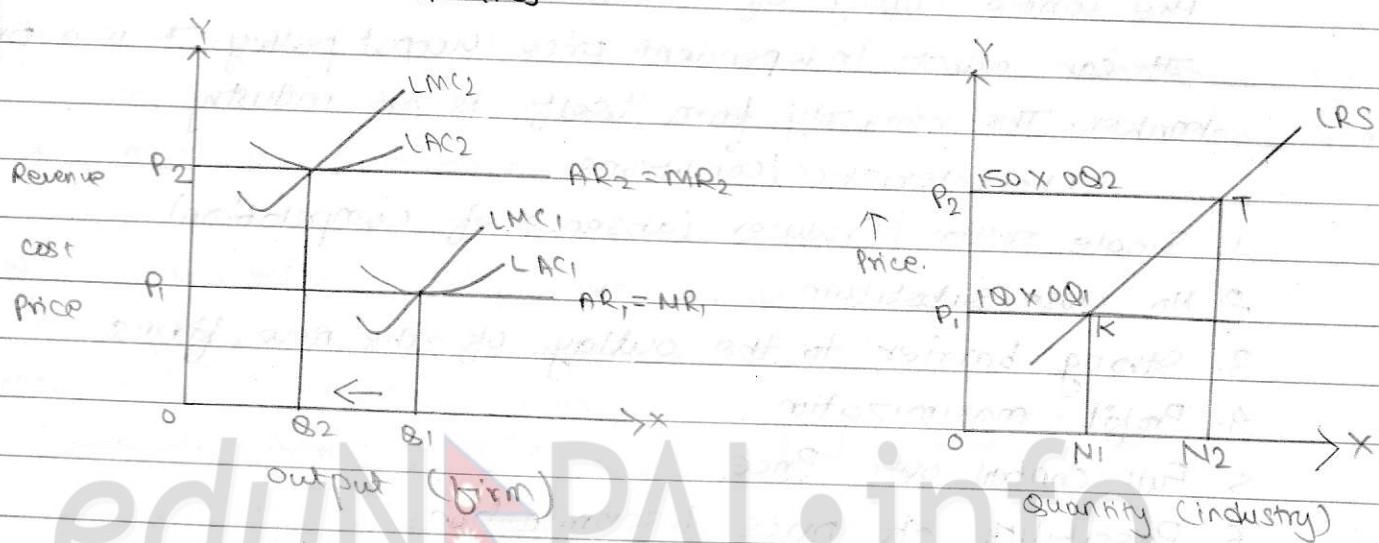


In the fig. the eqⁿ output is OQ at the price OP , if there are 100 firms in an industry the output supplied will be equal to $100 \times OQ$ to meet the increase demand, new firms will be established. It doesn't bring any change in cost curve. But as the no. of firm has increase to 150 the industry will supply $150 \times OQ$ or ON_2 qty at the same price of LRS curve is horizontal & parallel to x-axis indicating larger qty is supplied at the same price due to constant cost.

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- 3 Supply curve of the increasing cost industry

In the case of increasing cost when new firms enter into the industry to meet the increase demand cost of prodⁿ increases due to external diseconomies.



If there are 100 firms industry will supply $100 \times 0Q_1$ or $0N_1$ output at the price OP_1 with the demand the no. of firms increased to 150 due to ext. diseconomies & rise in the price of factor cost curves LAC & LMC shift upward to the left. At the higher price OP_2 the firm produces less $0Q_2$, the industry will supply $150 \times 0Q_2$ or $0N_2$ at the higher price OP_2 . Output of the firm decreased from Q_1 to Q_2 due to increase in the cost of prodⁿ but the supply of the product produced by the industry increases due to the increase in firm. By joining the points K & T upward sloping LRS is derived. It indicates at higher price OP_2 larger qty is supplied in the increasing cost industry.

Monopoly - Mono = Single no close substitute.

Poly = Seller

It is that market situation in which a single producer controls the whole supply of product which have no close substitute.

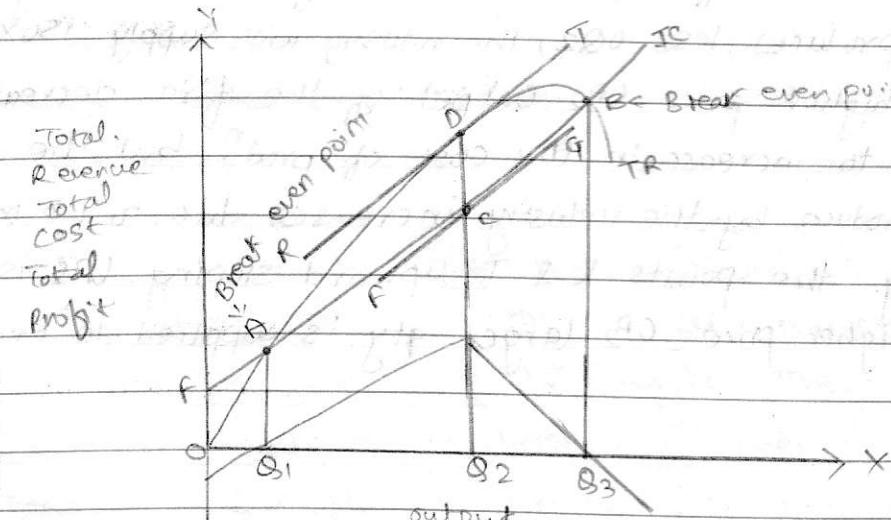
It can adopt independent price output policy. It is a price maker. The monopoly firm itself is an industry.

Characteristics / Conditions

1. Single seller / Producer (absence of competition)
2. No close Substitute
3. Strong barrier to the entry of the new firms
4. Profit maximization
5. Full control over Price
6. Possibility of price discrimination

Monopoly (short run equilibrium of the firm)

1. ~~TR~~ TR - TC approach



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

$$= Q_2 D = Q_2 C$$

$$= CD \text{ or } Q_2 E$$

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The total profit curve drawn separately on the same fig shows maximum profit = CP or Q_2E on CD where it produces eq^m output Q_2 . TR-TC approach is not convenient to find out the eq^m point of the monopoly firm. By just looking at the fig. Price per unit can't be determined. Secondly tangents on TR & TC have to be drawn making them parallel to determine maximum profit or equilibrium.

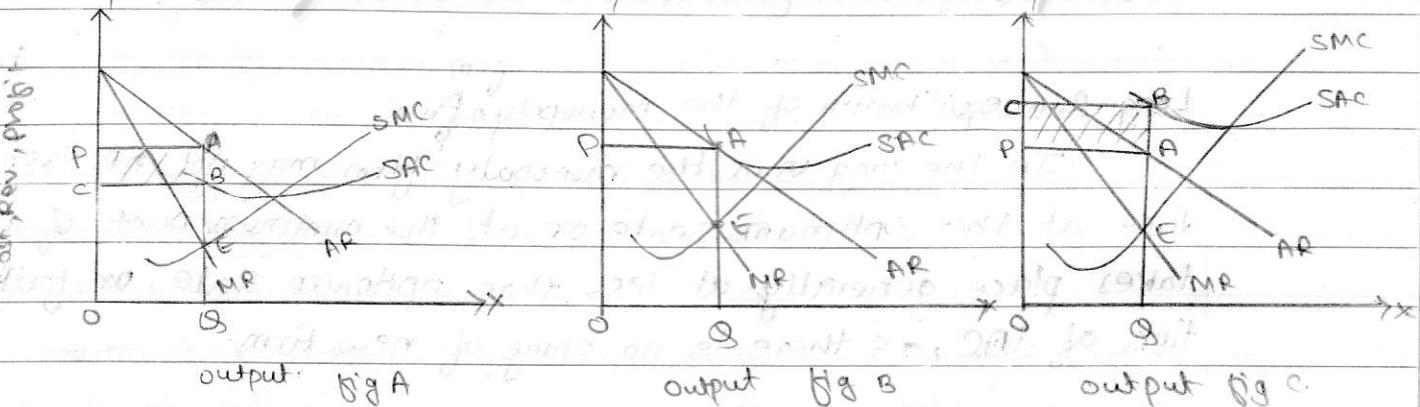
2. MR-MC approach (short run eq^m of the firm)

Pricing / Price & output determination

- i $MR=MC$ (^{1st} necessary condition)
- ii MC cuts MR from below (^{2nd} sufficient condition)

Slope of MR < Slope of MC

Super Normal Profit



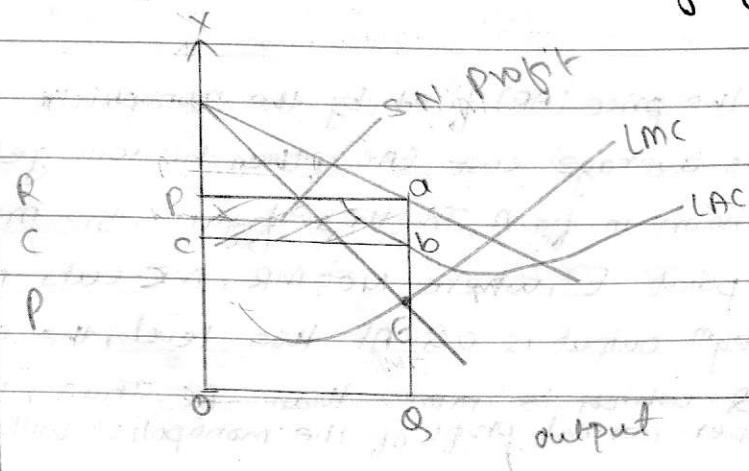
- ! Super normal profit: If the price (AR) fixed by the monopolist in equilibrium is more than his average cost (AC), then he will get super normal profits. It is shown in fig. A. In this figure, the monopolist is in equilibrium at point E, where $MC=MR$, MR cuts MR from below. At this point, eq^m output is OQ_1 . At this level, the eq^m price is determined as AQ_1 which is more than AC. Thus, in this situation the total super-normal profit of the monopolist will be $ABCP_1$, the shaded area.

2. Normal profit : If in the short run eq^m ($MC=MR$), the price (AR) is equal to its average cost (AC), i.e., $AR=AC$, then the monopolist will earn only normal profit. It is shown in fig B. In this fig., the firm is in eq^m point E, where $MC=MR$ & MC cuts MR from below. OQ is the eq^m output. At this output, AC touches AR at point A. Thus, price or (AR) OP is equal to AR (OQ) of the product. Monopoly firm, therefore, earns only normal profit in eq^m situation as its $AC=AR$.

3. Loss : In the short-run, a firm under monopoly may incur loss of fixed cost. It is the minimum loss of the firm. In fig C, it is shown that the firm is in eq^m at point E. At this point $MC=MR$ & MC cuts MR from below. In eq^m position, the firm will produce OQ_0 units of output. At this eq^m output, price is OP . But the AC of the firm is more than AR i.e. $AC>AR$. Hence, the firm suffers a loss equivalent to BA per unit. The total loss of the firm will be $ABCP$, the shaded area.

Long Run equilibrium of the monopoly ^{firm} Price

In the long run the monopoly firm may not necessarily produce at the optimum scale or at the minimum point of LAC. Prod. takes place generally at less than optimum scale or falling portion of LAC, as there is no entry of new firm.



In the fig. point E indicates the eq^m of the monopolist. At point E, $MR = LMC$, hence OQ is the eq^m output & OP (i.e. aQ) is the eq^m price. bQ is the long run av. cost. Price (AV . revenue) aQ being more than Long run av. cost bQ ($AR > AC$), the monopolist will get super normal profit. Accordingly, the monopolist earn ($aQ - bQ = ab$) super-normal profit per unit. His total super normal profit will be P_{abc} as shown by shaded area.

$$\begin{aligned} \text{Profit} &= TR - TC \\ &= OQaP - OQbC \\ &= P_{abc} \end{aligned}$$

Thus, in the long run eq^m the monopoly firm earns 'super normal profit' because of the strong barrier to the entry of the new firms.

The long run eq^m of the monopoly firm takes place at that of output OQ at which

- 1) $MR = MC$ & 2) LMC cuts MR from below. Besides these two essential condition another con.

Is monopoly always high? or control on monopoly?

- 1) Large scale economies
- 2) Nature of demand
- 3) Fear of substitutes
- 4) Rivals / competitors
- 5) Consumer's boycott
- 6) Govtⁿ regulation by increasing tax (price control)
(Output control)

Perfect com - homogenous

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Monopoly - No close substitute

Monopolistic competition : M.C.

Monopolistic com - Close substitute

Monopolistic Competition / Imperfect Competition

Monopolistic competition is a common market situation Chamberlin brought out synthesis of a two market situation perfect competition & monopoly. In his book 'Theory of monopolistic competition' in 1933. M.C. is a market situation in which there are large no. of firms producing differentiated product they are close substitute, they are similar but not identical for eg: diff. firms produce diff. brands of toothpaste or so or computer / car there may be difference in quality, weight, color, size, design, packaging etc of the product. M.C. is common in retail & service sectors of the economy. Eg: Tailoring Shop, Beauty parlors, drug store, grocery, liquor store. Every firm has some monopoly control over its own differentiated product. But at the same time it has to face a keen competition from other firm producing close substitute. Thus, monopolistic & competitive elements are present in M.C.

Features:

- 1) Large No. of firms: None of them controls a major portion of total output. There is a keen but imperfect competition among the firms. Therefore, each producer can adopt independent price & output policy.
- 2) Product differentiation (Product Variation): Under M.C. each firm produces a differentiated product one product is different from other in respect to quality, size, design, packing, raw mat. used, weight, etc. Brand name & trade mark also help to differentiate product. Through product differentiation each firm gets a limited degree of monopoly power. A collection of firms producing differentiated product is known as group.

- Normal profit
- S.N. profit
- Normal profit

3. Free entry & exit of firms: Under M.C new firm can enter into the group attracted by super normal profit & old ones suffering from loss can lead the group in the long run. As in perfect competition each firm earns only normal profit in long run. $AR(P) = LAC$ normal profit.
4. Selling cost/expenses: Under M.C when the product is differentiated, selling cost are necessary to increase the sell by increasing the consumers' preferences for the product. Selling cost include expenses on the advertisement, free service, free gift, door to door, canvassing. Through advertisement & sales technique real or imaginary differences of the product can be created in the minds of consumer. Advertisement can be informative & competitive or persuasive. The first one spreads knowledge about product while the 2nd one ends push up sales & demand curve of one firm at the cost of other.
5. Downward sloping elastic demand curve: Under M.C the demand (AR) curve of a firm is downward sloping & highly elastic but not perfectly elastic. The firm has to reduce the price of the product to increase the sales/Demand.

Suppose a Monopolist faces the following demand schedule

Price (P) Qty (Q) TR (Q x P) MR ($\Delta TR / \Delta Q$)

100	0	0	-
90	5	450	90
80	10	800	70
70	15	1050	50
60	20	1200	30
50	25	1250	10
40	30	1200	-10
30	35	1050	-30

- i Calculate MR, if MC is Rs 50 what is the profit maximizing level of output & price.
- ii If price is set equal to NC what will be the output that the Monopoly will produce.

Sol:

Given MC = Rs 50.

i) If demand is increased by blocks of 5 units

Price changed by Rs 10

Hence, $MR = \frac{\Delta TR}{\Delta Q}$ is used, instead of $MR = TR_{n+1} - TR_n$

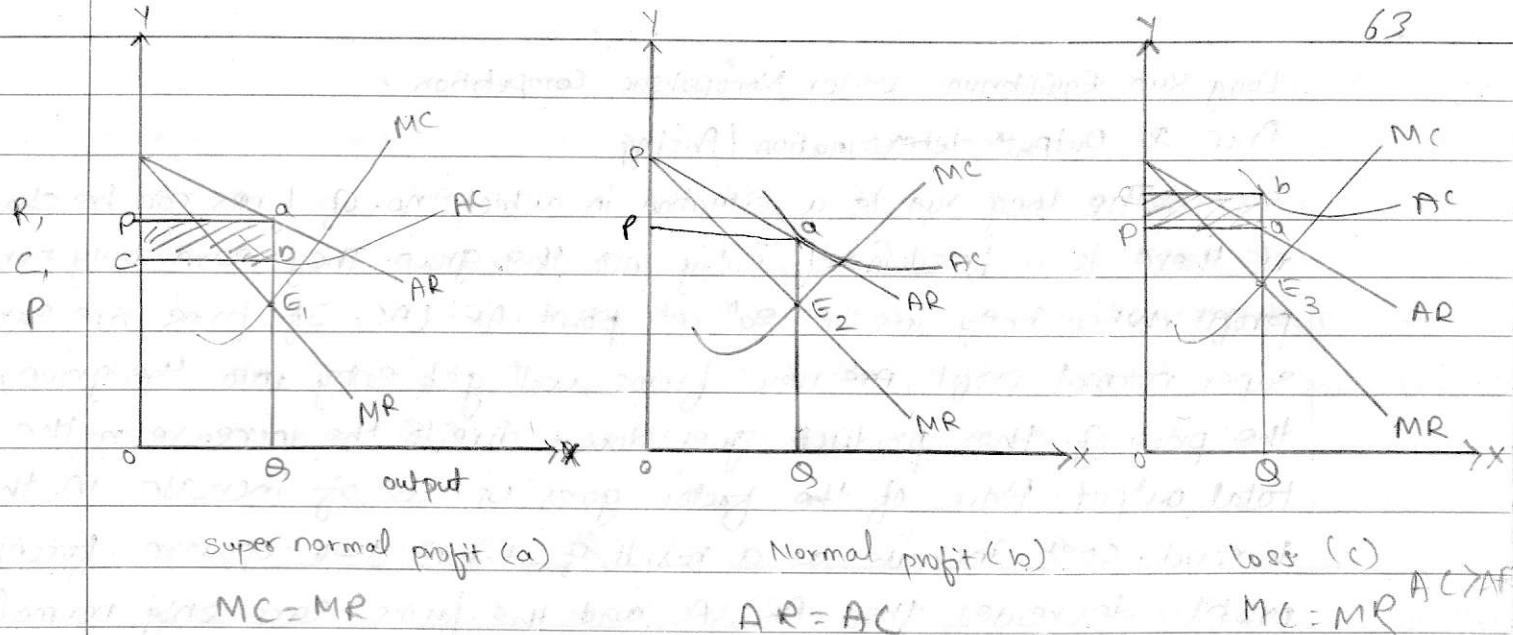
Condition: Profit maximizing $= MR = MC$ is satisfied when output is 15 units
price of the product is Rs 70 per unit.

ii) If price is set = MC i.e at Rs 50, 25 units of output will be produced & sold by the monopoly.

Short-Run equilibrium

Monopolistic competition consist of a large no. of firms producing differentiated product or close substitute. A firm has a continuous downward sloping elastic demand curve. Under the M.C the main aim of the firm is to maximize profit or minimize loss so it will like to produce that level of output at which $MR = SMC$ & SMC cuts MR from below. At this point the firm will be in eq! So, long as $MR > SMC$ it will find profitable to expand its output, if $MR < SMC$ it is beneficial to firm to reduce output to the level where $MR = SMC$.

Short-run is a period in which fixed factor, plant size & no. of firm can't be change. There we assume different short run cost curves of different firms. Therefore, some firm may be having super normal profit, normal profit or loss.



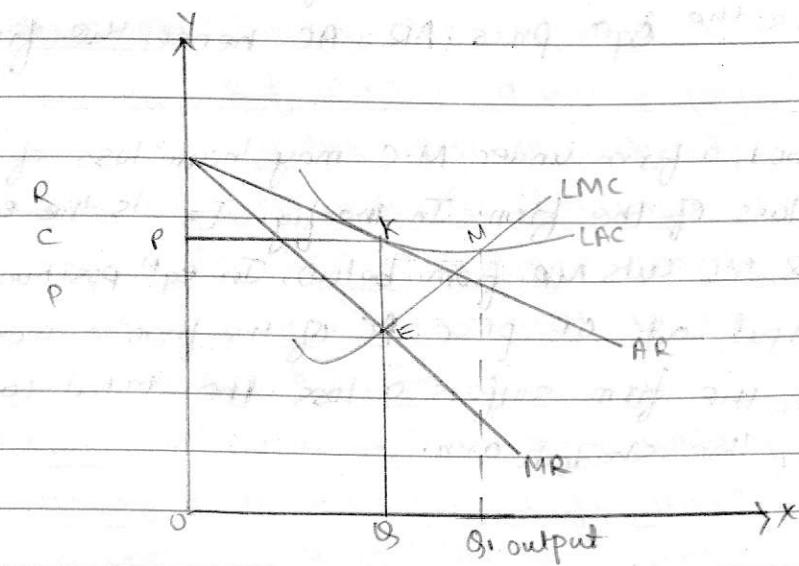
1. **Super-Normal profit:** Fig a shows that firm is in eq^m at point E₁, coz MC=MR & MC cuts MR from below at this point. eq^m price is OP & eq^m output is OQ. The price OQ_a is greater than av. cost OQ_b. Hence, the firm earns supernormal profit. Total S.N. profit of the firm in eq^m is Pabc, the shaded area.
2. **Normal profit:** In the short-period, a firm under M.C may earn normal profit. It is the case where AR = AC. In fig B, firm is in eq^m at point E₂ where MC=MR & MC cuts MR from below. Thus, OQ is the eq^m output & OP is the eq^m price. AR = AC hence, the firm earns normal profit.
3. **Loss:** In the short-period, a firm under M.C may incur loss of fixed cost. It is the minimum loss of the firm. In the fig. E₃ is the eq^m point at which MR=MC & MC cuts MR from below. In eq^m position, the firm will produce OQ output at OP price. AC of the firm is more than AR (i.e AR > AC). Hence, the firm suffers a loss. The total loss of the firm will be Pabc, the shaded area.

Long Run Equilibrium Under Monopolistic Competition

Price & Output determination / Pricing

The long run is a situation in which no. of firms can be changed as there is a freedom of entry into the group. They earn only normal profit, when they are in eqⁿ at point AR=LAC. If firms are earning super normal profit, new firms will get entry into the group, the price of the product goes down due to the increase in the total output. Price of the factor goes up coz of increase in their demand, cost increase as a result of these two opposite forces profit decreases then AR=LAC and the firms earn only normal profit.

If firms are having loss, they will leave the group in the long run. Thus, there will be reduction in total output as a result price of product is pushed up. On the other hand as the demand for the factors decrease, they become cheaper. As a result cost decreases. Arise in a price of product & fall in cost eliminate loss. The firm gets only normal profit.



In the fig. E is the eq^m point where $MR=LMC$ & LMC cuts MR from below. The eq^m output is Q_1 & eq^m price is OP & sold at OP price as $AR=AC^*$ at the point K. The firm earn only normal profit. The lowest point of LAC is M but the eq^m of the firm doesn't take place at this point or optimum capacity coz of the downward sloping demand or AR curve. Therefore, they operate with excess capacity. The capacity equal to Q_2 or Q_3 , is being unused in the firm.

Comparison among different market situations.

S.N	Heading	Perfect Competition	Monopoly	Monopolistic Competition
1.	No. of firms.	Large no of firm in an industry.	Single firm.	Large no of firm in a group.
2.	Nature of the product	Homogenous product	Product having no close substitute.	Product having close substitute.
3.	Price & output det policy	Price taker, can't influence, lower price/larger output.	Price Maker high price/less output.	Can influence Price/ output.
4.	AR/Demand curve.	Perfectly elastic/Horizonal	Inelastic/ Downward falling	Elastic/ Downward falling
		→ $AR=MR$	AR MR	AR (D)
5.	Entry & exit of firm	Free entry & exit	Barrier of entry	Free entry & exit
6.	Profit in long run.	Normal profit	Super Normal profit	Normal profit
7.	Price discrimination	Pervading market Price, uniform price	Possibility of price discrimination	The firm may charge diff price but not much diff
8.	Selling cost	No selling cost	Selling cost is not necessary but for info it is used.	Very essential it is que of life & death. They spend much on advertisement

Price Discrimination

when the sellers sells different units of the same product at different price to different customers at different markets, it is said to be price discrimination, it is not possible under perfect competition.

Whenever there is Monopoly element the monopolist can sell different units of the same type of the product at diff prices, it is known as discriminating Monopoly.

According to Joan Robinson - "The art of selling the same article under a single control at different prices to different buyer is known as price discrimination".

The perfect example of price discrimination can be found in the direct service sector such as in the profession of doctors, lawyer, beautician, etc. they can charge differently for their services. Depending on the financial condition of their client. Likewise in other to capture foreign market some goods are sold at low price at foreign market & at high price at home market.

The policy of price discrimination is adopted keeping in mind different objectives such as:

To maximize profit.

To eliminate competition

To provide Social justice

To benefit certain group Likewise, Students, women, elderly citizen

Degree of Price discrimination.

S. Price discrimination of 1st degree : Under it the monopoly charged different prices for each unit of the comm. Sold. He charge the maximum that each is able & willing to pay leaving him no consumer surplus. It involves maximum exploitation of buyer. This is also known as perfect price discrimination

2. Price discrimination of 2nd degree: It is cause when consumers are charged for 1st few units & then another price charge for another units of purchase. All units with a demand price higher than P_1 & all units with a demand price lower than P_2 at a price P_2 & so on. It leads some consumer surplus.
3. Price discrimination of 3rd degree: In the 3rd degree price degree, the monopolist splits the entire market of the product in two sub-market depending on the elasticity of demand. In foreign market the comm. is sold at cheaper price as compare to home market in order to capture foreign market price discrimination of 3rd degree of very common.

Conditions of Price discrimination:

1. Existence of monopoly element: Under perfect competition uniform price prevails in the market, P.D is not possible. If market is imperfect having the monopoly element the seller can sell the same type of the product at diff. price at diff. sub-market.
2. Elasticity of demand: P.D can be introduced in the elasticity of demand for the commodity in diff. sub-market differs. The monopoly firm finds it profitable to charge more in the market where elasticity of demand for the product is low & low price where it is high.
3. Market segmentation: The firm should be able to separate the market into diff. submarket on the basis of the elasticity of demand. Similarly, the monopoly firm can charge diff. prices for its product in submarket are separated by distance or tariff. It can sell its product at a higher price in the domestic market or in a country using high import duty & low price in a foreign market or in a country with no such duty.

4. No possibility of resale: The goods sold in a cheaper market should not be resold in the dearer market. Direct services provided by doctor, lawyer, etc. are non-transferable. In such case P.D. is possible.

Imp.

Price-Output determination in discriminating monopoly

The monopolist divides the total market of its product into sub-markets on the basis of elasticity of demand for maximizing the profit. The monopoly firms finds it profitable to charge more in the market where elasticity of demand for the product is low.

Assumptions:

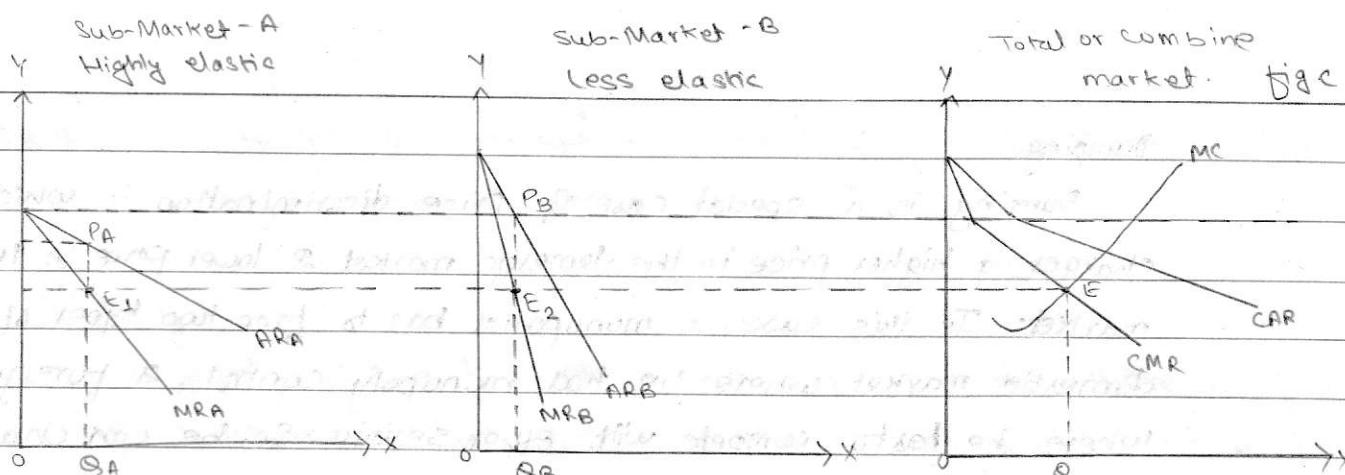
1. Large no of buyers / consumers
2. No possibility of resale of the product.
3. Downward sloping demand curve in sub-market
4. Different elasticity in different sub-market.

Here only two submarket A & B have been taken into consideration. Market A has high elastic demand & Market B has less elastic demand for the product. For the maximization of profit

- 1) the monopolist produces that amt of output at which total / combined MR of two Submarkets equal to MC.
- 2) $MRA = MRB = MC$. MR of each sub-market should be equal to MC.

If MR in sub-market 'A' is more than in sub-market 'B', the monopoly sells less in Sub-market 'B' & transfer some amt to sub-market 'A'.

When MR in two sub-market are equal it will not be profitable for the monopolist to transfer from one market to another. MR of each submarket should be equal to MC.



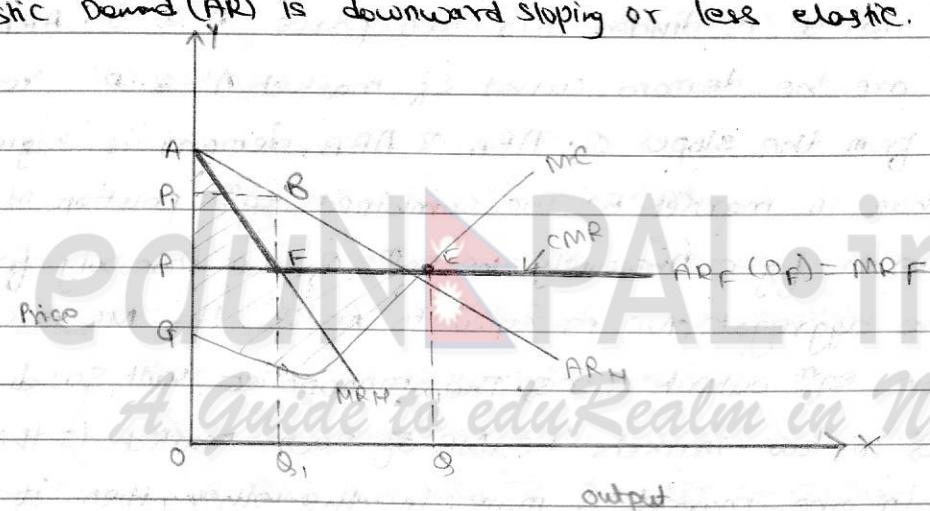
The above fig shows the position of eq^m under discriminating monopoly. Supposing market is divided into two parts 'A' & 'B'. AR_A curve & AR_B curve are the demand curves of market 'A' & 'B' respectively. It is evident from the slopes of AR_A & AR_B , demand is highly elastic in market 'A' than in market 'B'. The combined eq^m position of both the market is shown in fig-c. Obviously, the eq^m of the monopoly firm will be at point E where aggregate CMR is equal to MC & the MC is cuts CMR from below. Here, eq^m output is OQ . The monopolist will so distribute his total output OQ in two markets the MR of each market is the same. If his MR is less in one market & more in the other, then it will be profitable for him to transfer comm. from less- MR market to more- MR market.

In order to get the same mag marginal revenue, the monopolist will sell OQ_A amt of output in Market 'A' & OQ_B amt of output in market 'B'. He will sell more in market 'A' at OP_A price & less in market 'B' at OP_B price. Total amt of output in 2 market i.e. $OQ_A + OQ_B$ will be equal to the total output OQ produced by the monopolist.

Dumping:

Dumping is a special case of price discrimination in which monopolist charges a higher price in the domestic market & lower price in the foreign market. In this case, a monopolist has to face two types of markets: domestic market where he has monopoly control, a foreign market where he has to compete with other sellers. So, he can charge higher price in the domestic market but lower price in foreign market.

Demand curve (AR_f) in foreign market is perfectly elastic or horizontal. Home market is monopolistic. Demand (AR_h) is downward sloping or less elastic.



As shown in the fig. the firm faces perfect competition in the foreign market & hence AR_f & MR_f both are the same & parallel to x-axis. Similarly, as monopoly prevails in the domestic market, AR_h & MR_h both slope downward. MC curve refers to marginal cost curve of the total output.

For eq^m, the dumping monopolist must produce an output that equalizes his MC to his combined marginal revenue (ΣMR). E is the eq^m point where $\Sigma MR = MC$ & MC cuts CMR from below. Eq^m output is OQ . The monopolist's total profits are represented by the area AFEG. These profits are at a maximum & are contributed by both markets.

of output

Q_1 amount is sold in home market at price Q_1B & Q_2 amount of output is sold in foreign market at price QE .

Oligopoly

Oligopoly is the firm of market orgⁿ in which there are few seller of a product. If the product is homo homogenous there is a pure/ standardized oligopoly. If the product is differentiated there is differentiated oligopoly. Since there are only a few large seller of a product the action of each seller effect the others that means the firms are mutually interdependent. As a result oligopolist usually engage in non-price rather than price competition coz of mutual interdependence. If one firm reduces the price of its product, it could take most of the sells away from the other firms. Other firms are there likely to retaliate & possibly start price war. As a result oligopolist is characterized by price rigidity. It is difficult to determine the demand curve.

The Oligopoly firms try to compete with the rivals on the basis of quality, product design, gift voucher, customer service & advertising.

Pure Oligopoly is found in the production of cement, steel & many other industrial product which are standardized.

Eg. of differentiated oligopoly are auto mobile, cigarettes, electrical appliances, noodles where a few large firm dominated the market characteristics

- 1) A few sellers: Each oligopoly firm sells a large part of total output & can influence price.
- 2) Interdependence: Price & output decision of firms are interdependence. One firms price decision is reacted by another firms.

- 3) Indeterminate price: Reaction to the price change by a firm is difficult to guess in respect to price of the product. Cooperate or fight to date.
- 4) Price rigidity & non-price war: Once a price comes to prevail it continues for years as such inspite of changes in cost & demand while maintaining cost constant, firms attain to improve through various types of non-price competition such as various types of concession to the consumer, free delivery, repair facilities, gift coupon.
- 5) Importance of advertisement & selling cost / expenses: Under Oligopoly, advertisement & selling cost can become a life & death matter, which fail to keep up a advance version of its competitors. Many finds its customer drifting off to rival products advertising & selling cost include all expenses incurred to obtained addition demand for the product.
- 6) Collusion: Business syndicates / cartel / trust may be formed by the oligopolistic firms to eliminate price cut competition & for sharing the market of the product to maximize industry or total profit.
- 7) Entry of the firm into the industry: Entry of the firm is not formally barred but it is difficult to get the entry of new firms into oligopoly market coz the existing firms may come to an agreement for blocking the entry of new firm into industry.

Concepts used in Oligopoly

1. Price leadership: long standard, reputation
2. Price war
3. Collusion
4. Secret Price concession \rightarrow Cheating
5. Non Price competition.

Collusion → Collusion means a formal or informal agreement among oligopolist on what prices to charge & how to divide market of product to maximize industry or total profit. Collusion arises due to the mutual interdependence among oligopoly firm. It sets turn from price war & leads to increase in total profit.

Difficulties or Obstacles

- The greatest obstacles to it is anti-trust laws.
- The greater the no. of firms & the extent of the product differentiation, the more difficult collusion becomes.
- Cheating by the member firms are other obstacles to effective collusion

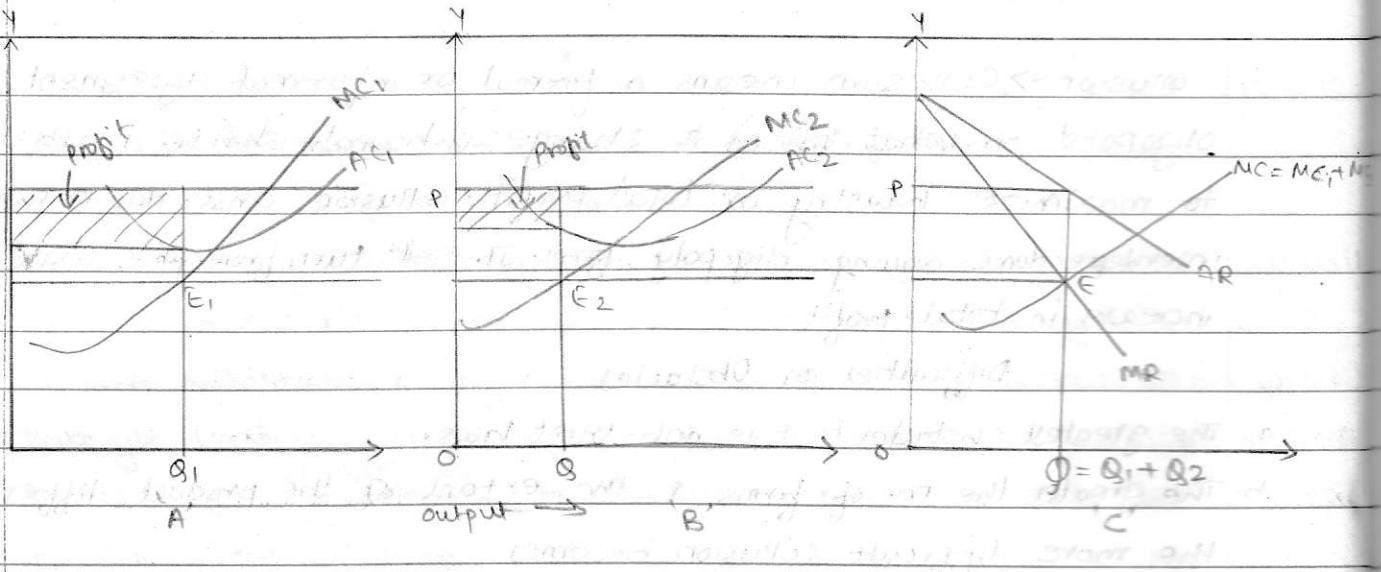
1. Tacit / Covert collusion

It is an informal agreement such as price leadership & is not illegal. It is often practice in oligopolist market when increase in cost condition make a price change necessary, the most efficient firm in the industry usually starts price increase on the Tacit understanding. The other firm in the industry will follow the price industry within a few days. This defit the danger of price war & will not be against anti-trust laws.

2. Open / Overt Collusion

It refers to the formal agreement such as a cartel. It is illegal in most of the countries. In US. anti-trust laws consider it as illegal.

Cartel: It is a orgl. of producers for the purpose of setting price & dividing the market so as to maximize total profit & block entry of new firms into the industry. The most extent firm is a centralized Cartel which behaves as a monopolist. Cartels are illegal in US. All firms producing the product come together to form a monopoly.



Central agency estimates demand & cost curves to determine qty & price for the market as also for constituent firms. Having access to cost of individual firms, the central agency determines MC of the industry through horizontal summation of MC_1 & MC_2 , the MC of the constituent firms. In the fig 'C', the profit maximizing monopoly output is determined at the point E where MC cuts MR from below. The output is OQ & corresponding price, OP . To allocate it among constituent firms, a horizontal line through E is drawn to cut NC_1 at E_1 & NC_2 at E_2 . The points E_1 & E_2 determine quantities Q_1 & Q_2 that the two firms should produce & sell so that $Q = Q_1 + Q_2$. The constituent firms sell their allocation at monopoly price P . The firms with lower cost gets a higher % market share (Q_1) & earns a higher profit than the other firm with higher costs (B). (A)