

Equilibrium of the Firm under different Market Categories

12.1 EQUILIBRIUM OF A FIRM UNDER PERFECT COMPETITION IN THE

SHORT-RUN

A firm is in equilibrium at that point where it maximizes its profit. The profit of the firm essentially depends on two factors, viz.

- i) The Revenue structure and
- ii) The cost structure

The Revenue Structure

Under Perfect Competition i.e. under perfect competition, **the average revenue curve is horizontal** because each firm under perfect competition is a price-taker and the **marginal revenue curve coincides with the average revenue curve**. Thus **AR = MR** in case of firm under perfect competition.

The Cost Structure:

The cost structure can be illustrated by the **U – shaped Average Cost curve**. i.e. the average cost curve is U – shaped and **the marginal cost curve cuts the average cost curve at the lowest point of the average cost curve**. i.e. when AC is falling, $MC < AC$; when AC is Minimum $MC = AC$; when AC is rising, $MC > AC$.

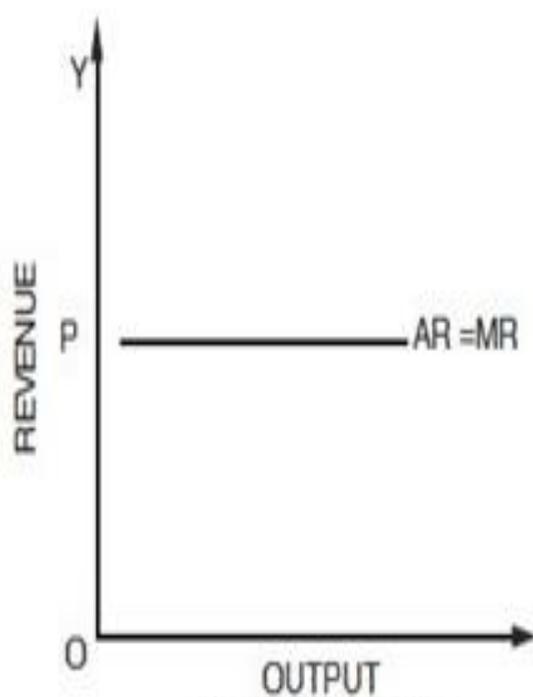


Fig. 12.1 AR = MR

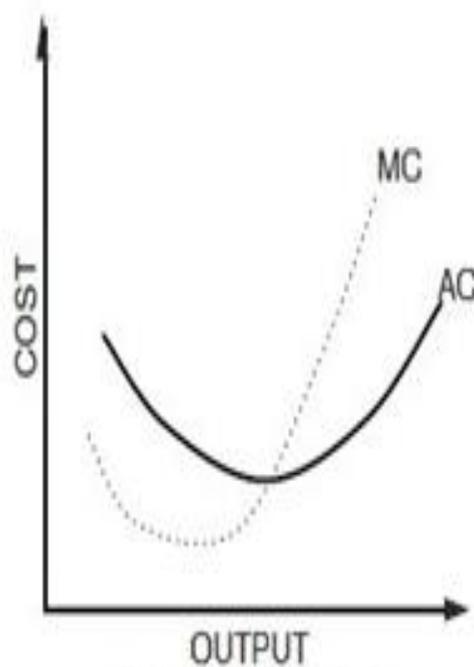
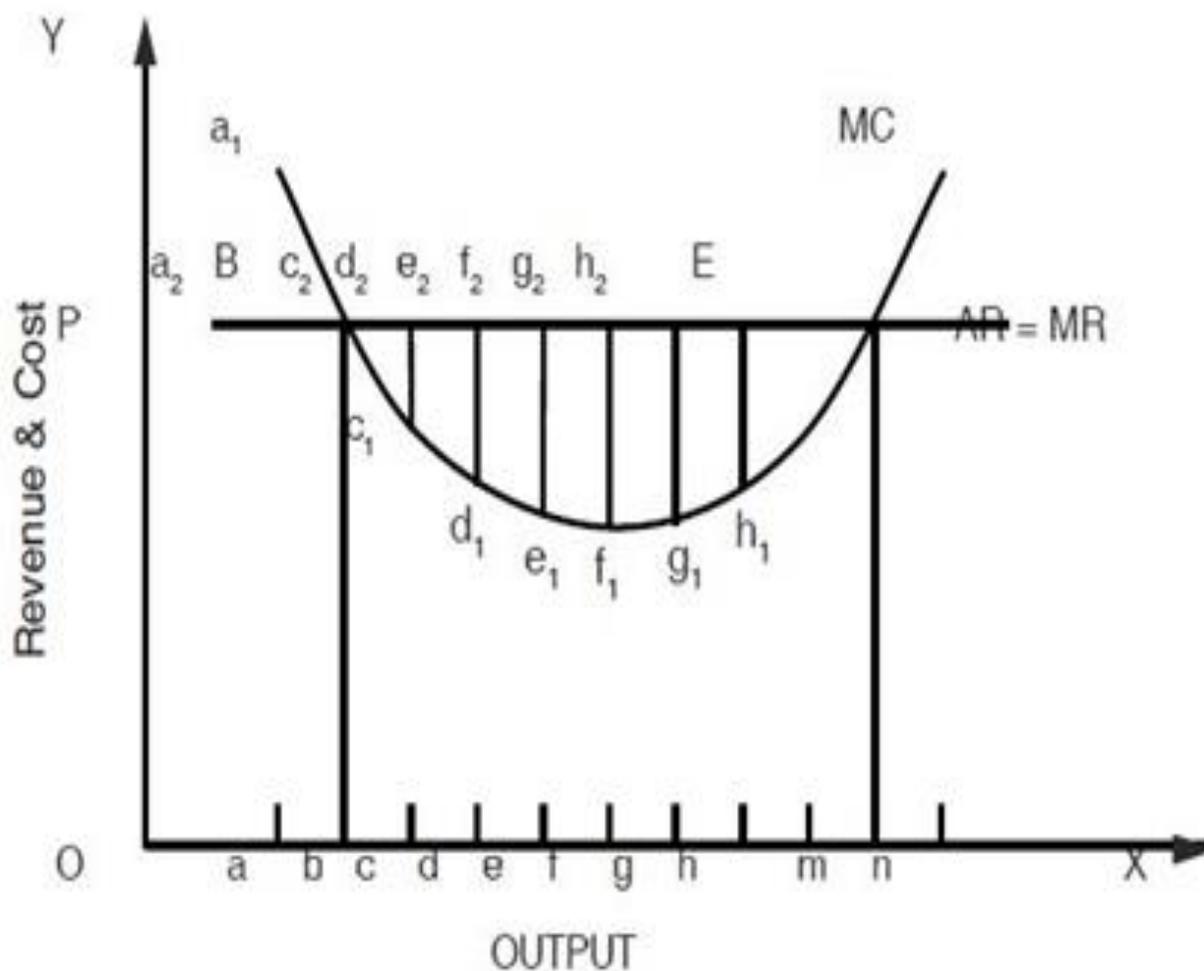


Fig. 12.2 AC & MC

Necessary condition for equilibrium of a firm under perfect competition in the shortrun (MR = MC)



In order to obtain the necessary condition for equilibrium of a firm under perfect competition in the short-run let us consider the revenue and cost structures simultaneously.

The average revenue curve is horizontal and marginal revenue curve coincides with the average revenue curve. Thus $P = AR = MR$. Let us also consider initially the given marginal cost curve, MC. Given these curves we may embark upon our analysis to locate the point of **profit maximization**. Let us assume that the firm produces 'a' unit of output. For the 'a' unit of output the marginal cost is aa_1 but the marginal revenue is aa_2 . The marginal revenue is less than marginal cost and therefore a_1a_2 is the loss for unit 'a'. But the firm does not stop production at this stage because for the additional unit produced the marginal cost is less. Let us consider the unit b. For b unit, the marginal cost is bB and marginal revenue is also Bb . Thus for the b unit there is neither any profit nor any loss. The firm then produces c unit. For the c unit the marginal cost is cc_1 whereas marginal revenue is cc_2 . Therefore, c_1c_2 is the profit for c unit. Similarly for d unit the profit is d_1d_2 . For e unit of output the marginal cost is ee_1 and marginal revenue is ee_2 . Therefore e_2e_1

is the profit for e unit. The profit from c, d and e units will be $c_1c_2 + d_2d_2 + e_1e_2$. Let us now consider the f unit. For the f unit the marginal cost is ff_1 and marginal revenue is $f f_2$. Therefore the profit for f unit is f_1f_2 . The total profit from units c, d, e and f now is $c_1c_2 + d_1d_2 + e_1e_2 + f_1f_2$. Let us now consider

the unit g . For g unit the marginal cost is g_1 and marginal revenue is g_2 . Thus for g unit the profit is g_1g_2 . You will observe that g_1g_2 is less than f_1f_2 . Therefore the profit for the g unit is less than profit from f unit, nevertheless it is an addition to the total profit. The firm goes on producing till unit M . For unit M the **marginal cost = marginal revenue** i.e. ME . If the firm produced even one unit more than OM , say n unit then the marginal cost for n unit is nn_1 and marginal revenue from n unit is nn_2 . The cost exceeds revenue and there will be a loss. Hence when the output goes beyond OM , the profit cannot be maximum. Thus in order **to maximize profit the firm must produce OM units of output, neither more nor less than OM** . When the output is OM , the Marginal revenue equals Marginal cost. Thus **equality between marginal revenue and marginal cost is the necessary condition for equilibrium**.

Sufficient condition for Equilibrium of a firm under perfect competition in the Shortrun (MR = Rising MC).

$MR = MC$ not only at point E . If you observe very carefully then marginal revenue is equal to marginal cost even at point B ; but B is not the point of equilibrium because upto that point the firm has not enjoyed any profit. It has only incurred losses. Therefore B can not be the point of equilibrium. Besides the firm starts enjoying profits only after this point because then the marginal cost is below the marginal revenue. Hence between B and E , the only point of profit maximization is E , although $MR = MC$ at both B and E . The main factor which distinguishes point E from B is that at point E , the marginal cost is rising. Given the marginal revenue as horizontal straight line and since at point B the marginal cost is falling the cost will be below the revenue for an additional unit of output. This will yield profit to the firm. Whereas at point E , as the marginal cost is rising it will be higher than marginal revenue for an additional output beyond OM units and subsequently result in loss. Hence although $MR = MC$ is the necessary condition for equilibrium it needs to be modified to derive the sufficient condition. The **sufficient condition for equilibrium of a firm under Perfect Competition is not just that $MR = MC$ but MR must equal rising MC . i.e. for a firm to be in equilibrium under perfect competition in the short-run, the marginal cost curve must cut marginal revenue curve from below**.

12.2 EQUILIBRIUM OF A FIRM UNDER PERFECT COMPETITION IN THE LONG-RUN

Given the original average and marginal revenue ($AR = MR$) and the marginal cost curve (MC), let us assume that E is the original point of equilibrium where $MR =$ rising MC . OM is the equilibrium level of output.

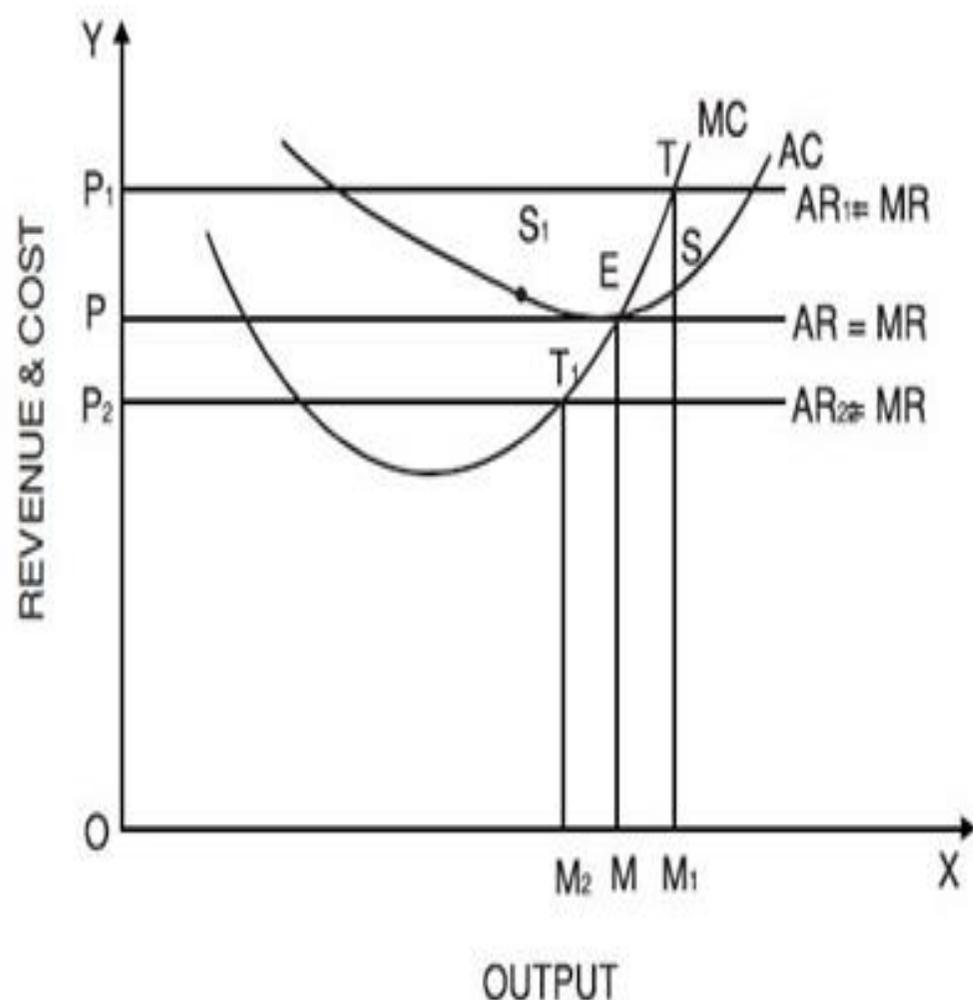


Fig 12.4 $AR = MR = \uparrow MC = \text{MIN } AC$

Now let the price be OP_1 . The revenue structure will now be represented by $AR_1 = MR_1$. The marginal cost cuts the new marginal revenue from below at point T . Thus T is the new point of equilibrium and the new equilibrium output is OM_1 . Let us now introduce the average cost curve (AC) and as discussed earlier let us assume that the average cost includes normal profit. For the new equilibrium output OM_1 , the average cost is M_1S and the new price is $OP_1 = M_1T$. Since average revenue is M_1T and average cost is M_1S and as $M_1T > M_1S$ the firm enjoys super-normal profit. **TS is thus the** super-normal profit. Now if the firm enjoys supernormal profit it tempts other firms to enter the industry. Free entry, i.e. entry without any restriction is an important characteristic of perfect competition. Thus new firms enter. More or new firms implies that the supply of the product in the market will increase and when the supply expands, the price of the product in the market will decline. Therefore, the price will move down from OP_1 to OP and **the original**

equilibrium will be restored at point E. The super-normal profits of the

firm will disappear and once again only normal profit will be enjoyed. **T was the point of only temporary equilibrium.**

Now let us consider the price to be OP_2 . When the price is OP_2 the new equilibrium is at point T_1 . The new equilibrium output is OM_2 . Now when the output is OM_2 , the average revenue is M_2T_1 and the average cost is M_2S_1 . The average cost is higher than the average revenue.

The firm is incurring a loss; and if the firm can not enjoy even normal profit then it takes an exit. When firms begin to step out of the industry, the industry supply of the product falls, and as the supply shrinks, the price begins to rise. It goes up from OP_2 to OP , and once again the original point of equilibrium E is restored.

Now observe this point E very carefully. Just see how many things are equal at this point. At point E we find that the price, average revenue, marginal revenue, rising marginal cost and the minimum average cost are the same.

i.e. at point E ,

$$AR = MR = \uparrow MC = \text{Min AC}$$

This is the condition for equilibrium of a firm under perfect competition. The point where $MR = \text{rising MC}$ is also the point where the horizontal AR is a tangent to the AC at the minimum point of AC curve and the point where **Price = AR = MR = MC = Min AC** is the point of equilibrium of the firm under perfect competition.

12.3 THE SHUT-DOWN POINT OF THE FIRM

At this stage one very important question arises i.e. will a firm take an exit as soon as it incurs a loss? The answer will be in the negative. No doubt the aim of the firm is to maximize profit and when it incurs a loss it must try to **minimize its loss**. This implies that a firm should remain in production at least as long as its loss is minimized. To understand the shut-down point of the firm we shall have to reconsider the cost structure. When the average revenue is below the average cost then the firm is not enjoying profit but is incurring a loss. But the average cost itself is made up of average fixed cost

and average variable cost. Now, as long as the average revenue of the firm can cover its variable cost then the firm will continue to remain in production with the hope that it will be able to minimize its loss. **But if the revenue is not enough to cover even its variable cost then the firm must take an honourable exit.** It must shut-down at this stage and hence such a situation is called the **shut-down point** of the firm.

We can very conveniently elucidate the shut-down point graphically. Let us assume that the average revenue, marginal revenue, average and marginal cost curves are given. E is the original point of equilibrium of the firm where $AR = MR = MC = \text{Min AC}$.

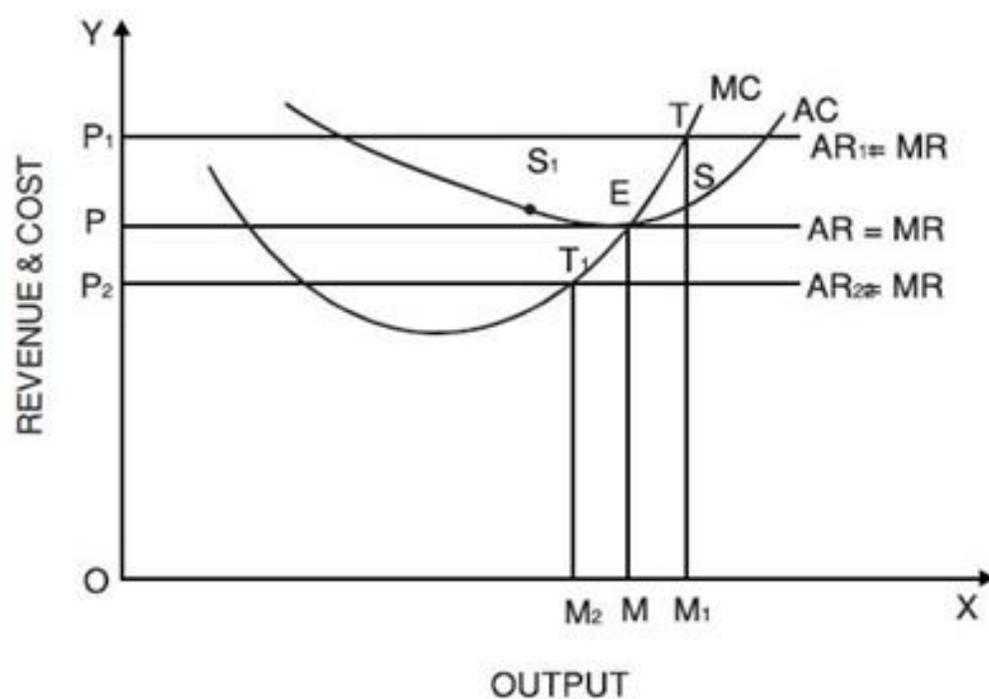


Fig 12.4 $AR = MR = \uparrow MC = \text{MIN AC}$

Let the new price be OP_1 represented by $AR_1 = MR_1$. The new equilibrium point is S and the new equilibrium output is OM_1 . At this level of output the average cost is M_1L and average revenue is M_1S . The cost exceeds revenue and thus LS indicates the loss. At this stage we consider the average variable cost curve. Let us suppose that AVC is the average variable cost curve. At point S, the AR just covers AVC . This is the maximum possible loss a firm can bear. If the price is even slightly lower than OP_1 say OP_2 then the average revenue will not be able to cover even the average variable cost and thus the firm will have no option left but to take an exit. Hence **point S may**

be considered to be the shut-down point of the firm. It is therefore clear that under condition of loss, the firm tries to minimize its loss and thus continues to remain in production as long as the revenue can cover at least its variable cost. But even if the variable cost is not covered then the firm has to shut-down.

12.4 EQUILIBRIUM UNDER MONOPOLY

The Monopolist is in equilibrium at that point where he maximizes his profit. Profit of the monopolist will depend, as usual, on two factors; (i) the Revenue structure and (ii) the Cost structure.

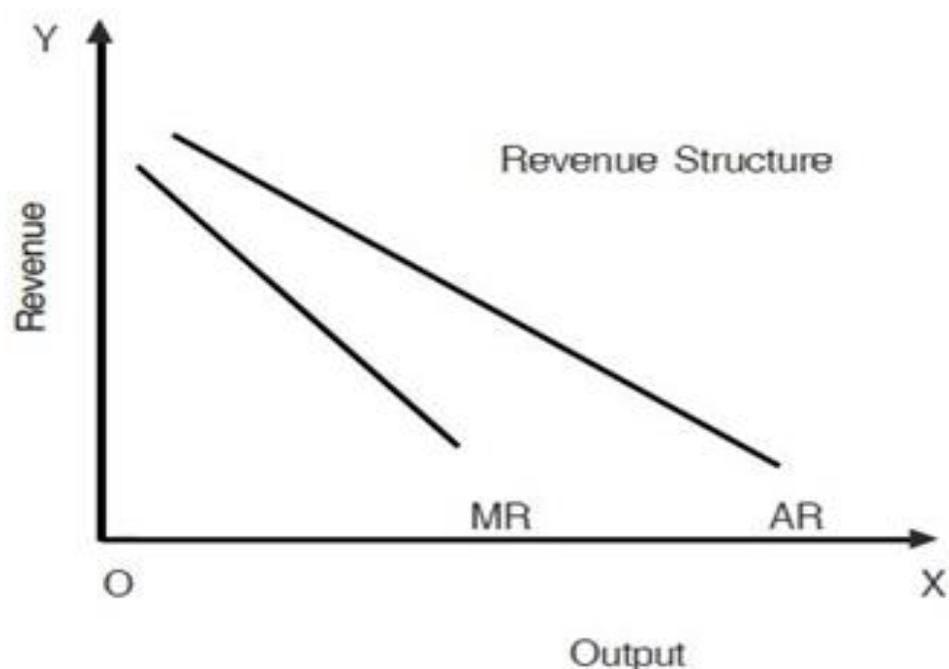
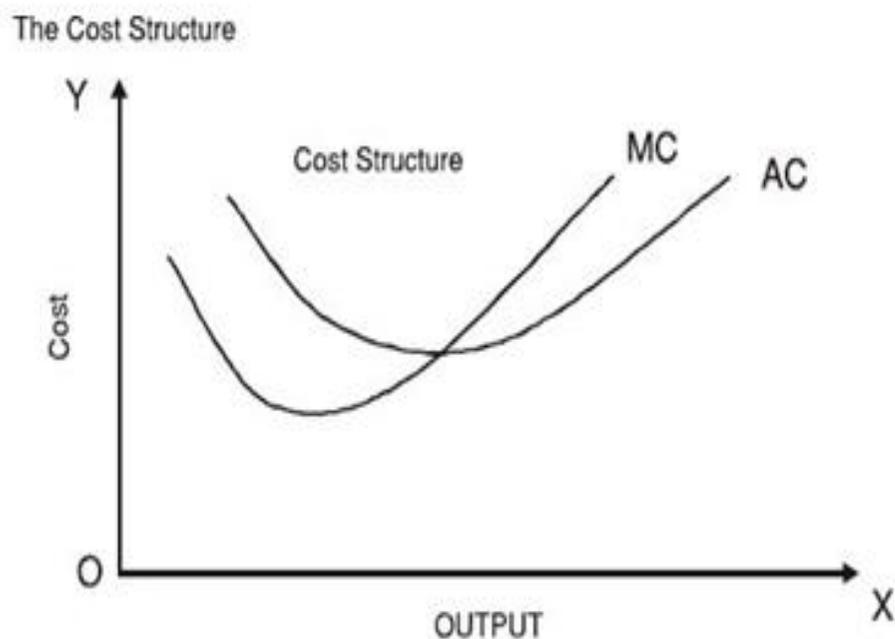


Fig 12.6 AR & MR Curves

In case of monopoly the average revenue curve slopes downwards from left to right and the marginal revenue curve lies below it. This implies that the monopolist can sell more only at lower price. Besides, as the average revenue is falling, the marginal revenue falls faster than average revenue.



The cost structure under monopoly has no element of uniqueness. In the sense that just as under perfect competition the average cost curve under monopoly is also Ushaped in the short-run and the marginal cost curve cuts AC at the lowest point of the average cost curve.

The Golden Rule for Profit Maximization : $MR = MC$

To keep our analysis simple, to start with, let us consider only Marginal revenue and Marginal cost curves. MR is the Marginal Revenue curve and MC is the Marginal cost curve. Let the Monopolist produce 'a' unit of output. The marginal cost for producing 'a' unit is aa_1 . When he sells this 'a' unit he gets the revenue aa_2 . The marginal revenue aa_2 from unit 'a' is higher than the marginal cost aa_1 and therefore a_2a_1 is the profit for 'a' unit. Now let the monopolist produce b unit. The cost for producing b unit is bb_1 whereas the revenue from b unit is bb_2 . Hence the profit from b unit is b_2b_1 . Adding up the marginal profits from a and b we get $a_2a_1 + b_2b_1$. The monopolist will go on producing the output upto M unit. For the M unit, $MR = MC$. If the monopolist produces nth unit then for nth unit, the marginal cost is above marginal revenue and therefore the monopolist will incur a loss for the nth unit. Hence to maximize profit the monopolist will produce OM units, neither more nor less. E is the point of equilibrium. At point E, $MR = MC$ and thus **the Golden rule for equilibrium under monopoly, $MR = MC$ is established.**

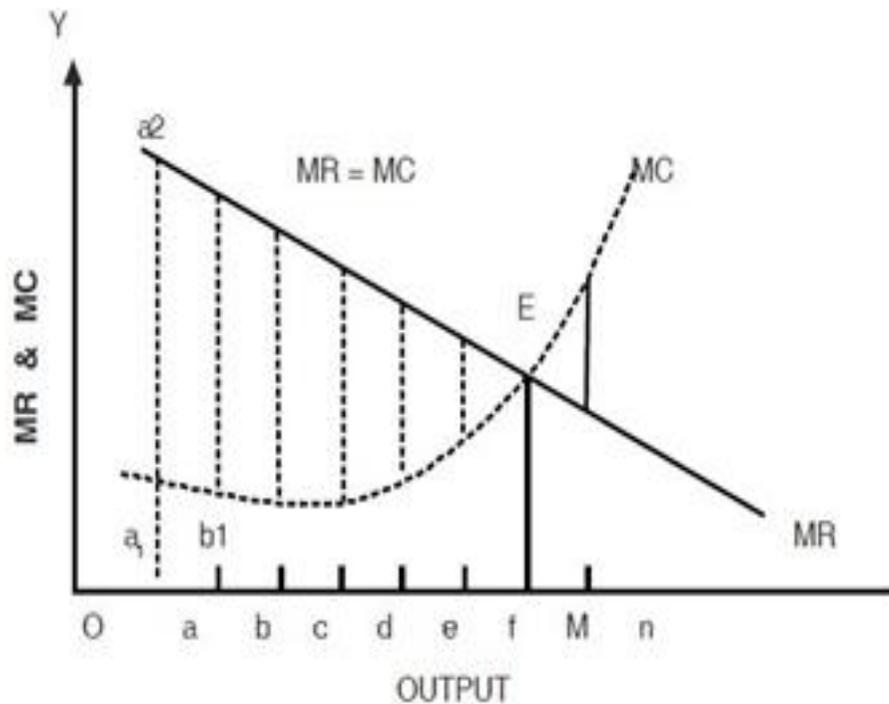


Fig. 12.8 MR = MC

Let us now introduce the Average Revenue and Average Cost curves in a similar diagram:

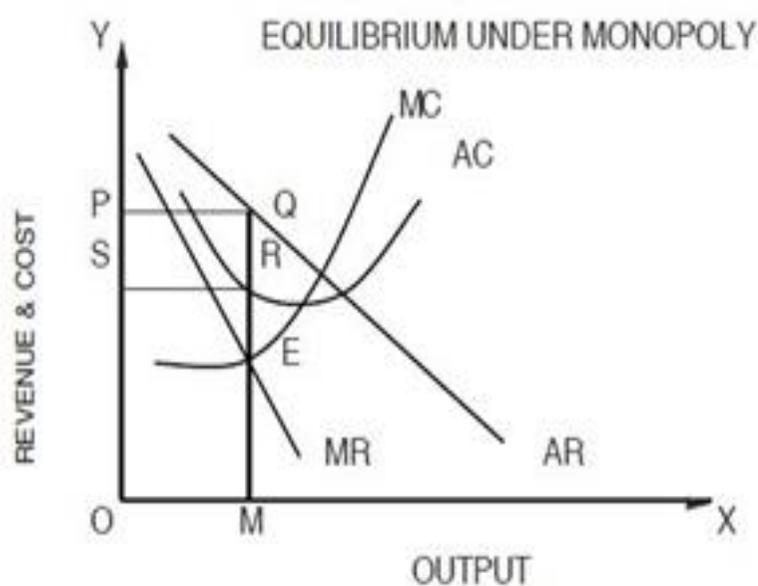


Fig 12.9 Equilibrium Under Monopoly

Given the Average Revenue and Marginal Revenue curves and the Average and Marginal cost curves, E is the point of equilibrium where $MR = MC$. **OM is the equilibrium output. The price is shown by the average revenue curve** and therefore corresponding to the equilibrium output OM, the price as shown by average revenue is OP. Now when the output is OM, the average revenue is QM and QR is the extent of average profit. The product of average profit (QR) and output (OM) is the total area of profit. Thus **PQRS is the area of supernormal profit of the monopolist.**

ELASTICITY OF DEMAND AND MONOPOLY EQUILIBRIUM

The concept of elasticity of demand has an important bearing on monopoly

equilibrium. **A monopolist cannot be in equilibrium where elasticity of demand is less than one.** The monopolist will be in equilibrium at the point where he maximizes his profit. The condition for profit maximization which we have just derived is $MR = MC$.

We have also derived a formula which interrelates AR, MR and elasticity of demand.

$$e = \frac{A}{A - M}$$

$$e(A - M) = A$$

$$eA - eM = A$$

$$eA - A = eM$$

$$A(e - 1) = eM$$

$$M = \frac{A(e - 1)}{e}$$

Now if e is greater than 1, then M is positive and if e is equal to 1, then M is zero. But if e is less than 1, then M becomes negative. When marginal revenue is negative, the profit cannot be maximum and if profit is not maximum then the monopolist cannot be in equilibrium. Thus **a monopolist cannot be in equilibrium where elasticity of demand is less than one.**

12.5 COMPARISON BETWEEN PERFECT COMPETITION AND MONOPOLY

Having analysed at length the price-output policy and conditions of equilibrium under perfect competition and monopoly, for the sake of complete understanding we may now venture to compare these two market categories with respect to price, output, profit, revenue and cost considerations.

Given the diagrams depicting equilibrium of a firm under perfect competition and monopoly let us consider the various aspects for comparison.

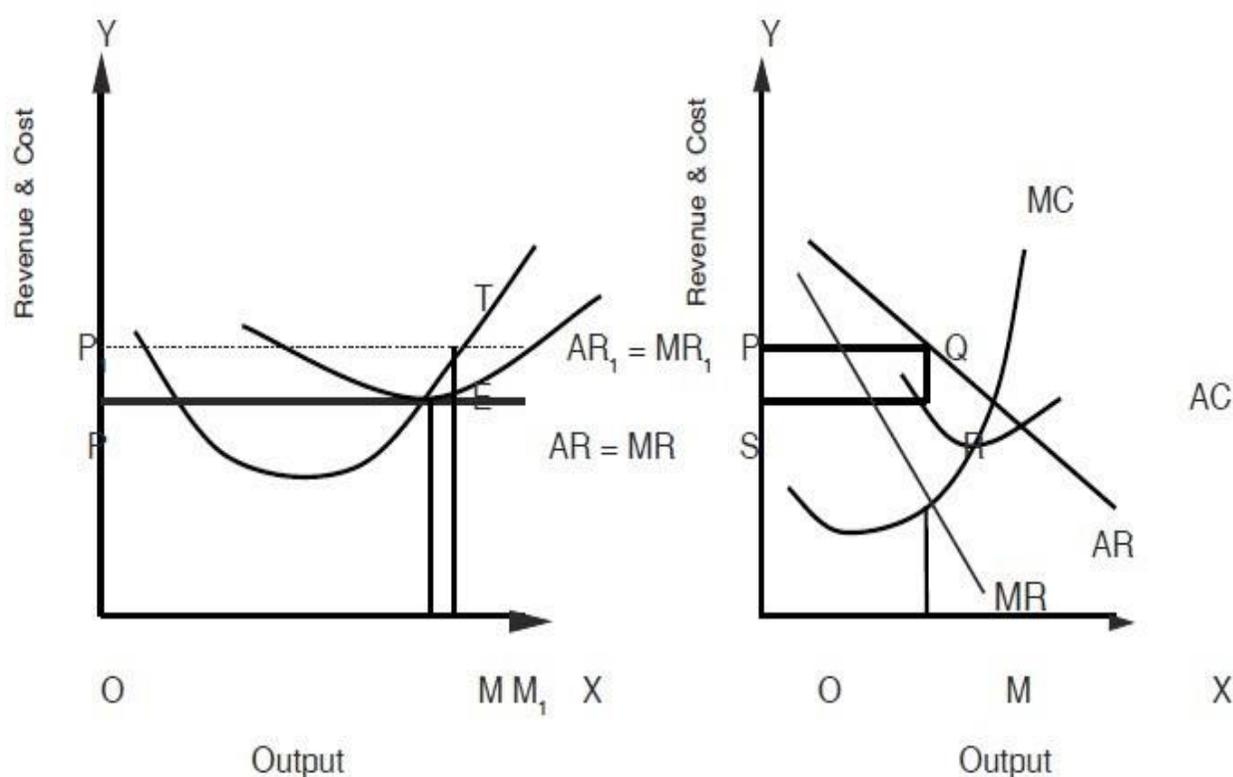


Fig 12.10 Perfect Competition & Monopoly Compared

1. **Price:** A firm under perfect competition is a **price-taker**. It has to take the price which prevails in the market whereas a monopolist is a **price-maker**. Besides in case of a firm under perfect competition the equilibrium condition demands that price = AR = MR = rising MC = Minimum AC. Whereas Price under monopoly is denoted by the AR curve and at the

point of equilibrium the AR is above AC, MR and MC. Hence one is normally tempted to conclude that **price under monopoly is higher than price under perfect competition.**

2. **Output:** The firm under perfect competition is producing the output upto the point where average cost is minimum. This implies that output of a firm under perfect competition is optimum. The output is produced where $AR = \text{Minimum AC}$. The monopolist, on the other hand does not cease to produce the output upto the point where AC is minimum. He stops producing where $MR = MC$, because if he were to produce more than OM and upto the point where AC is minimum then his profit will not be maximum. Hence **under monopoly the output is restricted whereas under perfect competition the output is optimum.**
3. **Profit: A firm under perfect competition enjoys only normal profits in the longrun.** When it enjoys super normal profits new firms enter the industry. Supply increases; price comes down and super normal profits

disappear in the long-run. **But a monopolist normally enjoys super normal profits even in the long-run.**

4. **Revenue:** A firm under perfect competition is facing a **horizontal revenue curve**. Besides the Marginal revenue curve coincides with the average revenue curve. Thus $AR = MR$. **But in case of monopoly the AR curve is downward sloping and MR curve falls faster than the average revenue curve.**
5. **Cost:** In case of perfect competition a firm cannot be in equilibrium under condition of falling cost. **Thus falling cost are not compatible with equilibrium of a firm under perfect competition whereas a monopolist can be in equilibrium under conditions of rising, falling and constant cost.**

12.6 PRICE-DISCRIMINATION OR DISCRIMINATING MONOPOLY

Often do we come across situations when we find that a single producer sells his product at different prices to different buyers or in different markets. This practice of charging different prices to different buyers or in different markets for the same product is called Price discrimination. According to **Mrs. Joan Robinson, “the act of selling the same article, produced under a single control, at different prices to different buyers is called Price discrimination.”** The person or firm practicing price- discrimination is the **Discriminating Monopolist**.

Price discrimination may take any of these three forms :

- i) **Personal Price-discrimination:** i.e. different prices may be charged to different buyers for the same product, may be depending upon the individuals ability to pay.
- ii) **Regional Price-discrimination:** i.e. different prices may be charged for the same product in different local markets. Local or regional price-discrimination depends on the differences in elasticities of demand for the product in different markets.
- iii) **Trade Price-discrimination:** i.e. different prices may be charged for the same product depending upon the use to which the product is applied. e.g. a relatively lower price is charged for a unit of electricity when used

for industrial consumption purpose as compared to the price charged for the same unit of electricity for the purpose of domestic consumption.

12.7 CONDITIONS UNDER WHICH PRICE-DISCRIMINATION IS POSSIBLE

Price-discrimination is possible under following conditions:

- i) **Imperfect Competition:** Price-discrimination is not possible under perfect competition because under perfect competition each firm is a price taker and we also assume perfect knowledge on the part of buyers about market conditions. Hence a producer cannot charge different price for the same product to different buyers. Therefore price-discrimination can only be practiced under imperfect competition.
- ii) **Absence of Resale possibility:** The fundamental condition which must be fulfilled if discrimination is to take place is that there should be no possibility of resale from one consumer to the other. Now if the same commodity is sold to Mr. A at Rs. 10/- and to Mr. B. at Rs. 9/- and if the buyers are interrelated then B will buy both the units at the price of Rs. 9/- each and resell it to A. In that case the monopolist will not be able to practice price-discrimination.
- iii) **Differences in Elasticity of demand:** Perhaps the most important factor which promotes price discrimination is the prevalent differences in elasticity of demand for the product. It is due to differences in elasticity of demand for the product displayed by different consumers or in different regional markets that price-discrimination has become possible. In a market where demand for the product is relatively inelastic, the monopolist will charge a relatively higher price. **According to Mrs. Joan Robinson,** “the submarkets will be arranged in ascending order of their elasticities, the highest price being charged in the least elastic market and the lowest price in the most elastic market”.
- iv) **Relative immobility of buyers:** There should prevail no possibility of transferring the unit of demand from the high priced market to the low priced one or else it will be difficult for the monopolist to practice price-discrimination.

- v) **Consumer's Peculiarities:** Price-discrimination takes place due to some of the peculiarities of the consumers:
- a) **Ignorance:** The consumer may be ignorant of the price charged by the monopolist for the same product to the other consumers.
 - b) **Indifference:** The consumers do display the tendency to ignore minor price differences e.g. if Mr A is asked to pay Rs. 50/- for the product and Mr. B has paid Rs. 51/- then B may not bother much about this price difference. This attitude of indifference with regard to different prices charged for the same product to different buyers encourages the monopolist to practice price-discrimination.
 - c) **Illusion:** The consumers entertain some false notions. i. e. there is the tendency to believe that different price implies inherent qualitative differences in the product. Such beliefs encourage the policy of price-discrimination.
- vi) **Personal Services:** In case of services which require personal touch and which are not subject to resale it is easy to practice price discrimination e.g. doctors, lawyers, hair-dressers, beauticians, auditors etc. can very conveniently practice price discrimination.
- vii) **Regional distances and frontier barriers:** Regional distances account for transport cost and so also inter-regional exchanges involve tariffs and duties . These factors enable the monopolist to charge different prices in different regional markets for the same product and encourage price-discrimination.

12.8 PROFIT-MAXIMISATION UNDER PRICE-DISCRIMINATION

(When is price-discrimination profitable?)

The aim of the discriminating monopolist is to maximize profits. We can thus derive the condition of profit maximization under price-discrimination by extending the normal theory of the firm to a case where there are two or more markets instead of just one market. We can build up the theory of profit maximization on the basis of certain assumptions:

Let us assume that:

i) **There are two markets A and B.**

ii) The aim of the monopolist is to maximize profits.

iii) He enjoys monopoly position in both the markets.

iv) The elasticity of demand for the product in the two markets is different (This is perhaps the most essential condition for price discrimination to be profitable). Price discrimination, according to **Stonier and Hague** “will be profitable only if elasticity of demand in one market is different from elasticity of demand in the other. In general, it will pay a monopolist to discriminate between two markets only if elasticity of demand in one market is different from elasticity of demand in the other.” Let us assume that the demand is relatively inelastic in market A and relatively elastic in market B.

v) We also assume that conditions do prevail for practicing price-discrimination.

vi) We also assume that the buyers in one market are not able to trade profitably by selling the good to the buyers in the other market.

Let us now analyse how the monopolist will determine the size of his total output and on what basis will he decide to distribute the output between the two markets A and B. What will be the price that he will charge in the two markets and how will he maximize his profits.

The condition for profit maximization is that the Marginal Revenue should equal Marginal Cost. However, the complication arises here because the producer is selling this product not in just one market but in two markets. Hence he is faced with the revenue structure in two markets. Given the marginal cost curve he aggregates the marginal revenue from market A and Market B and produces the output upto the point where **combined MR = MC**. He then distributes his output between the two markets in such a way that marginal revenue from both the markets will be the same, for if the marginal revenue from one market is more than the marginal revenue from the other then he will sell more in the former market till the marginal revenue in that market equalizes the marginal revenue in the other. Once the output gets distributed in the two markets on the basis of equal marginal revenue

from both the markets the price in each market is shown by the respective average revenue curves. Obviously the price in the market where demand is relatively inelastic will be higher than the price in the market where demand is relatively elastic. Hence price-discrimination will be profitable only when elasticities of demand are different in the two markets. There is no incentive for price discrimination if the elasticity of demand is the same in both the markets.

Let us now **assume that elasticity of demand is different in the two markets A and B**. If the elasticity of demand is low in market A; i.e. **demand is relatively inelastic**, the price can be raised in market A. Since the demand is relatively inelastic it is insensitive to rise in price and hence if the price is raised it will not cause much fall in demand. If the **demand is relatively elastic in market B** it will pay the monopolist to lower the price in B and increase the sales substantially. Now as in Market A since elasticity of demand is low, a decrease in sales will reduce revenue insignificantly, whereas in market B a reduction in price will add significantly to the total revenue. It will be profitable for the monopolist to transfer goods from Market A to market B. He will continue to transfer units from market A to market B till that point where marginal revenues are equal in both the markets. "It is also essential that not only the MR should be the same in each market but that the **MR should also be equal to MC of producing the whole output.**" This then is the condition for equilibrium under discriminating monopoly.

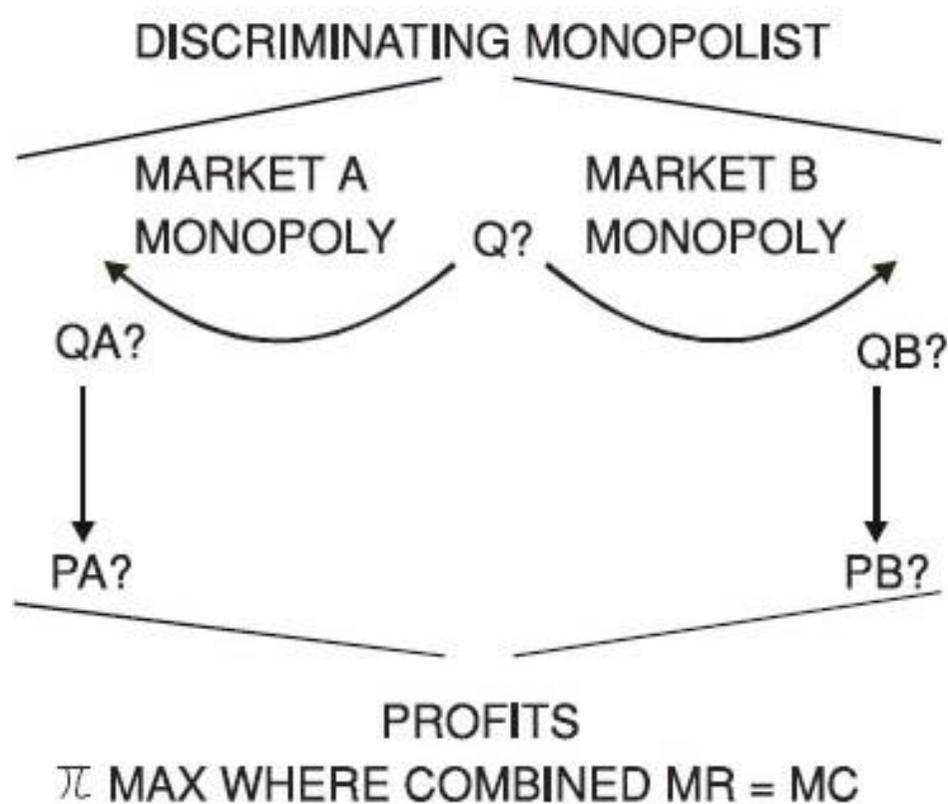


Fig 12.11 Issues Of Discriminating Monopoly

We can translate the entire explanation in the form of pictorial presentation. Let us consider the two markets A and B. In both the markets our producer enjoys monopoly. Hence the AR Curve is down-ward sloping and the MR curve lies below the average revenue curve. However, the **elasticity of demand for the product in the two markets is different**. In market A, the demand for the product is relatively inelastic and in market B the demand is relatively elastic. This is shown by the steepness in the average revenue curve in the respective markets and corresponding to the average revenue curves we have the respective marginal revenue curves.

In the third panel we have summed up the marginal revenue from the two markets. Given the marginal cost curve the producer will produce the output upto OM units where **combined MR = MC**. If he produces either more or less than OM then his profit will not be maximum. He now distributes his total output OM between the two markets A and B in such a way that the marginal revenue from the two markets is the same and that marginal revenue equals the marginal cost for the whole output. Thus he sells **OM_a in market A** and **OM_b in the market B**. The price in two markets are shown by the point on the average revenue curves corresponding to the level of output in each market. i.e. **in market A the price is OP_a and in market B the price is OP_b**. It is quite obvious that the price in market A is higher than price in market B because the demand for the product is relatively inelastic in market A. The total profit is indicated by the area ZTEG.

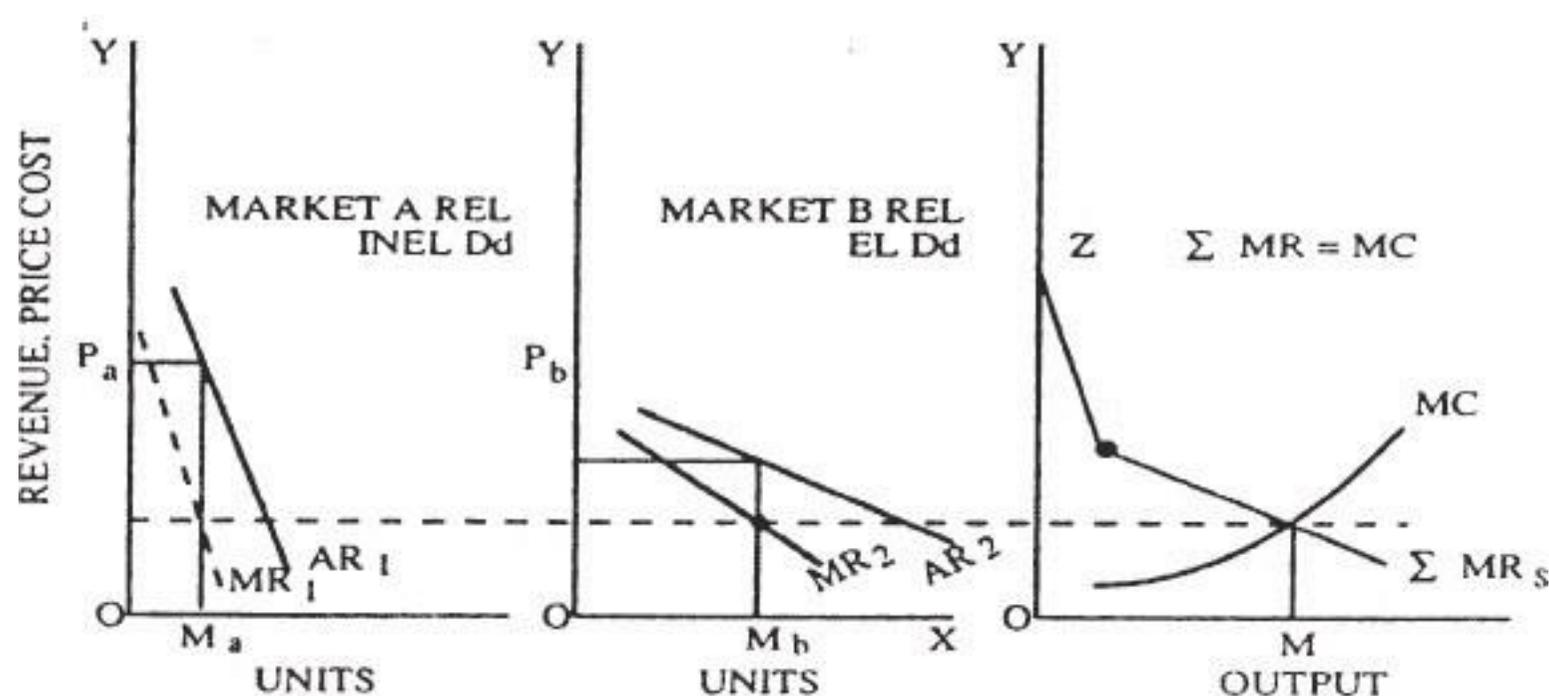


Fig 12.12 Monopoly in both Market

12.9 DUMPING

The term **Dumping** means **selling our product in foreign market at a price lower than in the home market**. Let us elaborate 'dumping' by considering the following illustrations:

Suppose the producer is selling in two markets; viz, the **home market** and the **world market**. In the **home market** he is saddled as a **monopolist but in the world market there is perfect competition**. Let us therefore analyse the price-output policy of the producer under this peculiar situation.

Since there is perfect competition in the world market, the producer has to take the price which prevails in the world market. This is represented by the horizontal average revenue curve AR_w and the marginal revenue curve coincides with the average revenue curve. Thus $AR_w = MR_w$. However, in the home market he is a monopolist and therefore average revenue curve slopes downwards and the marginal revenue curve lies below it, both represented by AR_H and MR_H respectively. Given the MC curve the producer is in equilibrium at point E where **combined $MR = MC$** .

The **total profit maximizing output is OM** . He sells **OH in the home market and HM in the world market**; because upto H unit of output the marginal revenue in the home market is higher than the marginal revenue from the world market. But beyond the H unit he sells in the world market to enjoy higher marginal revenue from the world market. **$OH + HM$ exhausts his total output OM** . Regarding the price, the producer

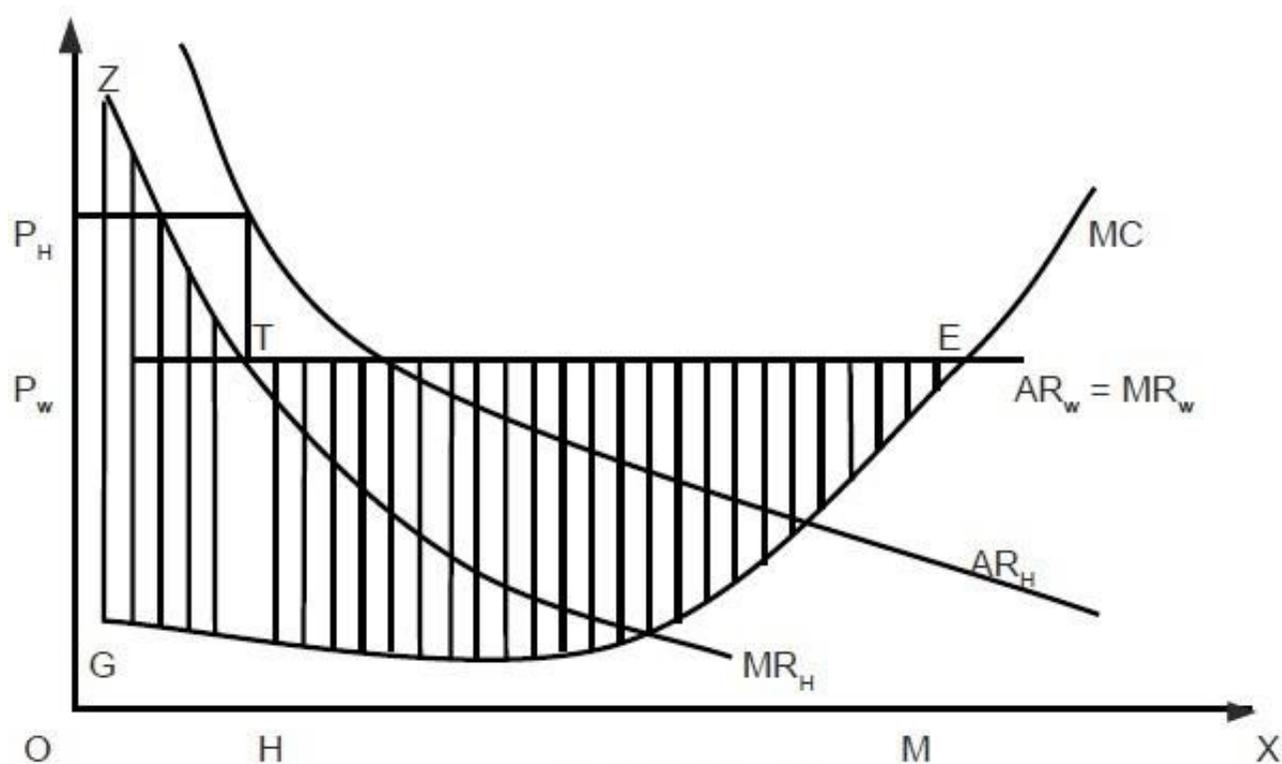


Fig 12.13 Dumping

is helpless as far as the world market is concerned because there is perfect competition and he is only a price-taker. He has to take OPW as the price in the world market. However, in the home market the price is OPH corresponding to the output OH . **The price in the home market is higher than the price in the world market.** i.e. $OPH > OPW$. This implies that the producer is selling his product in the two markets at different prices. In other words, he is practicing price-discrimination. The total profit is shown by the area $ZTEG$.

This act of selling the product in a foreign market at a price lower than in the domestic market is called **Dumping**. Dumping may be either **persistent** in nature i.e. over a long period or **intermittent** in nature, i.e. only for a temporary short period.

Dumping takes place due to following (technical) and (financial) reasons:

- i) The aim of the discriminating monopolist is **to maximize profits**. Initially he earns higher MR for his product when he sells in the home market. But if he continues to sell more in the home market then the MR from home market will be much lower than MR from the world market and hence to maximize profits he cuts short his sales in the home market to OH and prefers to sell HM in the world market. Thus, he can sell larger output and also hope to maximize profits.
- ii) There is the possibility that as the producer goes on producing more units, **he enjoys economies of scale** which would help him in lowering the average cost. To minimize cost and optimize output he will produce upto the point where AC is minimum. Now all that he produces may not be demanded in the home market and therefore he will sell as much is needed to be sold at home and the remaining could be sold (dumped) in the foreign market even at a little lower price than the price at which it is sold in the home market.
- iii) Thirdly the producer wants **to penetrate the foreign market** and hence sells his product there at a relatively lower price.
- iv) An important reason for dumping is that the producer may not just want to enter the foreign market but even try **to capture the foreign market**. This

will be disadvantageous to these foreign markets where the product is dumped. The buyers there may then turn to buy the foreign product which

is being sold at a lower price than the product of their home industry. The infant-industries there tend to suffer. Due to fall in their domestic demand industries have to close down. There will be threat of unemployment and all this may lead to recession and even depression. The country where the product is dumped will resort to imposing tariffs on imports as an important anti-dumping measure.

12.10 MONOPOLISTIC COMPETITION

According to **Prof. E.H. Chamberlin**, “Economic literature affords a curious mixture, confusion and separation of the ideas of competition and monopoly”. In reality we neither have perfect competition nor pure monopoly. We hardly come across a situation in which an indefinite number of firms produce identical or homogeneous product. Similarly a situation in which only one firm regulating the entire supply of a product is hard to come by. In reality, we come across a market structure in which elements of both, the Competition and Monopoly are interwoven.

Monopolistic Competition is that market category in which there is keen competition, though not perfect, among a group of monopolists producing same, though not identical product e.g. soaps, watches etc.

FEATURES OF MONOPOLISTIC COMPETITION

- 1. Large number of firms:** Monopolistic competition is characterized by large number of sellers. In this respect it is close to perfect competition. The number may not be as large as that under perfect competition but it is also not very small.
- 2. Absence of interdependence:** Since the number of firms is sufficiently large and the size of individual firm is small enough no appreciable interdependence exists among the different firms. No single firm can influence or is influenced by the others in the market. It means different firms cannot produce any significant impact on market by changing their price policies.
- 3. Freedom of Entry:** Like perfect competition, monopolistic competition also grants unrestricted entry, to rivals in the market. It means there are no restrictions. This leads to occurrence of only normal profits in the long run.

However, the nature of this feature is not the same as that under perfect competition. Under perfect competition new firms enter the market with an identical product while under monopolistic competition the new firm may produce only similar but not identical product.

4. **Product-Differentiation:** Under monopolistic competition, the different firms produce similar (but not homogeneous) products. It means the different firms produce what may be properly described as a differentiated product. Thus, product differentiation is the core of monopolistic competition. The firms produce a product belonging to a particular class, say tooth-paste; but individual product is differentiated from other rival products. It is because of such product differentiation that firms enjoy some monopoly power, that is, the power to control the price in a narrow circle, but in the wider circle, it faces the competition from the rival firms. Hence, the firms may be called as “competing monopolists” and the situation may be rightly described as monopolistic competition.
5. **Selling Costs:** Another feature of Monopolistic Competition is the existence of Selling Costs; i.e. the costs incurred in order to create demand and push up the sales of the product; such as advertising costs and publicity expenses. Selling costs are not incurred under Perfect Competition nor under Monopoly. In case of Perfect Competition we assume perfect knowledge on the part of buyers about the market condition; and in case of monopoly there is no close substitute in the market. Therefore selling costs are peculiar to monopolistic competition.
6. **Concept of Group:** Chamberlin introduced the concept of ‘group’ in place of industry. Industry referred to a collection of firms producing homogeneous product; whereas group comprises of firms producing differentiated product. The group may be ‘small’ or ‘large’. A small group consists of few sellers whereas large group consists of many sellers. A small group consisting of few sellers is associated with a market category called Oligopoly whereas in Monopolistic Competition we are concerned with large group having sufficiently large number of firms producing differentiated product.

12.11 SELLING COSTS

Broadly, selling costs refer to those expenses which are incurred for popularizing the differentiated product and increasing the demand for it. Selling cost is a special feature of monopolistic competition. Under perfect competition due to homogeneous product and under monopoly because of absence of substitute, the selling costs become unnecessary.

The most important instrument by which a firm can convince its buyers about the differentiating nature of its product is **advertising**. Such expenditure which is incurred by a firm under monopolistic competition to persuade customers to prefer its product to that of its rivals is known as 'selling costs'. **According to Chamberlin, Selling Costs are Costs incurred in order to alter the position or shape of demand curve for a product.** Such selling costs may be incurred in any form such as advertising, sales promotion, samples to potential customers etc. Whatever be the form, selling costs aim at raising the demand for the product and changing the position and the shape of demand curve.

Production Costs v/s Selling Costs	
Production Cost	Selling Cost
1. Incurred under all types of market category	1. Peculiar to Monopolistic Competition
2. Influence supply side	2. Influence demand side
3. To meet demand	3. To create demand
4. Some element of proportionality between production cost sales and output	4. No definite proportionality between selling cost and promotion.
5. Need not be considered as items of waste.	5. May be considered as items of waste.

Are selling costs to be considered as items of waste?
We can prepare a case on both sides;

- a) **Selling Costs as wasteful**
- b) **Not necessarily wasteful.**

Selling costs may be considered as items of waste for following reasons:

- a) **Retaliation:** i.e. when one firm incurs selling cost to push up the sales of its product, the other firms will also resort to advertisement to push up their sales. This almost leads to advertisement warfare which would be considered as an item of waste.
- b) **Rise in price:** Selling costs are items of cost. When cost is incurred it will have to be covered. This could be through rise in price.
- c) **Misleading:** Selling costs may mislead the consumers about the nature of quality of product. This would be considered socially undesirable.
- d) **Cross-transport:** It may lead the consumers from one region to go to other region to purchase the product of his choice being guided by its advertisement.
- e) **Not effective:** A firm may keep incurring selling cost without promoting sales. This is wasteful.

However, selling costs need not necessarily be considered as items of waste for following reasons:

- a) Selling costs are of two types viz. **Informative** and **Persuasive**. Informative selling costs make the consumers aware about the entry of new firm, new product or any change in the product. This is educative role of selling cost and should not be considered as an item of waste.
- b) Selling costs involve advertisement, publicity, salesmanship etc., all these have become industry on their own. **They create large scale employment** and hence cannot be treated as an item of waste.
- c) Selling costs create demand. To meet the demand the firm has to produce more. When production expands, the average cost of production falls and hence **prices need not be raised because of selling cost**. Thus selling costs need not be considered as items of waste.

12.12 EQUILIBRIUM UNDER MONOPOLISTIC COMPETITION

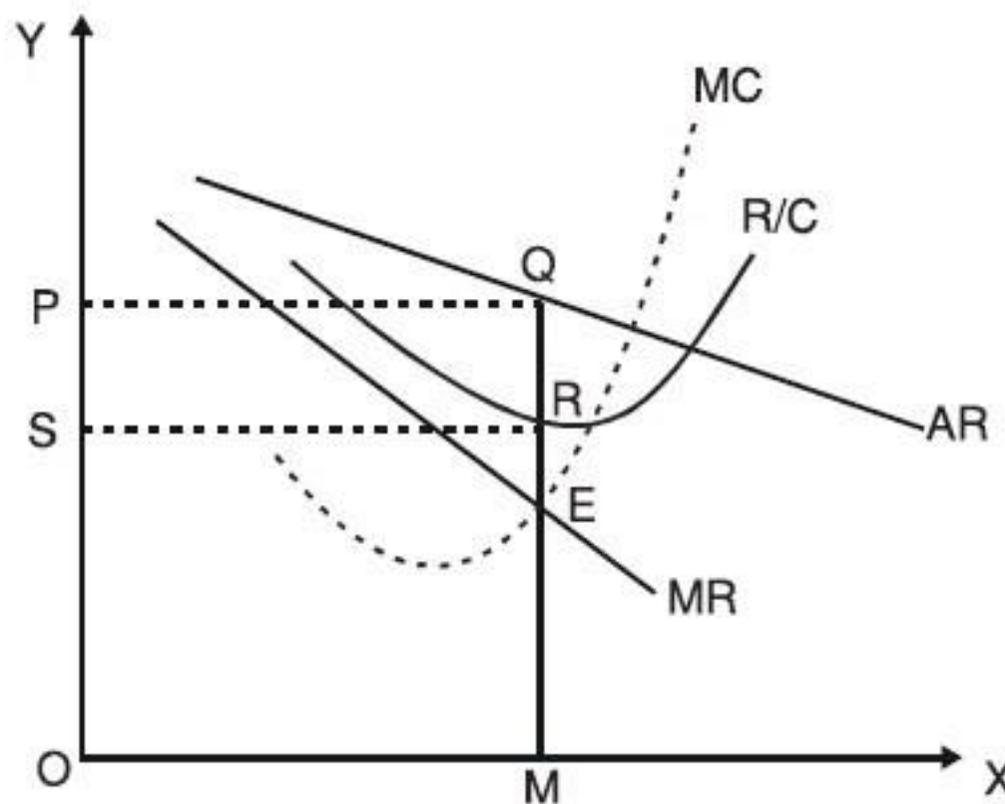
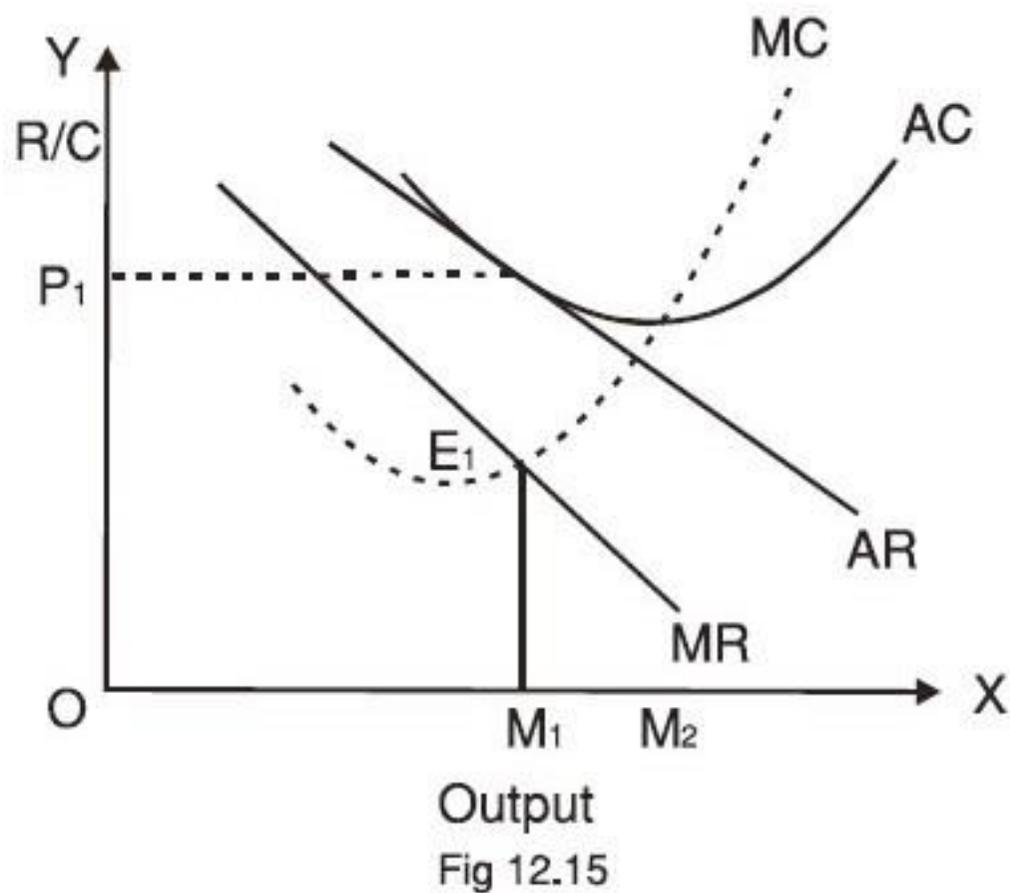


Fig. 12.14

As we know, a firm will be in Equilibrium at that point where it maximizes profits. Profits happen to be the function of Cost and Revenue. Since every producer is a monopolist in his own way under monopolistic competition, therefore, both AR and MR curves will be downward sloping as under monopoly; MR lying below AR and falling at a rate faster than AR. The cost structure, as usual, will be that AC curve is U-Shaped and MC curve cuts AC curve where AC is minimum. Given AR, MR, AC and MC as in fig. 12.14, the firm is in equilibrium at pt E where $MR=MC$. The equilibrium output is OM; price is given by AR curve and hence for output OM, price will be OP; and area of profit is PQRS. Thus in the short-run the firm enjoys supernormal profits, under monopolistic competition.

Later Prof. E. H. Chamberlin proceeds to analyse equilibrium of a firm under monopolistic competition in the long-run. In order to analyse this problem Chamberlin makes an assumption. He assumes cost conditions to remain the same in long-run as in the short-run and hence proceeds with 'identical cost curves'. This is also called the 'Heroic assumption' of Chamberlin. Now as the firm enjoys supernormal profits in the short-run, new and more firms are likely to enter in the long-run, the element of competition will increase and the Revenue Structure will shift downwards to the left till AR becomes a tangent to AC. New equilibrium will be at E_1 . New price will be OP_1 and if you observe carefully as AR is a tangent to AC for the output level OM, the

supernormal profits disappear in the long-run. (Fig. 12.15), and the firm under monopolistic competition, like the firm under perfect competition enjoys only normal profits in the long-run.



12.13 OLIGOPOLY

Oligopoly is that market category in which we have few sellers competing with each other. **Fellner** thus defines Oligopoly as '**Competition among the Few**'. In the words of **Robert Y. Awh**, "**Oligopoly is that market structure in which a few sellers who clearly recognize their mutual interdependence produce the bulk of the market output**". Oligopoly differs from other market categories in that, under monopoly we have only one seller, under perfect competition we have many sellers, under monopolistic competition we have a sufficiently large group of small monopolists whereas under oligopoly we have a few sellers constituting a small group. In an Oligopolistic market the firms may be producing either homogeneous or differentiated products. Besides, the element of interdependence among rival firms in the group makes it difficult for us to have a general theory of the oligopoly. In oligopoly the action of one firm depends not only on the reaction of the consumers but also on the reaction of rival firms. Thus decision-making becomes a complicated phenomenon. Before a firm makes any decision it has to take into account the probable reaction of the rival firms.

Classification of Oligopoly

Oligopoly can be classified into a number of categories on the following basis:

1. **On the basis of product differentiation**, we can have either pure oligopoly or differentiated oligopoly. **In case of pure-oligopoly**, the products of different firms in the group will be identical. There is no element of product differentiation. **In case of differentiated oligopoly**, the competing firms produce products which are not identical. There is product-differentiation.
2. **On the basis of entry of firms** we may classify oligopoly as open oligopoly and closed oligopoly. **In open oligopoly** the firms are free to enter the market. There is no restriction of any kind for a firm to enter the group producing very close substitute. This implies absence of any barriers to entry of a new firm. **In case of closed oligopoly** there are barriers to the entry of a new firm. No new firms are able to enter the existing group.
3. **On the basis of the presence or absence of price-leadership**, we may classify oligopoly into partial or full oligopoly. **In case of partial oligopoly** there is one priceleader. He takes the decision regarding prices and the rest of the firms 'follow the leader'. **In case of full oligopoly** there is no leader and no follower. Every producer takes his own decision regarding the fixation of price.
4. **On the basis of deliberate agreement**, oligopoly may be classified as collusive oligopoly and non-collusive oligopoly. **Under collusive oligopoly** firms establish a virtual monopoly by agreeing upon one common uniform price in the market. They, combine together in order to avoid any cut-throat price competition. This is called collusion. This practice of collusion has been quite an illegal practice. If firms do not formally agree to get one price, the same result may be worked out through 'Understood' informal collusion. **In case of non-collusive oligopoly** the firms do not take a common uniform decision regarding price-policy. Each firm takes its own decision.

12.14 CHARACTERISTICS OF OLIGOPOLY

- 1. Competition among the Few:** There are just a few sellers under oligopoly. The number could be more than one but not very many. In case there are only two sellers then such a market category is called Duopoly. Duopoly is perhaps a special case of oligopoly.
- 2. Interdependence among rival firms:** Interdependence is an integral part of Oligopoly. In case of perfect competition, a firm is a price-taker. Each firm has to take the price which prevails in the market. Under oligopoly the situation is quite different. Each firm has to take into account the actions and reactions of other firms while formulating its price policy. Before an oligopolist decides to fix or change the price of his product he must study the 'moves' which his rivals are likely to make in the market.
- 3. Possibility of Collusion:** In order to avoid any cut-throat retaliation among the firms through price-cutting, the firms decide to come together and unanimously agree to adopt a uniform price policy. Thus collusion is normally likely to be practical under oligopoly.
- 4. Rigidity in Pricing:** Even in the absence of collusion of any type, there is resistance to price changes among oligopolists. For if one oligopolist lowers the price of his product to increase its demand by taking away his rival's clientele then the rival oligopolist will also resort to the policy of scaling down the price of his product to win back and attract more of the other's customers. Thus a price-war starts. This retaliation in price-cutting would reduce the profits of all the oligopolists. Thus the inevitable threat of price-cutting leads to price-rigidity.
- 5. Barriers to Entry:** One of the essential features of oligopoly is the difficulty on the part of new firms to enter the market. Entry barriers resulting from mergers, ownership and control of key factors of production and the advantage of having been 'established' and enjoying scale economies are significant elements in maintaining the dominance of the existing few firms in the oligopolistic market.
- 6. Excessive Expenditure on Advertisement:** Advertising and selling costs are of strategic importance to oligopolists. To quote Baumol. "It is only under oligopoly that advertising comes fully into its own."

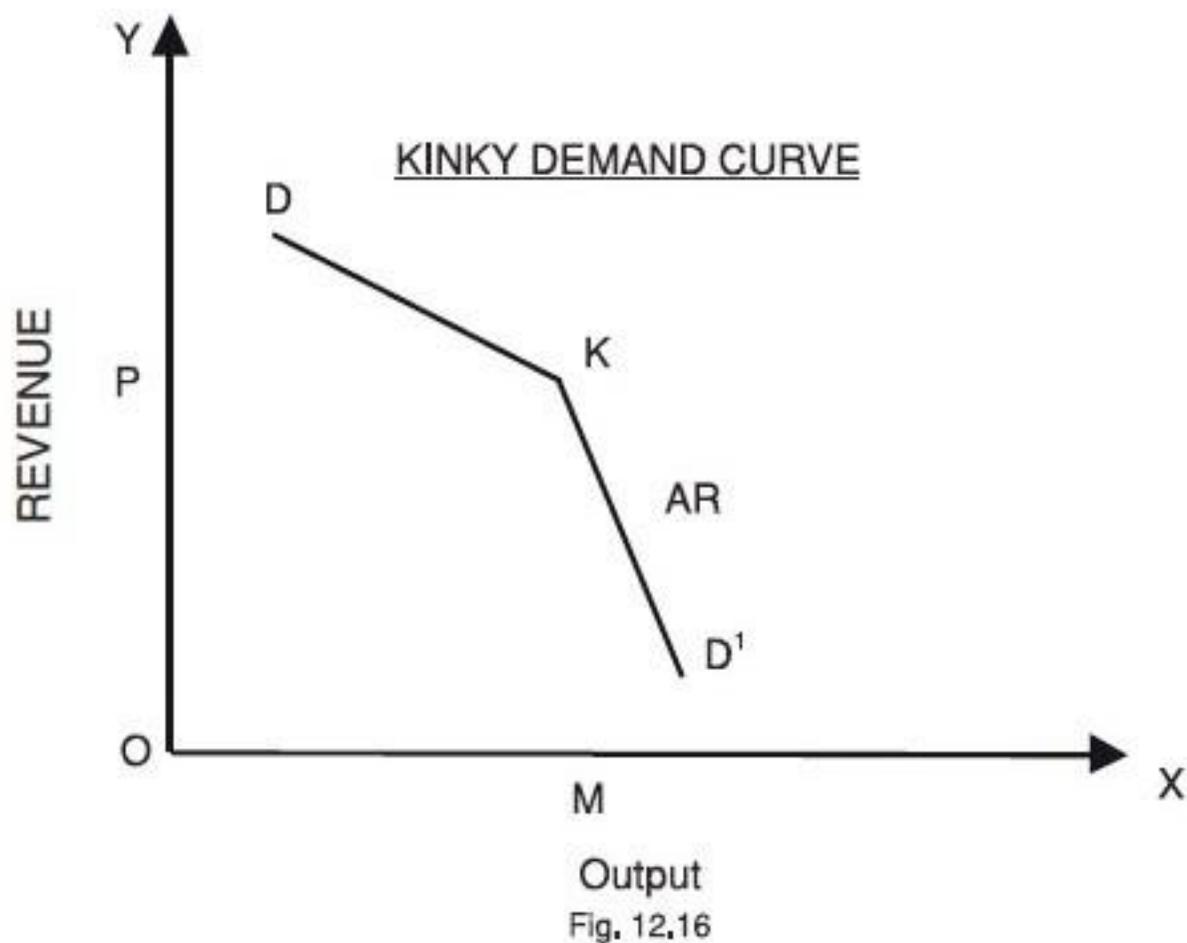
7. Indeterminateness: Interdependence of the firms and the firm's reaction against each other's policy formulation poses several problems in the determination of price and output. There is a wide spectrum of oligopolist behaviour. To quote Baumol, 'Rivals may decide to get together and co-operate in the pursuit of their objectives, at least so far as the law allows or, at the other extreme, they may fight each other to death. Even if they enter into an agreement it may last or it may break down. The agreements may follow a wide variety of patterns.'

As a result of this interdependence the demand curve of the oligopolist firm itself displays an element of indeterminateness. Once the oligopolist decides to alter the price of his product it will influence the demand for it in the market. But the rivals will also retaliate (or at times remain docile), which in turn will affect the demand of the firm which earlier charged its price. Thus the demand curve of the firm is indeterminate and therefore there creeps in an element of indeterminacy regarding the price-output policy of an oligopolist.

8. The Kinky Demand Curve: One of the most distinguishing features of Oligopoly is the Kinky demand curve. The concept of the Kinky demand curve is more associated with the name of Paul M. Sweezy.

We had earlier studied the slopes of the AR Curve under perfect competition and under monopoly and also established the interrelation between AR and MR curves under the market categories. However, under Oligopoly the AR curve has a peculiar shape and AR and MR bear some unique relationship. We may proceed to understand the slope of the AR curve or demand Curve under oligopoly by considering the firm's expectation about the behaviour of the rivals in the market.

- (i) The firm feels that if it lowers the price of the product then the rivals too will lower their prices. Thus the demand for the firm's product will not rise significantly. In other words when the firm lowers the price then demand for its product will remain relatively inelastic. Let us assume that the original price of the firm's product was OP. Now if it lowers the price below OP then others too will lower their prices. Thus demand for this firm's product will not show any sizeable increase. This would be shown by the relatively inelastic demand curve; i.e. portion KD'.

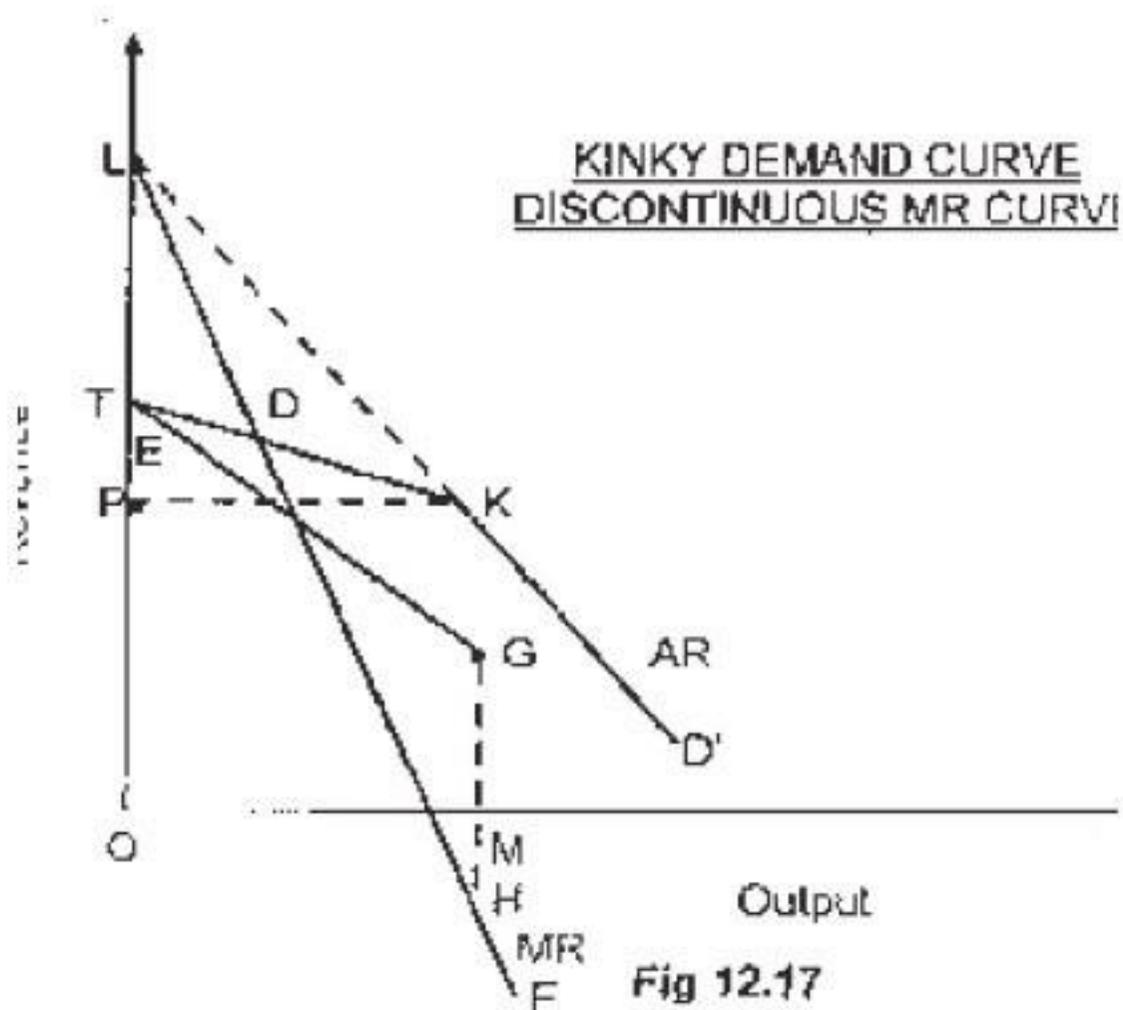


(ii) Now when the firm raises the price of its product but the rivals do not raise their prices then the demand for the firm's product will fall off considerably. It will face a relatively elastic demand curve. This is shown by the portion KD above the original price OP.

Thus from D to K the firm has a relatively elastic demand curve and from K to D' the firm faces a relatively inelastic demand curve. This implies that there is a sudden bend in the slope of the AR curve of the firm at point K. This sudden bend is technically called a 'Kink'. Thus demand curve under oligopoly has a 'kink' or we say that under oligopoly we have a 'kinky' demand curve.

Thus the market situation contemplated by Sweezy is one in which rivals will quickly match price reductions but only hesitantly and incompletely (if at all) follow price increase and this leads to the kinky demand curve.

If AR curve has a kink, the question that instantaneously arises is what should be the slope of the MR curve, or how to derive the MR curve.



Let us suppose that the demand curve viz. the average revenue curve DKD' is given, having a kink at point K . Now, to draw MR curve corresponding to the Kinky average revenue curve, let us produce KD to meet Y-axis in pt. T . Thus we have the curve TDK , a straight line. This is the slope of AR curve above price OP . Now since AR curve is a straight line. MR curve will lie half-way between AR and Y-axis. Thus let us draw TEG as the MR curve corresponding to TDK as the given AR curve. The marginal revenue curve will go upto point G , and G is in a vertical line with K . We cannot produce this curve TEG any further, because at point K , the AR curve changes its slope. It has a bend which we technically call a Kink.

Now we must draw the MR curve corresponding to the slope KD' or the AR curve. To do this, we produce $D'K$ to meet Y-axis in L . Since LD' is now a straight line AR curve; therefore, MR curve corresponding to LD' average revenue curve will lie half-way between LD' and Y-axis. This is shown by the line LF . However, we are only concerned with the portion HF of marginal revenue curve because we want to have marginal revenue corresponding to average revenue portion KD' . Hence HF would be the marginal revenue curve portion under consideration corresponding to KD' portion of AR curve.

This implies that from G to H there is a gap in the marginal revenue curve. **Thus where average revenue has a Kink, the marginal revenue curve becomes discontinuous.**

Now setting high prices will induce the entry of new producers and thus to keep them away the group of oligopolists will not venture to set high prices. Nor will the oligopolist think of price cutting because this may ignite a price-war and consequently all the oligopolists would suffer. In this context there is either a move towards explicit or implicit collusion. However, explicit collusion being proclaimed as illegal in many countries there prevails 'tacit collusion'.

To quote Samuelson " 'experience suggests that they (few large firms)— without meeting, phoning, winking or corresponding—arrive at a tacit mode of behaviour that avoids fierce price competition. With or without a price leader, the sellers may be quoting rather similar prices.' "

