Learning Objectives

At the end of this unit you will be able to :

- know the meaning of market in Economics.
- know various types of markets.
- understand the concepts of total, average and marginal revenue.
- understand behavioural principles underlying markets.

1.0 MEANING OF MARKET

Consider the following situation. You go to the local market to buy a pair of shoes. You enter one shop which sells shoes. The shoes which you like are priced at Rs. 600. But you think that they are not worth more than Rs. 500. You offer Rs. 500 for the shoes. But the shopkeeper is not ready to give them at less than Rs. 550. You finally buy the shoes for Rs. 550.

This is an example of a local market. In this market some are buyers and some are sellers. The market fixes the price at which those who want something can obtain it from those who have it to sell.

Note that it is only exchange value which is significant here. The shopkeeper selling the shoes may have felt that the shoes ought to have made more than Rs. 550. Considerations such as 'sentimental value' mean little in the market economy.

Most goods such as foodstuffs, clothing and household utensils etc., are given a definite price by the shopkeeper. But buyers will still influence this price. If it is too high, the market will not be cleared; if it is low, the shopkeeper's stock will run out.

A market need not be formal or held in a particular place. Second-hand cars are often bought and sold through newspaper advertisements. Second-hand furniture may be disposed of by a card in the local shop window.

However, in studying the market economy it is essential to understand how price is determined. Since this is done in the market, we can define the market simply as all those buyers and sellers of a good or service who influence the price.

The elements of a market are :

(i) buyers and sellers;

(ii) a product or service;

(iii) bargaining for a price;

(iv) knowledge about market conditions; and

(v) one price for a product or service at a given time.

1.1 TYPES OF MARKET STRUCTURES

For a consumer, a market consists of those firms from which he can buy a well-defined product; for a producer, a market consists of those buyers to whom he can sell a single well-defined product. If a firm knows precisely the demand curve it faces, it would know its potential revenue. If it also knows its costs, it can readily discover the profit that would be associated with different level of output and can choose the rate that maximizes the output. But suppose the firm knows its costs and the market demand curve for the product but does not know its own demand curve. In other words, it does not know its own total sales. In order to find this curve, the firm needs to answer the following questions. How many competitors are there in the market selling similar products? If one firm changes its price, will its market share change? If it reduces its price, will other firms follow it or not? There are so many other related questions which will need answers.

Answers to questions of this type will be different in different circumstances. For example, if there is only one firm in market, the whole of the market demand will be satisfied by this particular firm. But if there are two large firms in the industry they will share the market demand in some proportion. They will have to be very cautious of the reactions of other firm to every decision they make. But if there are say more than 5,000 small firms in an industry, each firm will be less worried about the reactions of other firms to its decisions because each firm sells only a small proportion of the market. Thus, we find that the market behaviour is greatly affected by market structure. We can conceive of more than thousand types of market structures but we focus on a few theoretical market types which mostly cover a high proportion of cases actually found in marketing world. These are :

Perfect Competition : Perfect competition is characterised by many sellers selling identical products to many buyers.

Monopolistic Competition : It differs in only one respect, namely, there are many sellers offering differentiated products to many buyers.

Monopoly : It is a situation of a single seller producing for many buyers. Its product is necessarily extremely differentiated since there are no competing sellers producing near substitute products.

In **Oligopoly :** There are a few sellers selling competing products for many buyers.

Table 1 summarises the major distinguishing characteristics of these four major market forms.

Table 1 - Distinguishing features of m

Assumption	Mar		
	Pure Competition	*Monopolistic Competition*	(
Number of sellers	many	many	a
Product differentiation	none	slight	n(
Price elasticity of demand of a firm	infinite	large	sn
Degree of control over price	none	some	son

Before discussing each market form in greater detail it is wo average and marginal revenues and behavioural princi conditions.

1.2 CONCEPTS OF TOTAL REVENUE, AND MARGINAL REVENUE

Total Revenue : If a firm sells 100 units for Rs.10 each, what i realises Rs. 1,000 (100 x 10), which is nothing but total revenue that total revenue refers to the amount of money which a firm of a commodity. Symbolically, total revenue may be expressed

$$TR = P \times Q$$

Where, TR is total revenue
P is price
Q is quantity of a commodity

Average Revenue : Average revenue is the revenue earned per u price of one unit of output because price is always per unit of average revenue is :

$$AR = \frac{TR}{Q}$$

Where AR is average revenue
TR is the total revenue
Q is quantity of a commodity so

$$\text{or } AR = \frac{P \times Q}{Q}$$

$$\text{or } AR = P$$

Table 1 - Distinguishing features of major types of markets

Assumption	Market Types			
	Pure Competition	*Monopolistic Competition*	*Oligopoly*	*Monopoly*
Number of sellers	many	many	a few	one
Product differentiation	none	slight	none to substantial	extreme
Price elasticity of demand of a firm	infinite	large	small	small
Degree of control over price	none	some	some	very considerable

Before discussing each market form in greater detail it is worthwhile to know concepts of total, average and marginal revenues and behavioural principles which apply to all market conditions.

1.2 CONCEPTS OF TOTAL REVENUE, AVERAGE REVENUE AND MARGINAL REVENUE

Total Revenue : If a firm sells 100 units for Rs.10 each, what is the amount which it realises? It realises Rs. 1,000 (100 x 10), which is nothing but total revenue for the firm. Thus we may state that total revenue refers to the amount of money which a firm realises by selling certain units of a commodity. Symbolically, total revenue may be expressed as

$$TR = P \times Q$$

Where, TR is total revenue
P is price
Q is quantity of a commodity sold.

Average Revenue : Average revenue is the revenue earned per unit of output. It is nothing but price of one unit of output because price is always per unit of a commodity. Symbolically, average revenue is :

$$AR = \frac{TR}{Q}$$

Where AR is average revenue
TR is the total revenue
Q is quantity of a commodity sold

$$\text{or } AR = \frac{P \times Q}{Q}$$

$$\text{or } AR = P$$

If, for example, a firm realises total revenue of Rs. 1,000 by the sale of 100 units. It implies that the average revenue is Rs. 10 (1,000/100) or the firm has sold the commodity at a price of Rs.10 per unit.

Marginal Revenue : Marginal revenue (MR) is the change in total revenue resulting from the sale of an additional unit of the commodity. Thus, if a seller realises Rs. 1,000 after selling 100 units and Rs. 1200 after selling 101 units, we say marginal revenue is Rs. 200. We can say that MR is the rate of change in total revenue resulting from the sale of an additional unit.

$$MR = \frac{\Delta TR}{\Delta Q}$$

Where MR is marginal revenue

TR is total revenue

Q is quantity of a commodity sold

Δ is the rate of change.

For one unit change in output

$$MR_n = TR_n - TR_{n-1}$$

Where TR is the total revenue when sales are at the rate of n units per period.

TR_{n-1} is the total revenue when sales are at the rate of n - 1 units per period.

Marginal Revenue, Average Revenue, Total Revenue and Elasticity of Demand : It is to be noted that marginal revenue, average revenue and price elasticity of demand are uniquely related to one another through the formula :

$$MR = AR \times \frac{e-1}{e}$$, Where e = price elasticity of demand

Thus if e = 1, $MR = AR \times \frac{1-1}{1} = 0$.

and if e >1, MR will be positive

and if e <1, MR will be negative

In a straight line demand curve, we know that the elasticity of the middle point is equal to one. It follows that marginal revenue corresponding to the middle point of the demand curve (or AR curve) will be zero.

1.3 BEHAVIOURAL PRINCIPLES

Principle 1 : A firm should not produce at all if total revenue from its product does not equal or exceed its total variable cost.

It is a matter of common sense that a firm should produce only if it will do better by producing than by not producing. The firm always has the option of not producing anything. If it does

Learning Objectives

At the end of this unit you will be able to :

- understand how price and quantity demanded and supplied are determined in perfect competition, monopoly, oligopoly and monopolistic competition.
- understand the conditions required to make price discrimination by monopolist successful.
- understand how firms in an oligopolist market are independent.

In this unit, we shall study the determination of price and output under perfect competition, monopoly, monopolistic competition and oligopoly. Output is supplied by individual firms on the basis of market demand, their cost and revenue functions. However, the existence of different forms of market structure leads to differences in demand and revenue functions of the firms. Therefore, supplies offered at different prices by the firm would vary significantly depending upon the market forms. We start our analysis with perfect competition.

3.0 PERFECT COMPETITION

3.0.0 Features

Suppose you go to a vegetable market and enquire about the price of potatoes from a shopkeeper. He says potatoes are for Rs. 5 per kg. In the same way, you enquire from many shopkeepers and you get the same answer. What do you notice? You notice the following facts :

(i) There are large number of buyers and sellers in the potatoes market.

(ii) All the shopkeepers are selling potatoes for Rs. 5.

(iii) Product homogeneity i.e. all the sellers are selling almost same quality of potatoes in the sense that you cannot judge by seeing the potatoes from which farmer's field do they come from.

Such type of market is known as perfectly competitive market. In general it has the following characteristics :

(i) There are a large number of buyers and sellers who compete among themselves and their number is so large that no buyer or seller is in a position to influence the demand or supply in the market.

(ii) The commodity dealt in it is homogeneous in the sense that the goods produced by different firms are identical in nature.

(iii) Every firm is free to enter the market or to go out of it.

(iv) There is a perfect knowledge, on the part of buyers and sellers, of the quantities of stock of goods in the market, market conditions and the prices at which transactions of purchase and sale are being entered into.

(v) Facilities exist for the movement of goods from one centre to another. Also buyers have no preference as between different sellers and as between different units of commodity offered for sale; also sellers are quite indifferent as to whom they sell.

(vi) The commodity or the goods are dealt on at a uniform price throughout the market at a given point of time. In other words, all firms individually are price takers, they have to accept the price determined by the market forces to total demand and total supply.

The last mentioned is a consequence of the conditions prevailing in a market operating under conditions of perfect competition, for when there is perfect knowledge and perfect mobility, if any seller tries to raise his price above that charged by others, he would lose his customers.

N.B. If only the first three conditions exist, competition will be treated as pure or free.

While there are few examples of perfect competition, which is regarded as a myth by many, the grain or stock markets approach the condition of perfect competition.

3.0.1 Price determination under perfect competition

Equilibrium of the Industry : An industry in economic terminology consists of a large number of independent firms, each having a number of factories, farms or mines under its control. Each such unit in the industry produces a homogeneous product so that there is competition amongst goods produced by different units called firms. When the total output of the industry is equal to the total demand we say that the industry is in equilibrium; the price then prevailing is equilibrium price, whereas a firm is said to be in equilibrium when it has no incentive to expand or contract production.

As stated above under competitive conditions, the equilibrium price for a given product is determined by the interaction of forces of demand and supply for it as is shown in figure 7.

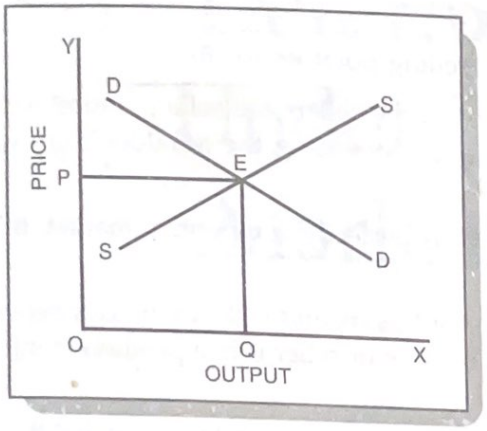

Fig.7 : Equilibrium of a competitive industry

In Fig. 7, OP is the equilibrium price and OQ is the equilibrium quantity which will be sold at that price. The equilibrium price is the price at which both the demand and supply are equal at which no buyer goes dissatisfied who wanted to buy at that price and none of the sellers is dissatisfied that he could not sell his goods at that price. It will be noticed that if price were to be fixed at any other level, higher or lower, demand remaining the same, there would not be an equilibrium in the market. Likewise, if the quantities of goods were greater or smaller than the demand, there would not be an equilibrium.

Equilibrium of the Firm : The firm is said to be in equilibrium when it maximizes its profit. The output which gives maximum profit to the firm is called equilibrium output. In the equilibrium state, the firm has no incentive either to increase or decrease its output. Since it is the maximum profit giving output which only gives no incentive to the firm to increase or decrease it, so it is in equilibrium when it gets maximum profit.

Firms in a competitive market are price-takers. This is because there are a large number of firms in the market who are producing identical or homogeneous products. As such these firms cannot influence the price in their individual capacities. They have to accept the price fixed (through interaction of total demand and total supply) by the industry as a whole.

See the following figure :

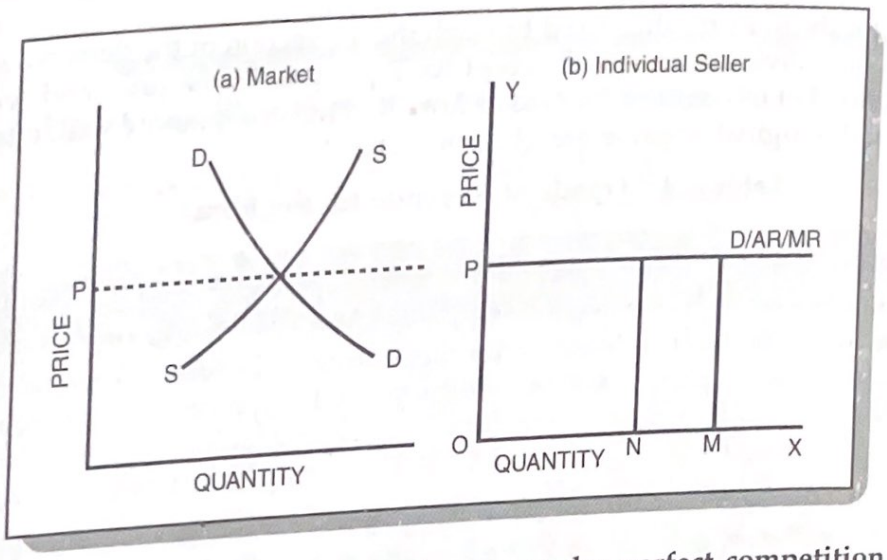

Fig.8 : The firm's demand curve under perfect competition

Industry price OP is fixed through the interaction of total demand and total supply of the industry. Firms have to accept this price as given and as such they are price-takers rather than price-makers. They cannot increase the price OP individually because of the fear of losing customers to other firms. They do not try to sell the product below OP because they do not have any incentive for lowering it. They will try to sell as much as they can at price OP.

As such P-line acts as a demand curve for them. Thus the demand curve facing an individual firm in a perfectly competitive market is horizontal one at the level of market price set by the industry and firms have to choose that level of output which yields maximum profit. Let us continue our example on page 126 in which demand and supply schedules for the industry were as follows :

Table – 3 : Equilibrium price for industry

Price (Rs.)	*Demand (units)*	*Supply (units)*
1	60	5
2	35	35
3	20	45
4	15	55
5	10	65

Equilibrium price for the industry thus fixed through the interaction of the demand and supply is Rs. 2 per unit. The individual firms will accept Rs. 2 per unit as the price and sell different quantities at this price. Let us consider the case of firm 'X'. Firm X's quantity sold, total revenue, average revenue and marginal revenue are given in Table 4 :

Table – 4 : Trends of Revenue for the Firm

Price (Rs.)	*Quantity Sold*	*Total Revenue* $P \times Q$	*Average Revenue* $\frac{TR}{Q}$	*Marginal Revenue* $\frac{\Delta TR}{\Delta Q}$
2	8	16	2	2
2	10	20	2	2
2	12	24	2	2
2	14	28	2	2
2	16	32	2	2

Firm X's price, average revenue and marginal revenue are equal to Rs. 2. Thus we see that in a perfectly competitive market a firm's AR = MR = price.

Conditions for equilibrium of a firm : As discussed earlier, a firm in order to attain the equilibrium position has to satisfy two conditions :

(i) The marginal revenue should be equal to the marginal cost. i.e. MR = MC. If MR is greater than MC, there is always an incentive for the firm to expand its production further and gain by sale of additional units. If MR is less than MC, the firm will have to reduce output since an additional unit adds more to cost than to revenue. Profits are maximum only at the point where MR = MC.

(ii) The MC curve should cut MR curve from below. In other words, MC should have positive slope.

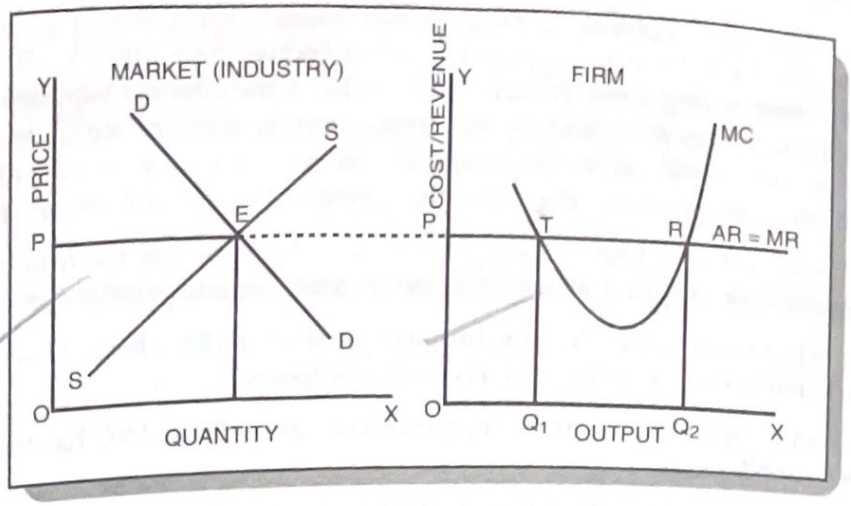

Fig. 9 : Equilibrium position for a firm under perfect competition

In figure 9, DD and SS are the industry demand and supply curves which equilibrate at E to set the market price as OP. The firms of perfectly competitive industry adopt OP price as given and considers P-Line as demand (average revenue) curve which is perfectly elastic at P. As all the units are priced at the same level, MR is a horizontal line equal to AR line. Note that MC curve cuts MR curve at two places T and R respectively. But at T, the MC curve is cutting MR curve from above. T is not the point of equilibrium as the second condition is not satisfied. The firm will benefit if it goes beyond T as the additional cost of producing additional unit is falling. At R, the MC curve is cutting MR curve from below. Hence R is the point of equilibrium and OQ_2 is equilibrium level of output.

3.0.2 Supply curve of the firm in a competitive market :One interesting thing about the MC curve of the firm in a perfectly competitive industry is that it depicts the firm's supply curve. This can be shown with the help of the following example.

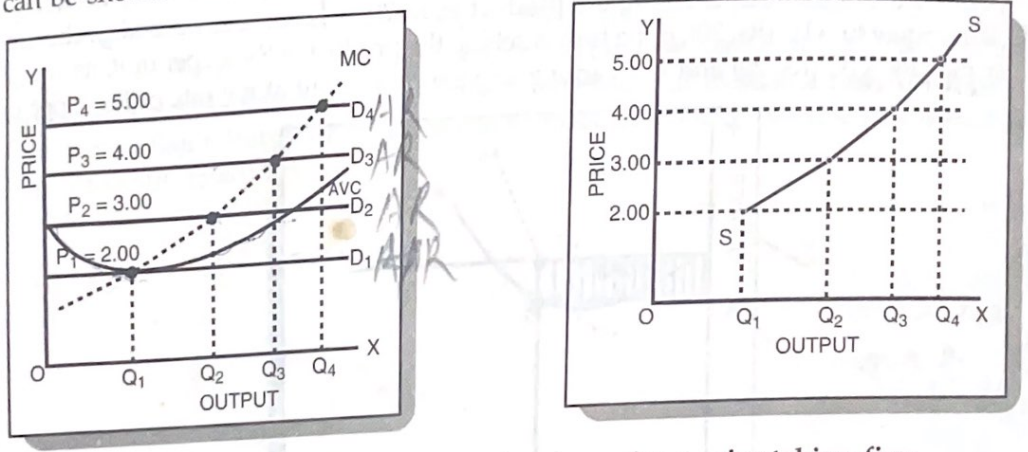

Fig.10 : Marginal cost and supply curves for a price-taking firm

Suppose market price of a product is Rs. 2 corresponding to it we have D_1 as demand curve for the firm. At price Rs. 2, the firm supplies Q_1 output because here MR=MC. If the market price is Rs. 3, the corresponding demand curve is D_2. At Rs. 3, the quantity supplied is Q_2. Similarly, we have demand curves at D_3 and D_4 and corresponding supplies are Q_3 and Q_4. The firm's marginal cost curve which gives the marginal cost corresponding to each level of output is nothing but firm's supply curve that gives the quantity the firm will supply at each price.

For prices below AVC, the firm will supply zero units because here the firm is unable to meet even its variable cost for prices above AVC the firm will equate price and marginal cost.

When price is just meeting the AVC, the firm will break-even (Rs. 2 here). Here it is just meeting its average variable costs and there are no profits or losses.

Thus in perfect competition the firm's marginal cost curve above AVC has the identical shape of the firm's supply curve.

3.0.3 Can the the competitive firm earn profits? In the short run, a firm will attain equilibrium position and at the same time it will earn supernormal profits, normal profits or losses depending upon its cost conditions.

Supernormal Profits : There is a difference between normal profits and supernormal profits. When the average revenue of a firm is just equal to its average total cost, it earns normal profits. It is to be noted that here a normal percentage of profits for the entrepreneur for his managerial services is already included in the cost of production. When a firm earns supernormal profits its average revenues are more than its average total cost. Thus, in additional to normal rate of profit, the firm earns additional profits. The following example will make the above concepts clear :

Suppose the cost of producing 1,000 units of a product by a firm is Rs. 15,000. The entrepreneur has invested Rs. 50,000 in the business and normal rate of return in the market is 10 per cent. Thus the entrepreneur must earn at least Rs.5,000 (10% of 50,000) in this particular business. This Rs. 5,000 will be shown as a part of cost. Thus total cost of production is Rs. 20,000 (Rs. 15,000 + 5,000). If the firm is selling the product at Rs.20, it is earning normal profits because AR (Rs. 20) is equal to ATC (Rs. 20). If the firm is selling the product at Rs. 22 per unit, its AR (Rs. 22) is greater than its ATC (Rs. 20) and it is earning supernormal profit at the rate of Rs. 2 per unit.

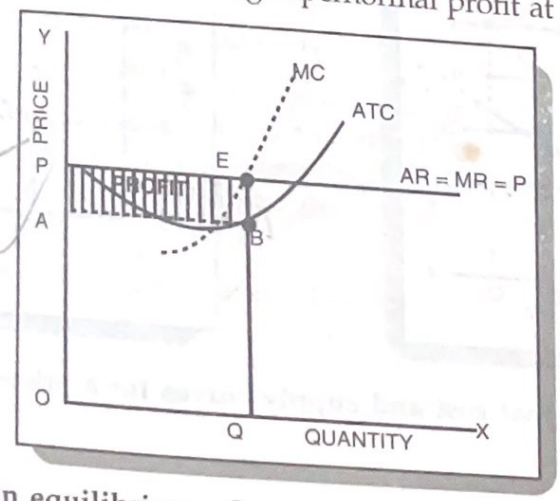

Fig. 11 : Short-run equilibrium : Supernormal profit of a competitive firm

3.1.0 Features of Monopoly Market : The following are the major features of the monopoly market :

(1) **Single seller of the product** : In a monopoly market there is only one firm producing or supplying a product. This single firm constitutes the industry and as such there is no distinction between the firm and the industry in a monopolistic market.

(2) **Restrictions to Entry** : In a monopolistic market, there are strong barriers to entry. The barriers to entry could be economic, institutional, legal or artificial.

(3) **No close-substitutes :** The monopolist generally sells a product which has no close substitutes. In such a case, the cross elasticity of demand for the monopolist's product and any other product is zero or very small. The price elasticity of demand for monopolist's product is also less than one. As a result, the monopolist faces a downward sloping demand curve.

3.1.1 Sources of monopoly power : While to some extent all goods are substitutes for one other, there may be essential characteristics in a good or group of goods which give rise to gaps in the chain of substitution. If one producer can so exclude competition that he controls the supply of a good, he can be said to be 'monopolist' – a single seller.

In real life, there is seldom complete monopoly. But one producer may dominate the supply of a good or group of goods. In public utilities, e.g. transport, water, electricity generation etc. monopolistic markets may exist so as to reap the benefit of large scale production.

3.1.2 Monopolist's Revenue Curves : Since the monopolist firm is assumed to be the only producer of a particular product, its demand curve is identical with the market demand curve for the product. The market demand curve, which exhibits the total quantity of a product that buyers will offer to buy at each price, also shows the quantity that the monopolist will be able to sell at every price that he sets. If we assume that the monopolist sets a single price and supplies all buyers who wish to purchase at that price, we can easily find his average revenue and marginal revenue curves.

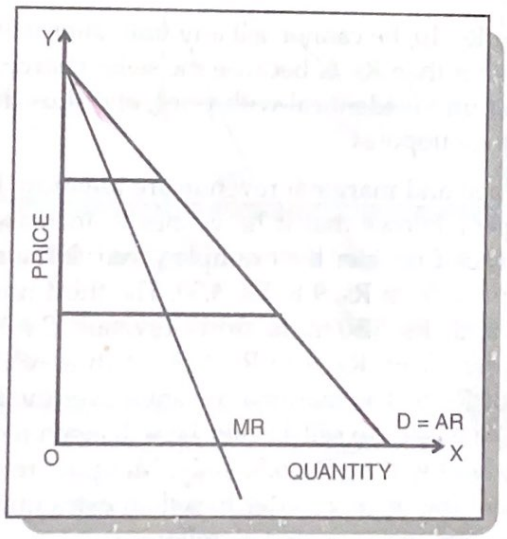

Fig. 16 : A monopolist's demand curve and marginal revenue curve

(i) AR and MR are both negative sloped (downward sloping) curves.

(ii) MR curve lies half-way between the AR curve and the Y axis. i.e. it cuts the horizontal line between Y axis and AR into two equal parts.

(iii) AR cannot be zero, but MR can be zero or even negative.

3.1.3 Profit maximisation in a monopolised market Equilibrium of the monopoly firm : Firms in a perfectly competitive market are price-takers so that they are only concerned about determination of output. But this is not the case with a monopolist. A monopolist has to determine not only output but also price for his product. Since, he faces a downward sloping demand curve, if he raises price of his product his sales will go down. On the other hand, if he wants to improve his sales volume he will have to be content with lesser price. He will try to reach that level of output at which profits are maximum i.e. he will try to attain the equilibrium level of output. How he attains this level can be found out as is shown below.

Short run Equilibrium

Conditions for the equilibrium : The twin conditions for equilibrium in a monopoly market are same as discussed earlier.

(i) MC = MR

(ii) MC curve must cut MR curve from below.

Graphically, we can depict these conditions in figure 17.

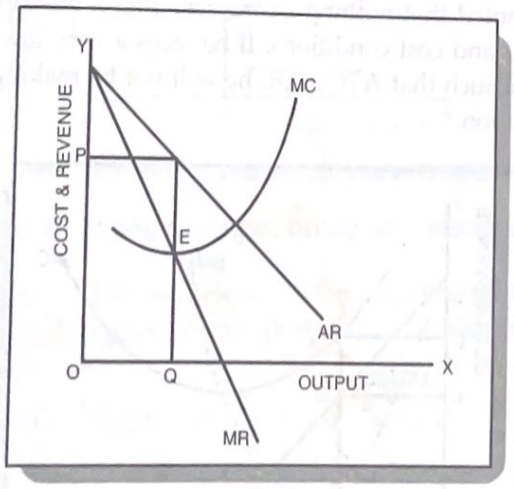

Fig. 17 : Equilibrium position of a monopolist (Short run)

The figure shows that MC curve cuts MR curve at E. That means at E, equilibrium price is OP and equilibrium output is OQ.

In order to know whether the monopolist is making profits or losses in the short run, we need to introduce average total cost curve. The following figure shows how the firm makes profits in the short run.

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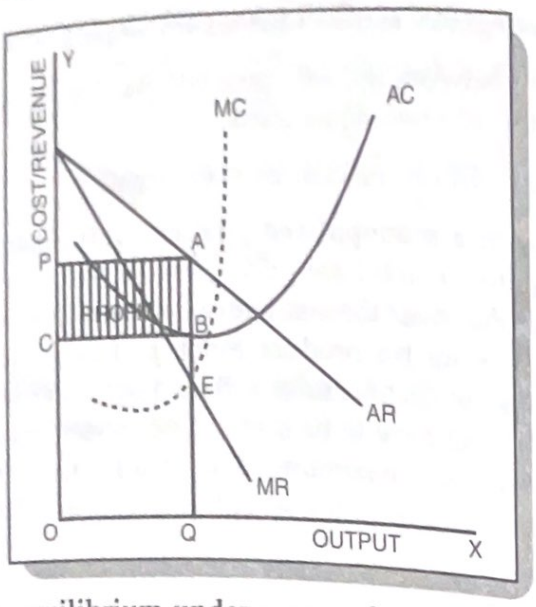

Fig. 18 : Firm's equilibrium under monopoly : maximisation of profits

Figure 18 shows that MC cuts MR at E to give equilibrium output as OQ. At OQ, price charged is OP (we find this by extending line EQ till it touches AR or demand curve). Also at OQ, the cost per unit is BQ. Therefore, profit per unit is AB or total profit is ABCP.

Can a monopolist incur losses? One of the misconceptions about a monopolist is that he always makes profits. It is to be noted that nothing guarantees that a monopolist makes profits. It all depends upon his demand and cost conditions. If he faces a very low demand for his product and his cost conditions are such that ATC >AR, he will not be making profits but incur losses. Figure 19 depicts this position.

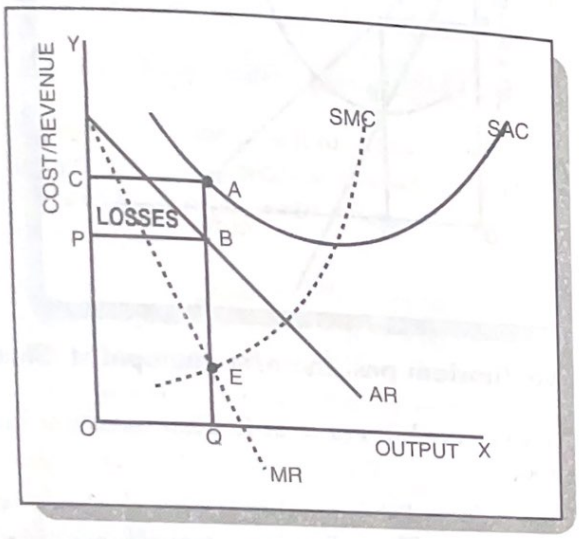

Fig. 19 : Equilibrium of the monopolist : Losses in the short run

In the above figure MC cuts MR at E. Here E is the point of loss minimisation. At E, equilibrium output is OQ and equilibrium price is OP. Cost corresponding to OQ is QA. Cost per unit of output i.e. QA is greater than revenue per unit which is BQ. Thus the monopolist incurs losses to the extent of AB per unit or total loss is ABPC. Whether the monopolist stays in business in the short run depends upon whether he meets his average variable cost or not. If he covers average variable cost and at least a part of fixed cost, he will not shut down because he contributes something towards fixed costs which are already incurred. If he is unable to meet his average variable cost even, he will shut down.

Long Run Equilibrium : Long run is a period long enough to allow the monopolist to adjust his plant size or use his existing plant at any level that maximizes his profit. In the absence of competition, the monopolist need not produce at the optimal level. He can produce at sub-optimal scale also. In other words, he need not reach the minimum of LAC curve, he can stop at any place where his profits are maximum.

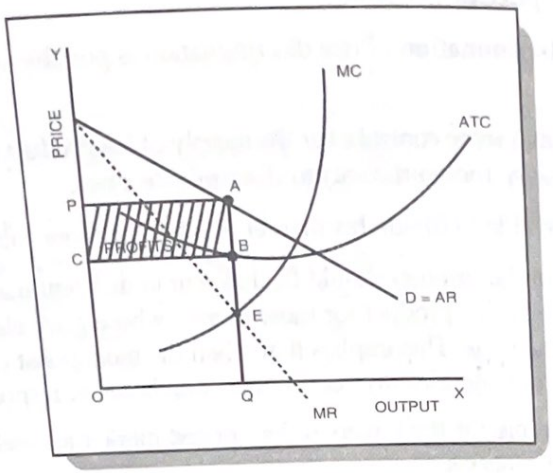

Fig. 20 : Long-run equilibrium of a monopolist

However, one thing is certain : The monopolist will not continue if he makes losses in the long run. He will continue to make super normal profits even in the long run as entry of outside firms is blocked.

3.1.4 Price Discrimination : Consider the following examples.

The family doctor in your neighbourhood charges a higher fees from a rich patient compared to the fees charged from a poor patient even though both are suffering from viral fever. Why?

Electricity companies sell electricity at a cheaper rate for home consumption in rural areas than for industrial use. Why?

The above cases are examples of price discrimination. What is price discrimination? Price discrimination occurs when a producer sells a specific commodity or service to different buyers at two or more different prices for reasons not associated with differences in cost.

Further examples :

(a) Railway separate high-value or relatively small-bulk commodities which can bear higher freight charges from other categories of goods.

(b) Some countries dump goods at low prices in foreign markets to capture them.

(c) Some universities charge higher tuition fees from evening class students than from other scholars.

(d) A lower subscription is charged from student readers in case of certain journals.

(e) A higher price for vegetables may be charged in posh localities inhabited by the rich than in other localities.

Price discrimination cannot persist under perfect competition because the seller has no influence over market determined rate. Price discrimination requires an element of monopoly so that the seller can influence the price of his product.

Conditions for price discrimination : Price discrimination is possible only under the following conditions :

(i) The seller should have some control over the supply of his product i.e. monopoly power in some form is necessary (not sufficient) to discriminate price.

(ii) The seller should be able to divide his market into two or more sub-markets.

(iii) The price-elasticity of the product should be different in different markets. The monopolist fixes up a high price for his product for those buyers whose price elasticity of demand for the product is less than one. This implies that when the monopolist charges a higher price from them, they do not significantly reduce their purchases in response to high price.

(iv) It should not be possible for the buyers of low-priced market to resell the product to the buyers of high-priced market.

Thus we note that discriminating monopolist charges a higher price from the market which has a relatively inelastic demand. The market which is highly responsive is charged less. On the whole, the monopolist benefits from both the markets.

A numerical example will help you to understand price- discrimination more clearly.

Suppose the single monopoly price is Rs. 30 and elasticities of demand in markets A and B are respectively 2 and 5. Then.

type of market is more common than pure competition or pure monopoly. The industries in monopolistic competition include clothing manufacturing and retail trade in large cities. There are many hundreds of manufacturers of women's dresses, and hundreds of grocery shops in average medium sized or large city.

3.2.0 Features of Monopolistic Competition :

(i) *Large number of sellers* : In a monopolistically competitive market, there are a large number of sellers who individually have a small share in the market.

(ii) *Product differentiation* : In a monopolistic competitive market, the products of different sellers are differentiated on the basis of brands. These brands are generally so much advertised that a consumer starts associating the brand with a particular manufacturer and a type of brand loyalty is developed. Product differentiation gives rise to an element of monopoly to the producer over the competing product. As such, the producer of an individual brand can raise the price of his product knowing that he will not lose all the customers to other brands because of absence of perfect substitutability. Since, however, all the brands are close substitutes of one another, the seller will lose some of his customers to his competitors. Thus this market is a blend of monopoly and perfect competition.

(iii) *Freedom of entry or exit* : New firms are free to enter into the market and existing firms are free to quit it.

(iv) *Non-price competition* : In a monopolistically competitive market, sellers try to compete on basis other than price, as for example aggressive advertising, product development, better distribution arrangements, efficient after-sales service, and so on. A key base of non-price competition is a deliberate policy of product differentiation. Sellers attempts to promote their products not by cutting prices but by incurring high expenditure on publicity and advertisement and other sale promoting techniques mentioned above. This is because price competition may result in price – wars which may throw a few firms out of market.

3.2.1 Price-output determination under monopolistic competition : Equilibrium of a firm : In a monopolistically competitive market since the product is differentiated between firms, each firm does not face a perfectly elastic demand for its products. Each firm is a price maker and is in a position to determine price of its own product. As such, the firm is faced with a downward sloping demand curve for its product. Generally, the less differentiated the product is from its competitors, the more elastic this curve will be.

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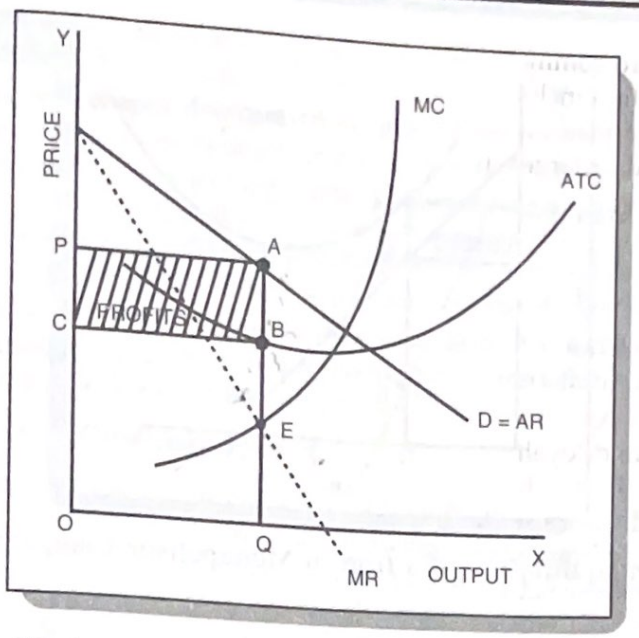

Fig. 21 : Short-run equilibrium of a firm in monopolistic competition : Super normal profits

The firm depicted in figure 21 has a downward sloping but flat demand curve for its product. The firm is assumed to have U-shaped short run cost curve.

Conditions for the Equilibrium of an individual firm : The conditions for price-output determination and equilibrium of an individual firm may be stated as follows :

(i) MC = MR

(ii) MC curve must cut MR curve from below.

Figure 21 shows that MC cuts MR curve at E. At E, the equilibrium price is OP and equilibrium output is OQ. Since per unit cost is BQ, per unit super normal profit (i.e. price-cost) is AB (or PC) and total super normal profit is APCB.

The firm may also be earning losses in the short-run. This is shown in fig. 22.

The figure shows that per unit cost (AQ) is higher than price OP (or BQ) of the product of the firm and loss per unit is AB (AQ-BQ). Total loss is ACPB.

What about long run equilibrium of the industry? If the firms in a monopolistically competitive industry earn super-normal profits in the short-run, there will be an incentive for new firms to enter the industry. As more firms enter, profits per firm will go on decreasing as the total demand for the product will be shared among a larger number of firms. This will happen till all the profits are wiped away and all the firms earn only normal profits. Thus in the long run all the firms will earn only normal profits.

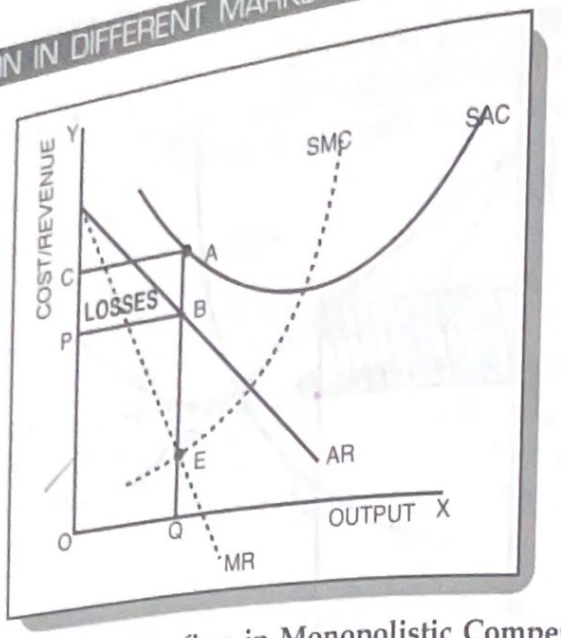

Fig. 22 : Short-run equilibrium of a firm in Monopolistic Competition – With losses

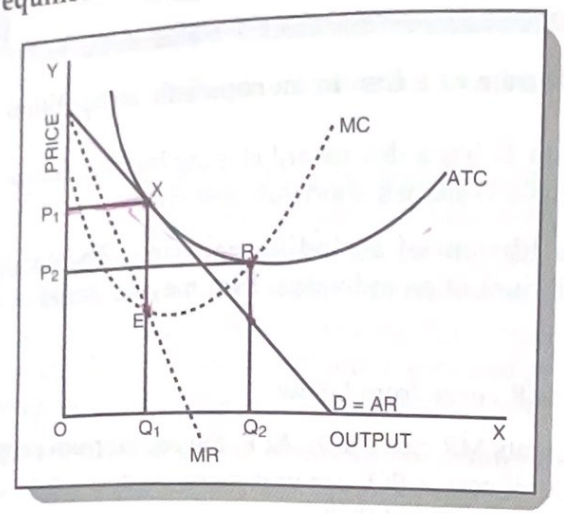

Fig. 23 : The long term equilibrium of a firm in monopolistic competition

Figure 22 shows the long run equilibrium of a firm in a monopolistically competitive market. The average revenue curve touches the average cost curve at point X corresponding to quantity Q_1 and price P_1. At equilibrium (i.e. MC = MR) profits are zero, since average revenue equals average costs. All firms are earning zero supernormal profits or just normal profits.

In case of losses in the short run, the loss making firms will exit from the market and this will go on till the remaining firms make normal profits only.

It is to be noted that an individual firm in the long run is in equilibrium position at a position where it has excess capacity. That is, it is producing a lower quantity than its full capacity level. The firm in Figure 23 could expand its output from Q_1 to Q_2 and reduce average costs. But it does not do so because to do so would be to reduce average revenue even more than average costs. It implies that firms in monopolistic competition are not of optimum size and there exists excess capacity (Q_1 Q_2 in our example above) of production with each firm.

3.3 OLIGOPOLY

We have studied price and output determination under three market forms, namely, perfect competition, monopoly and monopolistic competition. However, in the real world economies we find that many of the industries are oligopolistic. Oligopoly is an important form of imperfect competition. Oligopoly is often described as 'competition among the few'. In other words, when there are few (two to ten) sellers in a market selling homogeneous or differentiated products, oligopoly is said to exist. Consider the example of cold drinks industry or automobile industry. There are a handful firms manufacturing cold drinks in India. Similarly there are a few members of automobile industry in India. These industries exhibit some special features which are discussed in the following paragraphs.

3.3.0 Characteristics of Oligopoly Market :

(i) **Interdependence :** The most important feature of oligopoly is interdependence in decision-making of the few firms which comprise the industry. This is because when the number of competitors is few, any change in price, output, product, by a firm will have direct effect on the fortune of the rivals, who will then retaliate in changing their own prices, output or advertising technique as the case may be. It is, therefore, clear that an oligopolistic firm must consider not only the market demand for the industry product but also the reactions of other firms in the industry to any major decision it takes.

(ii) **Importance of advertising and selling costs** : A direct effect of interdependence of oligopolists is that the various firms have to employ various aggressive and defensive marketing weapons to gain a greater share in the market or to maintain their share. For this various firms have to incur a good deal of costs on advertising and other measures of sales promotion. Therefore, there is a great importance of advertising and selling costs in an oligopoly market. It is to be noted that firms in such type of market avoid price cutting and try to compete on non-price basis because if they start under cutting one another a type of price-war will emerge which will drive a few of them out of the market as customers will try to buy from the seller selling at the cheapest price.

(iii) **Group behaviour :** The theory of oligopoly is a theory of group behaviour, not of mass or individual behaviour and to assume profit maximising behaviour on oligopolist's part may not be very valid. There is no generally accepted theory of group behaviour. Do the members of a group agree to pull together in promotion of common interest or will they fight to promote their individual interests? Does the group possess any leader? If so, how does he get the others to follow him? These are some of the questions that need to be answered by the theory of group behaviour. But one thing is certain. Each oligopolist closely watches the business behaviour of the other oligopolists in the industry and designs his moves on the basis of some assumptions of how they behave or likely to behave.

3.3.1 Price and output decisions in an oligopolistic market : Because of interdependence an oligopolistic firm cannot assume that its rival firms will keep their prices and quantities constant, when it makes changes in its price and/or quantity. When an oligopolistic firm changes its price, its rival firms will retaliate or react and change their prices which in turn would affect the demand of the former firm. Therefore, an oligopolistic firm cannot have sure and definite demand curve, since it keeps shifting as the rivals change their prices in reaction to the price

changes made by it. Now when an oligopolist does not know his demand curve, what price and output he will fix cannot be ascertained by economic analysis. However, economists have established a number of price-output models for oligopoly market depending upon the behaviour pattern of the members of the group.

3.3.2 Kinked Demand Curve : It has been observed that in many oligopolistic industries prices remain sticky or inflexible for a long time. They tend to change infrequently, even in the face of declining costs. Many explanations have been given for this price rigidity under oligopoly and the most popular explanation is kinked demand curve hypothesis given by an American economist Sweezy.

The demand curve facing an oligopolist, according to the kinked demand curve hypothesis, has a 'kink' at the level of the prevailing price. The kink is formed at the prevailing price level. It is because the segment of the demand curve above the prevailing price level is highly elastic and the segment of the demand curve below the prevailing price level is inelastic. A kinked demand curve dD with a kink at point P has been shown in Fig. 24.

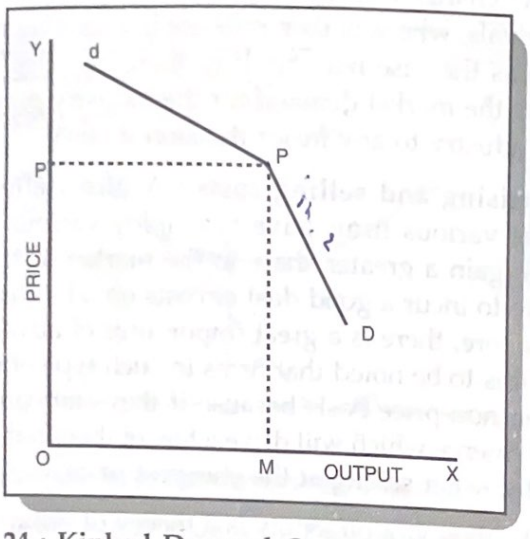

Fig. 24 : Kinked Demand Curve under oligopoly

The prevailing price level is MP and the firm produces and sells output OM. Now the upper segment dP of the demand curve dD is relatively elastic and lower segment PD is relatively inelastic. This difference in elasticities is due to the particular competitive reaction pattern assumed by the kinky demand curve hypothesis. This assumed pattern is :

Each oligopolist believes that if he lowers the price below the prevailing level its competitors will follow him and will accordingly lower prices, whereas if he raises the price above the prevailing level, its competitors will not follow its increase in price.

This is because when an oligopolist lowers the price of its product its competitors will feel that if they do not follow the price cut their customers will run away and buy from the firm which has lowered the price. Thus in order to maintain their customers they will also lower their prices. Thus the lower portion of the demand curve PD is price inelastic showing that very little increase in sales can be obtained by a reduction in price by an oligopolist. On the other

hand, if a firm increases the price of its product there will a substantial reduction in its sales because as a result of the rise in its price, its customers will withdraw from it and go to its competitors which will welcome the new customers and will gain in sales. These happy competitors will have therefore no motivation to match the price rise. The oligopolist who raises its price will lose a great deal and will therefore refrain from increasing price. This behaviour of the oligopolists explains the elastic upper portion of the demand curve dp showing a large fall in sales if a producer raises his price.

Each oligopolist will, thus, adhere to the prevailing price seeing no gain in changing it and a kink will be formed at the prevailing price. Thus, rigid or sticky prices are explained according to the kinked demand curve theory.

SUMMARY

The features of the various types of market forms are summarised in the table given below :

Classification of Market Forms

Form of Market Structure	*Number of firms*	*Nature of product*	*Price Elasticity of Demand of a firm*	*Degree of Control over price*
(a) Perfect competition	A large number of firms	Homogeneous	Infinite	None
(b) Monopoly	One	Unique product without close substitute	Small	Very Considerable
(C) Imperfect Competition				
(i) Monopolistic Competition	A large number of firms	Differentiated products	Large	Some
(ii) Oligopoly	Few Firms	Homogeneous or differentiated product	Small	Some

Perfect Competition, as evident from the above table is said to prevail where there is a large number of firms producing a homogeneous product. No individual firm is in a position to influence the price of the product and therefore the demand curve facing it will be a horizontal straight line at the prevailing market price. Short run equilibrium price of the firm is at a point where MC = MR of the firm. In the short run firms may be earning supernormal profits and some firms may be earning losses at the equilibrium price. In the long-run all the supernormal profits or losses get wiped away with entry or exit of the firms from the industry and all the firms earn normal profits.

Monopoly is an extreme form of imperfect competition with a single seller of a product which has no close substitutes. As such, a monopolist has considerable control over the price of his