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OLIGOPOLY AND DUOPOLY

Three forms of imperfect competition are found in real life : Monopolistic Competition, Oligopoly and Duopoly. In previous chapter, we studied monopolistic competition. Now, in this chapter, we will study oligopoly and duopoly.

Meaning Of Oligopoly

Oligopoly word is derived from two Greek Words : 'Oligis' and 'Pollin'. 'Oligi' means 'a few' and 'Pollin' means 'to sell'. This way, oligopoly's literal meaning is few sellers. The market situation is said to be oligopoly, when number of firms producing homogeneous or close substitute products are few in industry. In views of **Prof. Leftwitch**, "the situation of market is said to be oligopoly when number of sellers are few and acts of every seller is important for other." According to **Prof. George J. Stigler**, "Oligopoly is that situation in which a firm bases its market policy in part on the expected behaviour of a few close rivals."

It is clear that oligopoly is that form of market structure in which there are few firms selling a product so that there is intense competition amongs them. These few firms are producing either homogeneous product or close substitutes for one another. Commodities of producers of homogeneous goods are perfect substitutes of each other like- gold, silver, iron and steel etc. Close substitute goods involve electrical fans, woollen clothes etc.

Characteristics Of Oligopoly

(1) Few Sellers : In oligopoly market structure, a small number of firms dominate the market of the commodity, they are more then two and less than perfect competition in number. Every seller has a large share of market supply, hence, all firms, action results in a reaction of other firms. Every seller keeps a close watch on his market share and action or reaction of the few competitors.

(2) Homogeneous or Differentiated Products : In oligopoly, different sellers engaged in industry may produce homogeneous products or differentiated products. In case of homogenous products, it is called pure oligopoly and in case of differentiated product, it is called differentiated oligopoly or oligopoly with product differentiation. Commodities of sellers are very much alike in case of 'Differentiated Oligopoly' and have a minute difference amongs them. Firms producing automobiles, computers are good example of differentiated oligopoly which are differentiated among their products.

(3) Interdependence : All firms engaged in production activity under oligopoly are interdependent in respect of decision-making from and this is the most important feature of oligopoly. Since sellers are few, activities and policies of every seller also affect the others firms. Hence, any action or decision will definitely result into reaction of rival firms, therefore, a firm has to consider reaction of other firms while taking any decision. "The firms of an oligopolistic industry are all in the same boat. If one rocks the boat, the others will be affected and in all probability will know the identity of the responsible firm and can retalite.'' Is has been rightly stated by M. L. Seth.

(4) Importance of Advertisement and Sales Promotion : If product differentiation exists or few sellers are involved in a market, it becomes necessary to advertise the firm's product due to intense competition and interdependence. If lesser amount is spent or less consideration is given to sales promotional activities and advertisement, the sales share of producer will decline. We may conclude, advertisement and sales promotion are in extreme swing under this market structure and may become a matter of life and death for oligopolist firms.

(5) Price-Rigidity : Mostly price-rigidity is found in oligopoly as firms are closely connected to each other. If any firm decreases price for sales increase, rival firm will also follow it. As a result, price war may arise which eventually end up to losses to all the firms. On the other hand, if an oligopolistic firm increases the price, there would be fear of removal or reduction in its market share resulting to advantage for rival firms. That is why, price rigidity trend is mostly found in oligopoly.

(6) Difficulty in Entry and Exit of Firms : Under oligopoly, there are restrictions to the entry of new firms. This restriction arises due to the market size, technical, financial factors and also because of the price policy, trade mark, patent etc. adopted by the existing firms. Sometimes, there are in-built restrictions, such as, size of the market is small and may be able only to support the sales of two or three firms or the pricing of product may be fixed in such a way that new entrant can not be able to survive because of cost. The existing firms get cost advantage for their early establishment and due to huge investment in fixed properties it may not be easy to acquire exit for them.

(7) Indeterminateness of Demand Curve : Demand curve in oligopoly is unpredictable in comparison to other market structures. In oligopoly, it is very difficult to predict whether rival firms will change their prices or not, at the time of change in price policy of any firm. In other market structure such as perfect competition, monopoly or monopolistic competition, producers can ignore the reactions of the rival firms hence, they have a definite demand curve. But, in oligopoly, reactions of rival firms cannot be ignored due to interdependence. Thus, demand curve under oligopoly keeps on shifting, hence, it in determinate.

(8) Demand Curve under oligopoly is kinky : The firms under oligopoly are mutually dependent, hence, there is a situation of action and reaction by firms. Eventually prices tend to be rigid as shown in diagram 1 as OP. If any firm tries to increase the price of its product above OP, other firms will not react but there will be large reduction in quantity demanded of the firm. The first part of the demand curve (D_1K) is thus, relatively elastic. On the other hand, if firm reduces the price of its product, other firms will also reduce prices of their products and it would result into a price war. This reaction of price-reduction by rivals prevents the oligopoly firm from obtaining full advantage as quantity demanded would increase loss than proportionately. Therefore, second part of the demand curve (KD_2) is reactively inelastic. Thus, the demand curve under oligopoly, is a kinky demand curve. Price tends to be rigid at the kink, K.

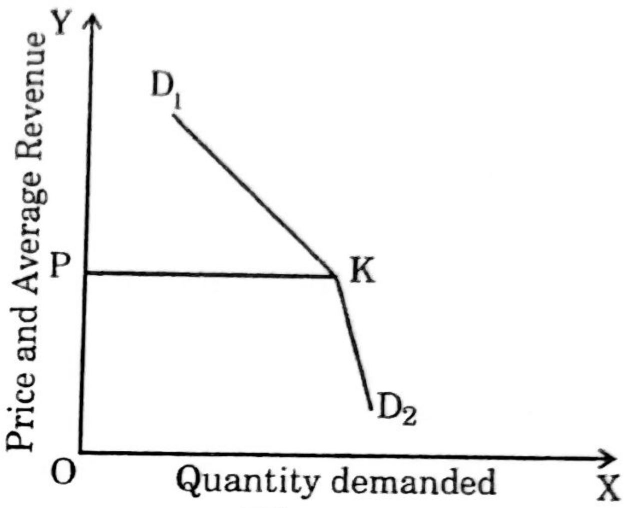

Diagram-1

TYPES OF OLIGOPOLY

Oligopoly has following classification on different basis :

(1) Pure and Differentiated Oligopoly : When homogeneous products are produced and sold by firms, in oligopoly, it is called 'Pure Oligopoly' such as production of cement, steel, silver and gold. On its opposite, when firms under oligopoly produce close substitute goods in place of homogeneous, this is called, 'Differentiated Oligopoly', such as television, scooter, tractor, refrigerator etc.

(2) Open and Closed Oligopoly : Open oligopoly is characteristized by freedom of entry to new firms in industry and closed oligopoly refers to market structure when there is no permission to new firms to be entered into industry.

(3) Partial or Full Oligopoly : Partial oligopoly is that market structure which involves leadership of one big firm over whole industry and small firms follow it, assuming that firm to be price leader. In full oligopoly, price leadership is absent and any firm may determine price independently.

(4) Collusive and Non-Collusive Oligopoly : When firms determine output and price through mutual collaboration and understanding, in place of competition, it is called collusive oligopoly. On the other hand, if firms determine price and output without such understanding it is called non-collusive oligopoly.

Difference Between Oligopoly And Monopolistic Competition

(1) Entry and Exit of firm : Entry and exit of firm is difficult in oligopoly whereas in monopolistic competition entry and exit of firm is simple and free.

(2) Type of commodities : In oligopoly, both homogeneous and differentiated products can be sold but, in monopolistic competition differentiated product is sold.

(3) Number of Sellers : In oligopoly, number of sellers is few but, in monopolistic competition, number of sellers is more than in oligopoly.

(4) Demand curve of firm : Demand curve of firm is very uncertain, kinked and indetermined in oligopoly but in, monopolistic competition, demand curve of firm is definite and of falling slope.

(5) Price Determination : The price of any firm depends on behaviour of the other firms in oligopoly, hence, firm has limited control over price determination due to mutual interdependence. On its opposite, monopolistic firm determines the price by own, according to demand and supply forces.

Difference Between Oligopoly And Monopoly

(1) Number of sellers : Number of sellers is few in oligopoly but, only one seller exists in monopoly.

(2) Type of commodity : Products are homogeneous or differentiated in oligopoly but, only one kind of commodity is sold by seller in monopoly.

(3) Availability of substitutes : Close substitutes of goods are available in oligopoly whereas no substitutes are found in monopoly market.

(4) Demand curve of firm : It is difficult to determine demand curve of firm in oligopoly but, in monopoly, demand curve or average revenue curve is downward sloping line.

(5) Entry and exit of firms : Entry and exit of firm is difficult in oligopoly but, in monopoly, entry and exit of firm is completely closed.

(6) Control over price : Firms have limited control over price, in oligopoly because of mutual interdependence, whereas firm has enough control over prices in monopoly.

(7) Dependence on advertisement : Firms give significant importance to advertisement due to intensive competition but it is less required in monopoly.

Difference Between Oligopoly And Duopoly

(1) Number of Sellers : Number of sellers is more than two in oligopoly but in duopoly number of sellers is exactly two.

(2) Area : Area or scope of oligopoly is very wide and found mostly in practical but area of duopoly is narrow and found less.

(3) Possibility of mutual agreement : Possibility of mutual agreement is less in oligopoly due to larger number of sellers. On the other hand, in duopoly, possibility of mutual agreement is more due to only two sellers in market.

(4) Price Determination : Price is determined in oligopoly at point where marginal cost and marginal revenue (MC = MR) are equal. Price determination depends on mutual agrement in duopoly.

Determination Of Price And Output Under Oligopoly

Price and output determination analysis is not easy in oligopoly and its general principle is yet not existent. There are three methods of price determination under oligopoly :

(1) Independent Pricing,

(2) Pricing under Collusion, and

(3) Pricing under Price Leadership

(1) Independent Pricing : In case of oligopoly market structure, when there is no kind of collusion amongs different sellers, then every seller is free for price and output determination. In this way, the system of pricing under oligopoly will be alike the pricing in monopoly. In such case, there is possibility of price war. The reduction in price by one seller may induce other rival firms to reduce their price also to maintain their market share and this creates price war atmosphere. Oligopoly firms may take help of price rigidity to prevent price war in which all the firms adopt prevailing price in market. Modern economists believe that in long-run, independent price policy can not sustain in oligopoly. It induces uncertainty, insecurity and competition. Hence, in long-run, tendency of collusion and price leadership is found under oligopoly.

(2) Pricing Under Collusion : To overcome the limitations of independent pricing, oligopoly firms sometimes get into agreement which is called collusion. Collusion may be possible of two kinds :

(a) Perfect Collusion, and

(b) Imperfect Collusion

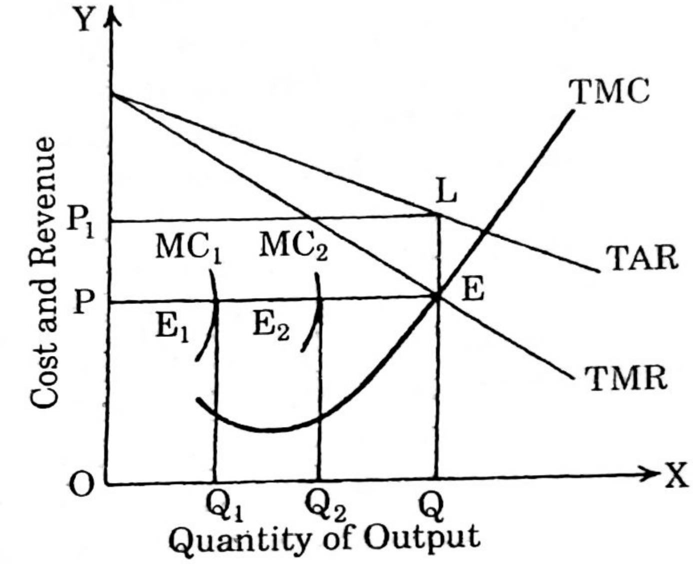

Diagram-2

(a) Perfect Collusion : Under this, a central organisation is established which is called Cartel. Price and quantity of output, for all the firms of group, are determined by cartel and freedom of individual firms ends regarding price and output determination. Cartel determines the price and quantity of output at point where total marginal cost (TMC) and total marginal revenue (TMR) of industry are equal. It has been shown in diagram 2. In diagram, TMR and TMC curves are equal at point E, hence, OQ production is decided for the whole industry, whose price is known by total average revenue (TAR) as OP_1. This total output OQ will be divided between two firms, equal to OQ_1 and OQ_2 which is equal to total output quantity or $OQ_1 + OQ_2 = OQ$. [Only two firms have been analyzed for convenience.] The output allocation has been made by intersection of equilibrium line (EP) and marginal cost line of individual firms that is MC_1 and MC_2 at the point E_1 and E_2.

Situation of perfect collusion is imaginary and temporary because there happens to be conflict amongs different firms in respect of division of output quota and they normally leave the collusion. Government interference is also a hindrance for perfect collusion so ultimately it leads to imperfect collusion.

(b) Imperfect Collusion : Under this, there is no central organisation or Cartel. All the firms of industry get into gentlemen's agreement regarding price and quantity of output of the commodity. Every firm has freedom of price and quantity determination to some extent but channel of mutual agreement is adopted to avoid price war. This form of collusion is mostly found. The most popular form of imperfect collusion is price leadership.

(3) Pricing under Price Leadership : Price leadership refers to situation where price determined by one strong firm is accepted by all other firms under oligopoly. The firm, which initiates the price determination is called price leader. Rest of the firms, which follow the leader are called price follower. As per **Arther Burns**, "Price leadership is a practice in which most units of an industry adopt the price amounced by one member of the industry."

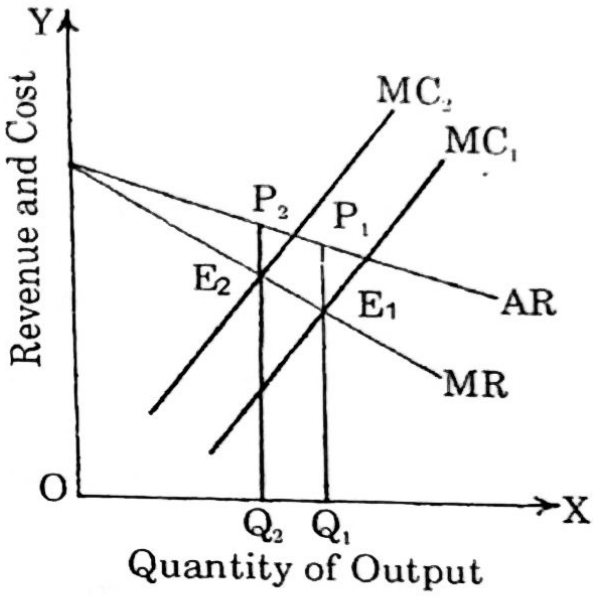

Diagram-3

Under price leadership, the firm, which leads, is big and has large share in total production of commodity. Other firms are of small size, which produce lesser quantity. Thus, all the firms, which are small in size, sale the commodity on price determined by large and experienced firm, known as price leader. This policy is based on the principle of **survival of the fittest**. In India, Steel Authority of India Limited - SAIL is an example of price leadership. Price leadership, under oligopoly, and the price and quantity of output determination in it has been shown in diagram 3.

MC_1 and MC_2 are different marginal cost curves of two firms. AR and MR are average revenue and marginal revenue curves, which are same for both the firms. Firm, whose marginal cost MC_1 is less, would produce quantity of OQ_1, for P_1Q_1 price at point E_1 where MR = MC_1. Second firm, whose marginal cost MC_2 is more than earlier firm, would produce quantity OQ_2 at P_2Q_2 price, at equilibrium point E_2 when MR = MC_2. Price of first firm is less then second firm and its output is also more. Hence, first firm will be price leader and price determined by it would be followed by second firm. This way, less price of the leader will prevail in the whole market.

Causes of Price leadership : Price leadership arises due to following reasons :

(1) Large firm : Usually, when there is one large and influential firm, in the market, it leads the price because it has more resources and market information than small firms and it produces most part of market supply.

(2) Experience and Reputation : It there is one old, experienced and reputed firm in market, it has more ability to determine correct price hence, other firms consider it to be price leader.

(3) Aggressive Price Determination : Mostly large firm tries to capture market through price cut, as a result, other competitive firms also adopt this policy to save their existence. Big firm becomes price leader in price war.

(4) Low Cost : The production cost of big firm is less in comparison of small firms and decides low price, as a result it becomes price leader.

(5) Initiative : When any firm initiates in any production area and starts production by taking risk, and is able to maintain good reputation in market, that firms becomes leader of other firms.

Necessary Conditions For Effective Price Leadership

The success of price leadership depends on following conditions :

(1) Correct knowledge of competitors' reactions : Price leadership will be successful and effective when price leader has correct knowledge of reactions of competitors, else its leadership would be in danger.

(2) Loyalty of followers : It is necessary for success of price leadership that price determined by leader is effectively followed by its followers with fully loyalty.

(3) Ability for price war with rival firms : The success of price leader depends on its ability to defeat its rival firms in price war and to bear risk.

(4) No frequent price change : Price leader should not frequently change the prices at small deviations in cost and demand. It should only change price at some important events else its leadership and reputation would be hurt and follower would be in difficulty for coordinating with such frequent changes in the price.

(5) Long-run advantages : Price leader should consider long-run advantage instead of short-run profit in respect of price policy.

(6) Other conditions : Some of other necessary conditions for effective price leader are following :

(i) Price leader should welcome the thought of the followers and accordingly incorporate changes in his policies.

(ii) He should avoid price cut as far as possible so that followers may not lose confidence in leader.

(iii) Price leader should be aware of advertisement, entry, growth and sales of rivals.

(iv) Price leader should maintain high quality and utility of his product.

Advantages of Price Leadership : Its main advantages are following :

(1) Convenient : Problem of price determination ends for other follower firms because they have not to do anything about pricing. They accept price of price leader in easy and economical way.

(2) Risk Reduction : Price leadership enables price situations which results in reduction in risk to producers, sellers and buyers.

(3) No price war : In case of price leadership price war is discontinued and price stability is found in market.

(4) No need for negotiation : Due to price stability, unnecessary negotiation is not required to buyers and sellers.

(5) Strong base for price determination : Price leadership is done by old and experienced firm, hence, small firms remain safe from Government interference and criticism of public.

Disadvantages of Price Leadership : Following are the limitations of price leadership :

(1) Price leader has to endulge in industrial politics, which is a difficult task.

(2) Price leadership is based on policy of 'Live and let live' and if follower firms are against price leader, there may arise the situation of muscle-money politics, conflict and revolt.

(3) If there is difference in production cost of different firms, success of price leadership would be doubtful.

(4) Status and reputation of price leader could be hurt by followers through selling their product at lower prices.

(5) Price leadership would be in danger if there is any mistake in market and cost analysis.

DUOPOLY

Duopoly refers to that market structure in which there are only two producers. These two producers produce and sell similar or nearly similar products. There is an enough effect of activity of one producer on the other and reaction of other firm is definite. Duopoly is the simplest form of oligopoly which is rarely found in market. Its example is supply of LPG in India only by Indian Oil Corporation and Bharaṭ Petroleum. Main features of duopoly are following :

1. There are only two sellers in market.
2. Both the sellers are producing and selling homogeneous or nearly similar (differentiated) commodities.
3. There is a competition and action—reaction between two sellers.
4. Both sellers have independent production and sales policy.
5. In duopoly, if there is an agreement between two firms, situation of monopoly arises.

Price Determination : In duopoly, price determination may be in following two ways :

(1) When there is agreement between the two firms : If there is agreement between two firms, in such condition, price would be determined as in monopoly. Price of commodity would be determined at point, where marginal revenue (MR) is equal to marginal cost (MC). In practical life, possibilities of agreement between two firms are rare and it is only possible where cost is same for both. If there is significant difference between their cost, firm, whose cost is less would capture larger part of market through lesser price determination and both will work without any agreement.

(2) When there is no agreement between two firms : If there is no agreement between two firms, competition would exist and there is possibility of price war. Every producer would try to attract customers of other sellers by reducing its prices and this process of price decrease would continue till prices of both the dealers are equal to their marginal cost (MC). If commodities of these two sellers are not homogeneous, there will be difference in prices. In real life, duopoly firms take help of price leadership and mutual agreement to avoid price war. That is why if is said that the last solution of duopoly lies in price leadership and collusion.

Essay Type Questions

1. Bring out the salient features of oligopoly. How are price and output determined under oligopolistic competition ?
2. Explain the meaning and characteristics of oligopoly. How is it different from monopolistic competition, monopoly and duopoly ?
3. Define oligopoly. Mention the chief features and types of oligopoly.
4. What are the causes of Price Leadership ? Briefly describe the conditions necessary for effective Price Leadership. How price is determined in it ?
5. "The ultimate solution of duopoly lies in price leadership and collusion." Explain this statement in reference to pricing of duopoly. How price is determined in oligopoly ? Briefly explain.

Short Type Questions

1. State briefly the attributes of oligopoly.
2. What are the main types of oligopoly ?
3. How does oligopoly differ from monopoly ?
4. How is price determined in case of perfect collusion of oligopolistic firms ?
5. What are the necessary conditions for effective price leadership ?
6. Briefly mention the merits and demerits of price leadership.

Very Short Type Questions

1. Distinguish between pure and differentiated oligopoly.
2. What is partial and full oligopoly ?

3. What is imperfect collusion of oligopolistic firms ?
4. What is duopoly ?

OBJECTIVE QUESTIONS

1. Which is not the attribute of oligopoly ?
   (i) Interdependence in firms,
   (ii) Importance of sales promotion,
   (iii) Price rigidity,
   (iv) Intermediateness of demand curve,
   (v) Free entry and exit of firms, (vi) Lack of advertisement costs.
   (a) (iii), (v) (b) (v), (vi)
   (c) (iv), (v) (d) (iii), (vi)
2. "Gentlemen's agreement" is made in case of...........of oligopolist firms.
   (a) Independent pricing (b) Perfect collusion
   (c) Imperfect collusion (d) None of the above

Ans. 1. (b), 2. (c)

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