

## UNIT IV

**Market Structure And Pricing theory- Market Structure: - Meaning of market,** Classification of Market, Concepts of Total revenue, Average revenue and Marginal revenue, Market Structure - Concept ,Features types.

**Price – Cost and Output Determination under Different types of markets-** Perfect Competition, Monopoly, Monopolistic Competition, Equilibrium of firms under different market structures in short run and long run. Price Discrimination in monopoly and oligopoly. Kinked demand curve.

### Concept of Revenue

Revenue means sales receipts. It is the receipts obtained by a firm from selling various quantities of the products.

Revenue of the firm depends on the price at which the quantities of output are sold. Firms revenue can be categorized as

**A) Total Revenue**

**B) Average Revenue**

**C) Marginal Revenue**

### TOTAL REVENUE

Total revenue TR refers to the amount of money which firm realizes by selling certain units of a commodity. It is also called as total receipts of the output produced over a given period of time. It depends on 2 factors.

a) Price of the product

b) Quantity sold of the product

For eg. Of producer sells 500 units of cement bags @Rs.20/- each the  
 $TR = P \times Q = 500 \times 20 = 10,00/-$

### AVERAGE REVENUE

AR is obtained by total revenue divided by number of units of output sold. It is the revenue earned per unit of output. AR is the price of one unit of a commodity.

$AR = TR / Q$  For eg. If total revenue 10,000 and output sold is 50 units then  
 $AR = 10,000/50 = 200$  PU.

Since  $AR = \text{Price}$ .

AR curve of the producing firm may vary as per the price.

If in the given example if producer sells a commodity sells his total

commodity 200 units at different price then average revenue changes so  
 $AR = TR / Q$  since  $TR = P \times Q$  therefore  $AR = pxq/Q \times AR = P$

## **MARGINAL REVENUE**

MR is the changes / additions made to total revenue by selling additions or one more unit of the commodity. MR is the rate of change in total revenue resulting from sale of an additional unit.

$MR = \frac{TR}{Q}$  but for change in one unit of output

$MR = TR_n - TR_{n-1}$  For eg. If firm sells 10 units of a commodity @250 then

$TR = 2500$  if firm sells one more unit i.e. 11 units at lower price say @240 then  
 $TR = 2640$ .

$MR = 2640 - 2500 = 140$ .

MR is also defined as ratio of a change in TR to unit change in output sold.

## **Introduction :**

Market is generally understood as a particular place or locality where goods are sold and purchased. But, in economics, market refers to an arrangement through which buyers and sellers come in contact with each other directly or indirectly and exchange of goods and services takes place among them.

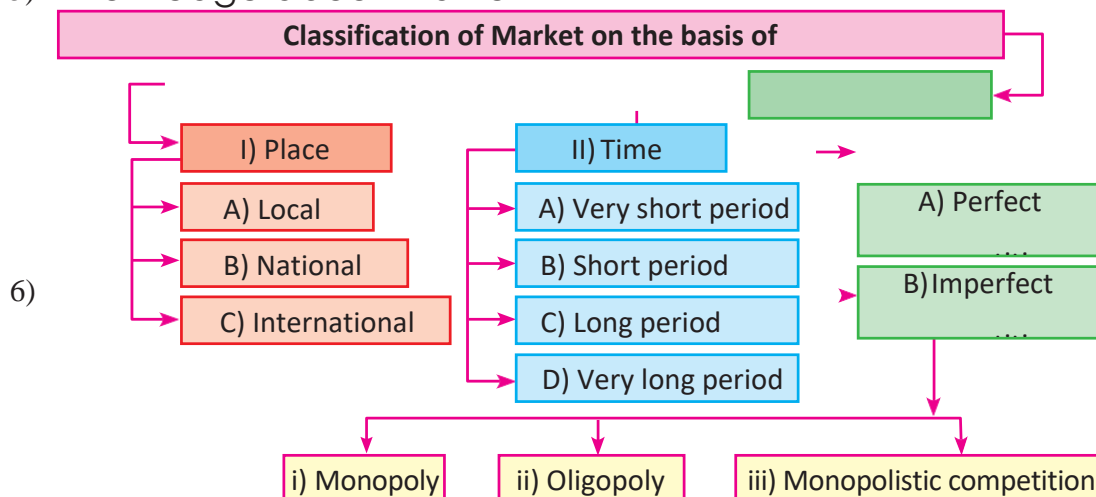
## **Definition of Market :**

According to Augustin Cournot, "Economists understand the term market, not any particular market place in which things are bought and sold, but the whole of any region in which buyers and sellers are in such a close contact with one another that the prices of the same goods tend to equality easily and quickly." Thus, market is a network of dealings between potential buyers and potential sellers. At any point of time, a market

will exist if there are :

- 1) Buyers and sellers
- 2) A product or service to be bought and sold
- 3) Price of the product
- 4) Close contact between buyers and sellers

## 5) Knowledge about market



## Classification of Market :

Market can be classified on the basis of various criteria.

- 1) **Local market** : Local market is a market in which sellers sell and customers buy a product in the region or area in which it is produced.
- 2) **National market** : National market is a domestic market in a given country. Each national market is governed by the regulation of its own country.
- 3) **International market** : International market is a worldwide market in which buyers and sellers trade in goods and services across the national borders.

## II) On the basis of time :

- 1) **Very short period** : Very short period is a period in which supply is fixed and price is determined by the demand. The time period is for a few days or weeks in which the supply of commodity cannot be increased.
- 2) **Short period** : Short period is a period of less than one year. In this period, firms can only make adjustments in inputs like labour to increase the supply of goods and services.

**Long period** : Long run is a period of time in which all factors of production and costs are variable. In the long run, firms are able to adjust all costs. It is for a few years, generally up to five years.

- 3) **Very long period** : Very long period is a production time that is so long that all inputs are variable. It is of more than five years.

### III) On the basis of Competition :

Competition among the sellers and buyers is the most important criteria for classification of markets in economics. Let us study the various types of markets on the basis of competition among the sellers :

#### A) Perfect Competition :

##### Meaning and Definition :

##### What is PERFECT COMPETITION

Perfect competition means a market structure where competition between sellers and buyers exists in most perfect manner. In perfect competition a single market price prevails for a commodity which is determined by the demand and supply forces in the market. In perfect competition every seller and buyer is a price taker. Both of them have accepted the existing prices.

Perfect competition is an ideal and imaginary concept of market rather than an actual market. According to Mrs. Joan Robinson, "Perfect competition prevails when the demand for the output of each producer is perfectly elastic."

A perfectly competitive market is one in which the number of buyers and sellers is very large. All the buyers and sellers are engaged in buying and selling a homogeneous product without any restrictions. Moreover both buyers and sellers possess perfect knowledge of market conditions.

Following are the features of Perfect Competition :

- 1) **Large number of sellers and buyers** : Under perfect competitions, there are large number of sellers and buyers. As mentioned earlier, each seller forms a negligible part in the total market. Hence, none of them is in a position to influence the price and supply in the market. Thus, sellers are price takers under perfect competition.

The number of buyers is also large. The share of each buyer is so negligible that none of them is in a position to influence the price in

the market.

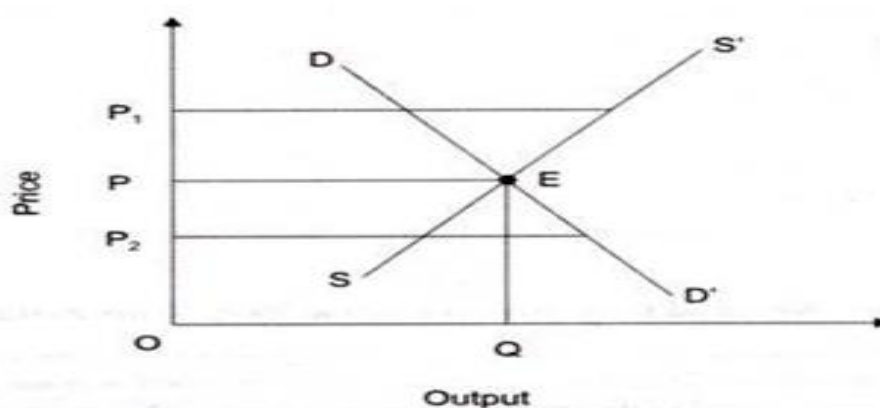
- 2) **Homogeneous product** : An important feature of a perfectly competitive market is that the product sold is homogeneous or identical in respect of size, design, colour, taste etc. All the products are perfect substitutes to each other.
- 3) **Free entry and exit** : There are no barriers to the entry and exit of firms. Any firm can enter or quit the industry at its own will. If there is hope of profit, the firm will enter the market and if there is possibility of loss the firm will leave the market.
- 4) **Single price** : A single uniform price prevails under perfect competition which is determined by the interaction of demand and supply.
- 5) **Perfect knowledge of market** : The buyers and sellers possess a perfect knowledge about the market conditions. Every seller and buyer has the knowledge about price, quality, source of supply of products etc.
- 6) **Perfect mobility of factors of production** : There is perfect mobility of factors of production under perfect competition. Labour and capital are mobile not only geographically but also occupationally.
- 7) **Absence of transport cost** : In perfect competition, price is uniform because we assume that transport cost does not exist. This assumption will lead to uniformity in price.
- 8) **No government intervention** : Laissez- faire policy is an important feature of perfect competition. It means there is absence of Government intervention in economic activities.

### ***Equilibrium of the firm under Perfect Competition***

As discussed earlier, in perfect competition, the price of a product is determined at a point at which the demand and supply curve intersect each other. This point is known as equilibrium point. At this

point, the quantity demanded and supplied is called equilibrium quantity.

Figure shows the equilibrium under perfect competition:



In above Figure, it can be seen that at price  $OP_1$ , supply is more than the demand. Therefore, prices will fall down to  $OP$ . Similarly, at price  $OP_2$ , demand is more than the supply. Similarly, in such a case, the prices will rise to  $OP$ . Thus,  $E$  is the equilibrium at which equilibrium price is  $OP$  and equilibrium quantity is  $OQ$ .

**Price determination under Perfect Competition:** The interaction of demand and supply determine price of the commodity in perfect competition. This is known as 'equilibrium price.' Marshall has compared the process of price determination to the cutting of cloth with a pair of scissors. Just as both the blades of scissors are required to cut the cloth, both the forces of demand and supply are essential to determine the equilibrium price in the market.

## MONOPOLY

**Meaning :** Monopoly is a well defined market structure where there is only one, single seller, selling a unique product in the market. In a

monopoly market, the seller faces no competition, as he is the sole seller of goods. There are no close substitutes available for his products and there are some barriers on new producers to enter into the market. Thus a single seller in the market is called "Monopolist". Monopolist is a sole seller of the product.

So, monopoly market is opposite of perfect competition.

### **Features of Monopoly**

- I. Sole seller becomes entire industry : The monopolist is the sole/single seller, so the concept of firm or industry disappears. Sole seller becomes the entire industry.
- II. Profit maximizer: Monopolist maximizes profits.
- III. Price maker: Decides the price of the good or product to be sold, but does so by determining the quantity in order to demand the price desired by the firm.
- IV. High barriers to entry: Other sellers are unable to enter the market of the monopoly.
- V. Single seller: In a monopoly, there is one seller of the good, who produces all the output.<sup>1</sup> Therefore, the whole market is being served by a single company, and for practical purposes, the company is the same as the industry.
- VI. **Types of Monopoly**
- VII. 1) *Natural, Legal, Technological & Joint Monopolies*
- VIII. On the basis of determining forces of monopoly power, monopoly may be legal, natural, technological and joint monopoly. **Legal monopolies** are like legal provisions for trade marks, patents, copy rights i.e. others can not copy or carry the same trade mark or patents etc. as it is forbidden by law to follow such practices. **Natural monopoly** are like some geographical areas which are gifted by nature with full of water, good quality of soil , land etc. This type of monopoly is the natural monopoly, which is called 'natural' because there is no direct government involvement. This derives from the fact that its creation originates from variables that are not man-made. For instance, railways are a prime example of a natural monopoly. This is

because the cost to build another track would be over and above what a competitor would make back in profit. Utilities are another example. To build new sewers or power lines would be costly, inefficient, and impractical. **Technological monopolies** are such as some of the businessmen are in receipt of ancestors business empires like Bajaj or Reliance. While **joint monopoly** where two companies were to build and offer separate lines, the costs would be higher than what they would be under a monopoly. These joint monopoly business is carried on the basis of trust, belief, group of business empires etc. Therefore, other firms do not want to enter the market because there is no profit to be made.

IX. **State Monopolies (Private & Public Monopolies)**

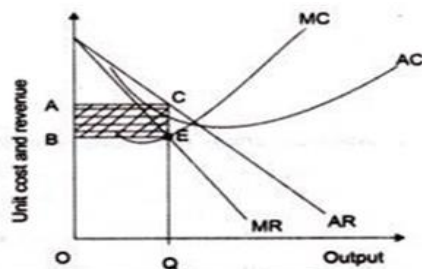
- X. 2) Another type of monopoly is the state monopoly. This covers industries where the state has full ownership. Notable examples include postal services, utilities, television, and the supply of money. These are usually controlled by the state as they are deemed as 'natural' monopolies. In other words, the goods could only be efficiently provided under a monopoly structure. Therefore, rather than trust a private firm to run them, they are taken under government ownership.
- XI. The aim of state ownership is to prevent price grouping that private monopolies would participate in. As monopolies have greater power to dictate prices, they may increase the cost to the consumer over and above the market rate.
- XII. Some governments regulate these monopolies, but in many countries, there is a strong political will to have these controlled by the state. In the UK for example, the re-nationalization of the railways has become increasingly popular in order to reduce ticket prices.
- XIII. **Simple and Discriminating Monopolies**
- XIV. 3) A simple monopoly firm charges uniform prices for its products to all the buyers. A discriminating monopoly firm charges different prices for the same products to the different buyers.

**Monopoly Equilibrium:**

Single organization constitutes the whole industry in monopoly. Thus, there is no need for separate analysis of equilibrium of organization and industry in case of monopoly. The main aim of monopolist is to earn maximum profit as of a producer in perfect competition.

Unlike perfect competition, the equilibrium, under monopoly, is attained at the point where profit is maximum that is where  $MR=MC$ . Therefore, the monopolist will go on producing additional units of output as long as  $MR$  is greater than  $MC$ , to earn maximum profit.

**Let us learn Long run monopoly equilibrium through below Figure-**



In above figure if output is increased beyond  $OQ$ ,  $MR$  will be less than  $MC$ . Thus if additional units are produced, the organization will incur loss. At equilibrium point, total profits earned are equal to shaded area  $ABCE$ .  $E$  is equilibrium point at which  $MR=MC$  with quantity as  $OQ$ .

**Conditions for Price Discrimination:** For price discrimination to exist, it requires the basic conditions. **These are:**

**1. Difference in Elasticity of Demand:**

Price discrimination is possible only when elasticity of demand will be different in different markets. The monopolist will fix higher price where demand is inelastic and low price where the demand will be elastic. In this way, he will be able to increase his total revenue.

**2. Market Imperfections:**

Generally, price discrimination is possible only when there is some degree of market imperfections. The individual seller is able to divide his market into separate parts only if it is imperfect.

**3. Differentiated Product:**

Price discrimination is possible when buyers need the same service in connection with differentiated products. For example, railways charges different rates for the transport of coal and copper.

## **Types of Price Discrimination**

### **1. Personal Price Discrimination:**

Personal price discrimination refers to the charging of different prices from different customers for the same product. For example, a doctor charges different fees for the same operation from rich and poor patients, lawyer charges different fees for two different clients.

### **2. Local/Geographical Price Discrimination:**

Under geographical price discrimination, the monopolist charges different prices in different markets for the same product. For eg. A firm may discriminate prices between domestic market and export market for the same product. It also includes dumping where a producer may sell the same commodity at one price at home and at the other price abroad.

**3. Price Discrimination according to Age:** This discrimination is made on the basis of age of the buyer. In transportation services like Best buses fair lower for children and higher for other age people.

### **Legal Sanction:**

In some cases price discrimination is legally sanctioned. As, Electricity Board charges lowest for electricity for domestic use and highest for commercial houses.

### **5. Monopoly Existence:**

Price discrimination is also called discrimination monopoly. It is evident that price discrimination is possible only under conditions of monopoly.

## **Monopolistic competition**

Monopolistic competition is a type of imperfect competition such that there are many producers competing against each other, but selling

products that are differentiated from one another (e.g. by branding or quality) and hence are not perfect substitutes. In monopolistic competition, a firm takes the prices charged by its rivals as given and ignores the impact of its own prices on the prices of other firms. In the presence of coercive government, monopolistic competition will fall into government granted monopoly. Unlike perfect competition, the firm maintains spare capacity.

Models of monopolistic competition are often used to model industries. Textbook examples of industries with market structures similar to monopolistic competition include restaurants, cereals, clothing, shoes, and service industries in large cities. The "founding father" of the theory of monopolistic competition is [Edward Hastings Chamberlin](#), who wrote a pioneering book on the subject, *Theory of Monopolistic Competition* (1933). [Joan Robinson](#) published a book *The Economics of Imperfect Competition* with a comparable theme of distinguishing perfect from imperfect competition. Further work on monopolistic competition was undertaken by Dixit and Stiglitz who created the [Dixit-Stiglitz model](#) which has proved applicable used in the sub fields of international trade theory, macroeconomics and economic geography.

## What is Oligopoly

The term "oligopoly" refers to an industry where there are only a small number of firms operating. It is a market structure in which there are few sellers. In an oligopoly, no single firm enjoys a large amount of [market power](#). Thus, no single firm is able to raise its prices above the price that would exist under a perfect competition scenario. In an oligopoly, all firms would need to collude in order to raise prices and realize a higher economic profit. Most oligopolies exist in industries where goods are **relatively** undifferentiated and broadly provide the same benefit to consumers. In India automobile firms, cement and steel industries come under oligopoly.

### Characteristics of Oligopoly

#### 1. A Few Firms with Large Market Share

A market may have thousands of sellers, but if the top 5 firms have a combined market share of over 50 percent, it can be classified as an oligopolistic market. This is because the power is concentrated between a few sellers who are able to exercise power over the market.

## **2. High Barriers to Entry**

Oligopolistic firms maintain their position through a number of barriers to new entry. For instance, brand loyalty, patents, and high start-up costs are but to name a few. These make it difficult for new entrants to build a presence in the market and attract customers. In industries such as retail – brand loyalty is a significant barrier to overcome. These barriers to entry make it difficult for new firms to join and sets it apart from perfect competition. As a result, these barriers to entry allow oligopolies to make higher profits due to limited competition.

## **. Interdependence**

Any action a firm takes in an oligopolistic market will strongly affect the actions of its competitors. As a result, we have what is often referred to as the 'Prisoners Dilemma', under Game Theory. For those who are not familiar with these terms: an oligopolistic firm will operate based on how they believe competitors will react. In other words, Company A expects Company X to reduce its prices, so will do so as well.

This can be sub-optimal as it reduces the power of a competitive market. For example, if Apple was to reduce the price of its iPhone by \$200, Samsung would likely follow suit. So when Apple looks to take that decision, they will consider how they will benefit. They won't receive a boost in demand because the competition is also the same price, so any initial benefit is lost. Often this can lead oligopolistic firms to just maintain the status quo and keep prices constant.

## **4. Each Firm Has Little Market Power In Its Own Right**

Leading on from interdependence; each firm has little market power, because other firms are quick to take advantage. For example, an

oligopolistic firm cannot raise prices in fear that customers will flee to its competitors. One oligopolistic firm cannot dictate prices or supply because competitors are equally as 'powerful'. On an individual basis, this keeps the firm in check. Yet it equally incentives collusion as one firm is unable to get ahead.

## 5. Higher Prices than Perfect Competition

Under perfect competition, prices are just above marginal cost, leaving firms with small profits – if any. As oligopolies have combined market power, they tend to keep prices higher to obtain larger profits.

If any firms were to reduce prices, others would also follow suit, thereby reducing profits for all. This is where it becomes tricky in distinguishing between collusion and a natural state of oligopolistic competition. Do firms naturally keep prices higher due to fear that their actions will reduce their profits? Or, do they collude to keep prices and profits high?

## 6. More Efficient

Oligopolistic firms benefit from high levels of market share. At the same time, they benefit from economies of scale – meaning it can produce at a lower cost. For instance, there are markets that have high fixed costs such as car manufacturers. If new competitors want to enter, they have to spend millions on new factories and other infrastructure.

Consequently, this would increase costs for existing firms as the benefit they receive from economies of scale would decline. This means higher prices for customers and it is for this reason that such markets are better served under an oligopolistic market structure.

## Types of Oligopoly

**Perfect Oligopoly:** The condition in which an oligopolistic firm sells homogeneous goods is known as a perfect or an ideal oligopoly, i.e., all firms sell similar kind of products such as cement companies, steel companies, they all sell a similar product with different brand names.

**Imperfect Oligopoly:** The condition in which oligopolistic firms sell differentiated products in the market is known as an imperfect oligopoly. For instance, Maruti and Hyundai are selling their various variants of cars in the market.

**Open Oligopoly:** When there will be no entry barriers for any new firm to enter into a market, such a condition is known as an open oligopoly. i.e. any firm can enter into the market without any restrictions.

**Close Oligopoly:** When a firm faces a various number of restrictions or barriers to entry in the market, such as technical or legal barriers that condition is known as a close oligopoly.

**Partial Oligopoly:** Partial oligopoly is a condition in which one firm is a price leader, who dominates the whole market and all other firms have to follow the prices and quantity set by this firm.

**Full Oligopoly:** If there is no price [leadership](#) and all firms are competing with each other in the market that condition is known as a full oligopoly.

**Co-operative Oligopoly:** When two or more firms merge to maximize their joint profit that condition is termed as a collusive oligopoly, i.e., these firms don't work for their benefit, but their motive is to maximize their collective profit. It's one of the best examples is (OPEC) in which various nations work jointly as oil-exporting company groups.

**Non-cooperative Oligopoly:** When a various company competes in the market to increase its market share, that condition is known as a non-collusive oligopoly.

### **Kinked Demand Curve**

In an oligopolistic market, firms cannot have a fixed demand curve since it keeps changing as competitors change the prices/[quantity](#) of output. Since an oligopolist is not aware of the demand curve, economists have designed various price-output models based on the behavior pattern of other firms in the [industry](#). In this [article](#), we will look at the kinked demand curve hypothesis.

### **Sweezy's Kinked Demand Curve Model:**

The kinked demand curve of oligopoly was developed by Paul M. Sweezy in 1939. Instead of laying emphasis on price-output determination, the model explains the behavior of oligopolistic organizations. The model advocates that the behavior of oligopolistic organizations remain stable when the price and output are determined.

The kinked-demand theory of oligopoly illustrates the high degree of **interdependence** that exists among the firms that make up an oligopoly. The market demand curve that each oligopolist faces is determined by the output and price decisions of the other firms in the oligopoly; this is the major contribution of the kinked-demand theory.

The kinked-demand theory, however, is considered an *incomplete* theory of oligopoly for several reasons. First, it does not explain how the oligopolist finds the kinked point in its market demand curve. Second, the kinked-demand theory does not allow for the possibility that price *increases* by one oligopolist are matched by other oligopolists, a practice that has been frequently observed. Finally, the kinked-demand theory does not consider the possibility that oligopolists *collude* in setting output and price. The possibility of collusive behavior is captured in the alternative theory known as the cartel theory of oligopoly.

If the organization increases the price, the competitor organizations would also cut down their prices. In such a case, the organization that has raised its prices would lose some part of its market share.

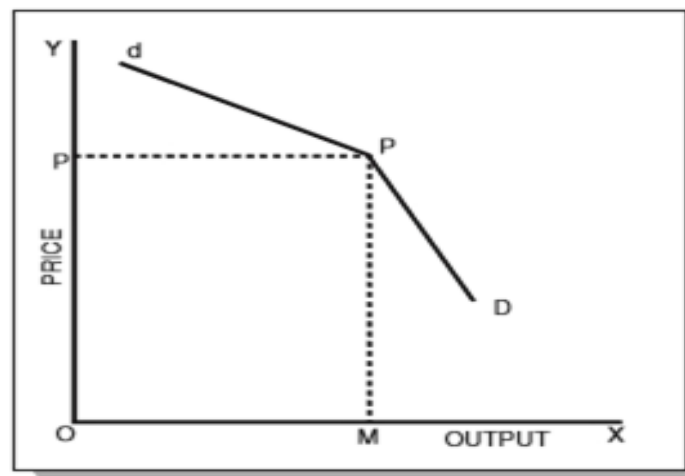
The kinked demand curve model seeks to explain the reason of price rigidity under oligopolistic market situations. Therefore, to understand the kinked demand curve model, it is important to note the reactions of rival organizations on the price changes made by respective oligopolistic organizations.

In many oligopolist markets, it has been observed that prices tend to remain inflexible for a very long time. Even in the face of declining costs, they tend to change infrequently. American economist Sweezy came up with the kinked demand curve hypothesis to

explain the reason behind this price rigidity under [oligopoly](#).

According to the kinked [demand](#) curve hypothesis, the demand curve facing an oligopolist has a kink at the level of the prevailing price. This kink exists because of two reasons:

- The segment above the prevailing [price](#) level is highly elastic.
- The segment below the prevailing price level is inelastic.
- The following figure shows a kinked demand curve  $dD$  with a kink at point  $P$ .



**Fig. 1 : Kinked Demand Curve under oligopoly**

- From the figure, we know that
- The prevailing price level =  $P$
- The firm produces and sells output =  $OM$
- Also, the upper segment ( $dP$ ) of the demand curve ( $dD$ ) is elastic.
- The lower segment ( $PD$ ) of the demand curve ( $dD$ ) is relatively inelastic.
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