Chapter – 4

Price Determination in Different Markets

Unit – 1

Meaning & Types of Market

Meaning of Market

- In ordinary language, a market refers to a place where the buyers and sellers of a commodity gather and strike bargains.
- In economics, however, the term "Market" refers to a market for a commodity. E.g., Cloth market; furniture market; etc.,
- According to Chapman, "the term market refers not necessarily to a place and always to a commodity and buyers and sellers who are in direct competition with one another".

Features of Market

- A Region
- Existence of Buyers & Sellers
- Existence of Commodity or Service
- Bargaining for Price
- Knowledge about Market Condition
- One Price for a Commodity

Classification of Market

- ✓ **Area:**

Local Markets: Markets for perishable goods – butter, eggs, milk, vegetables.

Regional Markets: Semi-durable goods – Shirts

National Markets: Durable goods and industrial items.

International Markets: precious commodities – Gold, Silver.

Classification of Market

- ✓ Time: **Alfred Marshall > "Time" elements in market**

Very Short Period Market: Perishable – Supply cannot be changed – Market supply E = 0

Short-Period Market: Supply can be changed due to law of variable proportion.

Long-Period Market: Supply can be changed unlimited due to law of returns to scale.

Very Long-Period or Secular Period Market: Change in factors – Population, capital supply.

Classification of Market

- ✓ **Nature of Transaction:**

Spot Market: Goods are physically transacted on the spot.

Future Market: Transaction at future date.

Classification of Market

- ✓ **Regulations:**

Regulated market: Transactions are regulated by Government-stock market.

Unregulated market: No restrictions on transactions-Free market.

Classification of Market

- ✓ **Volume of Business:**

Wholesale market: Commodities are bought and sold in bulk or large quantities.

Retail market: Commodities are bought sold in small quantities for ultimate consumers.

Classification of Market

- ✓ **Competition:**

Perfectly Competitive: Characteristics of perfect competition market.

Imperfect Market: Characteristics of monopolistic competition market.

Total Revenue

- TR refers to the amount of money, which a firm realized by selling certain units of a commodity.
- TR = P x Q
- For Example: Rs. 5 x 10 units = Rs. 50

Marginal Revenue

- MR is the change in TR resulting from the sale of an additional unit of a commodity.
- MR = Change in TR / Change in Quantity sold
- MR = Δ TR /Δ Q
- MR = TRn – TRn-1

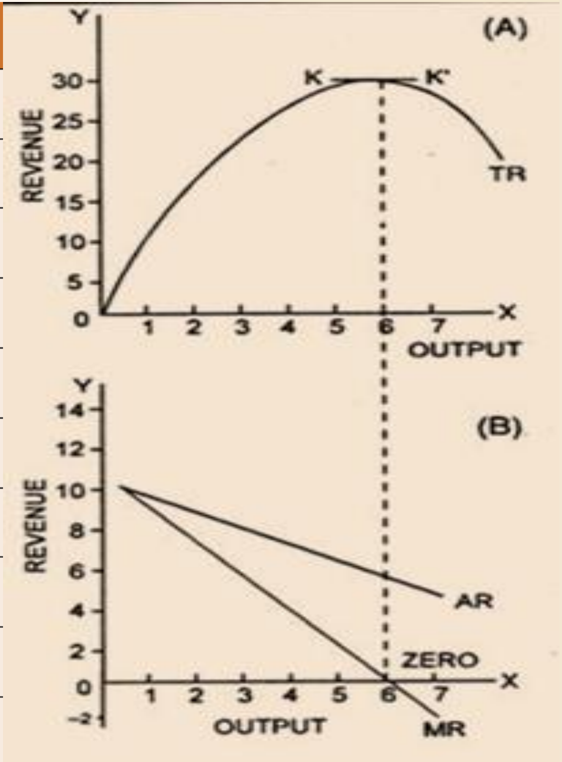
Average Revenue

- AR is revenue earned per unit of output.

- AR = TR/Q
- AR = P*Q/Q
- AR = P

TR, AR, MR

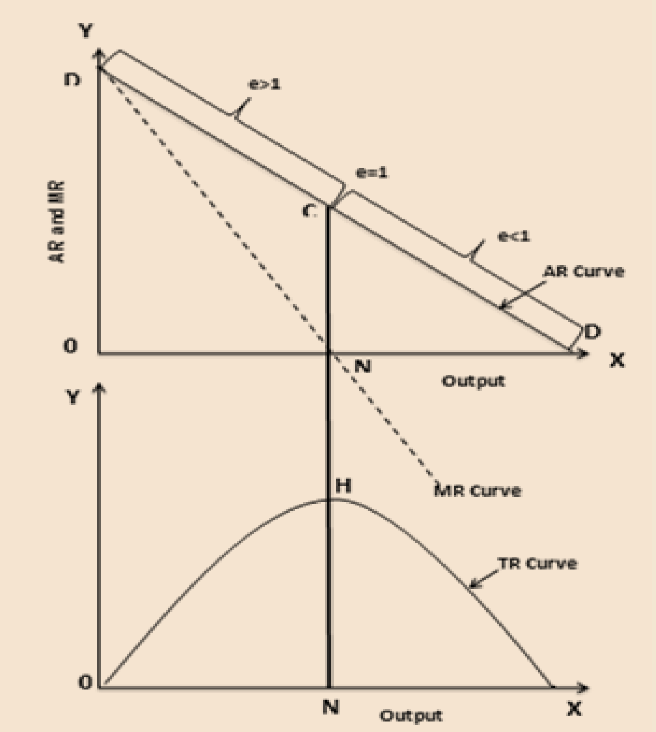
Units	Total Revenue	Average Revenue	Marginal Revenue
1	10	10	10
2	18	9	8
3	24	8	6
4	28	7	4
5	30	6	2
6	30	5	0
7	28	4	-2
8	24	3	-4
9	18	2	-6
10	10	1	-8



MR, AR & Elasticity

- MR = AR * E-1/E
- Where E = Price Elasticity of demand

- If E = 1, then MR = 0.
- If E > 1, then MR will be positive.
- If E < 1, then MR will be negative.

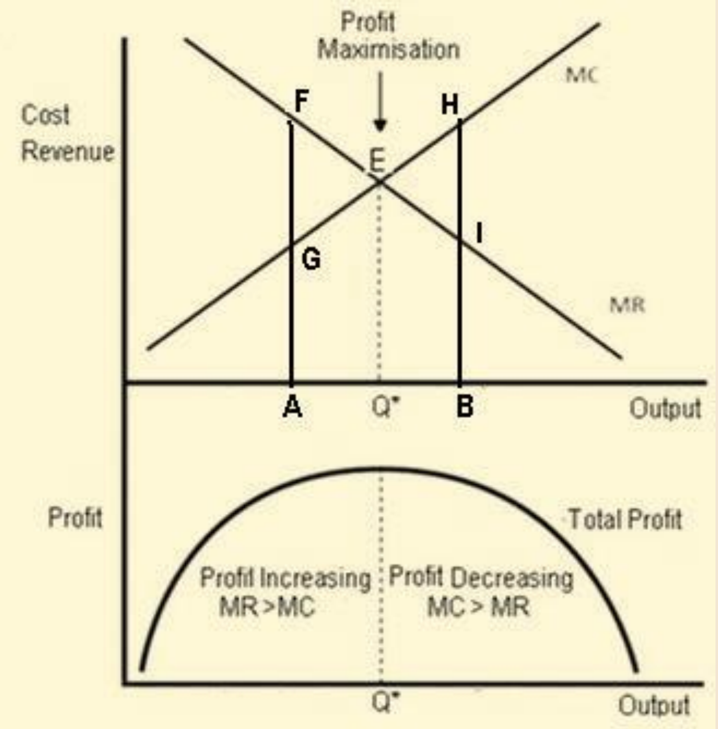


Behavioural Principles

- **Principle 1:**
- **A firm should produce if TR ≥ TVC (Price ≥ AVC).**
- **If TR = TVC, firm's maximum loss will be equal to its fixed cost.**
- **P > AVC = Continue Production**
- **P = AVC = Firm Encounters Shut-Down Point**
- **P < AVC = Firm Should Shut-Down**

Behavioural Principles

- **Principle 2:**
- MR > MC = Increase Output
- MR = MC = Equilibrium Point
- MR < MC = Decrease Output
- MC curve should cut to MR from below.

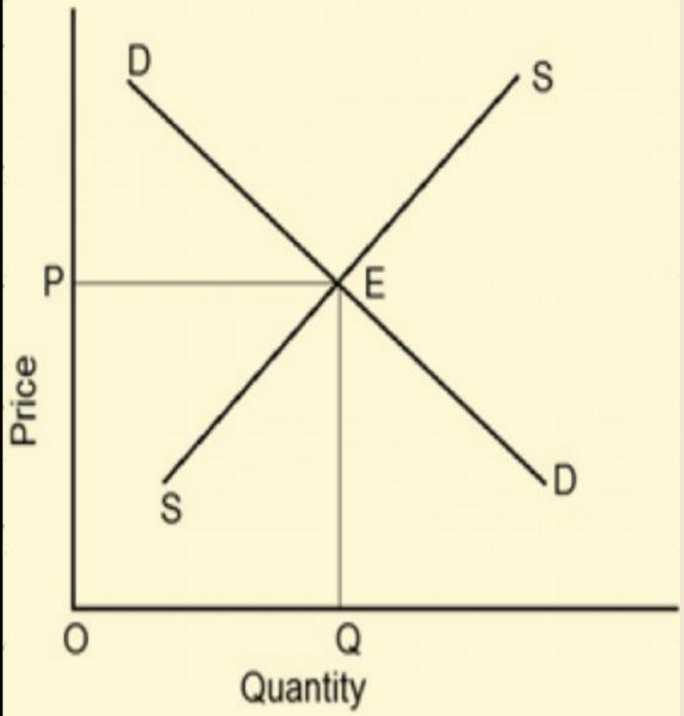


THANK YOU

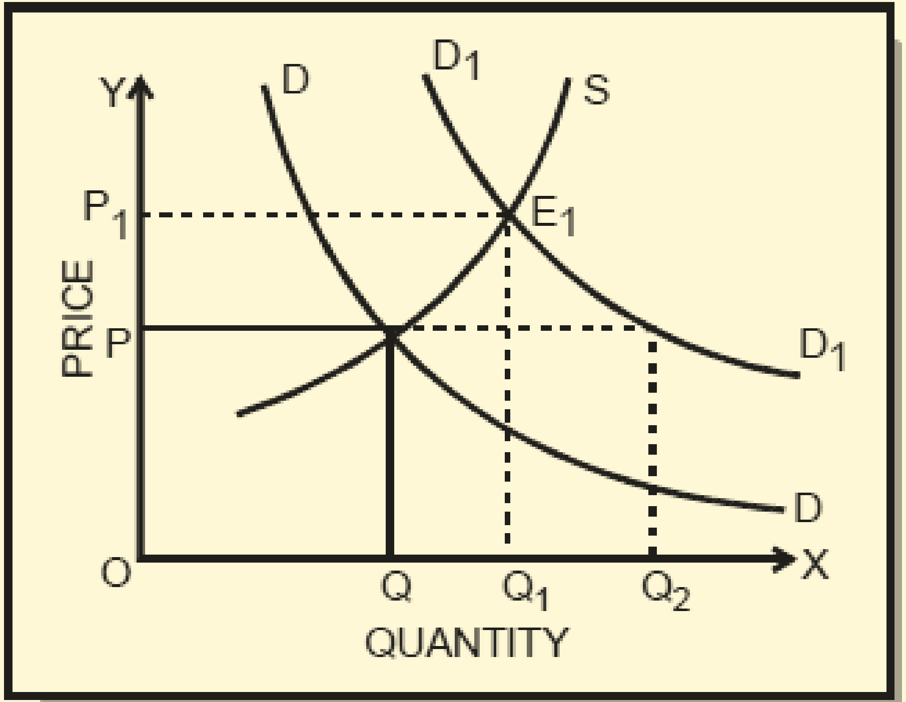
Chapter – 4
Price Determination in Different Markets
Unit – 2
Determination of Prices

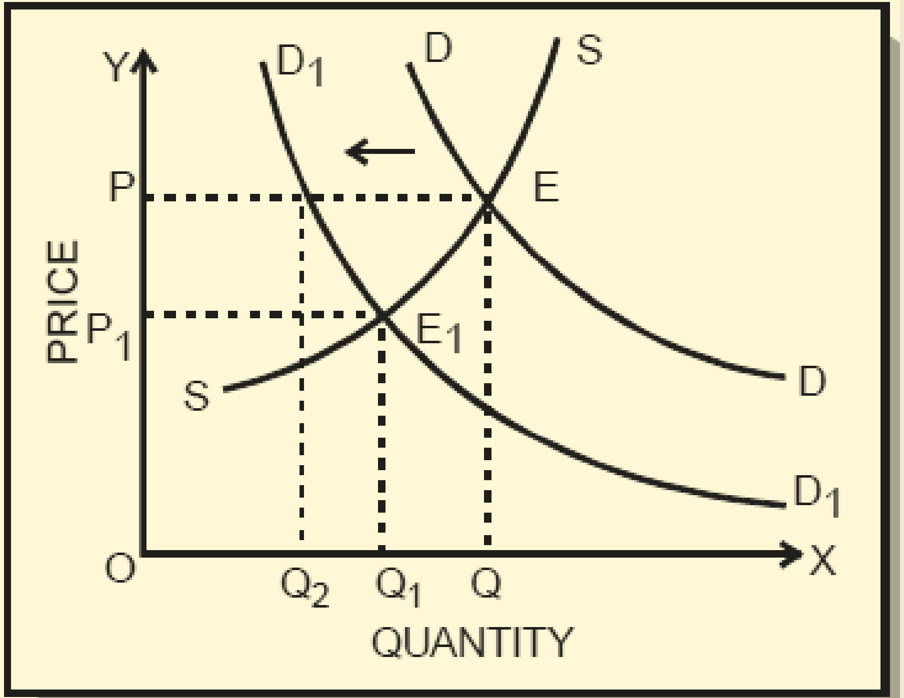
Equilibrium Price

Equilibrium price	Demand (units)	Supply (units)	Analysis
1	50	10	Excess
2	40	20	Demand
3	30	30	P = 3= D = S
4	20	40	Excess
5	10	50	Supply

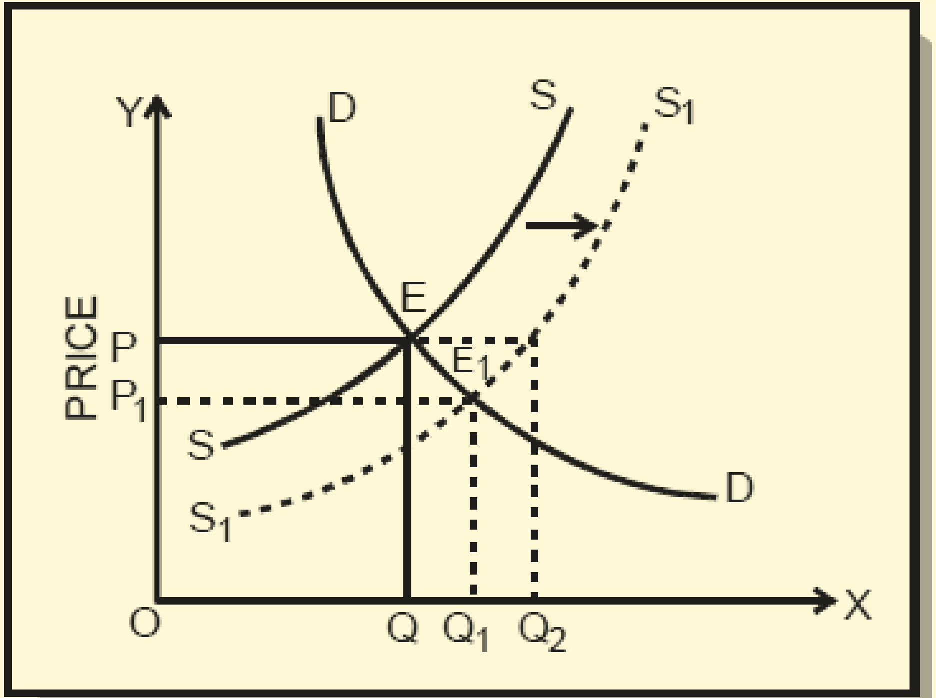


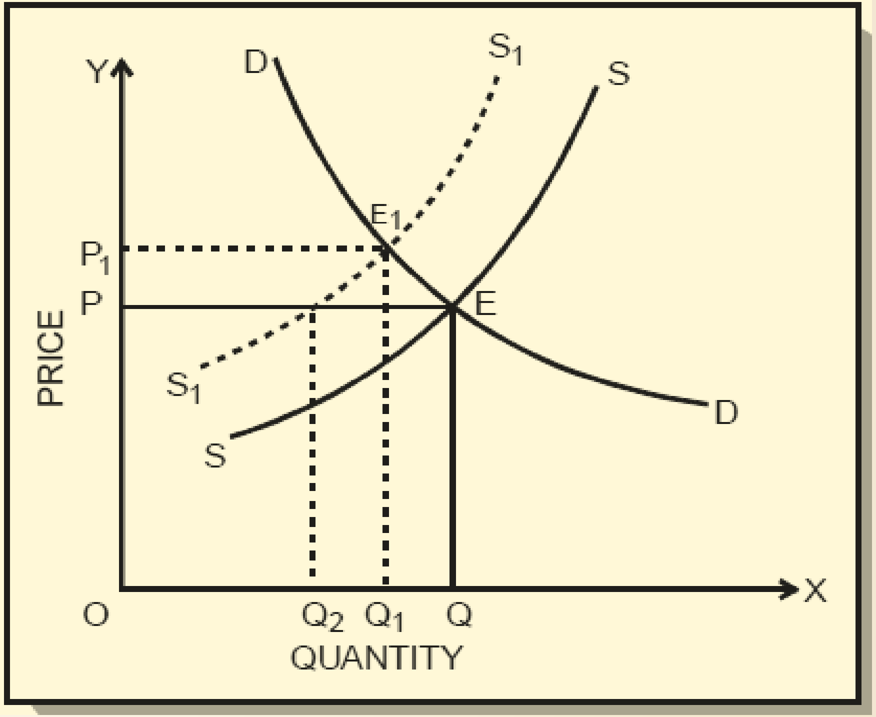
Increase & Decrease in Demand



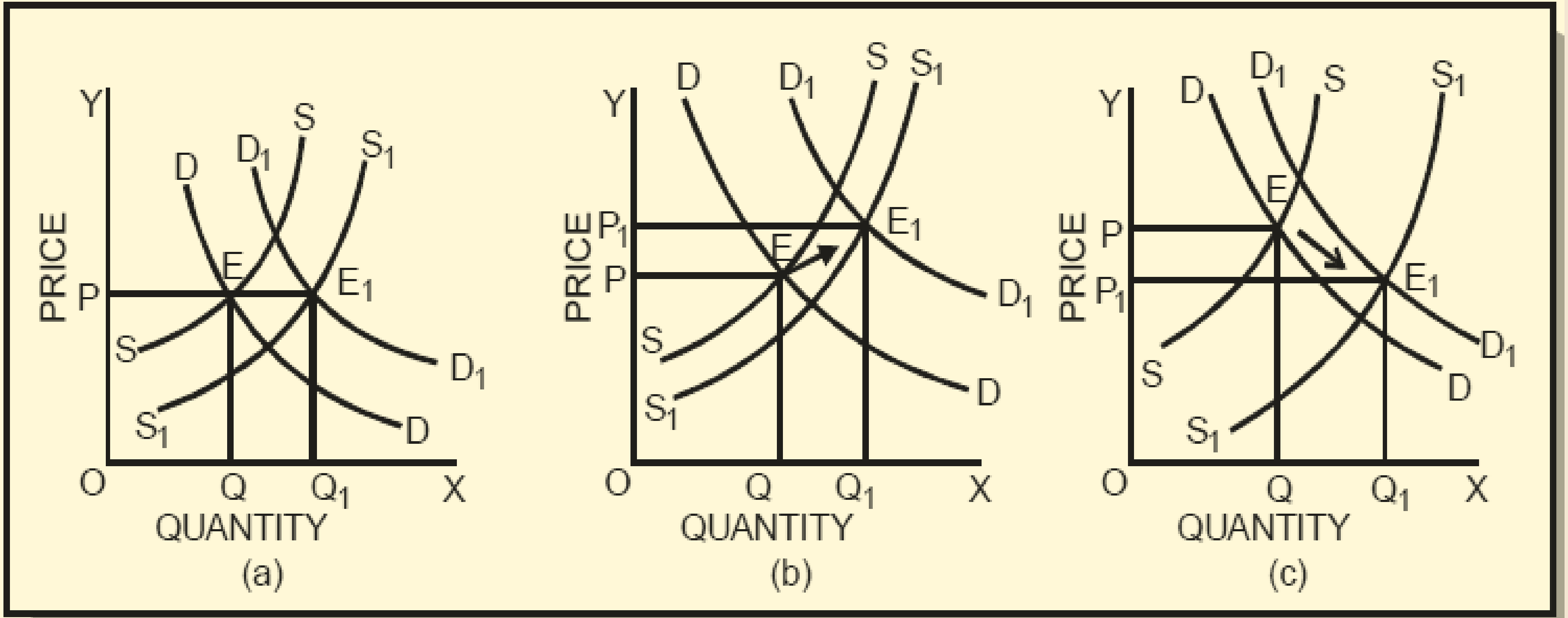


Increase & Decrease in Supply



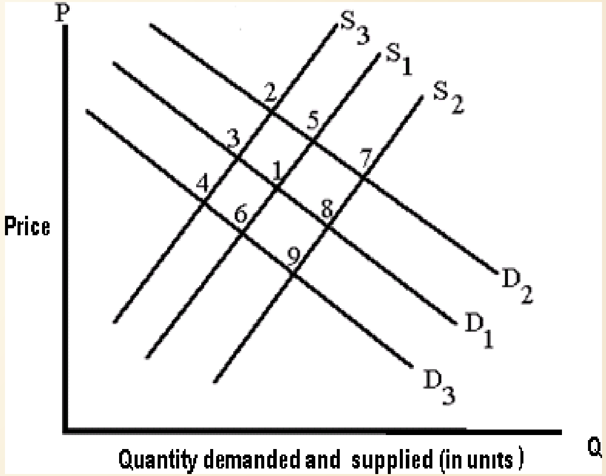


Simultaneous Changes in Demand & Supply



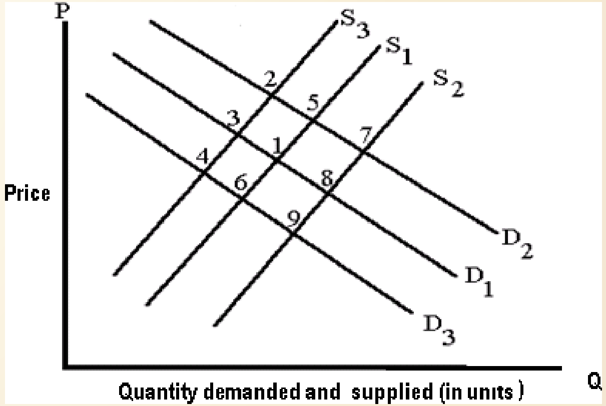
Simultaneous Changes in Demand & Supply

- ✓ Assume X is a normal good. Holding everything else constant, assume that income rises and the price of a factor of production also increases. What point in the figure above is most likely to be the new equilibrium price and quantity?



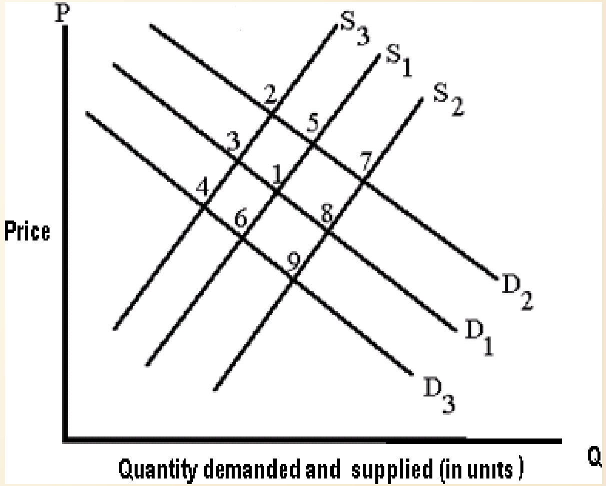
Simultaneous Changes in Demand & Supply

- We are analyzing the market for good Z. The price of a complement good, good Y, declines. At the same time, there is technological advance in the production of good Z. What point the figure above is most likely to be the new equilibrium price and quantity?



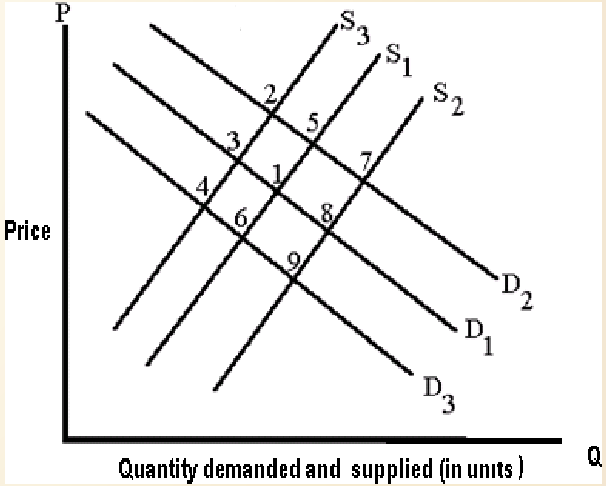
Simultaneous Changes in Demand & Supply

- ✓ Heavy rains in Maharashtra during 2005 and 2006 caused havoc with the rice crop. What point in the figure above is most likely to be the new equilibrium price and quantity?



Simultaneous Changes in Demand & Supply

- Assume that consumers expect the prices of new cars to significantly increase next year. What point in the figure above is most likely to be the new equilibrium price and quantity?



THANK YOU

Chapter – 4

Price Determination in Different Markets

Unit – 3

Price Output Determination Under Different Markets

Perfect Competition

- **Characteristics:-**
- Large number of buyers and sellers
- Homogeneous product
- Free entry and exit
- Perfect knowledge
- Perfect mobility
- Uniform price
- No government restrictions
- Industry is price maker and firm is price taker
- Transportation cost and selling costs are not found

Pure/Free Competition

- **Characteristics:-**
- **Large number of buyers and sellers**
- **Homogeneous product**
- **Free entry and exit of firms**

Price Determination Under Perfect Competition

- ✓ **Industry – Price Maker**

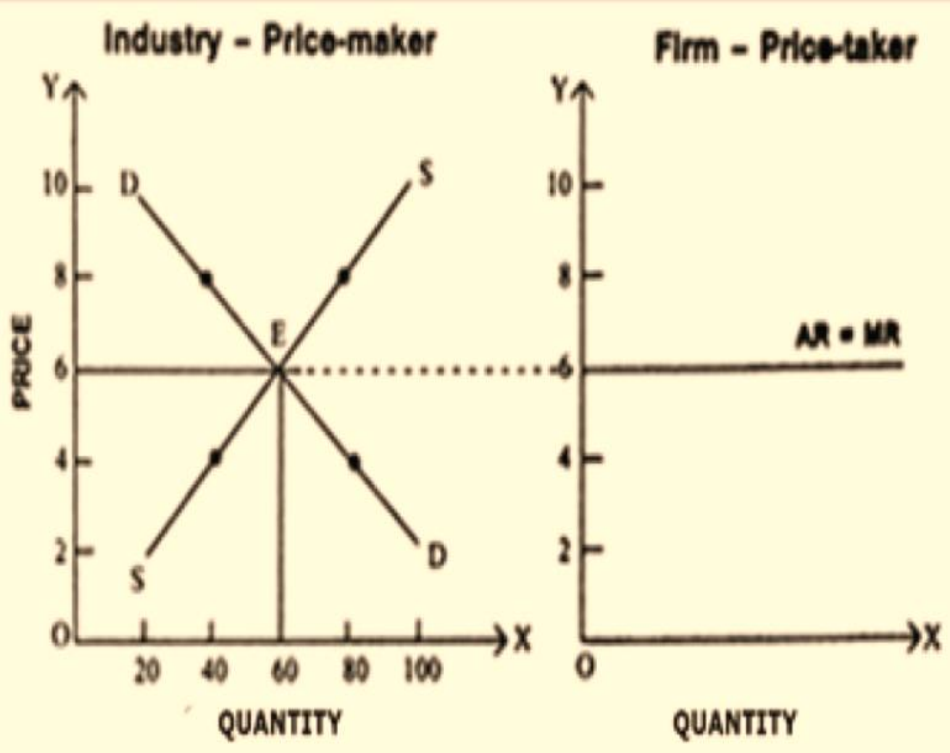
Equilibrium price	Demand (units)	Supply (units)	Analysis
2	100	20	Excess
4	80	40	Demand
6	60	60	P = 6= D = S
8	40	80	Excess
10	20	100	Supply

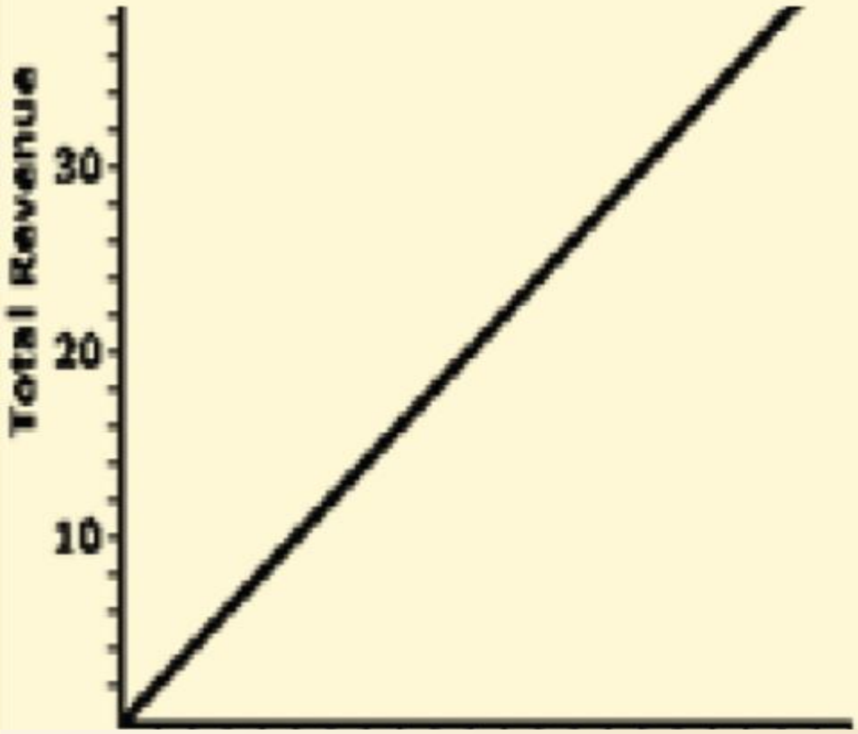
Price Determination Under Perfect Competition

✓ **Firm – Price Taker**

Price (P)	Quantity sold (Q)	Total Revenue (TR)	Average Revenue = TR/Q	Marginal Revenue = TR/Q
6	1	6	6	-
6	2	12	6	6
6	3	18	6	6
6	4	24	6	6
6	5	30	6	6

Price Determination Under Perfect Competition





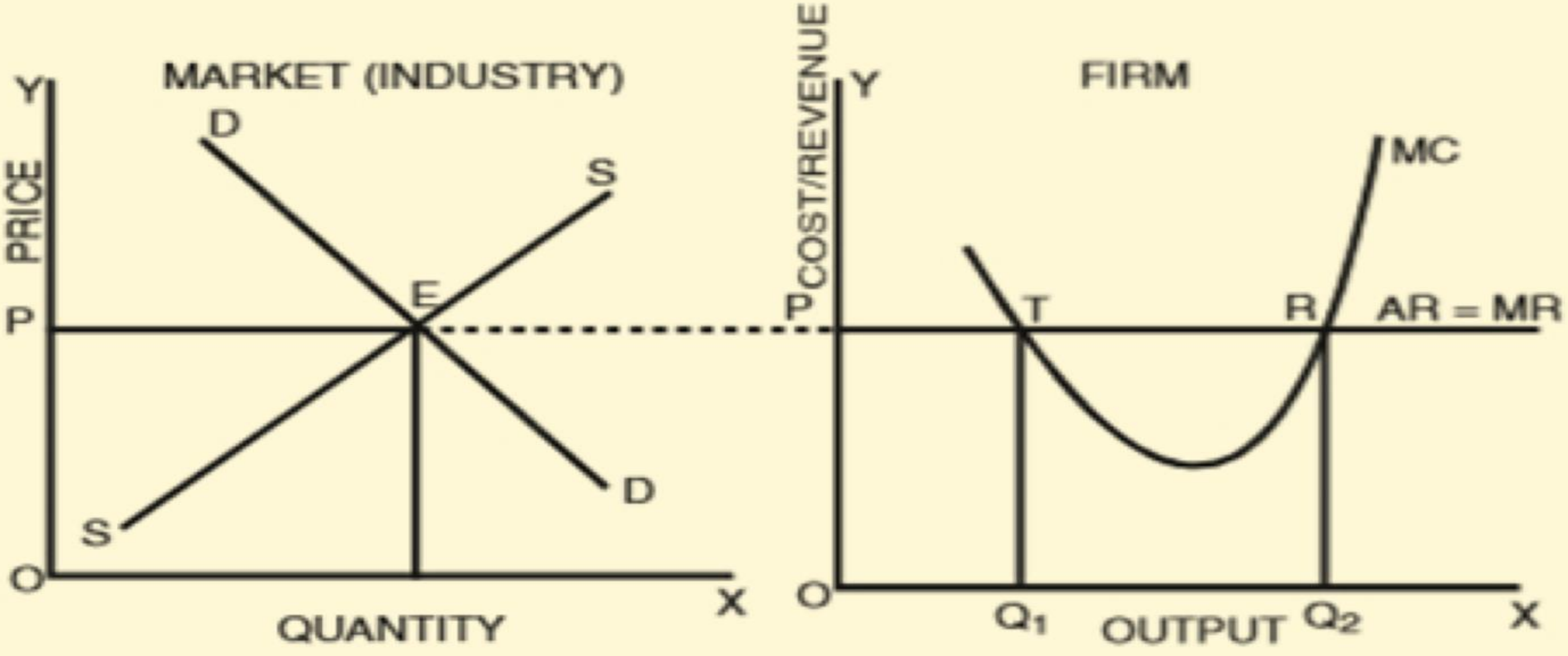
Equilibrim Under Perfect Competition

- In perfect competition, the firms are price takers and output adjusters.
- This is because the price of the commodity is determined by the forces of market demand and market supply i.e. by whole industry and individual firm has to accept it.
- Therefore firm has to simply choose that level of output which yields maximum profit at the prevailing prices.

Equilibrim Under Perfect Competition

- The firm is at equilibrium when it maximises its profit.
- The output which helps the firm to **maximise its profit is called equilibrium output.**
- There are two conditions for the equilibrium of a firm. They are –
- a. **MR = MC**. (first order condition)
- b. Firm's **MC curve should cut its MR curve from below** i.e. marginal cost curve should have positive slope at the point of equilibrium. (Second order condition)

Equilibrim Under Perfect Competition

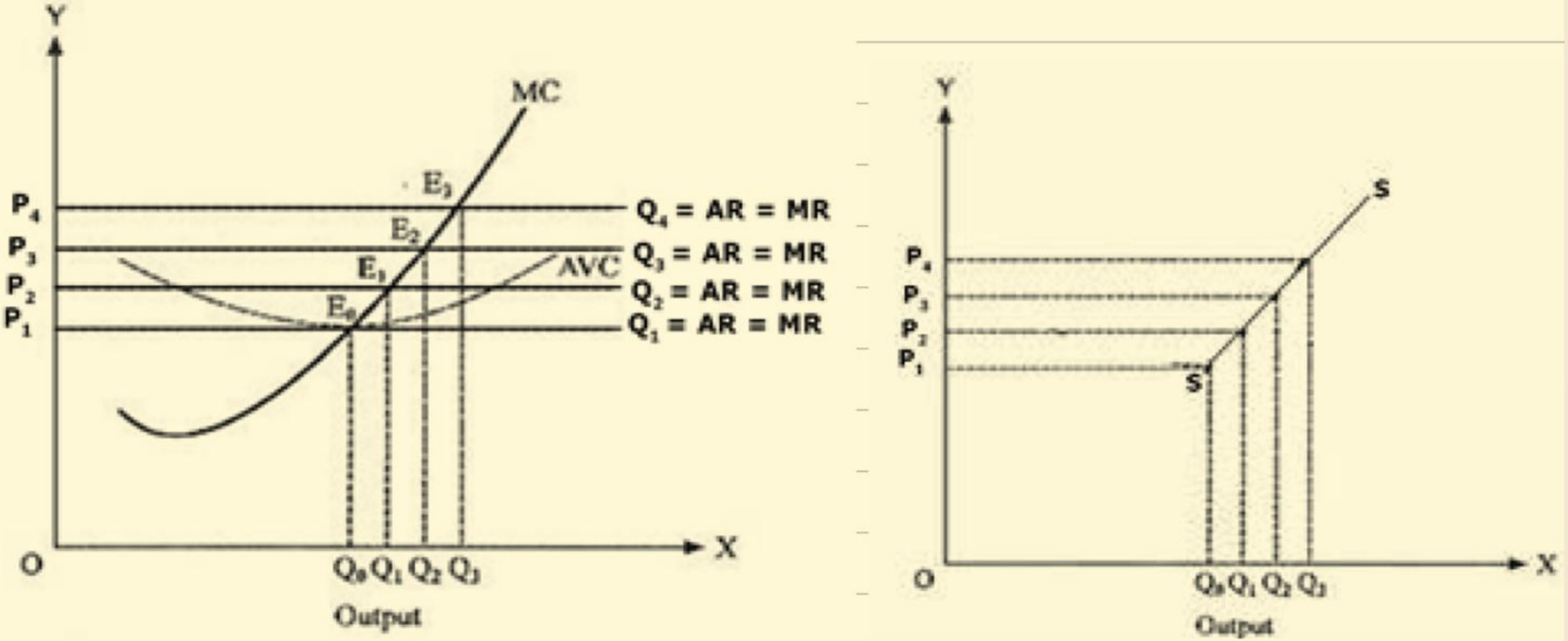


Profit/Loss Under Perfect Competition

- Average cost = AFC + AVC
- 20,000 = 8000 + 12000

Case	AR	AC	Relation	
1	30000	20000	AR > AC	Super normal profit (Abnormal profit)
2	20000	20000	AR = AC	Normal profits (Zero economic profit)
3	15000	20000	AC>AR>AVC	Sub normal profit
4	12000	20000	AC>AR=AVC	Maximum bearable loss
5	10000	20000	AC>AR<AVC	Shut down point

Supply Curve of Firm Under Perfect Competition



Can Competitive Firm Earn Profit?

- In the short run a firm in perfect competition, monopoly and monopolistic competition **may either earn normal profits or supernormal profits or make losses or even face shut down condition**.
- Moreover, in the short run **firms cannot enter or leave the industry.**

Profit/Loss Under Perfect Competition

- Average cost = AFC + AVC
- 20,000 = 8000 + 12000

Case	AR	AC	Relation	
1	30000	20000	AR > AC	Super normal profit (Abnormal profit)
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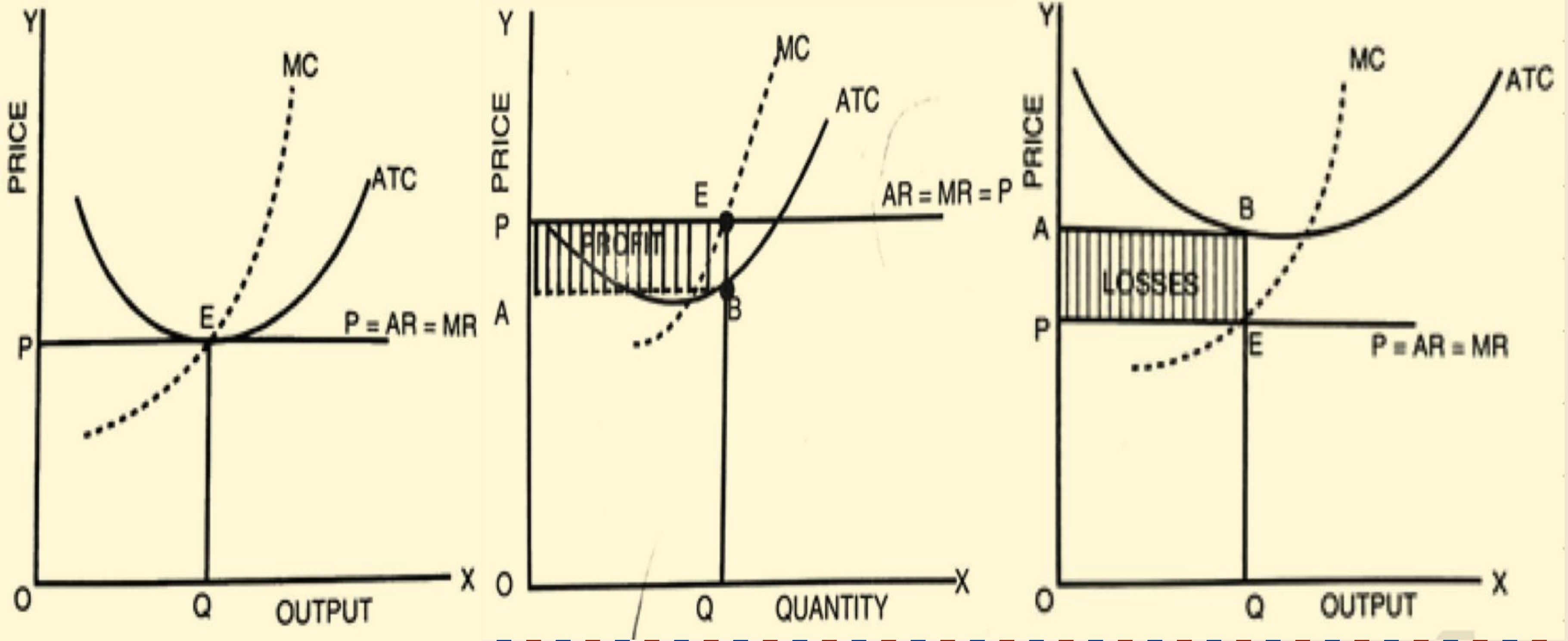
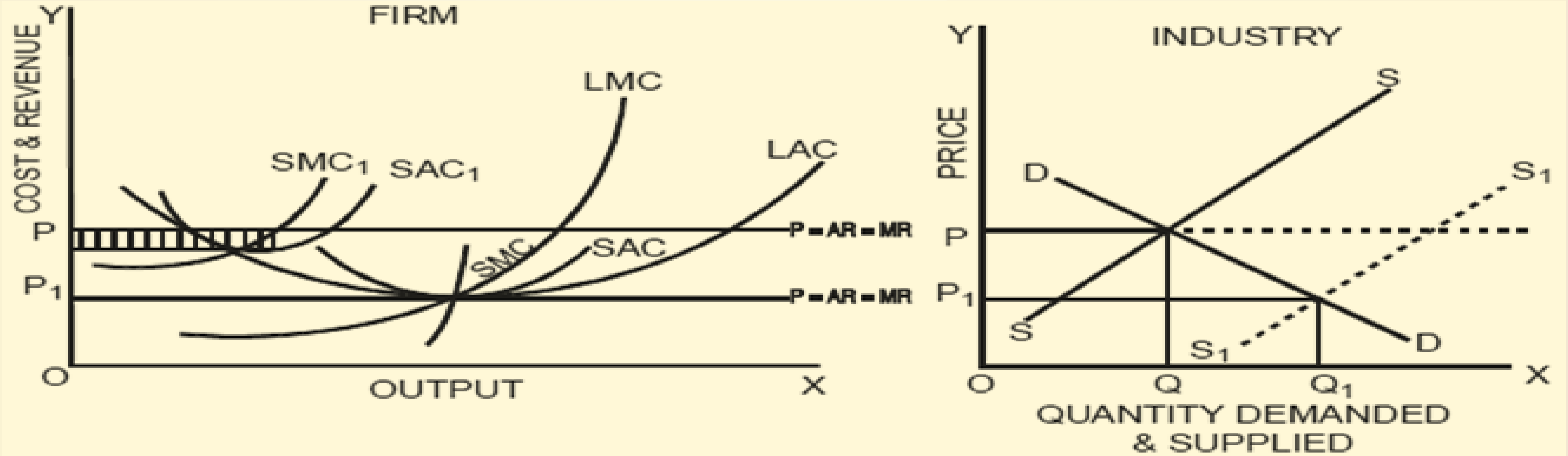
Can Competitive Firm Earn Profit?



Long Run Equilibrium of Competitive Firm

- In the long run a firm under perfect competition earns **only normal profit** due to the existence of **free entry and free exit of the firms**.



Long Run Equilibrium of Competitive Firm

- ✓ **Price = LAC – firms are earning only normal profit**
- ✓ **LAC = LMC – operating at the lowest possible point of AC curve i.e. optimum utilization of capacity (or absence of excess capacity)**
- ✓ **LAR / Price = LMC – consumer exploitation is zero**
- ✓ **LAR = LMR – firms are price takers**

Monopoly

- Mono means Single, Poly means Seller
- There is a single seller / producer of the commodity.
- There is absence of close substitutes. Since most of the commodities have close or remote substitutes, pure monopolies are not possible.
- There are strong barriers to entry. These barriers exist in the form of patents, trademarks, industrial licenses, copyrights, control over the supplier of raw materials, control over labor supply, etc. They also take form of price wars.

Monopoly

- Firm = Industry
- Relatively inelastic demand curve (AR)
- Price maker
- AR > MR
- Monopolist can decide both Price and Output (But not at the same time)

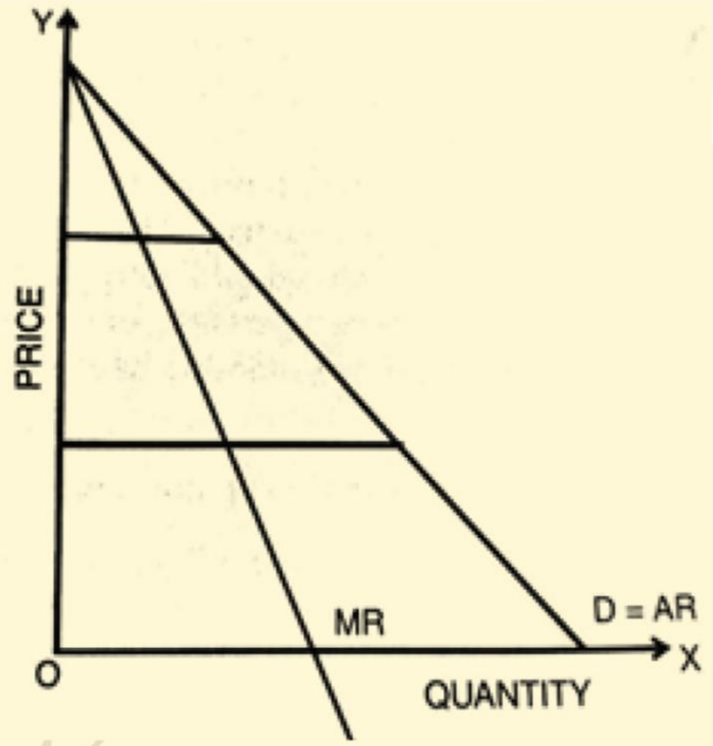
How do Monopolies Arise?

- **Strategic control** over scarce resources or technology
- **Developing or acquiring control over a product** that is difficult or costly for others to copy
- **Exclusive rights granted by government** to produce and sell
- **Patents** and **copyrights**
- Business **combinations** or **cartels**

How do Monopolies Arise?

- **Extremely large start-up costs** and requirement of extraordinarily costly and sophisticated technical know-how
- **Natural monopoly**
- **Enormous goodwill** enjoyed by a firm
- **Stringent legal and regulatory** requirements
- Use of various anti-competitive practices (e.g. **predatory pricing**)

Monopolist's Revenue Curve



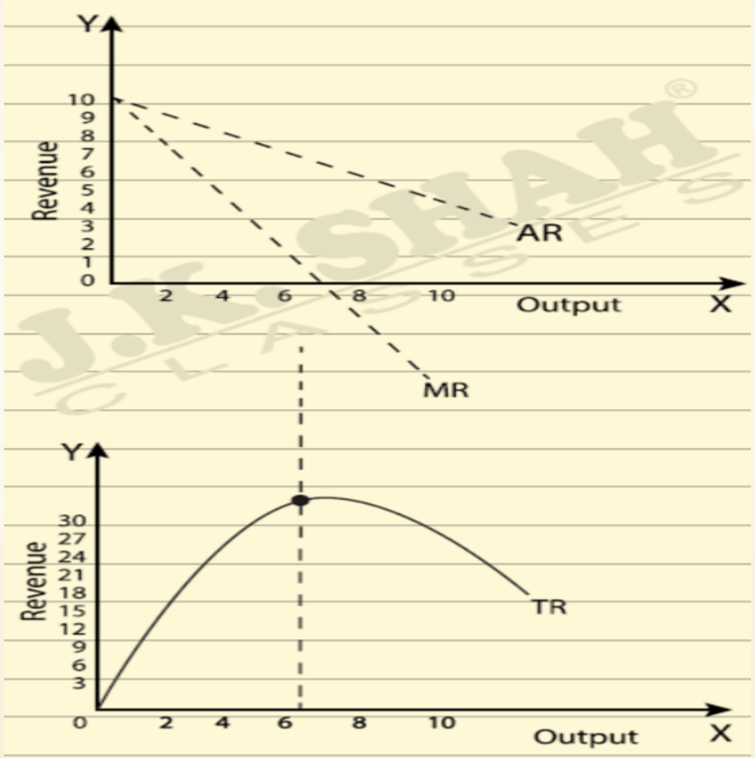
Monopolist’s Revenue Curve

- TR curve is inverse –U shaped.
- AR and MR are both negative slopped
- AR cannot be negative, but MR can be zero or negative.

Monopolist's Revenue Curve

Price	Output	TR	AR	MR	Analysis
10	0	0	-	-	TR increases AR > MR and Both decreases
9	2	18	9	9	
8	3	24	8	6	
7	4	28	7	4	
6	5	30	6	2	
5	6	30	5	0	MR = 0, TR is maximum
4	7	28	4	-2	TR decreases AR > (-) MR
3	8	24	3	-4	

Monopolist's Revenue Curve



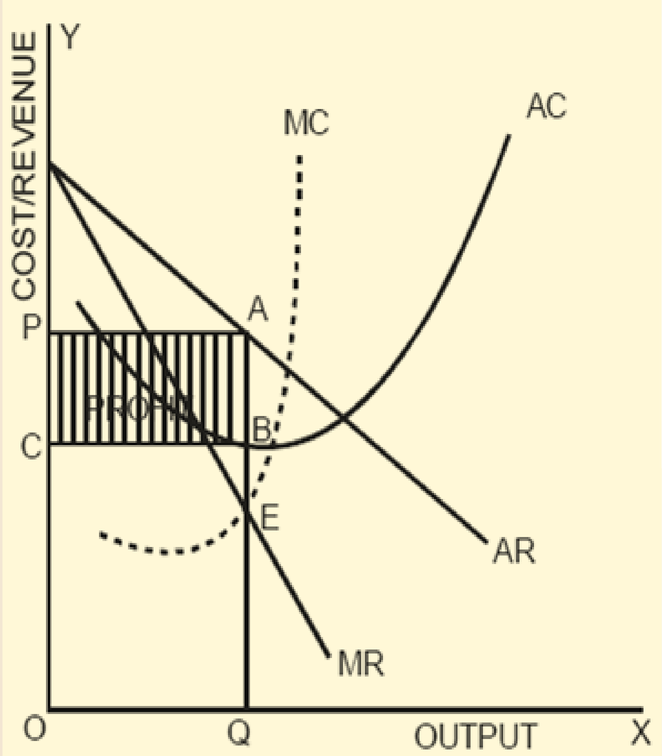
Types of Monopoly

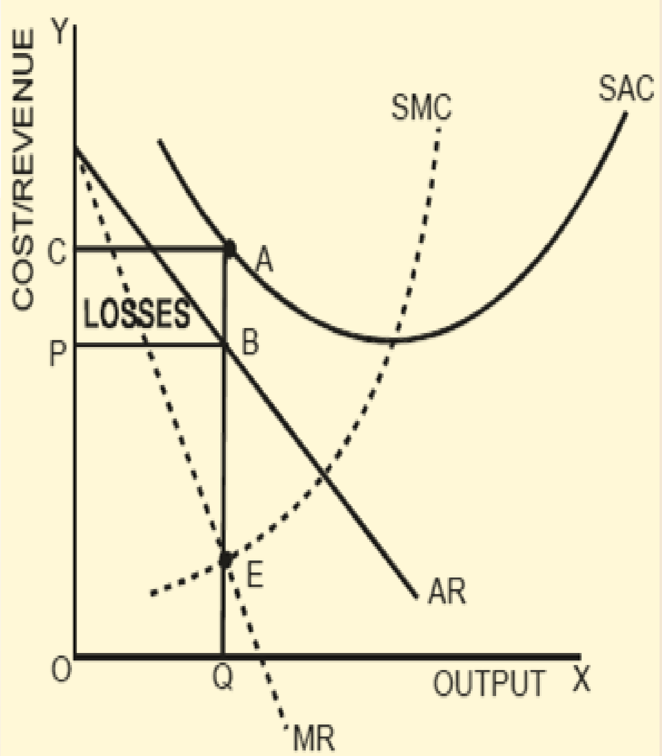
- **Simple monopoly – all units of a commodity sold at the same price and**
- **Discriminating monopoly – all units of a commodity not sold at the same price. The practice of selling different units at different prices is known as price discrimination**

Equilibrium of Monopoly

- A firm in monopoly has to determine both the price and the output to be sold as it is a price maker.
- Conditions for equilibrium of a firm:
- MC = MR
- MC curve must cut MR curve from below

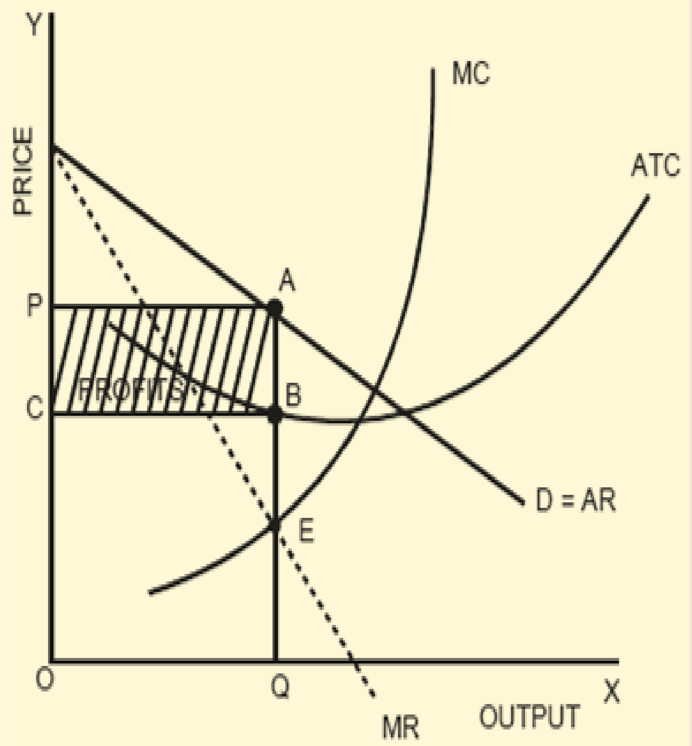
Short Run Equilibrium of Monopoly





Long Run Equilibrium of Monopoly

- In the long run a firm in monopoly earns only **supernormal profit** as it has no competition.
- It is seen that in equilibrium, the firm is producing at the **decreasing part of AC curve**.
- That means, **excess capacity exists** in this market structure.



Price Discrimination

- **MEANING:**
- Price discrimination refers to the practice of selling the same product to different buyers (or in different markets) at different prices.
- **EXAMPLES:**
- Railway fares for children under the age of 5, children above 5 years of age and up to 12 years and for those above the age of 60.
- Electricity sold for residential and commercial purposes.

Types of Price Discrimination

- **First Degree Price Discrimination:-**
- **Monopoly fixes a very high price which makes consumer surplus zero.**
- **For Example, personalized services like that of a doctor, teacher, lawyers, etc.**
- **Takes away entire Consumer Surplus.**

Types of Price Discrimination

- **Second Degree Price Discrimination:-**
- **Here price varies according to the quantity of output purchased**
- **For Example, wholesale and retail buying.**
- **High Price is Charged which will take away a part of Consumer Surplus.**

Types of Price Discrimination

- **Third Degree Price Discrimination:-**
- **Market is divided into different segments on the basis of age, use, gender, etc. and a different price is charged from each segment of the market.**
- **For Example, railways, electricity, etc.**
- **Different Price in different Submarkets.**

Objectives of Price Discrimination

- To maximize profit
- To sell off surplus stock
- To enjoy economies of scale (to reduce cost of production)
- To capture foreign market
- To secure equity through pricing (equitable distribution of income)

Conditions for Price Discrimination

- It should be possible for the firm **to divide the total market into two or more submarkets** on some criterion.
- The firm **should have monopoly power** (price making power) in at least one of the many markets in which it is selling its product.
- It should **not be possible for the buyers of low-priced market to resell the product** to the buyers of high-priced market.

Economic Effects of Monopoly

- ✓ Loss of productive and allocative efficiency – reduction of aggregate economic welfare
- ✓ Relatively high prices and lower output
- ✓ Abnormal profits earned in the long run – non justifiable
- ✓ Price greater than MC – reduction of consumer surplus
- ✓ Restriction on consumer sovereignty

Economic Effects of Monopoly

- Use of unjust means to create barriers to entry – increases AC of production
- Influences political process in order to obtain favorable legislation
- No incentives to introduce efficient innovations
- Pay lower prices to suppliers

Imperfect Competition/Monopolistic Competition

- This is a market structure which contains the characteristics of both perfect competition and monopoly.
- It is observed very commonly in the real world.
- Examples of monopolistic competition in India include the soap industry, toothpaste industry, biscuit industry, etc.

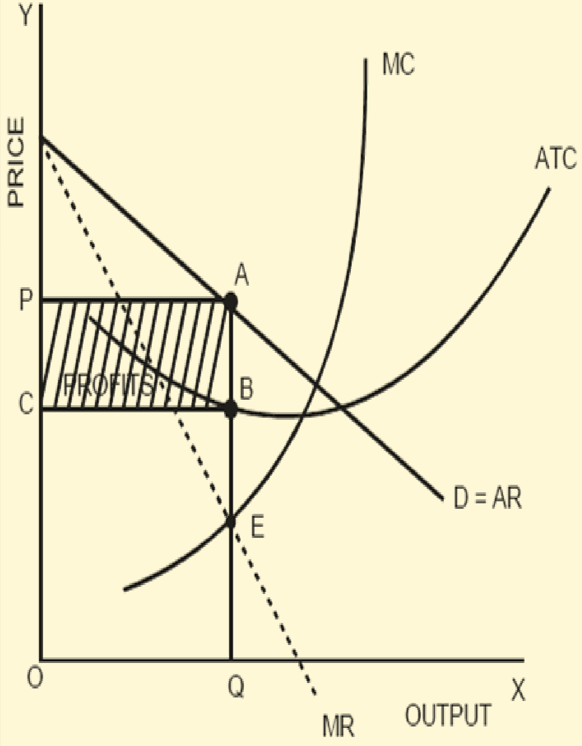
Features of Monopolistic Competition

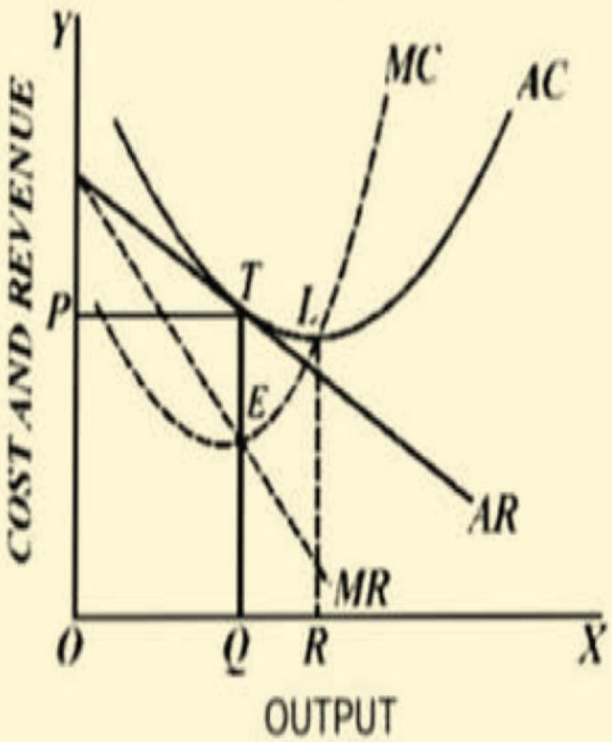
- ✓ Large number of buyers and sellers
- ✓ Product Differentiation
- ✓ Free Entry and Exit of Firms
- ✓ Selling Costs
- ✓ Relatively elastic demand curve
- ✓ Concept of Group exist
- ✓ Concept of Brand exist under monopolistic competition
- ✓ Non price competition
- ✓ Close Substitutes
- ✓ Price Maker and Price taker of its own Product

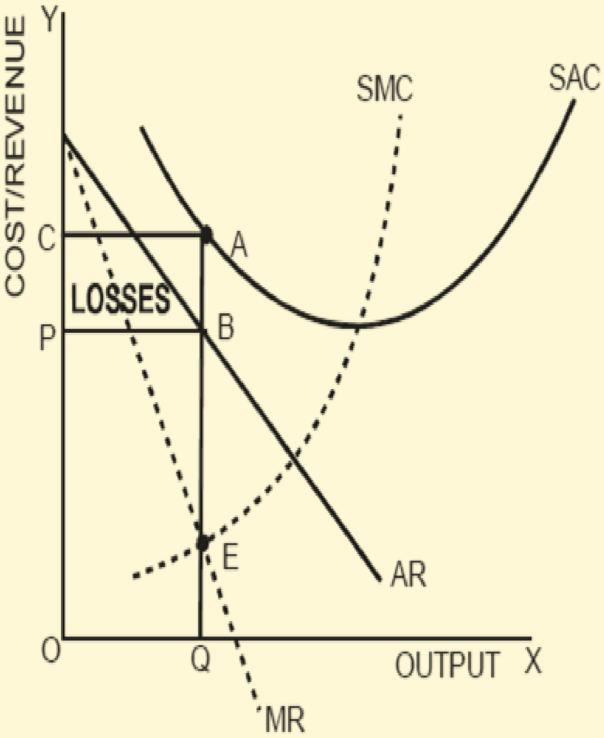
Price-Output Determination

- Conditions for equilibrium of an individual firm
- MC = MR
- MC curve must cut MR curve from below

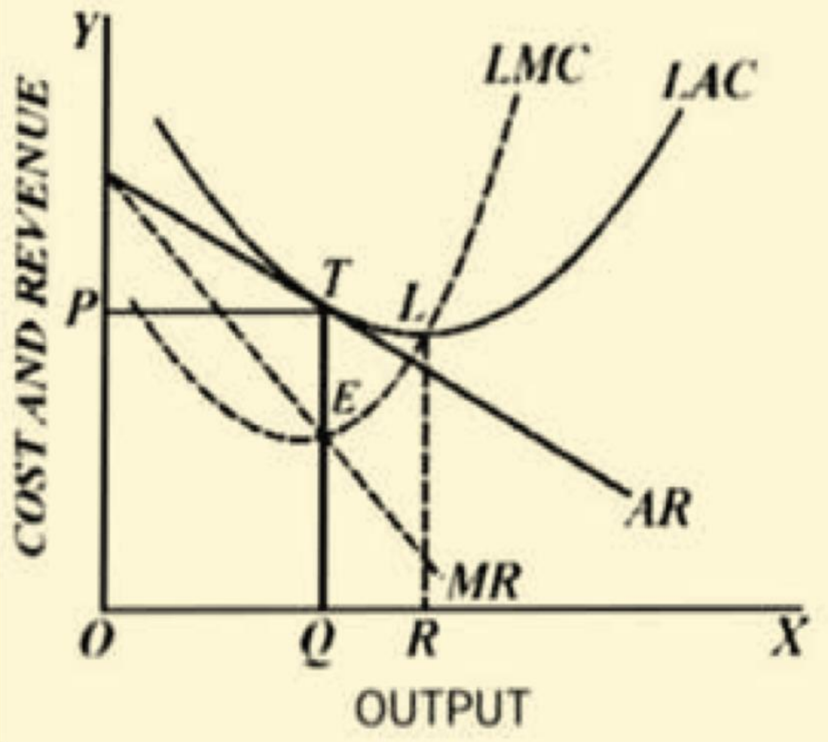
Short Run Equilibrium of Firm







Long Run Equilibrium of Firm



Oligopoly

- Oligopoly is a market structure characterized by the presence of few sellers (two to ten) selling homogenous or differentiated products to large number of buyers.
- Prof. Stigler defines oligopoly as that "situation in which a firm bases its market policy in part on the expected behavior of a few close rivals".

Characteristics of Oligopoly

- Few Number of Sellers - 2 to 10 (Competition among Few)
- Homogeneous or Differentiated Product
- Importance of Advertising / Selling Costs
- Interdependence
- Group Behaviour
- Price Rigidity
- No free entry, No blocked entry
- Kinked demand curve

Types of Oligopoly

- **Pure / Perfect Oligopoly:-**
- **It is a situation in which all firms in the market sell homogenous goods.**
- **Differentiated / Imperfect Oligopoly:-**
- **It is a situation in which all firms in the market sell differentiated goods.**

Types of Oligopoly

- **Open Oligopoly:-**
- **If new firms can enter in an oligopoly market it open oligopoly.**
- **Closed Oligopoly:-**
- **If new firms cannot enter an oligopoly market it closed oligopoly.**

Types of Oligopoly

- **Collusive Oligopoly:-**
- **When the few firms in the oligopoly market come to a common understanding or act in collusion with each other with regard to price fixation, market sharing, profit sharing, etc. it is a case of collusive oligopoly.**
- **Competitive Oligopoly:-**
- **When few firms in the oligopoly market compete with each other it is known as competitive oligopoly.**

Types of Oligopoly

- **Partial Oligopoly:-**
- **When oligopoly industry is dominated by one large firm which is looked upon as a leader, it is a case of partial oligopoly.**
- **Full Oligopoly:-**
- **When there is no price leader and all firms are equally dominant, it is a case of full oligopoly.**

Types of Oligopoly

- **Syndicated Oligopoly:-**
- **A situation in which firms sell their products through a centralized syndicate. Eg: OPEC**
- **Organized Oligopoly:-**
- **A situation where the firms organize themselves into a central association for fixing prices, output, etc.**

Oligopoly Models

- When the interdependence is ignored and decisions taken independently, the demand curve becomes definite and the equilibrium output is found out by equating MC with MR.
- Cournot model – the firm's control variable is output
- Stackelberg's model – the leader decides his output before all other firms
- Bertrand model – the firm's control variable is price
- Cartel formation – cartel is a group of firms that explicitly agree (collude) to coordinate their activities.

Price Leadership

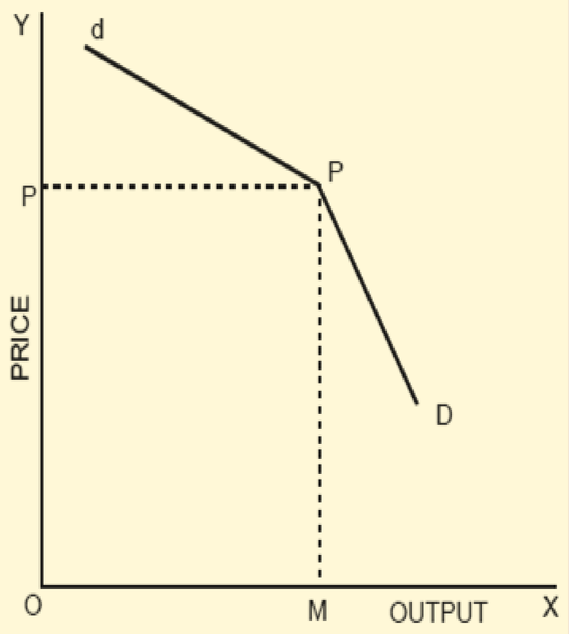
- Dominant firm price leadership model **('live and let live philosophy'.)**
- Low cost price leadership model
- Barometric price leadership model

Kinked Demand Curve

- One of the important features of oligopoly market is that prices of commodities once determined remain **fixed or rigid.**
- One of the many theories explaining price rigidity is American economist **Paul Sweezy's Kinked Demand Curve Model.**
- According to Sweezy, price in oligopoly market remains fixed because of a peculiar behavior of firms in this market.

Kinked Demand Curve

- ✓ Each oligopolist believes that if he lowers the price, its competitors will follow him.
- ✓ If he raises the price, its competitors will not follow him.



Other Forms of Competition

- **Duopoly:** It is a market situation in which there are only two firms in the market
- **Monopsony:** It is a market which has only one Single buyer of a Product or Service
- **Oligopsony:** It is a market which has Small number of Large buyers
- **Bilateral Monopoly:** In this market there is only a single buyer and single Seller (Monopoly market + Monopsony Market)

THANK YOU