

Price & Output Determination in Monopoly & Imperfect Markets

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General Economics

Monopoly

- Derived from Greek word “*Mono*” means “*Single*” and “*Polein*” means “*Seller*”.
- Monopoly means “*Alone to Sell*”.
- Monopoly signifies absolute power to Produce & Sell a Product which has no Close Substitute.
- Industry is a Single-Firm-Industry.

Monopoly

- Monopoly is a Market situation in which there is a Single Seller, there are no Close Substitutes for Commodity it produces, there are Barriers to Entry.

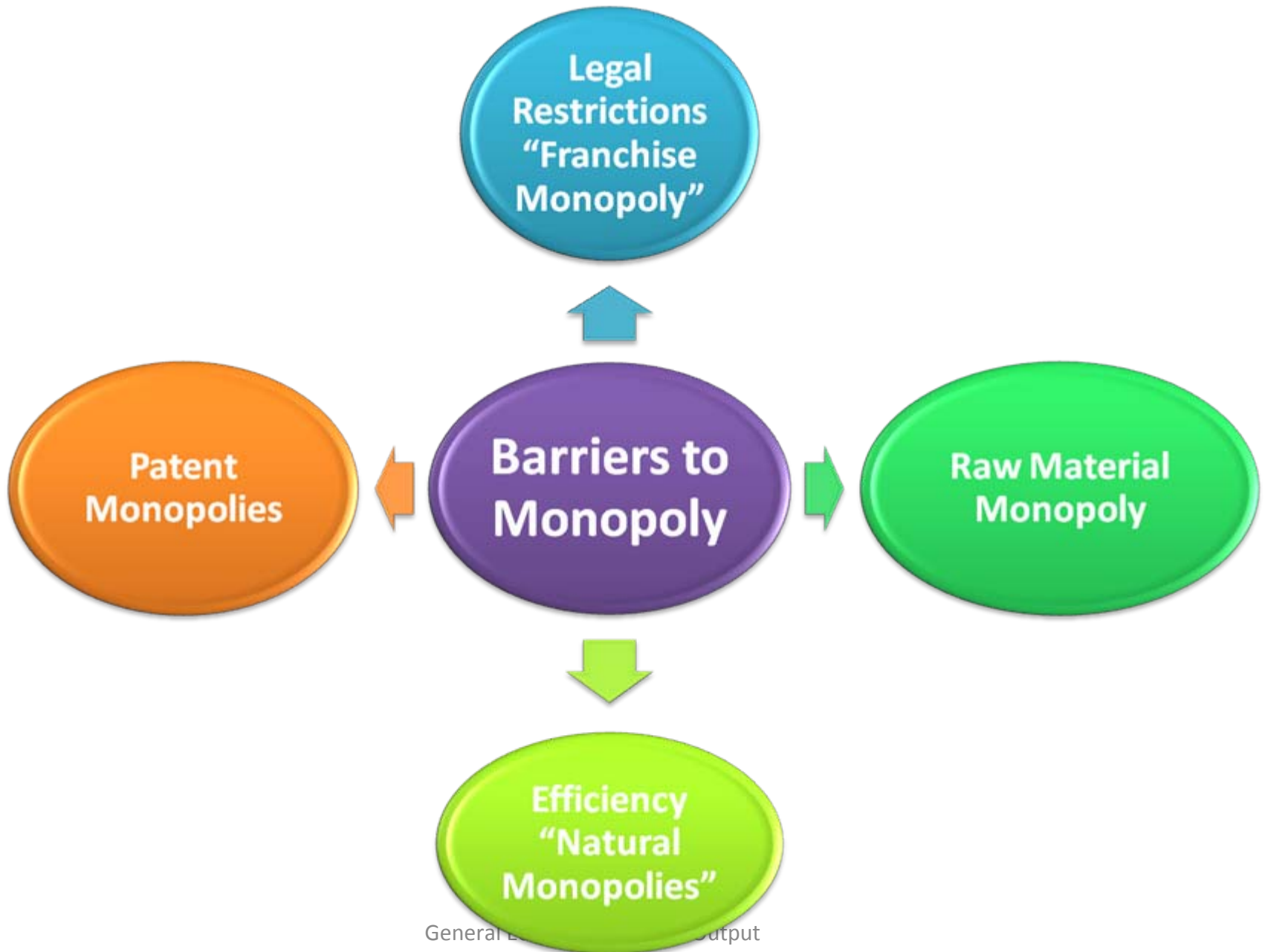
- Koutsoyiannis

- Pure or Absolute Monopoly exists when a Single Firm is the Sole Producer for a Product for which there are no Close Substitutes.

- Mc Connel

Features of Monopoly

- **One Seller & Large Number of Buyers**
- **Monopoly is also an Industry**
- **Restrictions on the Entry of New Firms**
 - **Economic, Institutional, Legal or Artificial Barriers**
- **No Close Substitutes**
 - **Cross Elasticity of Demand is Zero or Very Small**
 - **Price Elasticity of Demand < 1**
- **Price Maker**



Sources of Monopoly (Barriers)

- **Legal Restrictions**

- **Created by Law in Public Interest**

- **Like Postal, Telephone, Generation & Distribution of Electricity, Railways, Roadways, Airlines, etc.**

- **State may create Monopolies in Private Sector by restricting Entry of other Firms. Such Monopolies are known as “Franchise Monopoly”.**

Sources of Monopoly (Barriers)

- **Control over Key Raw Materials**
 - Firms that acquire Monopoly because of their Traditional Control over certain Scarce & Key raw Materials, which are essential for the Production of certain other Goods, are known as “Raw Material Monopolies”.
 - For Example, Aluminium Company of America had monopolized the Aluminium Industry by acquiring control over almost all sources of Bauxite Supply.

Sources of Monopoly (Barrier)

- **Efficiency**

- Primary and Technical reason for growth of Monopolies is the Economies of Scale.

- Emerges either due to Technical Efficiency or is Created by the Law on Efficiency grounds.

- Termed as “Natural Monopolies”.

Sources of Monopoly (Barriers)

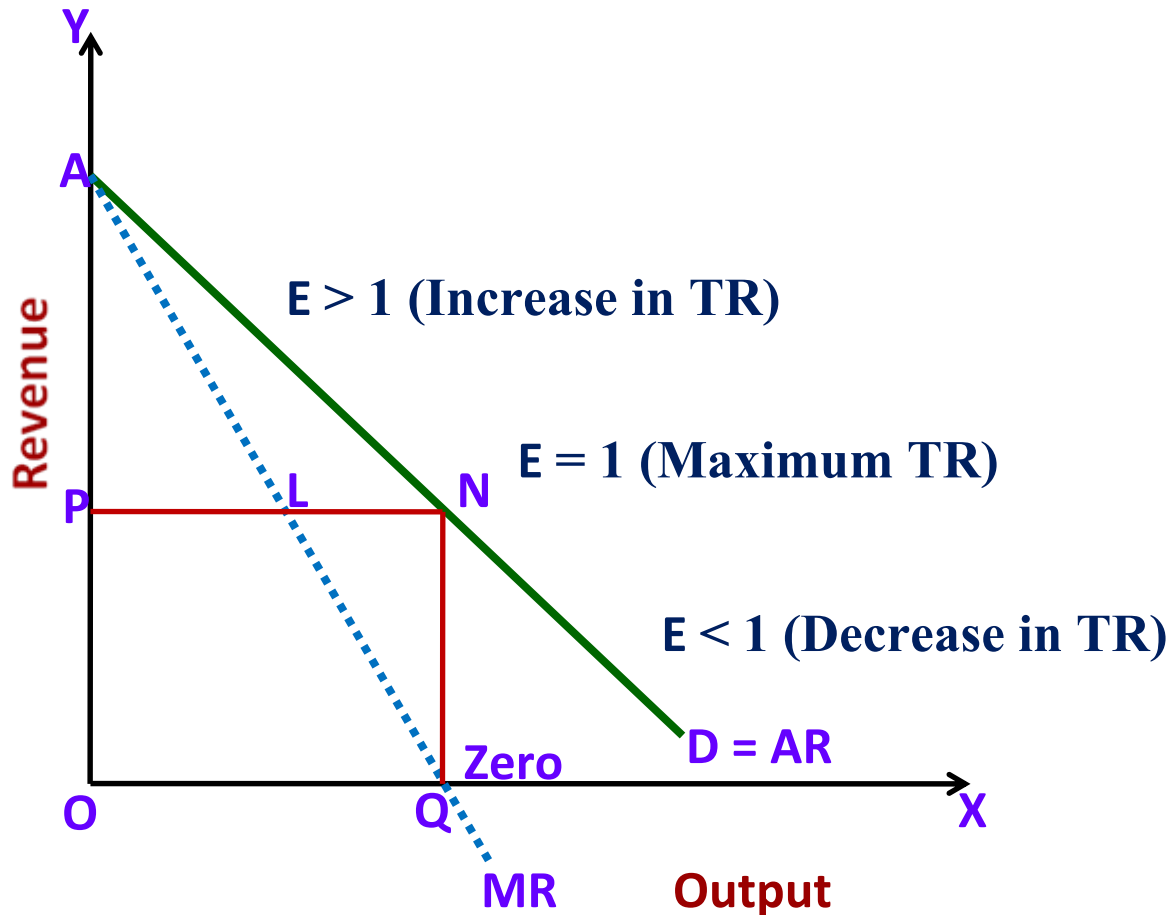
- Patent Rights

- Patent Rights are granted by Government to a Firm to produce a Commodity of Specified Quality & Character or to use a Specified Technique of Production.
- Patent Rights gives a Firm Exclusive Rights to produce the specified commodity or to use the Specified Technique of Production.
- Termed as “Patent Monopolies”.

Demand & Revenue Under Monopoly

- Firm's Demand Curve also constitutes Industry's Demand Curve.
- Demand Curve of Monopolist is also Average Revenue (AR) Curve.
- AR Curve & MR Curve are separate from one another.
- MR Curve lies below the AR Curve.
- Slope of MR Curve is TWICE the Slope of AR Curve.

Demand & Revenue Under Monopoly



Relationship between AR & MR of Monopoly

- AR & MR are both Negatively Sloped Curves.
- MR Curve lies half way between the AR Curve and the Y-Axis i.e. it cuts the area between AR Curve and Y-Axis into two equal parts.
- AR cannot be Zero, but MR can be Zero or even Negative.

Equilibrium under Monopoly

- **Conditions of Equilibrium**

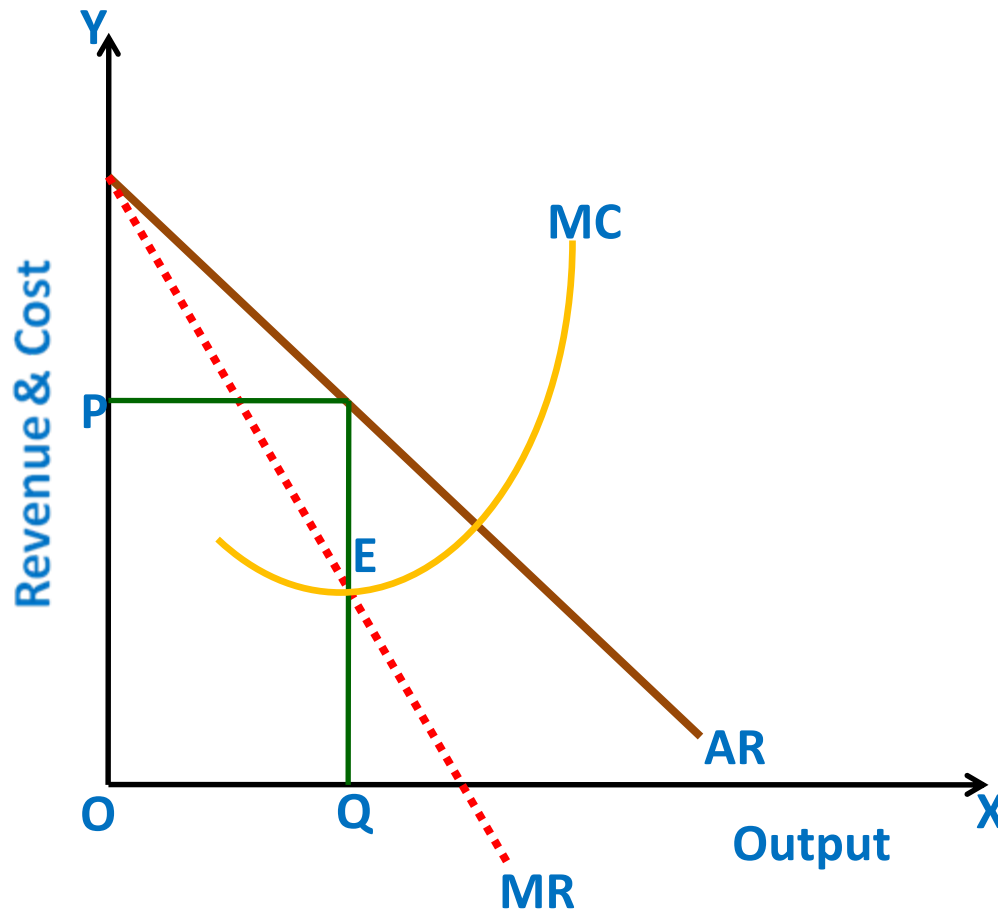
A Monopolist is in Equilibrium when he produces the amount of Output which yields him Maximum Total Profit.

- **Profit is Maximum when:**

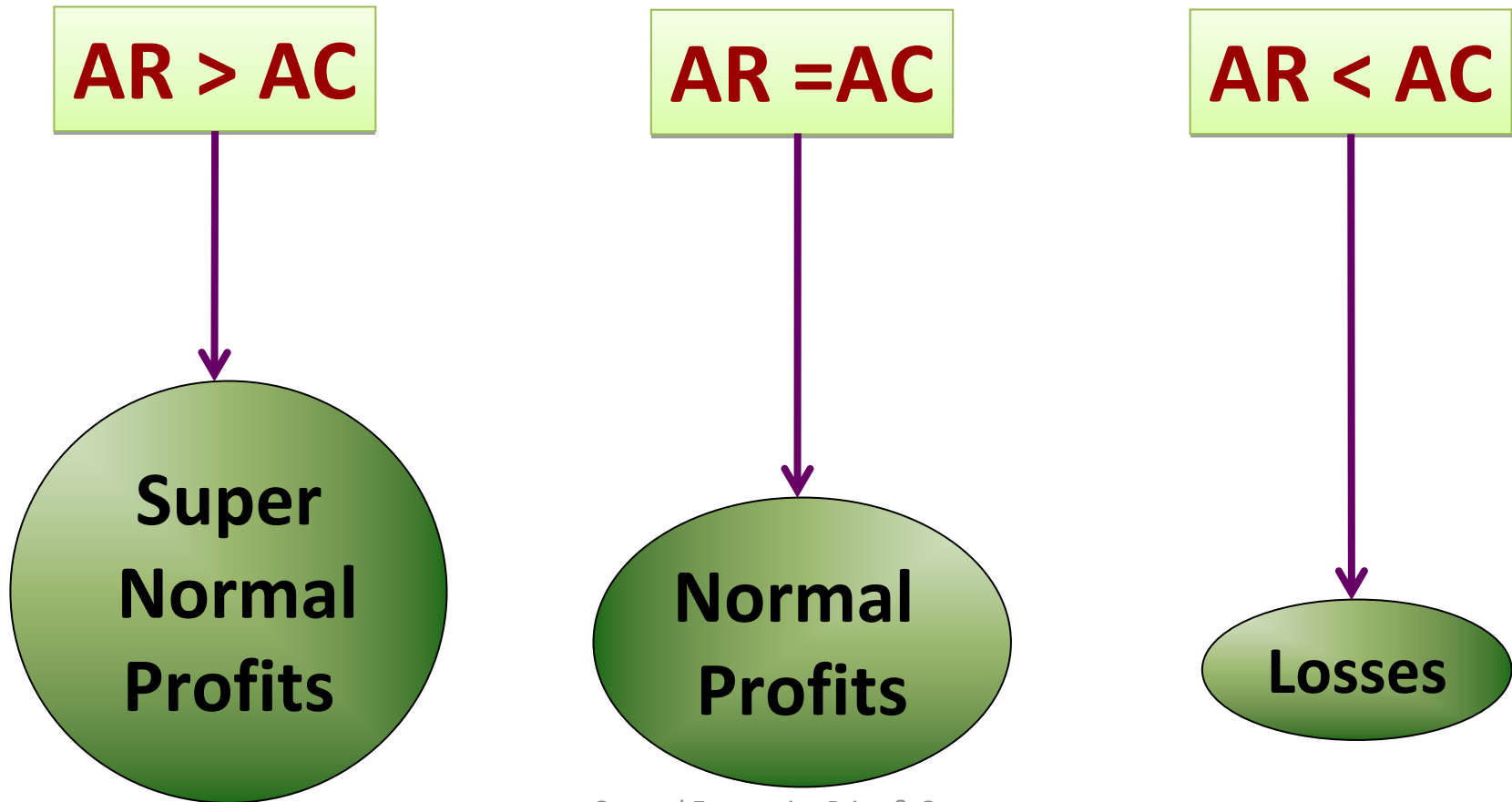
1. **Marginal Cost = Marginal Revenue**

2. **Marginal Cost Curve cuts Marginal Revenue from below under Increasing Cost condition.**

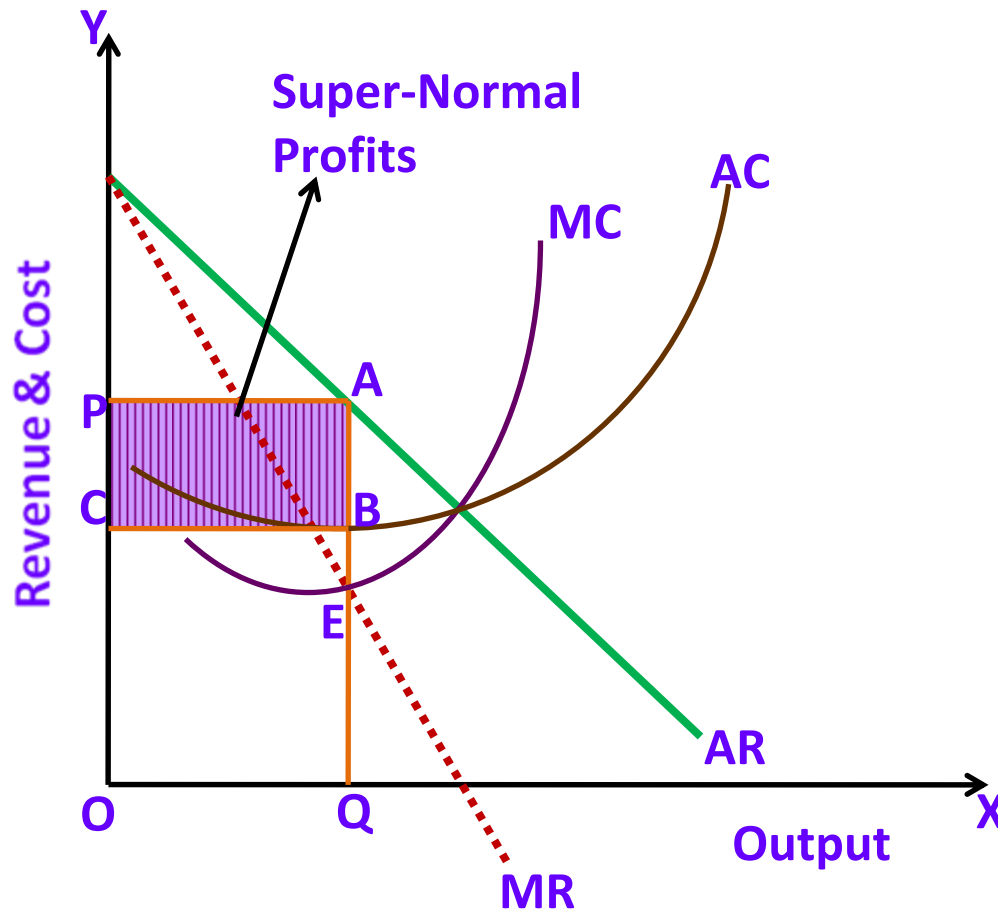
Equilibrium under Monopoly



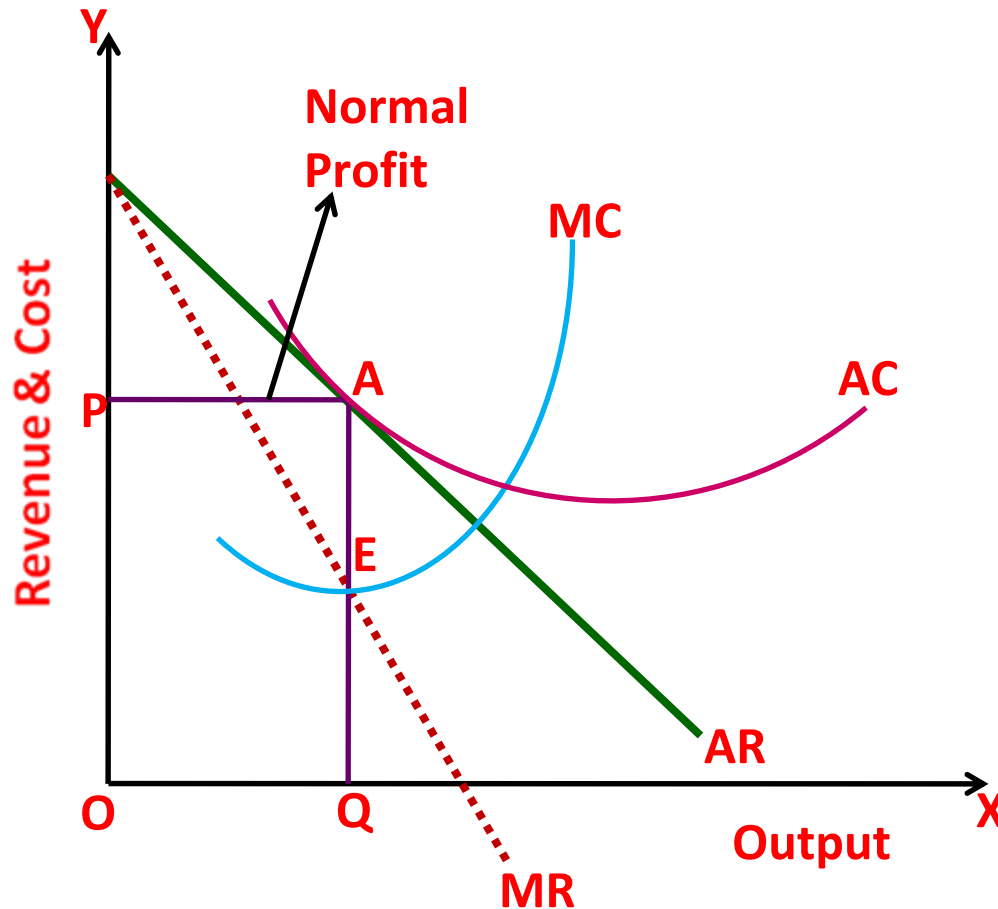
Short Run Equilibrium under Monopoly



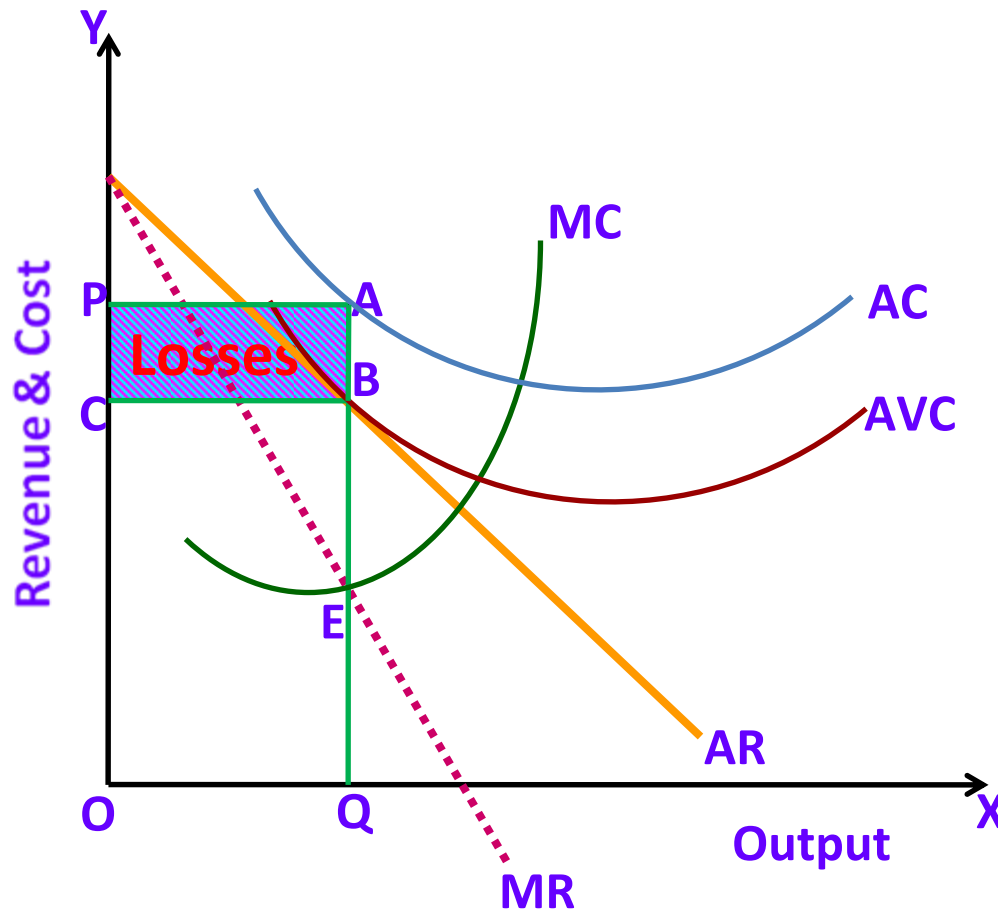
Short-Run Equilibrium under Monopoly (Super Normal Profits)



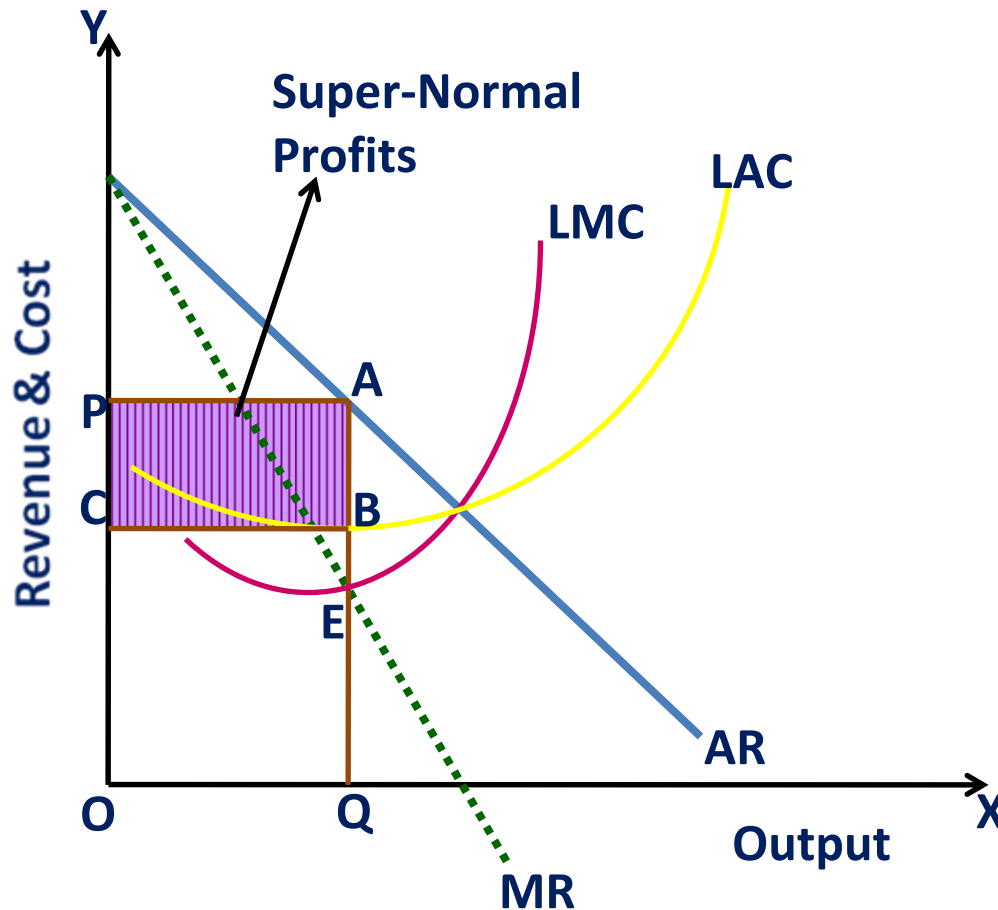
Short-Run Equilibrium under Monopoly (Normal Profits)



Short-Run Equilibrium under Monopoly (Losses)



Long-Run Equilibrium under Monopoly



Price Discrimination Under Monopoly

- **The Act of Selling the same Article produced under Single Control at a different Price is known as Price Discrimination.**

–Mrs. Joan Robinson

- **Price Discrimination refers strictly to the practice by a Seller to charging different Prices from different Buyers for the same Good.**

Conditions of Price Discrimination

- **Existence of Monopoly**
- **Separation of Markets possible i.e. No transfer of Commodity from Low Priced Market to High Priced Market.**
- **Difference in Elasticity of Demand**
 - **Inelastic Demand → Higher Price Per Unit**
 - **Elastic Demand → Lower Price Per Unit**

Example

Single Monopoly Price Rs. 30

Elasticity of Demand in Market A 2

Elasticity of Demand in Market B 5

Then,

MR in Market A

$$= AR \left(\frac{e-1}{e} \right)$$

$$= 30 \left(\frac{2-1}{2} \right)$$

$$= 15$$

MR in Market B

$$= AR \left(\frac{e-1}{e} \right)$$

$$= 30 \left(\frac{5-1}{5} \right)$$

$$= 24$$

Comparing Monopoly to Perfect Competition

Basis of Comparison	Perfect Competition	Monopoly
Goods Produces	Homogenous Products	Unique Product with Close Substitute
Sellers & Buyers	Large Number of Buyers & Sellers	One Seller & Large Number of Buyers
Price Control	Price Taker	Price Maker
Profit Maximization	$AR = P = MC$	$MR = MC$
Entry & Exit of Firms	Free Entry & Exit	Barriers to Entry
Decisions Taken	Quantity to be Produced	Either Price or Quantity to be Produced
Maximized Profit in Long Run	Normal Profits	Abnormal Profits
Technology's Effect	Still Zero Profit; Usually Price goes down & Output goes up	Generate Higher Profits; Price & Output is not determined

Monopolistic Competition

- Developed by Edward H. Chamberlin
- Monopolistic Competition is a Blend of Monopoly & Perfect Competition.
- Monopolistic Competition is a Market Structure in which a Large Number of Sellers sell Differentiated Products which are close, but not perfect substitutes for one another.

Monopolistic Competition

- **Monopolistic Competition is a Market situation in which there are many Sellers of a particular Product, but the Product of each Seller is in some way Differentiated in the minds of Consumers from the Product of every other Seller.**

By: Leftwitch

- **Monopolistic competition is found in the industry where there is a large number of small sellers, selling differentiated but close substitute products.**

Features of Monopolistic Competition

- Large Number of Sellers & Buyers in the Market.
- Product Differentiation
- Free Entry & Exit of Firms.
- Non-Price Competition.
- Price Policy (Firm is a Price Maker)
- Selling Cost
- Less Mobility
- Imperfect Knowledge

Features of Monopolistic Competition

- **Product Differentiation**
 - **Product Differentiation** refers to that situation wherein the Buyers can distinguish one Product from the other.
 - **Arises due to the Characteristics of the Products, E.g, Shape, Colour, Durability, Quality, Size etc.**
 - **Differentiated Products are Close, not Perfect Substitutes for one another.**
 - **For Example, Lux, Godrej, Hamam, Rexona,etc. among Bathing Soaps.**

Features of Monopolistic Competition

- **Price Policy**

- Each firm has its own price policy. Average and Marginal revenue curves of a firm under monopolistic competition slope downwards as in case of monopoly. It means if a firm wants to sell more units of its product it will have to lower the price per unit. If it wants to sell fewer units it may raise price per unit.

Features of Monopolistic Competition

- **Non-Price Competition**

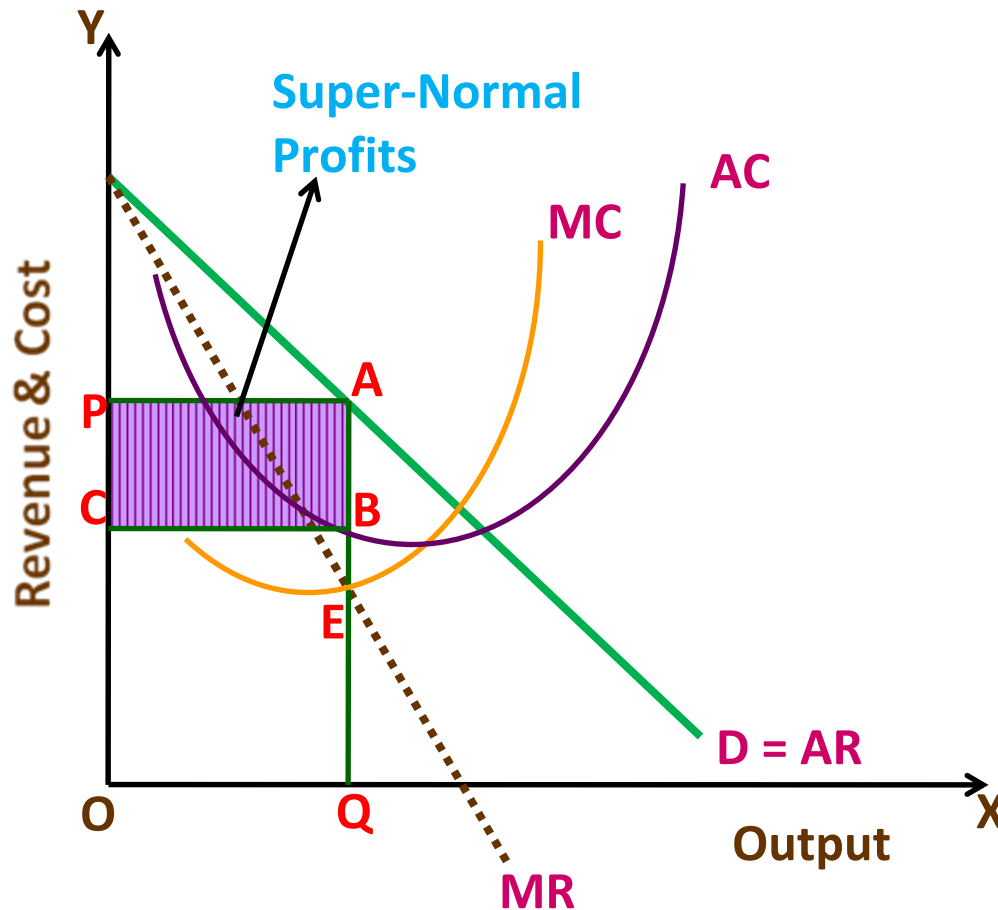
- **When Different Firms compete with one another without changing the Price of the Product, it is termed as Non-Price Competition.**

- **For Example, Firms producing Washing Powder, ‘Surf’ and ‘Farishta’. With one pack of ‘Surf’ the Company may give a Free Gift as one Glass-Tumbler. Likewise, with one pack ‘Farishta’, the other Company may give a Stainless Steel Spoon as a Free Gift.**

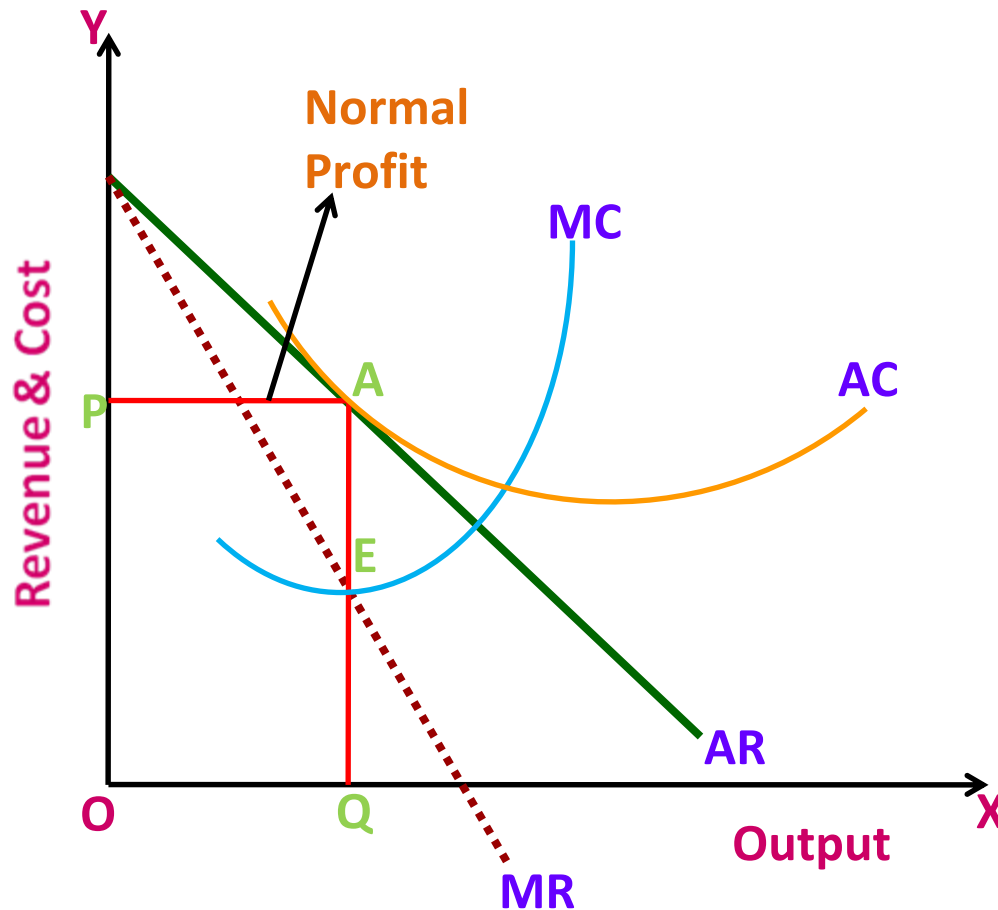
Short-Run Equilibrium under Monopolistic Competition

- In Short Run, a Firm will be in Equilibrium when
 - i. $MC = MR$
 - ii. MC Curve cuts MR Curve from below
- The Quantum of Profit available to a Firm in Equilibrium in Short Period depends upon
 - The Demand for the Good
 - The Efficiency of the Firms

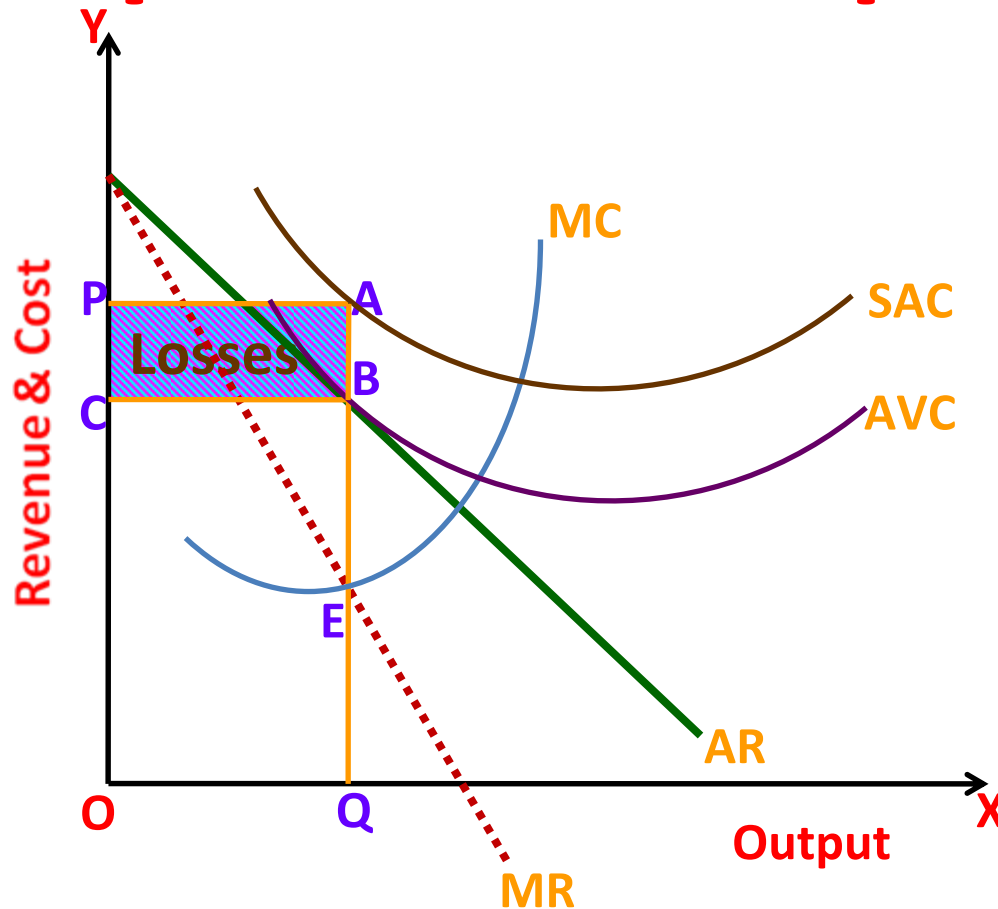
Short-Run Equilibrium under Monopolistic Competition



Short-Run Equilibrium under Monopolistic Competition



Short-Run Equilibrium under Monopolistic Competition



Short-Run Equilibrium under Monopolistic Competition

- If $MC = MR$, then the Output produced by the Firm, at the Point of Equilibrium, will yield Maximum Profit. It will not be advisable for the Firm to Produce more than it.
- If $AR(P) < AVC$, the Firm should stop its Production, because such a Price will not cover the AVC.
- If $AR(P) > AC$, the Firm will get Super Normal Profit.
- If $AR(P) < AC$, the Firm will incur Minimum Loss, however the Firm will continue its Production as long as the Prevailing Price covers AVC.

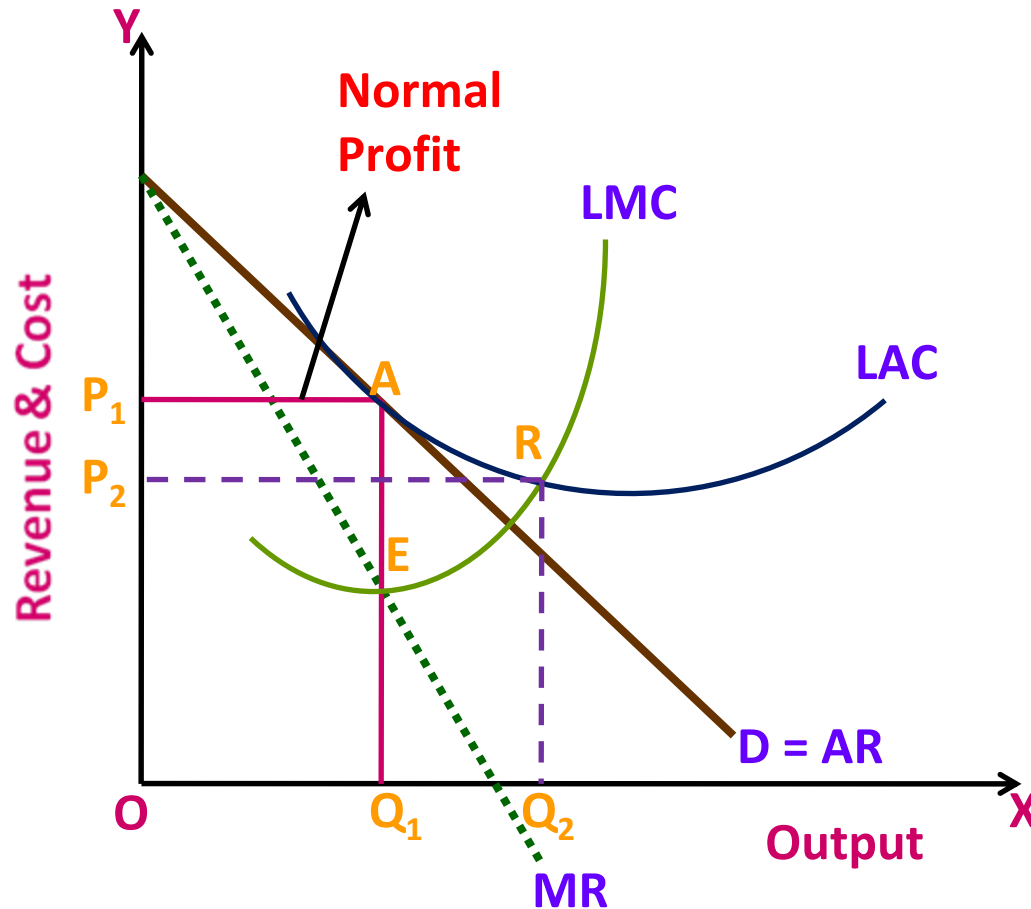
Long Run Equilibrium under Monopolistic Competition

- In the Long Period, each Firm will produce up to that Limit where $MR = LRMC$.
- Firms earn Normal Profit only as:
 - If Firms can earn Super Normal Profit, then new Firms will enter. As a result of it, Total Supply will Increase which lowers the Profit Margin.
 - To create more Demand new Firms will lower the Prices, old Firms too will lower the Price of their products, if they are to exist in the Market. Thus, because of Fall in Price both old and new Firms will get only Normal and not Super Normal Profit.

Long Run Equilibrium under Monopolistic Competition

- In Long Run, no Firm will incur Loss. If a Firm incurs Loss, it is better for the Firm to Shut Down. As Firms Quit, Total Supply of Goods will fall Short of Total Demand, causing their Price to Rise and enabling the Firms to earn Normal Profit once again.
- A Firm is in Equilibrium Position at a Point where it has Excess Capacity.

Long Run Equilibrium under Monopolistic Competition



Comparison of Long Run Equilibrium under Various Market Structures

Perfect Competition	Monopolistic Competition	Monopoly
<p>MR= LMC Price(AR)=LMC=LAC=MR</p>	<p>MR = LMC Price(AR)=LAC but >LMC</p>	<p>MR = LMC Price(AR)>LMC and >LAC</p>

Oligopoly

- Derived from Greek words “*Oligi*” meaning “*Few*” and “*Polein*” meaning “*Sellers*”.
- Often described as “**Competition Among the Few**”.
- **When there are few (Two or Ten) sellers in a Market selling Homogenous or Differentiated Products, Oligopoly is said to Exist.**

Features of Oligopoly Market

- **Few Sellers**
- **Interdependence of Business Decision**
- **High Cross Elasticity of Demand**
- **Advertising & Selling Cost**
- **Price Rigidity**
- **Intensive Competition**
- **Barrier to Entry**

Kinked Demand Curve

- Propounded by Paul M. Sweezy
- Does not deal with Price & Output Determination.
- Seeks to Establish that once a Price-Quantity combination is determined, an Oligopoly Firm will not find it Profitable to change its Price even in response to the Small Changes in the Cost of Production.

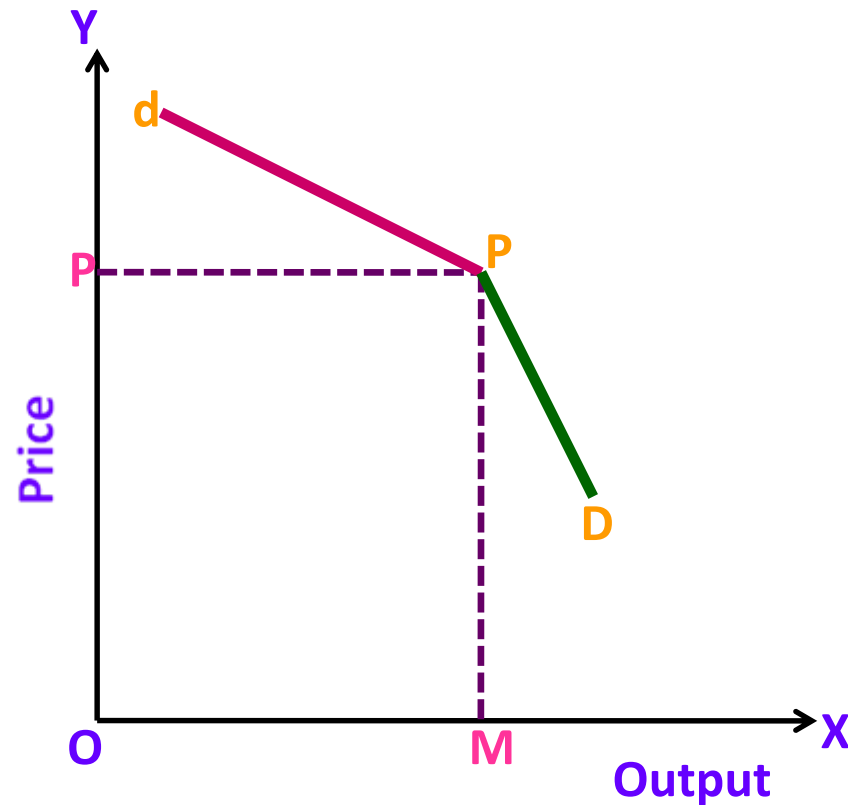
Kinked Demand Curve

- If an Oligopoly Firm, reduces the Price of its Product, the Rival Firms will follow & neutralize the Expected Gain from Price Reduction.
- If an Oligopoly Firm, raises the Price of its Product, the Rival Firm would either maintain their Prices or indulge in Price-Cutting.

Kinked Demand Curve

- **Three Possible ways in which Rival Firms may react to Change in Price by one of Firms:**
 - **The Rival Firms follow the Price changes, both Cut & Hike.**
 - **The Rival Firm do not follow the Price Changes.**
 - **Rival Firms do not react to Price-hikes but they do follow the Price-cutting.**

Kinked Demand Curve



Summary

Form of Market Structure	No. of Firms	Nature of Product	Price Elasticity of Demand of a Firm	Degree of Control over Price
(a) Perfect Competition	A Large no. of Firms	Homogenous	Infinite	None
(b) Monopoly	One	Unique Product with close Substitute	Small	Very Considerable
(c) Imperfect Competition				
(i) Monopolistic Competition	A Large no. of Firms	Differentiated Products	Large	Some
(ii) Oligopoly	Few Firms	Homogenous or Differentiated Product	Small	Some

Q1

Which of the following is not a Characteristics of Monopolistic Competition?

- a)Ease of Entry into the Industry.**
- b)Product Differentiation.**
- c)A relatively Large number of Sellers.**
- d)A Homogenous Product.**

Q2

All of the following are Characteristics of a Monopoly except:

- a) There is a Single Firm.**
- b) The Firm is a Price Taker.**
- c) The Firm produces a Unique Product.**
- d) The existence of some Advertising.**

Q3

Oligopolistic Industries are characterized by:

- a) A few dominant Firms & Substantial Barriers to Entry.**
- b) A few Large Firms & No Entry Barriers.**
- c) A Large number of Small Firms and no entry barriers.**
- d) One dominant Firm & Low Entry Barriers.**

Q4

Monopolistic Competition differs from Perfect Competition primarily because

- a) In Monopolistic Competition, Firms can Differentiate their Products.**
- b) In Perfect Competition, Firms can Differentiate their Products.**
- c) In Monopolistic Competition, Entry into the Industry is Blocked.**
- d) In Monopolistic Competition, there are relatively Few Barriers to Entry.**

Q5

The Long Run Equilibrium outcomes in Monopolistic Competition and Perfect Competition are similar, because in Both Market Structures

- a) The Efficient Output Level will be produced in the Long run.
- b) Firms will be producing at Minimum Average Cost.
- c) Firms will only earn a Normal Profit.
- d) Firms realize all Economies of Scale.

Q6

A Monopolist is able to Maximize his Profits when:

a) His Output is Maximum.

b) He charges a High Price.

c) His Average Cost is Minimum.

d) His Marginal Cost is equal to Marginal Revenue.

Q7

In which form of the Market Structure is the Degree of Control over the Price of its Product by a Firm is very Large?

a) Monopoly

b) Imperfect Competition

c) Oligopoly

d) Perfect Competition

Q8

Which is the Other Name that is given to the Average Revenue Curve?

a) Profit Curve

b) Demand Curve

c) Average Cost Curve

d) Indifference Curve

Q9

Under which of the following forms of Market Structure does a Firm have no Control over the Price of its Product?

a) Monopoly

b) Monopolistic Competition

c) Oligopoly

d) Perfect Competition

Q10

Discriminating Monopoly implies that the Monopolist charges different Prices for his Commodity:

- a) From Different Groups of Consumers**
- b) For Different Uses**
- c) At Different Places**
- d) Any of the Above**

Q11

Price Discrimination will be Profitable only if the Elasticity of Demand in different Market in which the Total Market has been divided is:

- a)Uniform**
- b)Different**
- c)Less**
- d)Zero**

Q12

The Kinked Demand Hypothesis is designed to explain in the context of Oligopoly

a) Price & Output Determination

b) Price Rigidity

c) Price Leadership

d) Collusion among Rivals

Q13

The Kinked Demand Curve Model of Oligopoly assumes that

- a) Response to a Price Increase is Less than the response to a Price Decrease.**
- b) Response to a Price Increase is More than the response to a Price Decrease.**
- c) Elasticity of Demand is Constant regardless of whether Price Increases or Decreases.**
- d) Elasticity of Demand is Perfectly Elastic if Price Increases and Perfectly Inelastic if Price decreases.**

Q14

When Price is less than AVC at the Profit-Maximizing Level of Output, a Firm should:

- a) Produce where Marginal Revenue equals Marginal Cost if it is operating in the Short Run.**
- b) Produce where Marginal Revenue equals Marginal Cost if it is operating in the Long Run.**
- c) Shutdown, since it will lose nothing in that case.**
- d) Shutdown, since it cannot even cover its Variable Cost if it stays in Business.**

Q15

One characteristic not Typical of Oligopolistic Industry is

a) Horizontal Demand Curve.

b) Too much importance to Non-Price Competition.

c) Price Leadership.

d) A Small Number of Firms in the Industry.

Q16

The Structure of toothpaste industry in India is best described as

- a) Perfectly Competitive.**
- b) Monopolistic**
- c) Monopolistically Competitive.**
- d) Oligopolistic**

Q17

The Structure of Cold Drink Industry in India is best described as

- a) Perfectly Competitive.**
- b) Monopolistic**
- c) Monopolistically Competitive.**
- d) Oligopolistic**

Q18

Which of the following statement is incorrect?

- a) Even Monopolistic can earn Losses.**
- b) Firms in a Perfectly Competitive Market are Price Takers.**
- c) It is always beneficial for a Firm in a Perfectly Competitive Market to Discriminate Prices.**
- d) Kinked Demand Curve is related to an Oligopolistic Market.**

Q19

When _____, we know that the Firms are earning just Normal Profits.

a) $AC = AR$

b) $MC = MR$

c) $MC = AC$

d) $AR = MR$

Q20

In Perfect Competition, in the Long Run
there will be no _____

- a) Normal Profits
- b) Super Normal Profits
- c) Production
- d) Costs.

THE END

*Price & Output Determination in
Monopoly & Imperfect Markets*