

UNIT –4

Market Structures

This hand-out gives an overview of the main market structures including perfect competition, monopoly, monopolistic competition, and oligopoly.

Summary Chart

	Perfect Competition	Monopoly	Oligopoly	Monopolistic Competition
# of firms	Many	One	2 or more	Many
Average size of firms	Small	Very large	Large	Small to medium
Nature of product	Same	Unique	Identical/ differentiated	Differentiated
Barriers to entry	None	Significant	Significant	Few
Government intervention	No	Yes	Some	No
Output decisions	No output restriction	Most output restriction	Output restricted	Output restricted
Interdependence	Each firm is independent	No competitors	Interdependent decisions	Each firm is independent
Profit making possibility	Low	High	High	Medium
Price and Marginal Cost	$P = MC$	$P > MC$	$P > MC$	$P > MC$
Implication for Demand Curve	Horizontal	Downward slopping; inelastic	Kinked/Downward slopping; inelastic	Downward slopping; elastic
Pricing decisions	$MC = MR = P$	$MC = MR$	Strategic pricing	$MC = MR$

(Note: P = price; MC = marginal cost; MR = marginal revenue)

Perfect Competition

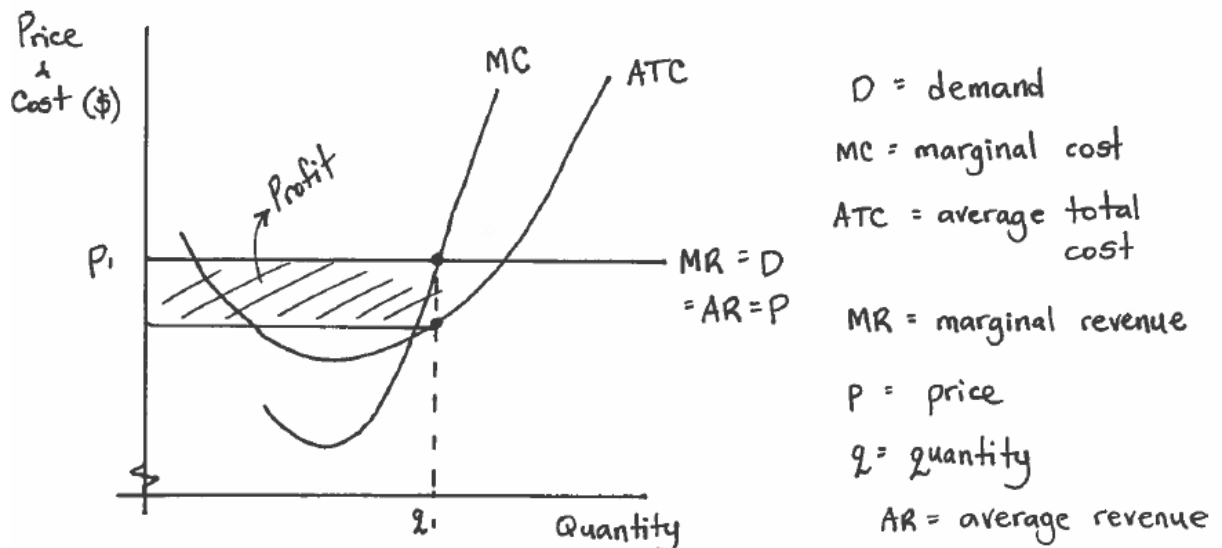
Perfect competition is a market in which:

- There is generally a large number of buyers and sellers.
- Buyers and sellers sell identical products (there is no need for advertising).
- Each buyer and seller acts independently.
- Sellers and buyers are reasonably well-informed about products and prices.
- Competitors are free to enter into the market, conduct business or leave the market.
- Examples: local vegetable farmers, dry cleaning businesses, grocery retailers, plumbing, etc.

Perfect competition markets are highly competitive markets in which many sellers are competing to sell their product. Each seller produces a product that has no unique characteristics so buyers “don’t care” about which seller’s product to buy.

Other notes:

- Firms cannot influence the market price because the individual firm’s production is an insignificant part of the total market. Firms are “**price-takers.**”
- Market demand and market supply determine the market price and quantity.
- The demand for a firm’s product is perfectly elastic (i.e. one firm’s product is a perfect substitute for another firm’s product).
- **In perfect competition, the firm’s marginal revenue equals the market price.**
- **If $MR = MC$, economic profit is maximized.**



Economic Profit in Perfect Competition

Monopoly

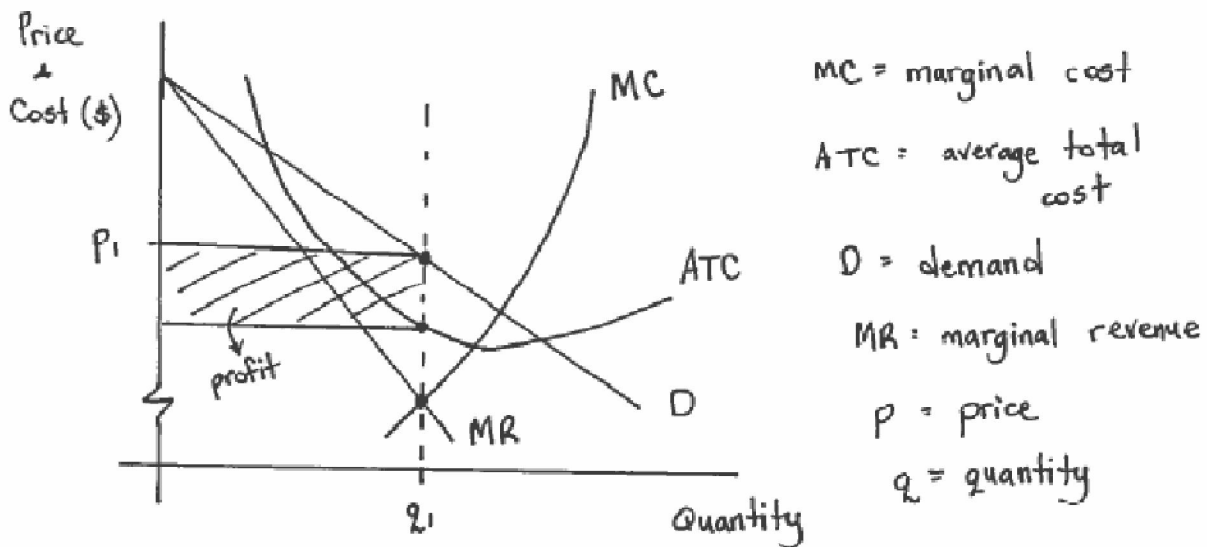
Monopoly is a market in which:

- there is one seller of a particular product
- there are barriers to entry of the market to prevent competition
- Examples: Toronto Hydro (has monopoly over electric services in the GTA); LCBO (has monopoly over alcohol sales in Ontario).

Types of Monopolies

1. **Natural Monopoly** – market situation where the costs of production are minimized by having a single firm produce the product (e.g. public utility companies, oil pipeline in Alaska)
2. **Geographic Monopoly** – based on absence of other sellers in a certain geographic area (e.g. gas station or drugstore in small town)
3. **Technological Monopoly** – based on ownership or control of a manufacturing method, process or other scientific advance (e.g. certain pharmaceutical drugs)
 - a. **Patent** – exclusive right to manufacture, use or sell invention (usually good for 20 years).
 - b. **Copyright** – authors, art (good for their lifetime plus 50 years)
4. **Government Monopoly** - monopoly owned and operated by the government (e.g. military, water and sewage)

A monopoly maximizes profit by producing output when $MR = MC$ and by charging **maximum price** that consumers are willing to pay for that output.



Economic Profit in Single-Price Monopoly

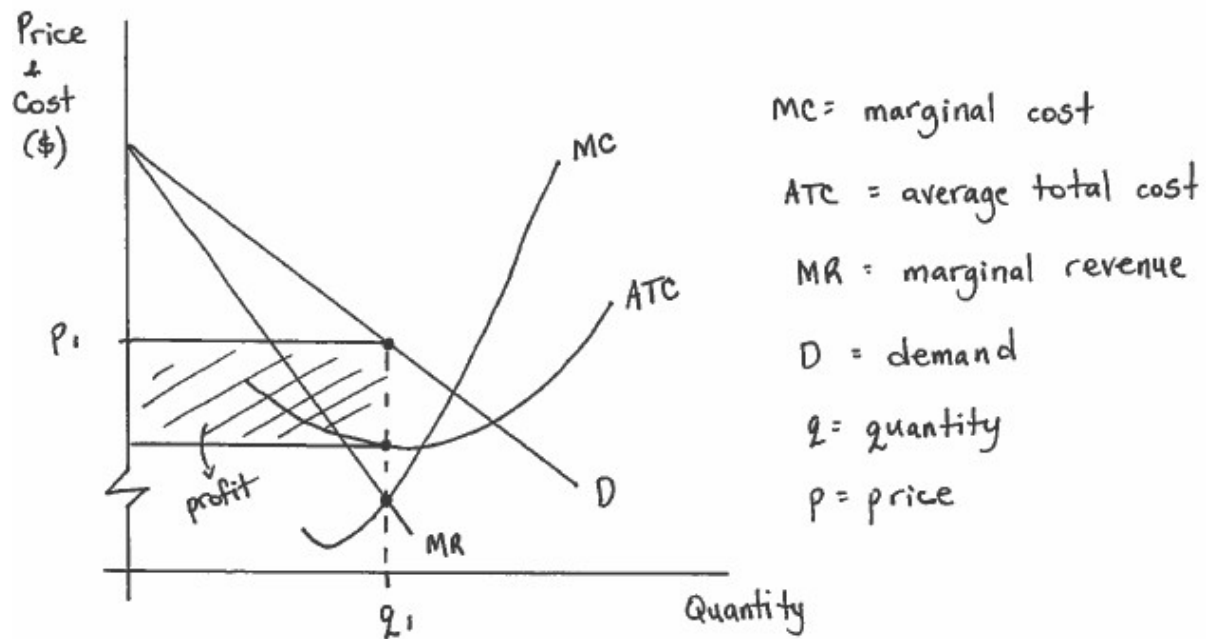
Monopolistic Competition

Monopolistic competition is a market in which:

- A large number of firms compete.
- Each firm produces a differentiated product.
- Firms compete on product quality, price and marketing.
- Firms are free to enter and exit the industry.

Other notes:

- All conditions of perfect competition are met except products are NOT identical.
- **Product differentiation** – real or perceived differences between competing products in same industry (e.g. Pure life Water vs. Dasani Water, Crest toothpaste vs. Colgate).
- **Nonprice competition** – use of advertising, giveaways, or other promotions designed to convince buyers that a product is unique (e.g. Coke vs. Pepsi).
- Profit is maximized by producing output when **MC = MR**.



Economic Profit in Monopolistic Competition

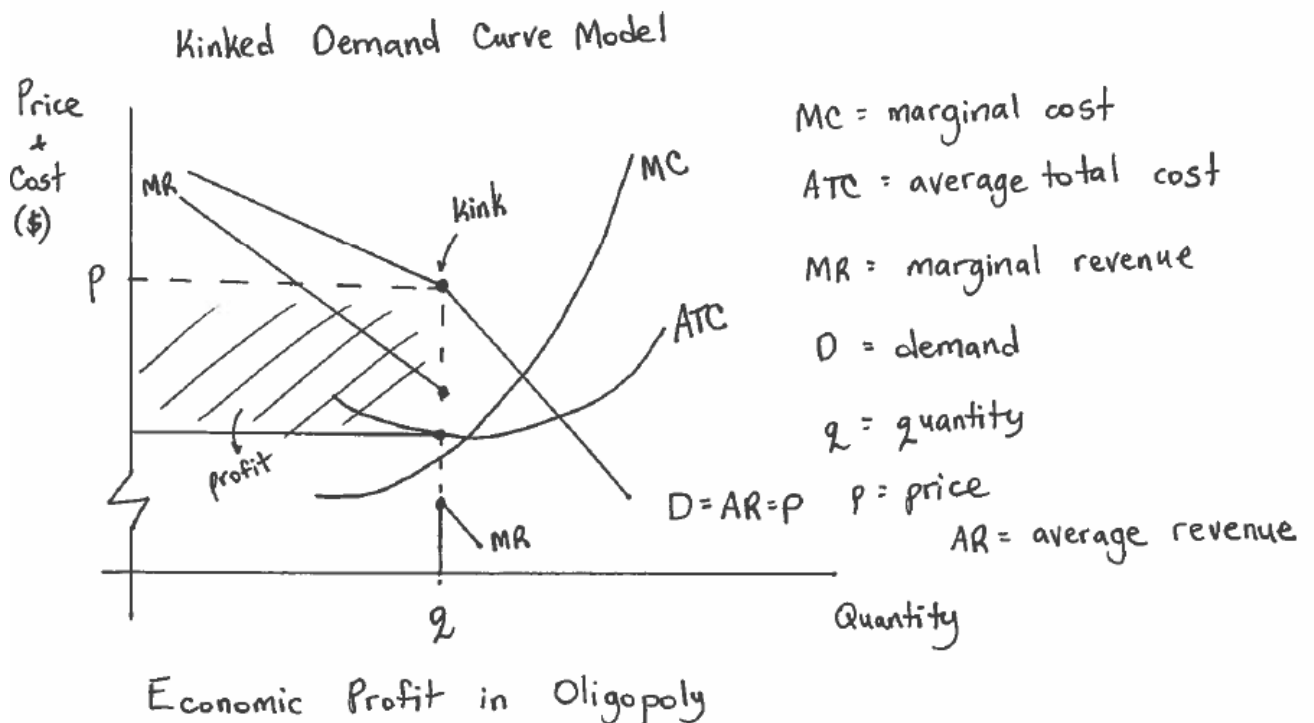
Oligopoly

Oligopoly is a market in which:

- Few very large sellers dominate the industry and compete with one another.
- Examples: Burger King, McDonald's and Wendy's.
- When one firm acts, the others tend to follow (e.g. selling chicken nuggets)
- Firms are “**price-makers.**”

Other notes:

- **Collusion** is formal agreement between sellers to set specific prices or to otherwise behave in a cooperative manner (For example, OPEC = Organization of the Petroleum Exporting Countries).
- **Price-fixing** is a form of collusion where firms establish the price of a product or service, rather than allowing it to be determined naturally through free market forces.
- The demand curve below is kinked. At higher prices the demand is elastic because if you raise your price, other firms will *not* match it. At lower prices, the demand curve becomes inelastic; if you lower your price, other firms *will* match it.



Market Structure(in details)

Market Structure: Meaning, Characteristics and Forms

According to **Prof. R. Chapman**, “The term market refers not necessarily to a place but always to a commodity and the buyers and sellers who are in direct competition with one another.”

The market for a product refers to the whole region where buyers and sellers of that product are spread and there is such free competition that one price for the product prevails in the entire region.

The essential features of a market are

(1) An Area:

In economics, a market does not mean a particular place but the whole region where sellers and buyers of a product are spread. Modern modes of communication and transport have made the market area for a product very wide.

(2) One Commodity:

In economics, a market is not related to a place but to a particular product. Hence, there are separate markets for various commodities. For example, there are separate markets for clothes, grains, jewelry, etc.

(3) Buyers and Sellers:

The presence of buyers and sellers is necessary for the sale and purchase of a product in the market. In the modern age, the presence of buyers and sellers is not necessary in the market because they can do transactions of goods through letters, telephones, business representatives, internet, etc.

(4) Free Competition:

There should be free competition among buyers and sellers in the market. This competition is in relation to the price determination of a product among buyers and sellers.

(5) One Price:

The price of a product is the same in the market because of free competition among buyers and sellers.

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MARKET STRUCTURE

Meaning:

Market structure refers to the nature and degree of competition in the market for goods and services. The structures of market both for goods market and service (factor) market are determined by the nature of competition prevailing in a particular market.

There are a number of determinants of market structure for a particular good.

- 1) The number and nature of sellers - The market structures are influenced by the number and nature of sellers in the market.
- 2) The number and nature of buyers - The market structures are also influenced by the number and nature of buyers in the market.
- 3) The nature of the product - It is the nature of product that determines the market structure.
- 4) The conditions of entry into and exit from the market - The conditions for entry and exit of firms in a market depend upon profitability or loss in a particular market.
- 5) Economies of scale - Firms that achieve large economies of scale in production grow large in comparison to others in an industry.
- 6)

On the basis of competition, a market can be classified in the following ways:

1. Perfect Competition Market:

A perfectly competitive market is one in which the number of buyers and sellers is very large, all engaged in buying and selling a homogeneous product without any artificial restrictions and possessing perfect knowledge of market at a time.

According to **R.G. Lipsey**, "Perfect competition is a market structure in which all firms in an industry are price-takers and in which there is freedom of entry into, and exit from, industry."

Characteristics of Perfect Competition:

- (1) Large Number of Buyers and Sellers
- (2) Freedom of Entry or Exit of Firms
- (3) Homogeneous Product
- (4) Absence of Artificial Restrictions
- (5) Profit Maximisation Goal
- (6) Perfect Mobility of Goods and Factors
- (7) Perfect Knowledge of Market Conditions
- (8) Absence of Transport Costs
- (9) Absence of Selling Costs

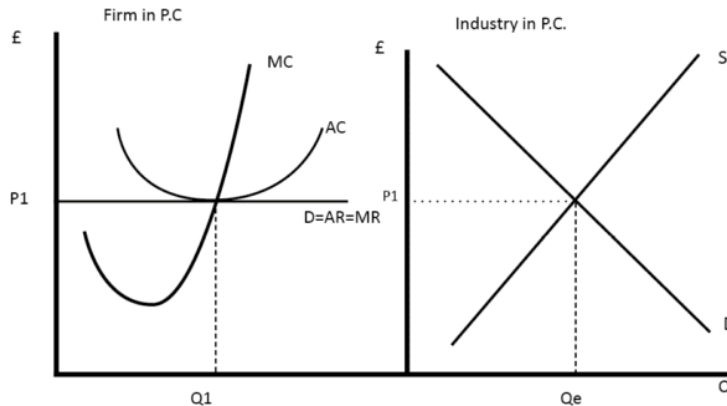


Diagram for perfect competition

OX- Price, Cost OY-Output

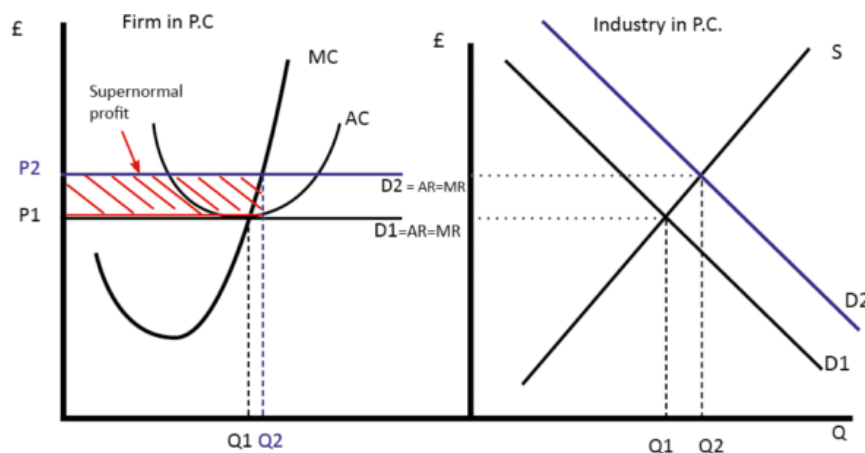
- ❖ The industry price is determined by the interaction of Supply and Demand, leading to a price of P_e .
- ❖ The individual firm will maximize output where $MR = MC$ at Q_1
- ❖ In the long run firms will make normal profits.

If supernormal profits are made new firms will be attracted into the industry causing prices to fall. If firms are making a loss then firms will leave the industry causing price to rise

The features of perfect competition are very rare in the real world. However perfect competition is as important economic model to compare other models. It is often argued that competitive markets have many benefits which stem from this theoretical model.

CHANGES IN LONG RUN EQUILIBRIUM

1. The effect of an increase in demand for the industry.



OX –Price & cost, OY-Output

If there is an increase in demand there will be an increase in price Therefore the demand curve and hence AR will shift upwards. This will cause firms to make supernormal profits. This will attract new firms into the market causing price to fall back to the equilibrium of P_e

2. An increase in firms costs

- The AC curve will increase therefore $AR < AC$
- Firms will now start making a loss and therefore firms will go out of business. This will cause supply to fall causing prices to increase.

Efficiency of perfect competition

- Firms will be allocatively efficient $P=MC$
- Firms will be productively efficient. Lowest point on AC curve.
- Firms have to remain efficient otherwise they will go out of business. (X-efficiency)
- Firms are unlikely to be dynamically efficient because they have no profits to invest in research and development.
- If there are high fixed costs, firms will not benefit from efficiencies of scale.
- see more: efficiency of perfect competition.

Examples of perfect competition

In the real world, it is hard to find examples of industries which fit all the criteria of 'perfect knowledge' and 'perfect information'. However, some industries are close.

1. **Foreign exchange markets.** Here currency is all homogeneous. Also, traders will have access to many different buyers and sellers. There will be good information about relative prices. When buying currency it is easy to compare prices
2. **Agricultural markets.** In some cases, there are several farmers selling identical products to the market, and many buyers. At the market, it is easy to compare prices. Therefore, agricultural markets often get close to perfect competition.
3. **Internet related industries.** The internet has made many markets closer to perfect competition because the internet has made it very easy to compare prices, quickly and efficiently (perfect information). Also, the internet has made barriers to entry lower. For example, selling a popular good on the internet through a service like e-bay is close to perfect competition. It is easy to compare the prices of books and buy from the cheapest. The internet has enabled the price of many books to fall in price so that firms selling books on the internet are only making normal profits.

Imperfect Competition

Definition: Imperfect competition is a competitive market situation where there are many sellers, but they are selling heterogeneous (dissimilar) goods as opposed to the perfect competitive market scenario. As the name suggests, competitive markets that are imperfect in nature.

Description: Imperfect competition is the real world competition. Today some of the industries and sellers follow it to earn surplus profits. In this market scenario, the seller enjoys the luxury of influencing the price in order to earn more profits.

If a seller is selling a non identical good in the market, then he can raise the prices and earn profits. High profits attract other sellers to enter the market and sellers, who are incurring losses, can very easily exit the market. *There are four types of imperfect markets:*

- Monopoly (only one seller)
- Oligopoly (few sellers of goods)
- Monopolistic competition (manysellers with highly differentiated product)
- Monopsony (only one buyer of a product)

1. Monopoly Market:

Monopoly is a market situation in which there is only one seller of a product with barriers to entry of others. The product has no close substitutes. The cross elasticity of demand with every other product is very low. This means that no other firms produce a similar product.

According to D. Salvatore, “Monopoly is the form of market organization in which there is a single firm selling a commodity for which there are no close substitutes.”

Characteristics of Monopoly

1. Under monopoly, there is one producer or seller of a particular product and there is no difference between a firm and an industry. Under monopoly a firm itself is an industry.

2. A monopoly may be individual proprietorship or partnership or Joint Stock Company or a cooperative society or a government company.

3. A monopolist has full control on the supply of a product. Hence, the elasticity of demand for a monopolist’s product is zero.

4. There is no close substitute of a monopolist’s product in the market. Hence, under monopoly, the cross elasticity of demand for a monopoly product with some other good is very low.

5. There are restrictions on the entry of other firms in the area of monopoly product.

6. A monopolist can influence the price of a product. He is a price-maker, not a price-taker.

7. Pure monopoly is not found in the real world.

8. Monopolist cannot determine both the price and quantity of a product simultaneously.

9. Monopolist’s demand curve slopes downwards to the right.

Sources of Monopoly Power

In a monopoly, specific sources generate the individual control of the market. Sources of power include:

- Economies of scale
- Capital requirements
- Technological superiority
- No substitute goods
- Control of natural resources
- Network externalities
- Legal barriers
- Deliberate actions

Monopoly vs. Competitive Market

Monopolies and competitive markets mark the extremes in regards to market structure. There are a few similarities between the two including: the cost functions are the same, both minimize cost and maximize profit, the shutdown decisions are the same, and both are assumed to have perfectly competitive market factors.

However, there are noticeable differences between the two market structures including: marginal revenue and price, product differentiation, number of competitors, barriers to entry, elasticity of demand, excess profits, profit maximization, and the supply curve. The most significant distinction is that a monopoly has a downward sloping demand instead of the “perceived” perfectly elastic curve of the perfectly competitive market.

Profit Maximization Function for Monopolies

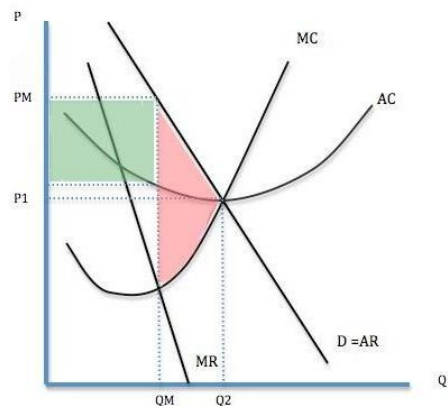
Monopolies set marginal cost equal to marginal revenue in order to maximize profit.

Monopolies have much more power than firms normally would in competitive markets, but they still face limits determined by demand for a product. Higher prices (except under the most extreme conditions) mean lower sales. Therefore, monopolies must make a decision about where to set their price and the quantity of their supply to maximize profits. They can either choose their price, or they can choose the quantity that they will produce and allow market demand to set the price.

Consider the diagram illustrating monopoly competition. The key points of this diagram are fivefold.

1. First, marginal revenue lies below the demand curve. This occurs because marginal revenue is the demand, $p(q)$, plus a negative number.
2. Second, the monopoly quantity equates marginal revenue and marginal cost, but the monopoly price is higher than the marginal cost.
3. Third, there is a deadweight loss, for the same reason that taxes create a deadweight loss: The higher price of the monopoly prevents some units from being traded that are valued more highly than they cost.
4. Fourth, the monopoly profits from the increase in price, and the monopoly profit is illustrated.
5. Fifth, since—under competitive conditions—supply equals marginal cost, the intersection of marginal cost and demand corresponds to the competitive outcome.

Profit maximization for a monopoly



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- In this diagram, the monopoly maximises profit where $MR=MC$ – at Q_m . This enables the firm to make supernormal profits (green area). Note, the firm could produce more and still make normal profit. But, to maximize profit, it involves setting a higher price and lower quantity than a competitive market.
- Note, the firm could produce more and still make a normal profit. But, to maximize profit, it involves setting a higher price and lower quantity than a competitive market.
- Therefore, in a monopoly profit maximization involves selling a lower quantity and at a higher price.

2. Oligopoly

Oligopoly Definition

“Oligopoly is an industry structure characterized by a small number of firms producing all or most of the output of some good that may or may not be differentiated”.

Oligopoly is a market situation in which there are a few firms selling homogeneous or differentiated products. It is difficult to pinpoint the number of firms in ‘competition among the few.’ With only a few firms in the market, the action of one firm is likely to affect the others. An oligopoly industry produces either a homogeneous product or heterogeneous products.

Characteristics of Oligopoly

- (1) Interdependence
- (2) Advertisement
- (3) Competition
- (4) Barriers to Entry of Firm
- (5) Lack of Uniformity
- (6) Demand Curve
- (7) No Unique Pattern of Pricing Behaviour

Types of Oligopoly:

1. Open Vs. Closed Oligopoly:

This classification is made on the basis of freedom to enter into the new industry. An open Oligopoly is the market situation wherein firm can enter into the industry any time it wants, whereas, in the case of a closed Oligopoly, there are certain restrictions that act as a barrier for a new firm to enter into the industry.

2. Partial Vs. Full Oligopoly:

This classification is done on the basis of price leadership. The partial Oligopoly refers to the market situation, wherein one large firm dominates the market and is looked upon as a price leader. Whereas in full Oligopoly, the price leadership is conspicuous by its absence.

3. Perfect (Pure) Vs. Imperfect (Differential) Oligopoly:

This classification is made on the basis of product differentiation. The Oligopoly is perfect or pure when the firms deal in the homogeneous products. Whereas the Oligopoly is said to be imperfect, when the firms deal in heterogeneous products, i.e. products that are close but are not perfect substitutes.

4. Syndicated Vs. Organized Oligopoly:

This classification is done on the basis of a degree of coordination found among the firms. When the firms come together and sell their products with the common interest is called as a Syndicate Oligopoly. Whereas, in the case of an Organized Oligopoly, the firms have a central association for fixing the prices, outputs, and quotas.

5. Collusive Vs. Non-Collusive Oligopoly:

This classification is made on the basis of agreement or understanding between the firms. In Collusive Oligopoly, instead of competing with each other, the firms come together and with the consensus of all fixes the price and the outputs. Whereas in the case of a non-collusive Oligopoly, there is a lack of understanding among the firms and they compete against each other to achieve their respective targets.

Explanation of Price and Output Determination under Oligopoly

We cannot explain the pricing and output decisions under *duopoly a single theory*. It will not be satisfactory. The reasons are:

The number of firms may vary which is dominating the market. Sometimes there may be only two or three firms that dominate the entire market (Tight oligopoly). At another time there are 7 to 10 firms that capture 80% of the market (loose oligopoly).

- (i) The goods produced may or may not be standardized under oligopoly.
- (ii) Sometimes the firms under oligopoly cooperate with each other in the fixing of price and output of goods. At another time, they choose to act independently.
- (iii) Sometimes barriers to entry are very strong in oligopoly and at another time, they are quite loose.
- (iv) Sometimes a firm under oligopoly cannot certainly predict with the reaction of the rival firms if any changes occur in the prices and output of its goods. Considering the wide range of diversity of market situations, a number of models have been developed which explain the behavior of the oligopolistic firms.

Pricing under Oligopolistic

- Independent pricing
- Collusive Pricing
- Price leadership
 - Barometric Price leadership
 - Dominant Price leadership
 - Aggressive Price leadership
 - Effective Price leadership

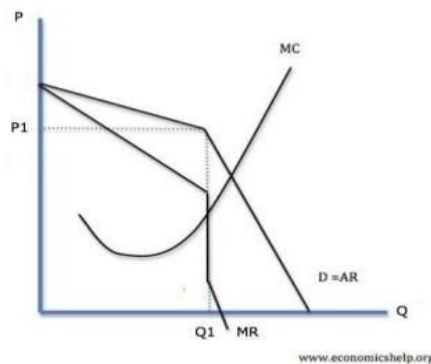
Price Rigidity- Sweezy's Kinky Demand Curve Model

- If a firm lower its prices – rivals will lower the price to avoid losing their customers.
- This portion of demand curve is relatively inelastic.
- If a firm increases its price – rivals will not follow it and change their price.
- This portion of demand curve is relatively elastic

Kinked Demand Curve

- Assumptions
 - There are few firms in the oligopolistic market
 - The products are close substitutes
 - There is no product differentiation
 - No advertising expenditures
 - Established market price
 - If a firm lower its prices – rivals will lower the price
 - If a firm increases raises the prices others will not follow it
 - MC curve passes through the dotted portion of the MR curve

Kinked Demand Curve



Kinked Demand Curve

- Criticism
 - Not proper explanation of price determination
 - Wrong assumptions
 - Ignores Non-Price competition
 - Fails to consider competitive reaction

Price Leadership

- When the price at which most of the firms in the industry offers to sell is determined by the leader.
- The Low-cost price leadership model
- The dominant firm price leadership model
- Barometric price leadership model.

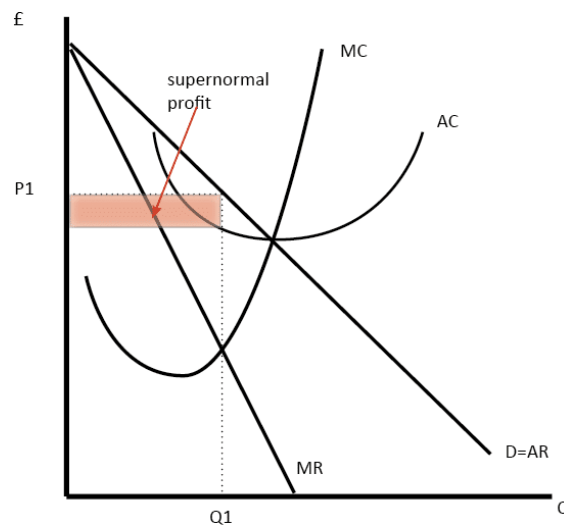
3. Monopolistic Competition

Monopolistic competition refers to a market situation where there are many firms selling a differentiated product. “There is competition which is keen, though not perfect, among many firms making very similar products.” Thus monopolistic competition refers to competition among a large number of sellers producing close but not perfect substitutes for each other.

Features of monopolistic competition

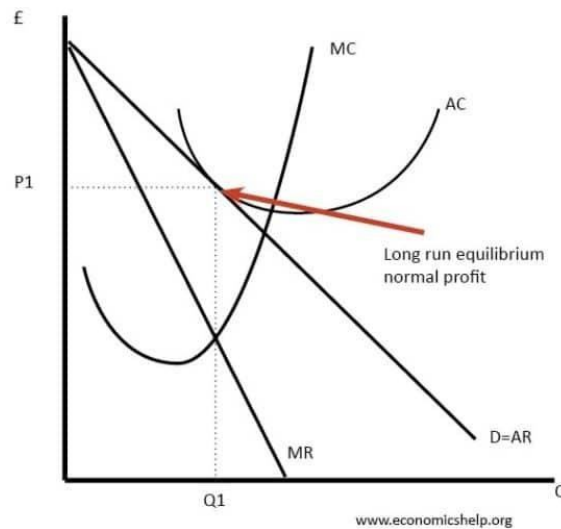
- (1) Large Number of Sellers
- (2) Product Differentiation
- (3) Freedom of Entry and Exit of Firms
- (4) Nature of Demand Curve
- (5) Independent Behaviour
- (6) Product Groups
- (7) Selling Costs
- (8) Non-price Competition

Diagram monopolistic competition short run



In the short run, the diagram for monopolistic competition is the same as for a monopoly. The firm maximises profit where $MR=MC$. This is at output Q_1 and price P_1 , leading to supernormal profit

Monopolistic competition long run



Demand curve shifts to the left due to new firms entering the market. In the long-run, supernormal profit encourages new firms to enter? This reduces demand for existing firms and leads to normal profit.

Efficiency of firms in monopolistic competition

- Allocative inefficient. The above diagrams show a price set above marginal cost
- Productive inefficiency. The above diagram shows a firm not producing on the lowest point of AC curve
- Dynamic efficiency. This is possible as firms have profit to invest in research and development.
- X-efficiency. This is possible as the firm does face competitive pressures to cut cost and provide better products.

Limitations of the model of monopolistic competition

- Some firms will be better at brand differentiation and therefore, in the real world, they will be able to make supernormal profit.
- New firms will not be seen as a close substitute.
- There is considerable overlap with oligopoly – except the model of monopolistic competition assumes no barriers to entry. In the real world, there are likely to be at least some barriers to entry
- If a firm has strong brand loyalty and product differentiation – this itself becomes a barrier to entry. A new firm can't easily capture the brand loyalty.
- Many industries, we may describe as monopolistically competitive are very profitable, so the assumption of normal profits is too simplistic.

Monopsony

Monopsony consists of a market condition that is heavily influenced by a single buyer. It is the opposite of monopoly – a market condition with only one seller. In monopsonies, the buyer exerts a majority of control over the purchase of a good or a service, which gives them higher power during negotiations.

Characteristics/Features of Monopsony:

Monopsony in the labor market, is said to exist when there is a single buyer of labor. The main characteristics of monopsony are as under.

1. The firm or employer hires a large portion of the total employment of a certain type of labor.
2. The mobility of labor is very much limited either geographically or in terms of skills of offer.
3. The monopsonist faces imperfect competition in the labor market but perfect competition in the product market.
4. The single buyer faces a large number of workers who are unorganized or non-unionized.

Monopsonies are common in the labor market in situations where only one company is responsible for supplying a lot of jobs. Labor market monopsonies tend to be disadvantageous for workers since companies can negotiate for lower wages due to their power in the market.

MONOPSONY POWER

- I. A monopsony has buying or bargaining power in their market.
- II. This buying power means that a monopsony can exploit their bargaining power with a supplier to negotiate lower prices.
- III. The reduced cost of purchasing inputs increases their profit margins increasing the chances of a business making super-normal profit
- IV. Monopsony exists in both product and labour markets – in this chapter we focus on buying power in the markets for goods and services.
- V. This means that the employer has buying power over their potential employees. This gives them wage-setting power in the industry labour market.

Monopsony is a potential cause of labour market failure. For a monopsony employer, the supply curve of labour equals the average cost of labour. The monopsony employer will have to bid up wages in order to attract new workers.

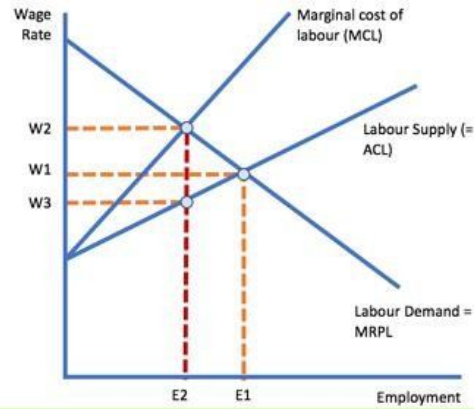
But the wage they pay will not necessarily be equal to the true marginal revenue product of people they have employed

Analysis of monopsony power when setting wages

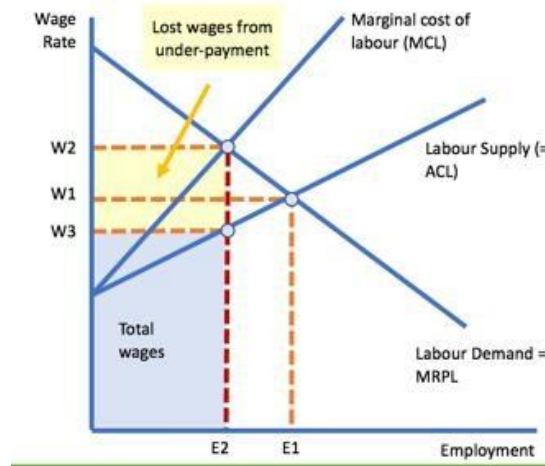
Profit maximizing employment level is where $MCL=MRPL$ i.e. E_2 number of people are employed

Their marginal revenue product is valued at W_2

Monopsony power of the employer allows them to pay a wage rate W_3



Monopsony employer can use their buying power to pay a wage lower than the value of the marginal revenue product of workers employed at E2. Monopsony power can therefore lead to exploitation of employed workers.



Advantages of Monopsony

- Being a monopsonist in the labor market allows companies to achieve economies of scale and lower long-run average costs. It increases profits and returns to stakeholders.

For monopsonists that invest in R&D, capital investment, and/or charitable causes, it helps the rich give back to society.

Disadvantages of Monopsony

- Suppliers are squeezed to settle at lower prices due to restrictions on alternatives.
- Specific to the labor market, lower wages may sometimes mean that wages fall below the productivity of workers. It may slow down the growth of the economy and have detrimental effects on educational attainment.

Bilateral Monopoly

Definition of Bilateral Monopoly: A Bilateral Monopoly occurs in an industry where there is only one producer of a good and only one supplier. It means there is a monopsonist (buyer of labour) and a monopoly (single supplier).

Meaning of Bilateral Monopoly:

Bilateral monopoly refers to a market situation in which a single producer (monopolist) of a product faces a single buyer (monopsonist) of that product. We analyse below price, output and profit determination under bilateral monopoly.

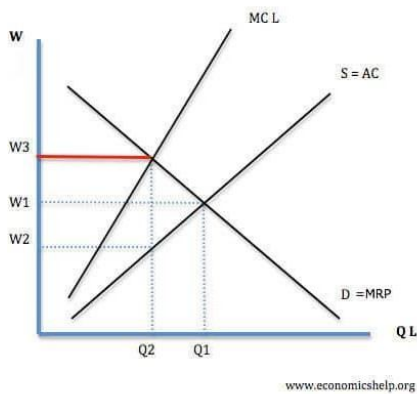
This analysis is based on the following assumptions:

1. There is a single commodity with no close substitutes.
2. The monopolist is its sole producer or seller.
3. The monopolist is its only buyer.
4. The monopolist and the monopolist are both free to maximize their own individual profits.

Examples of Bilateral Monopolies

- Coal Mining Monopsonist facing a Trade Union. In a town the coal mine is the only employer of labour. But, there is only one supplier of labour from the trade union members.

Diagram of Bilateral Monopoly



- A Monopsony would pay a wage of W_2 and employ Q_2 workers- where $MRP = MC$.
- A Trade Union could organize labour and bargain for higher wages of W_3 – without causing a fall in employment.