

**Monopoly** - involves a market with a single seller, but many buyers.

- a monopoly faces the downward sloping industry demand curve

- **Monopoly power** - a monopoly has control over the market price, it has the ability to set price above marginal cost because it can choose any price-quantity combination on the market demand curve

**Marginal Revenue** - equals the change in total revenue associated with a one unit change in output

- once a firm chooses a price they must charge that price for all units sold

- marginal revenue is always less than price when the demand curve slopes downward, except for the first unit sold

- monopoly firms maximize profit by setting output where  $MC = MR$

setting price - you need to know how quantity demanded varies relative to price (price elasticity)

$$\frac{(P - MC)}{P} = \frac{1}{\eta}$$

$$P = MC/[1-(1/\eta)]$$

## **Monopoly**

- monopoly has no supply curve - both marginal cost and demand affect output and price
- monopolists are not always profitable - if long run average cost lies entirely above the demand curve then any output will be produced at a loss so the firm should shut down
- monopolists will always sell output at a price where demand is elastic

**Monopoly power** - a monopoly has control over the market price, it has the ability to set price above marginal cost

**Lerner Index** - the larger the price marginal cost markup, the larger the firm's degree of monopoly power

$$LI = (P - MC)/P$$

**degree of monopoly power**

- the more elastic market demand and supply of all other firms in the market, the greater the elasticity of the individual firms demand curve and the smaller the monopoly power of the firm

**barriers to entry** - limit the number of firms operating in an industry which promote monopoly power

1. **Absolute cost advantage** - where an incumbent firm's production cost is lower than potential rival's production costs at all relevant output levels.

2. **Economies of Scale (Natural Monopoly)** - if the LAC for all firms slope downward over the entire range of market output then production cost is minimized if one firm supplies all output.

3. **Product Differentiation** - consumers may perceive the product sold by an incumbent firm to be superior to that offered by other firms.

4. **Regulatory barriers** - government granted patents, copyrights, franchises, licenses, limiting nonprice forms of competition such as advertising, or government contract purchases from one supplier

**Price Discrimination** - is the practice of charging different prices for the same product when there is no cost difference to the producer in supplying the product

**first-degree (perfect) price discrimination** - a pricing policy in which each unit of output is sold for the maximum price a consumer will pay

**second-degree (block) price discrimination** - is when a schedule of prices is used, such that the price per unit declines with quantity purchased by a particular customer

**third-degree price discrimination (market segmentation)** - occurs when each consumer faces a single price and can purchase as much as desired at that price, but the price differs among categories of consumers

## Necessary Conditions for Price Discrimination

1. the product seller must possess some degree of monopoly power
2. the seller must have some means of at least roughly approximating the maximum willingness to pay of buyers for each unit of output
3. the seller must be able to prevent resale of the product among the market segments

**Oligopoly** - is an industry structure characterized by a few firms producing all, or most, of the output of some good that may or may not be differentiated

- The market will function differently depending on which predictions about responses each firm makes and acts on. The predictions can affect firm output and profits as well as total industry output.

**Cournot model** - each firm determines its output based on the assumption that the other firm will not change its output. Equilibrium is reached when neither firm has any incentive to change output

**reaction curve** - shows the firm's profit maximizing output for each possible output by the other firm

**Stackelberg model** - a "leader" firm selects its output first, taking the reactions of a "follower" cournot firm into account

**residual demand** - shows what a firm can sell after accounting for other firms output

**dominant firm model** - the leader or dominant firm assumes that its rivals behave as competitive firms in determining their output. The dominant firm can sell an amount equal to the total market demand at that price minus the quantity the fringe firms produce.

Price depends on the elasticity of residual demand which is affected by -

1. Market share of the firm
2. Elasticity of the market demand
3. Elasticity of supply by competitive fringe

**cartel** - is an agreement among independent producers to coordinate their decisions so each of them will earn monopoly profits

Cartel failure is produced by -

1. Each firm has a strong incentive to cheat on the cartel agreement
2. Members of the cartel will disagree over appropriate cartel policy regarding pricing, output, market share, and profit sharing
3. Economic profits earned by cartel members will encourage entry into the industry

**Game Theory** - is a method of analyzing situations in which the outcomes of your choices depend on others' choices, and vice versa

**3 elements in model:**

**1. Players** - the decision makers whose behavior we are trying to predict (firms)

**2. Strategies** - are the possible choices ( output, price, advertising, new products, product differentiation)

**3. Payoffs** - are the outcomes of the strategies chosen (profit or loss)

**payoff matrix** - represents how each combination of choices affects the firms' profits

**dominant-strategy equilibrium** - both firms have a preferred or dominant strategy they will employ regardless of what the other firm does.

**Nash equilibrium** - is a set of strategies such that each firm's choice is the best one possible given the strategy chosen by the other firm

**Prisoner's Dilemma** - does show how the individual pursuit of self-interest can, in certain situations, produce results that are inferior for all players

**Public goods** - are those goods that benefit all consumers. These goods have two important characteristics, nonrival consumption and nonexclusion.

**nonrival consumption** - consumption by one person need not diminish the quantity consumed by others, or potential simultaneous consumption of a good by many persons

**nonexclusion** - confining a good's benefits to selected persons is impossible, or prohibitively costly

**free rider** - a person has an incentive to understate the value of the public good in an effort to secure the benefit at a lower or zero cost

- the efficient output of a public good occurs where  $MB_S$  intersects the MC curve

**externalities** - are present when all of the costs or benefits of a good are not fully borne by the participants in the market

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- externalities are likely to lead to an inefficient allocation of resources

**marginal external cost curve** - results from vertically summing the marginal cost of each person harmed

**marginal external benefit curve** - is derived by vertically summing the demand of people other than the immediate consumers of the product

**Coase Theorem** – since pollution is a property right that has value, if trade is allowed in those rights, and negotiation costs are low, efficiency should prevail no matter how the property rights are initially allocated