Study. BUSINESS

MICROECONOMICS

OVERVIEW

- **ECONOMICS:** *The study of how scarce resources are allocated among competing uses.*
- **KEY ECONOMIC QUESTIONS INCLUDE:**
  1. **WHAT is produced?** 2. **HOW is it produced?**
  3. **WHO gets what is produced?**
- **PRODUCTION POSSIBILITY FRONTIER:** *The alternative combinations of final goods and services that could be produced in a given time period with all available and limited resources and technology.*
  1. Illustrates **opportunity cost** - obtaining more production of one good requires a reduction in the production (lost opportunity) of one or more other goods.
  2. **Law of increasing opportunity cost** - obtaining more of a good in equal amounts requires giving up ever larger amounts of the alternative good.
  3. **Inside frontier** - unemployed resources or resources used inefficiently.
  4. **Expanding frontier** - occurs (a) when resources are increased and/or (b) due to technological advancements.
- **HOW CHOICES ARE MADE:**
  1. **Market mechanism** - supply and demand determine the price; owners allocate resources to obtain the highest monetary rewards.
  2. **Command economy** - central authority determines the price and allocates resources to achieve goals.
  3. **Mixed** - an economy that uses both market and non-market signals to allocate goods and resources.
- **MACROECONOMICS:** *The study of economic aggregates such as national production and the price level.*
- **MICROECONOMICS:** *The study of the behavior of consumers and producers operating in the individual markets of the economy.*

SUPPLY & DEMAND

DEMAND

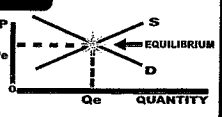
- **DEMAND CURVE (SCHEDULE):** A curve (table) showing the quantities of a good a consumer is willing and able to buy at alternative prices.
- **LAW OF DEMAND:** *Increase in price (P) causes decrease in quantity (Q) demanded.*
- **CHANGE IN QUANTITY DEMANDED: (Movement along the demand curve)** Caused by a change of price of the given good.
- **CHANGE IN DEMAND: (Shift in the entire demand curve)** Results from changes in tastes, income, personal taxes, prices of related goods (substitutes or complements), expected price or quantity, number of buyers, or a change in planned consumption at all prices.

SUPPLY

- **SUPPLY CURVE (SCHEDULE):** A curve (table) showing the quantities of a good a seller is willing and able to sell at alternative prices at a given cost of production.
- **LAW OF SUPPLY:** *Increase in price (P) causes increase in quantity (Q) supplied.*
- **CHANGE IN QUANTITY SUPPLIED: (Movement along the supply curve)** Caused by a change of price of the given good.
- **CHANGE IN SUPPLY: (Shift in the entire supply curve)** Results from change in the cost of production, business taxes, expected price or quantity, change in the price of other produced goods, change in the number of sellers, change in planned sales at all prices, and change in technology.

MARKET EQUILIBRIUM

- **EQUILIBRIUM:** Occurs at price (**Pe**) where quantity demanded = quantity supplied. At **Pe**, all sellers willing to sell will be able to sell and all buyers willing to buy will be able to buy.



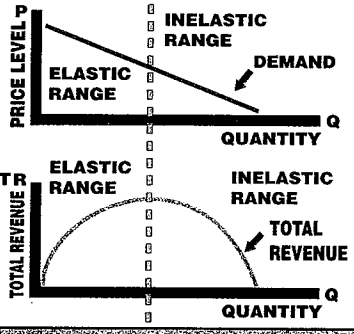
  - **PROPERTIES OF EQUILIBRIUM:**
    1. **P>Pe**, surplus; 2. **P<Pe**, shortage; 3. **P=Pe**, stable
  - **PRICE CONTROLS:**
    1. **Price ceiling: BELOW** equilibrium = shortage
    2. **Price floor: ABOVE** equilibrium = surplus
- **CHANGES IN EQUILIBRIUM:** Equilibrium price (**Pe**) and equilibrium quantity (**Qe**) will change whenever the regularly-shaped supply or demand curve shift.

ELASTICITY

PRICE ELASTICITY OF DEMAND

RESPONSIVENESS OF QUANTITY DEMANDED TO A CHANGE IN PRICE

- **SIMPLE FORMULA:** *The absolute value of % change in quantity demanded ÷ % change in price.*
- **MIDPOINTS FORMULA:** $\frac{Q_2 - Q_1}{Q_2 + Q_1} = \frac{P_2 + P_1}{P_2 - P_1}$
- **TYPES OF ELASTICITY (ϵ):**
  - ELASTIC . . . . . $|\epsilon| > 1$
  - UNITARY ELASTIC . . . $|\epsilon| = 1$
  - INELASTIC . . . . . $|\epsilon| < 1$
- **STRAIGHT LINE DEMAND CURVES:** Are elastic at prices above the midpoint and inelastic at prices below it. Comparing two curves on the same graph, the flatter curve is more elastic at every price.
- **VERTICAL DEMAND CURVES:** Are perfectly inelastic.
- **HORIZONTAL DEMAND CURVES:** Are perfectly elastic.



ELASTICITY AND REVENUE

	TOTAL REVENUE (TR)	
	PRICE INCREASE	**PRICE DECREASE**
ELASTIC	TR ↓	TR ↑
UNITARY ELASTIC	TR unchanged	TR unchanged
INELASTIC	TR ↑	TR ↓

ELASTICITY AND TAX BURDEN

- If the supply curve is more elastic than the demand curve, consumers carry more of the tax burden.
- If the demand curve is more elastic than the supply curve, suppliers carry more of the tax burden.
- If the supply (demand) curve is perfectly elastic, consumers (suppliers) carry ALL of the tax burden.
- If the supply (demand) curve is perfectly inelastic, suppliers (consumers) carry ALL of the tax burden.

UTILITY THEORY

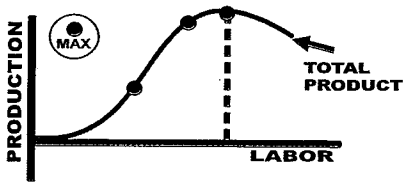
- **UTILITY** is the satisfaction obtained by the consumer from consuming a good.
- **MARGINAL UTILITY (MU)** is the extra utility from an additional unit of consumption.
- **PRINCIPLE OF DIMINISHING MARGINAL UTILITY:** Additional consumer satisfaction from the last unit of consumption falls as more of the good is consumed.
- **CONSUMERS GENERALLY ALLOCATE THEIR BUDGET TO MAXIMIZE** the utility from the bundle of goods they consume.
- **CONDITIONS FOR UTILITY MAXIMIZATION AND CONSUMER EQUILIBRIUM**
  1. $P_a \cdot Q_a + P_b \cdot Q_b =$ budget or income constraint
  2. $(MU_a \div P_a) = (MU_b \div P_b)$ Consumers allocate their budget to equate the utility received from the marginal dollar spent on each good consumed.
- **UTILITY AND THE LAW OF DEMAND**

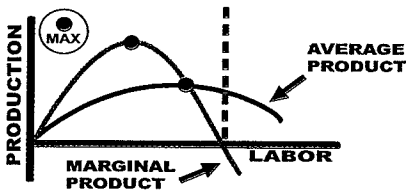
Relationship: As the price of a good increases, the utility of the marginal dollar spent on the good decreases, since the marginal dollar buys less of the good. The consumer reallocates the marginal dollar away from the good, causing quantity demanded to fall in line with the Law of Demand.

PRODUCTION COSTS

PRODUCTION

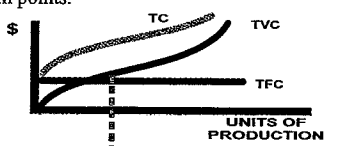
- **A FIRM PRODUCES GOODS BY COMBINING FACTORS OF PRODUCTION:** Land (natural resources), labor, capital and entrepreneurship.
- **IN THE SHORT RUN,** at least one factor of production is fixed (usually the firm's capital; for example, its plant).
- **IN THE LONG RUN,** all factors of production can be varied.
- **MARGINAL (PHYSICAL) PRODUCT** is the extra production created as a result of employing an additional unit of a factor of production.
- **PRINCIPLE OF DIMINISHING RETURNS:** When at least one factor is fixed, a firm will experience diminishing marginal physical product as it employs more of a variable factor (e.g. labor). Decrease in the change of quantity over the change in units of labor.

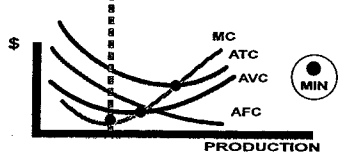




COSTS

- **ECONOMIC COSTS INCLUDE:** Not only explicit costs (accounting or out-of-pocket) but also implicit costs, such as the value of a business owner's time or the opportunity costs of his capital tied up in a productive activity.
- **IN THE SHORT RUN** some costs are fixed (the owner's overhead) and some are variable.
- **TOTAL COSTS (TC) = total variable costs (TVC) plus total fixed costs (TFC).**
- **AVERAGE COSTS** are costs per unit of output.
- **AVERAGE TOTAL COSTS (ATC) = average variable costs (AVC) plus average fixed costs (AFC).**
- **THE SHORT RUN AVERAGE TOTAL COST CURVE** is u-shaped because declining average fixed costs bring costs down at low production levels. At higher production levels, sharply rising average variable costs swamp the effect of declining fixed costs.
- **MARGINAL COST (MC)** ***is the extra cost of producing an additional unit*** **FORMULA: ($\Delta TC/\Delta Q$).**
  1. Marginal cost rises as production expands, either immediately or at low levels of output if diminishing returns set in with some delay.
  2. When marginal costs are below average costs, average costs are falling; when marginal costs are above average costs, average costs are rising; when marginal costs equal average costs, average costs are constant.
  3. The marginal cost curve crosses the average total cost curve and the average variable cost curve at their minimum points.



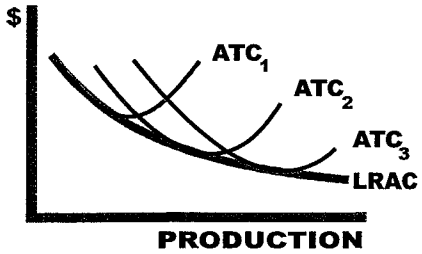


PERFECT COMPETITION

COSTS IN THE LONG RUN

NO FIXED COSTS IN THE LONG RUN

AS A FIRM EXPANDS ITS FIXED FACTORS (e.g. physical plant), it moves from one short run average cost curve to another.



THE LONG RUN AVERAGE COST CURVE (LRAC): The lower boundary of all short-run cost curves. It shows the cheapest way to produce any given level of output.

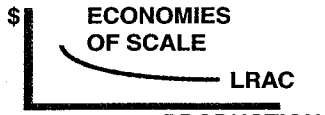
ECONOMIES OF SCALE OCCUR IF: In the long run average costs are declining. There is greater specialization of labor possible as the scale of a firm expands. As workers specialize and produce more, they go further up the "learning curve" and their productivity increases.

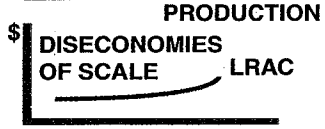
CONSTANT RETURNS TO SCALE OCCUR IF: In the long run, average costs are constant. The cost per unit of output does not change in this output range.

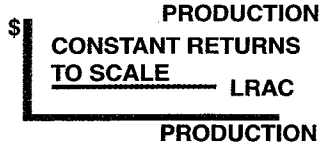
DISECONOMIES OF SCALE OCCUR IF: In the long run average costs are increasing.

Reasons:

1. Managers experience greater difficulties in supervising workers or managing inventory or technology as the scale of their responsibilities increases.
2. Monitoring costs increase.
3. There is competition instead of cooperation among employees.
4. Employees feel like their work is insignificant resulting in lower output per worker.







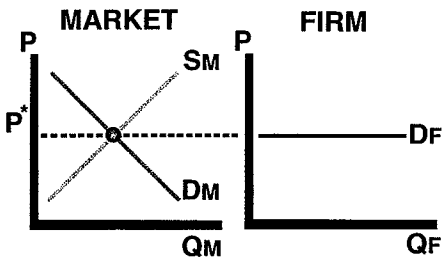
- **THE SHAPE OF THE LONG RUN AVERAGE COST (LRAC) CURVE:** Usually shows an initial period of economies of scale; afterwards there will be constant costs followed by diseconomies of scale.
- **IF DISECONOMIES OF SCALE SET IN AS SOON AS ECONOMIES OF ENDS (U-SHAPED LRAC),** there is a unique plant size that minimizes the unit cost of production for the firm.
- **IF ECONOMIES OF SCALE OCCUR INDEFINITELY,** a firm can expand indefinitely at ever lower unit costs to serve the entire market. This is a characteristic of a "natural" monopoly which is usually owned or regulated by the government.
- **IF THE AVERAGE COST CURVE TURNS FLAT,** at least for a portion of production, there is no unique plant size. This is the most frequent case in the business world.
- **MINIMUM EFFICIENCY SCALE (MES):** Minimum output level of constant returns to scale.

ECONOMIC PROFIT

- **Accounting Costs** = Explicit cost (actual expenses)
- **Implicit Costs** = Net benefit that could have been derived from the next best alternative
- **Economic Cost** (or opportunity costs) = Explicit cost + implicit cost
- **Accounting Profit** = Total revenue - explicit cost
- **Economic Profit** = Total revenue - (explicit cost + implicit cost)
- **Normal Profit** =The profit earned from investing in the average industry in the economy. Normal profit is achieved when economic profit is zero.

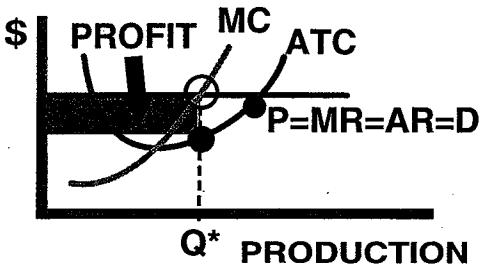
CHARACTERISTICS

- **LARGE NUMBER OF BUYERS AND SELLERS** - Large enough to prevent individual buyers or sellers or small groups of buyers or sellers from exclusively influencing the market price.
- **HOMOGENEOUS PRODUCT** - Firms are selling standardized or identical goods.
- **PERFECT INFORMATION ABOUT PRICES AND SUPPLIES** - Producers and consumers do not need nor are fooled by advertising.
- **FIRMS AND CONSUMERS ARE PRICE TAKERS** - Firm faces a perfectly elastic demand curve for its product at the market price (**P***). If a firm charges a price higher than **P*** the firm will have zero revenue. If a firm charges a price lower than **P*** the firm will have a lower revenue than the revenue it can achieve at **P***.
- **NEGLIGIBLE BARRIERS TO ENTRY** - Firms easily enter and exit the industry.



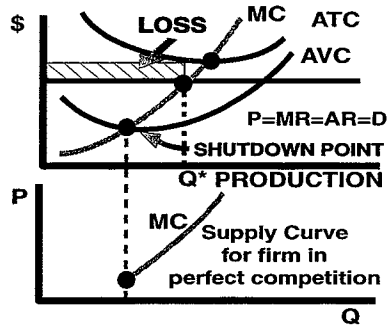
PROFIT MAXIMIZATION

- **FIRM OBJECTIVE: TO MAXIMIZE PROFIT.** Profit is revenue minus costs, where costs include implicit costs.
- **Firms choose to produce up to the point where MR = MC:** The revenue from the marginal unit (***marginal revenue*** [MR]), is equal to the cost of producing the marginal unit (***marginal cost*** [MC]).
  1. **Marginal revenue** is the change in total revenue for every additional quantity sold: ($\Delta TR/\Delta Q$).
  2. If marginal revenue exceeds marginal cost, the firm should increase production.
  3. If marginal revenue is less than marginal cost, production should be reduced.
- **IN PERFECT COMPETITION:** Marginal revenue (MR) = price (P), since the firm is a price taker. The perfectly competitive firm, therefore, expands production to the point where marginal cost equals price. Likewise, marginal revenue is equal to average revenue, which is the same as the demand curve.



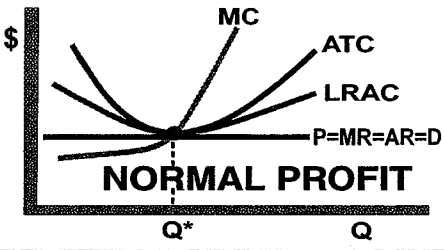
FIRM DECISION MAKING AND SHORT RUN SUPPLY

- **IF P > ATC, PROFITS EXIST AND THE FIRM WILL PRODUCE Q*.**
- **IF P < ATC, THERE WILL BE LOSSES.**
  1. The firm will **produce** at a loss if the price is higher than the average variable cost (**P >AVC**), because it can still cover variable costs. Also **TFC** (losses at shutdown) exceeds losses at **Q***.
  2. The firm will **shutdown** if the price is lower than the average variable cost (**P < AVC**) because it cannot cover variable costs. Also **TFC** (losses at shutdown) is less than losses at **Q***.
- **THE SHORT RUN INDIVIDUAL SUPPLY CURVE OF THE FIRM:** That portion of the marginal cost curve above its intersection with the average variable cost curve. The quantity produced at the intersection between marginal cost and the demand curve is equilibrium quantity. Since the firm will shutdown if the demand curve is below the average variable cost curve, this portion of the marginal cost curve is not part of the supply curve of the firm.



LONG RUN

- **IN THE LONG RUN:**
  1. Firms can:
     a. **Expand or contract** their fixed factors (e.g. plant size).
     b. **Freely enter or leave** the industry.
  2. The supply response to an increase in demand is greater in the long run than in the short run. Whether price rises or falls depends on whether the industry has diseconomies or economies of scale.
- **ECONOMIC PROFIT IN THE LONG RUN:**
  1. In a dynamic economy with changing technology and consumer tastes, there will always be some competitive industries with economic profits and others with economic losses as adjustments are undertaken.
     a. Economic profits are forced to zero by firms entering the industry.
     b. Losses are eliminated by firms leaving the industry to obtain at least normal profits elsewhere.
  2. Resources are reallocated from loss-making industries to industries making economic profits.



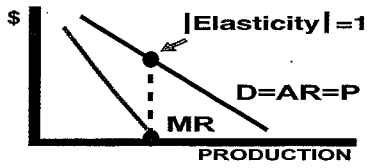
COMPETITION AND EFFICIENCY

- **A PERFECTLY COMPETITIVE MARKET BRINGS ABOUT:**
  1. Allocative Efficiency (**Q*** where **MC=P**): The cost of resources used to produce the marginal unit is equal to the amount of money a consumer is willing to pay for the marginal unit at **Q***. The opportunity cost producing the marginal unit is equal to the amount sovereign consumers are willing to pay for the unit. This occurs in both the short and long run periods for a perfectly competitive firm.
  2. Productive Efficiency (**Q*** at minimum ATC): Production occurs at the lowest average cost per unit. This occurs in the long run period for a perfectly competitive firm.

MONOPOLY

CHARACTERISTICS

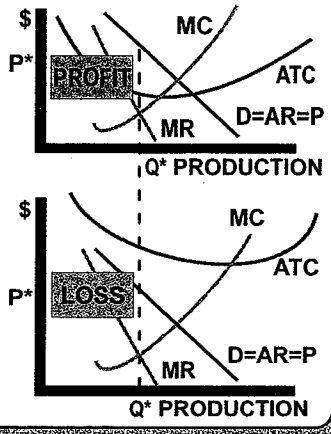
- **SINGLE SELLER (THE FIRM IS THE ENTIRE INDUSTRY)**
  - **GOODS PRODUCED HAVE NO CLOSE SUBSTITUTES**
  - **MAY BE IMPERFECT INFORMATION**
  - **PRICE MAKER OR PRICE SEARCHER: The downward-sloping demand curve facing the monopolist is the market demand curve.**
  1. Price must decline if the monopolist seeks to sell more. If the monopolist raises the price, the amount sold declines.
  2. The monopolist can choose the price or the amount sold but not both.
- **BECAUSE PRICE DECLINES AS OUTPUT IS EXPANDED, marginal revenue is less than price.**
- **AT Q WHERE MR = 0**
  1. Total revenue is maximized.
  2. Elasticity of demand curve is unitary elastic.



- **BARRIERS TO ENTRY**
  1. Legal barriers, patents and licenses
  2. Economies of scale keep out competition because the unit costs of a new entrant to the industry are much higher than the established monopolist who can charge lower prices - (*natural monopoly*).
  3. Control of an essential resource can prevent competitors from entering the market.

MONOPOLY PROFIT MAXIMIZATION

- **PRODUCTION:** The monopolist expands production to Q*, until the revenue from the marginal unit **(marginal revenue)**, equals the cost of producing it **(marginal cost)**.
- **PRICE**: Once a level of production is selected, the demand curve gives the price (**P***) that must be charged to persuade consumers to buy what is available.
- **PROFIT:** Production will continue in the short run as long as the price exceeds the average variable cost.
  1. If the price exceeds average variable cost (AVC) but is less than average total cost (ATC), the monopolist will produce at a loss.
  2. If the price exceeds average total cost, the monopolist will make a profit.
  3. In the long run, the monopolist can earn positive economic profits, but will shut down if it continues making a loss.



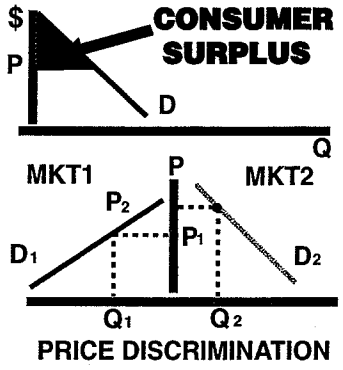
MONOPOLY AND EFFICIENCY

- **LACK OF COMPETITION DOES NOT FORCE THE MONOPOLIST TO PRODUCE WHERE UNIT COSTS ARE LOWEST.** Thus productive efficiency may not be achieved.
- **THE MONOPOLIST PRODUCES WHERE THE PRICE IS GREATER THAN THE MARGINAL COST.** Hence, the consumer pays more for an ***extra unit of production than it costs society***. Allocative efficiency is not achieved.
- **MONOPOLISTS PRODUCE LESS *AT A HIGHER PRICE* THAN WOULD BE PRODUCED UNDER PERFECT COMPETITION.** Monopoly profit reduces consumer welfare by charging consumers a higher price. A reduction in production even further reduces their welfare, a "deadweight" loss to the consumer.

PRICE DISCRIMINATION

CHARGING CONSUMERS DIFFERENT PRICES FOR ESSENTIALLY THE SAME PRODUCT

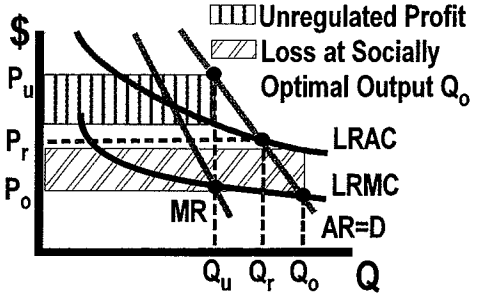
- **REQUIREMENTS:**
  1. Seller must be a monopolist or have considerable monopoly power.
  2. Sellers must be capable of dividing consumers into different classes, each class having a different demand curve.
  3. Marginal costs of production for the different classes must be similar.
  4. Consumers charged a lower price must be incapable of reselling to consumers in the higher priced class.
- **FOR EACH CLASS OF CONSUMERS THE MONOPOLIST SHOULD ALLOCATE OUTPUT TO THE POINT WHERE** the marginal revenues from selling to each class are equal to the common marginal cost.
- **CONSUMER SURPLUS:** Actual consumer savings given a single price. It is equal to the area below the demand curve above the market price.
  1. Price discrimination reduces consumer surplus.
  2. Perfect price discrimination completely wipes out consumer surplus.



PRICE DISCRIMINATION

WHAT YOUR PRICES MUST COVER

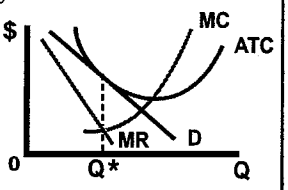
- **DEFINITION:** A **natural monopoly** arises because a single firm can supply the market and its long run average costs (**LRAC**) are still falling when the limits of market demand are reached. Examples are Public Utilities.



- **UNREGULATED NATURAL MONOPOLY** will produce Q_u (where **MR=LRMC**) at P_u, making a profit.
  1. There is no incentive for the monopolist to lower price and lower costs because of lack of competition.
  2. The price will be raised to cover any cost increase.
  3. There is also uncertainty about where the true cost and demand curves lie.
- **SOCIALLY OPTIMAL OUTPUT (Q_o): D = LRMC.** Here allocative efficiency is achieved (*output is produced up to the point where the cost of an extra unit equals the price consumers are willing to pay for the extra unit*). At Q_o, the price P_o is less than **LRAC** and the monopolist realizes a loss. This requires a subsidy (which is most likely to occur if the government owns the firm).
- **PRIVATELY OWNED NATURAL MONOPOLIES ARE USUALLY REGULATED.** The regulation allows the monopolist to charge P_r and produce Q_r, where the price equals **LRAC.** This ensures a "fair" return to the monopolist (normal profits).
- **PARTS OF A NATURAL MONOPOLY CAN BE OPENED TO COMPETITION. Ex.** a monopoly can be granted to the electric transmission system (wires, etc.) even if more than one company can produce the electricity to be generated.

MONOPOLISTIC COMPETITION

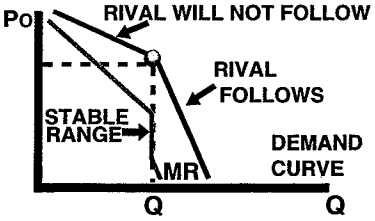
- **BASIC CHARACTERISTICS:**
  1. Large number of buyers and sellers
  2. Imperfect information; price maker
  3. Low barriers to entry
  4. Differentiated products such as different brands or levels of service. Costs are higher due to expenditures to differentiate products.
  5. Very elastic demand curve
  6. Short run behavior like a monopolist
  7. Competition ensures zero economic (normal) profit in the long run.
- **IN THE LONG RUN:**
  1. The demand curve will shift to the left until P = ATC and economic profits will be zero.
  2. Price is greater than marginal cost so that the consumer is willing to pay more than it costs to produce the good; no allocative efficiency.
  3. Monopolistic competition does not operate at minimum average cost, so that productive efficiency is not achieved.



OLIGOPOLY

- **CHARACTERISTICS:**
  1. Few sellers and many buyers
  2. Close substitutes or differentiated products
  3. Imperfect information; price maker
  4. Barriers to entry are strong but not as strong as a monopoly. Economies of scale make entry of new firms very costly.
- **OLIGOPOLY MODELS:**
  1. **Pure Oligopoly:**
     a. Kinked demand curve
     b. Competitors follow price cuts but not price increases
     c. Gives rise to stable prices.
  2. **Collusion: Ex. O.P.E.C.**
     a. Firms collude to behave as a monopolist
     b. Types of collusion:
        i. tacit collusion
        ii. overt collusion
  3. **Price leadership:** This oligopoly model is composed of one dominant firm with few smaller firms called "fringe" firms. Firms allow one firm to exercise leadership to end uncertainty.
  4. **Contestable markets:** oligopoly with low barriers to entry.

KINKED-DEMAND CURVE



- **MEASUREMENTS OF MARKET POWER**
  1. **Four(4) - firm concentration ratio:** Sum of the market shares of the top four firms in the industry.
  2. **Herfindahl-Hirschman Index:** Sum of the squares of the market shares of all firms in an industry.

ANTITRUST POLICY

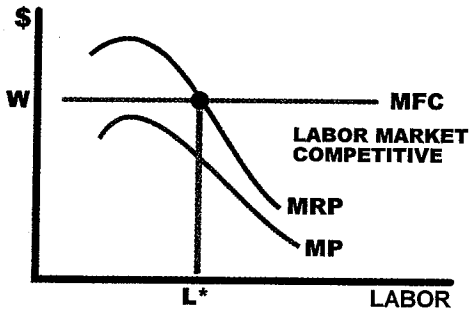
- **PURPOSE:**
  1. Prevents oligopolists from colluding with each other to eliminate competition.
  2. Prevents a firm from growing so large that it can drive competition out of business by restraining trade.
- **ANTITRUST LAWS:**
  1. **Sherman Act: (1890)** - Prohibits collusion and attempts to monopolize.
  2. **Clayton Act: (1914)** - Outlaws actions that would lessen competition and certain types of price discrimination.
  3. **Federal Trade Commission Act: (1914)** - Established a government agency to investigate unfair and deceptive business practices.
  4. **Robinson -Patman Act: (1936)** - Further prohibited price discrimination among customers.
- *Evidence **does not** support the view that antitrust laws have a big impact on the amount of competition in the economy. Many economists believe that fair international trade is the best way of promoting competition.*

RESOURCE MARKETS

RESOURCE DEMAND

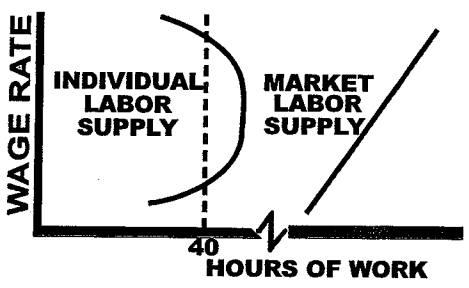
- **RESOURCE TYPES: Labor, Land, Capital & Entrepreneurship** - Any or all of which are used by a company to produce its output.
- **MARGINAL REVENUE PRODUCT (MRP):** The marginal revenue obtained from the marginal unit employed **(marginal revenue x marginal product).**
- **MARGINAL FACTOR COST (MFC):** The marginal cost of the last unit employed.
- **COMPANIES WILL EMPLOY UNITS OF A RESOURCE** (i.e. man hours; pounds of a raw material; machine hours) **until the marginal revenue obtained from the increased production generated by the marginal unit equals the marginal cost of that unit (MRP = MFC).**
- **IN PERFECTLY COMPETITIVE PRODUCT MARKETS:** Marginal revenue product = Price x Marginal product.
- **IN PERFECTLY COMPETITIVE RESOURCE MARKETS:** Marginal factor cost = The unit price of the input (wage rate in the case of labor).
- **MRP CURVE** is the firm's demand curve for the firm's combined factors of production where the marginal products per dollar spent are the same for each factor:

$$\frac{MP_L}{w} = \frac{MP_K}{r}$$ Where **w** is the wage rate and **r** is the rental cost of capital



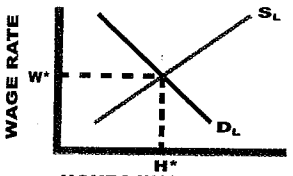
LABOR SUPPLY

- **INDIVIDUAL LABOR SUPPLY** - Reflects a person's allocation of time between work and leisure.
- **LEISURE** provides utility directly. Work generates wages which can be used to purchase goods that provide utility.
- **TIME IS ALLOCATED TO MAXIMIZE UTILITY.**
- **WAGE RATE INCREASES:**
  1. Affect the individual labor supply curve:
     a. raising the opportunity cost of leisure (wage is the price of leisure), and increasing the time allocated to work. This is the ***substitution effect.***
     b. or, by causing the individual labor supply curve to bend backwards as workers choose to increase leisure hours and decrease work hours. With an increase in income, workers buy more leisure. This is the ***income effect.*** At high wages, the income effect dominates the substitution effect. Workers may feel that they "can afford to take time off."
  2. Affect the market labor supply curve in one direction. It will not bend backwards because more workers will be attracted into the higher paying occupation.
- **LABOR UNIONS:** Workers can join together to establish labor unions. Unions have three main effects:
  1. Raise wages of unionized workers.
  2. Lower employment in unionized occupations.
  3. Lower relative wages of non-unionized workers.

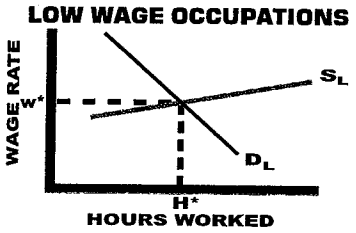


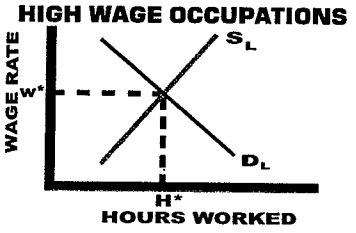
WAGE DETERMINATION

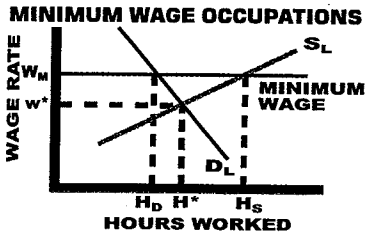
- **EQUILIBRIUM Wage rate (W*)** - Determined by labor supply and labor demand.
- **WAGE RATES BY OCCUPATION:**
  1. Workers cannot easily change occupations. It takes time and money to acquire new skills (a bus driver cannot easily become a doctor). Occupations experiencing shortages will see wages rise.



  2. Workers have different levels of marginal productivity in different occupations. Differences in productivity reflect:
     a. differences in education, training, and ability.
     b. differences in the productivity of equipment and technology used by the workers.
  3. Compensating wage differentials are paid to workers in occupations which are less desirable. A window washer may be paid more than a janitor because the occupation is more risky; a flight attendant may be paid less than a waitress because the opportunity to travel is viewed favorably.
- **LOW WAGE OCCUPATIONS:** Elastic labor supply.
- **HIGH WAGE OCCUPATIONS:** Less elastic supply, especially in the short run.



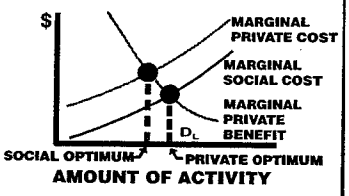




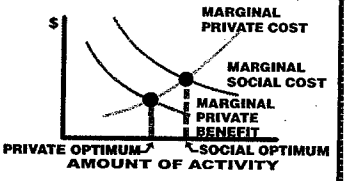
- **MINIMUM WAGES** are set if the **Equilibrium wage (W*)** is considered too low to afford basic needs and services. The disadvantage of minimum wage is that it increases unemployment in low wage occupations. Workers will be willing to supply H_S hours at the minimum wage (W_M) but will only find H_D hours available.
- **LICENSING OF OCCUPATIONS** restricts supply, raises wages and lowers employment.
- **DISCRIMINATION** against a group of people that limits their entry into some occupations will raise wages in the limited occupations and lower wages in the unlimited occupations.

EXTERNALITIES

- **DEFINITION: Benefits received or costs imposed on others** as a result of an economic activity to which they are not a party. Such activity can involve **production** or **consumption.**
  Ex. Environmental pollution **involves a negative externality.** Pollution abatement **involves a positive externality.**
- **SOCIALLY OPTIMAL LEVEL OF PRODUCTION OR CONSUMPTION:** Occurs when marginal social benefits equal marginal social costs.
- **COASE THEOREM:** In a system where legal damages can be collected from a person or from a negative externality, the **private market system will produce at the socially optimal level,** provided property rights are well-defined and costs of negotiations are low.
- **WITHOUT COASE THEOREM CONDITIONS:**
  1. An activity that generates a **positive externality will be conducted at a level below the social optimum.** This is because the activity will occur up to the level where the marginal **private cost equals** the marginal **private benefit.**



  2. An economic activity which creates a **negative externality will be conducted beyond the socially optimal level.** This is because the activity will occur up to the point where the marginal **private benefit equals** the marginal private cost, and the marginal **private cost is lower** than the marginal **social cost.**



- **PUBLIC POLICY** approaches to the problem of externalities include:
  1. **Regulations** limiting activities with negative externalities or requiring minimal levels of activities that have positive externalities.
  2. **Taxes** on activities that have negative externalities and subsidies on activities with positive externalities.
  3. **Sale of licenses** that, in aggregate, permit socially optimal levels of the negative externality. Allowing these licenses to be traded provides firms with the incentives to reduce the amount of the negative externality they produce.

INTERNATIONAL TRADE

- **ABSOLUTE ADVANTAGE:** Occurs when a country uses the same amount of resources to produce more goods than another country. The country has a lower absolute cost of producing the good.
- **COMPARATIVE ADVANTAGE:** Occurs when a country experiences a lower opportunity cost of producing a good than another country.
- **TRADE GAINS:** Will be received by countries that specialize in the production of goods where they have a comparative advantage, even if each country has an absolute advantage in the production of some goods that it no longer produces after trade.
- **TRADE GAINS ARE SHARED BY COUNTRIES** depending on the relative demand for each country's output. These demands are reflected in the terms of trade-ratio of export to import prices.

NOTE: This *QuickStudy*® chart is an outline of basic principles needed to learn Microeconomics. Due to its condensed nature, we recommend you use it as a guide, but not as a replacement for expert, in-depth advice.

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