

NINJA BOOK

Business Environment & Concepts



Economics

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Economics

Microeconomics

Overview

Economics is the study of the allocation of scarce resources among alternative uses. **Microeconomics** is the study of the decisions that individual units, such as firms and households, make when using limited resources to maximize satisfaction. By comparison, **macroeconomics** is the study of community (aggregate) decisions about allocating resources (labor and capital) to maximize social welfare. Microeconomics focuses on individuals (typically, as purchasers of production and suppliers of labor and capital) and firms (typically, as sellers of production and purchasers of labor and capital).

1. **Assumptions** Economics assumes unlimited human wants and limited resources to satisfy those wants.

Note: Throughout this chapter, the term *goods* implicitly includes both goods and services, unless noted otherwise.

2. **Economic Systems** Each economic system answers the following major questions: 1-What is produced? 2-How much is produced? 3-How is it produced? 4-Who uses the output of this production? Labels attached to economic systems are useful for describing them relative to each other. The existence of pure capitalistic and socialistic societies on a large scale are not as common as at first might appear.
 - a. **Capitalism** is also called the free-enterprise system. Every economic unit (firm, investor, consumer, etc.) is free to act in their own interests. Resources are owned privately and decisions are made individually. Economic questions are answered by the pricing mechanism of free markets. Government (state) oversight is mitigated to the extent possible.
 - b. **Communism** Resources are owned by the state and most decisions are made by the state. Individuals make limited choices. Economic questions are answered by government planning. Government (state) oversight is maximized.
 - c. **Socialism** is a mixture of capitalism and communism, with varying degrees of governmental intervention and private ownership. Some industries may be exclusive to state ownership. Economic questions are answered by government planning as well as the free market system. Economic concepts such as healthcare, education, and labor are constructed and regulated for the community as a whole.

Demand

Demand is the amount of a good that consumers as a group will and are willing and able to purchase at a given price during a given period of time. Demand analysis concentrates on consumer behavior. The price and quantity demanded for a good (or service) are related inversely; that is, *the lower the price, the higher the demand*. The classic list of demand determinants assumes a pure capitalist system: all consumers act in their individual interests. Group actions, such as boycotts and price controls, also influence demand.

1. **Cross-Elasticity of Demand** Or cross-price elasticity of demand. Measures how closely related goods influence demand. The degree to which two goods are related to each other influences the degree to which demand will change, *ceteris paribus* ("all other things equal").
 - a. **Substitutes** If good A has a substitute, B, relatively lower in price, buyers leave the market for A and purchase the substitute B. For instance, a price increase for wool clothing may increase demand for acrylic clothing. Good A price Good B demand .
 - b. **Complements** If good A has a complement, B, price changes for either have a corresponding change in the demand for the other. For instance, a price increase for breakfast cereal will decrease demand for milk. Example: cars and fuel. Good A (fuel) price Good B (SUV) demand .
2. **Income** The amount of consumers' income relative to prices influences demand.

- a. **Normal Goods** Demand for normal goods has a positive relationship to income. In other words, as income increases, the demand for normal goods normally increases; as income decreases, the demand for normal goods decreases.
- b. **Inferior Goods** Demand for inferior goods has a negative relationship to income. In other words, as income decreases, the demand for inferior goods increases; as income increases, the demand for inferior goods decreases.

Example: Silk clothing could be a normal good and nylon clothing could be an inferior good.

Example: Nordstrom vs Discount Clothing Retailers.

- 3. **Expectations** Consumer expectations as to price changes influence demand positively. If consumers expect prices to increase (inflation) they increase current demand. If consumers expect prices to decrease (deflation) they decrease current demand.
- 4. **Preference** Consumer taste or preference influences demand. Consumer preference is perhaps the least predictable determinant. For instance, in colonial times, oysters often were considered an inferior good (poor man's food), but now are a normal or even luxury good.
- 5. **Market Size** The number of consumers (also called the population) tends to have a positive relationship to demand.

Supply

Supply (or market supply) is the amount of a good that producers as a group will, and are willing and able to, supply at a given price during a given period of time. Supply analysis focuses on producers' behavior.

- 1. **Law of Supply** The price and quantity supplied for a good are related directly; that is, the higher the price, the higher the supply.
 - a. **Production Costs** Taxes are effective increases in production costs. Subsidies act as effective decreases in production costs.
 - b. **Technology** Technological improvements in production of a good increase the supply of that good. Example: economies of scale due to mass production.
 - c. **Prices of Other Goods** An increase in price for another good encourages firms to use resources for the production of that other good.
 - d. **Price Expectations** An increase in the expected future price for a good encourages firms to supply less at current stage.
- 2. **Surplus (Economic Rent)** Surplus or economic rent is deemed earned when an input is paid or purchased for a higher amount than the next highest bidder-consumer of that input would pay. For resources with perfect inelasticity, such as land and other limited natural resources, all of the price is deemed economic rent; a higher price will not increase the supply. In layman's terms, economic rent is the extra money earned for labor, capital, land etc. in excess of the cost to bring it to production.

Example 2.1 - Economic Rent

A musician earns \$500,000 as a rock star. The musician's alternative employment is a sales clerk for \$20,000. The economic rent is \$480,000.

Elasticity

Elasticity is a measure of how responsive the market is to change in a determinant.

- 1. Price Elasticity of Demand** Price elasticity of demand (E_d) measures responsiveness of demand to changes in price. If demand is elastic (imagine a rubber band), demand will fluctuate as the price changes; if demand is inelastic, demand will not change as the price changes. Algebraically, E_d is the percentage change in quantity demanded divided by the percentage change in price; thus, it is represented graphically as the inverse of the slope of the demand line.

Note: Increases in production costs are passed readily onto buyers when demand is inelastic, but must be absorbed by sellers when demand is elastic.

Exhibit 2.1 - Price Elasticity of Demand (Elasticity Coefficient) Formula

$$E_d = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in price}}$$

- a. Factors** The following factors increase demand elasticity: classification as a luxury, rather than a necessity; longer length of time period analyzed/researched; greater number of substitutes; and percent of income spent on that good. Example: Buying a Maserati vs purchasing diapers.
- b. Elasticity Coefficient** If the absolute value of E_d is greater than one, demand is classified as elastic; if less than one, demand is classified as inelastic; if equal to one, demand is classified as having unitary elasticity.

Exhibit 2.2 - Elasticity Coefficient and Total Revenue Relationship

	$ E_d > 1$ (Elastic)	$ E_d = 1$ (Even)	$ E_d < 1$ (Not Elastic)
Price increase	total revenue down	same	total revenue up
Price decrease	total revenue up	same	total revenue down

- 2. Price Elasticity of Supply** Price elasticity of supply (E_s) measures responsiveness of supply to changes in price. If supply is elastic, supply will fluctuate as the price changes; if supply is inelastic, supply will not change much as the price changes. Algebraically, E_s is the percentage change in quantity supplied divided by the percentage change in price; thus, it is represented graphically as the inverse of the slope of the supply line.

A high cost and low feasibility of storage decreases supply elasticity. Attributes of the production process influence elasticity: a by-product's elasticity is influenced strongly by the elasticity of the main product. The ability to supply goods becomes more elastic with time.

Exhibit 2.3 - Price Elasticity of Supply (Elasticity Coefficient) Formula

3. **Cross-Elasticity of Demand** Cross-elasticity of demand (E_{xy}) measures responsiveness of demand to changes in price of another good. If E_{xy} is positive, the goods are substitutes; if negative, the goods are complements; if equal to zero, the goods are unrelated. Substitutes are butter for margarine. Complements are higher prices for land lead to lower demand for housing.

Exhibit 2.4 - Cross-Elasticity of Demand (Elasticity Coefficient) Formula

$$E_{xy} = \frac{\text{Percentage change in quantity demanded of good X}}{\text{Percentage change in price of good Y}}$$

4. **Income Elasticity of Demand** Income elasticity of demand (E_i) measures responsiveness of demand to changes in income. If E_i is positive, the good is normal; if negative, the good is inferior. In other words, if E_i change is 2.0, that means a higher income led to the purchase of, say a Mercedes Benz. If E_i change is .5, that means a lower income led to the purchase of, say Spam food.

Exhibit 2.5 - Income Elasticity of Demand (Elasticity Coefficient) Formula

Market

The market is the interaction of buyers and sellers of a good for exchange purposes. The point where supply and demand curves meet is the market, or equilibrium, price. Anyone may purchase or sell the good at the market price. The market forces of supply and demand create an automatic rationing system. The system acts to allocate goods to consumers willing to pay for them. When a shortage exists, the market price will rise and quantity demanded will decrease, eliminating the shortage. When surplus exists, the market price will decrease and quantity demanded will increase, eliminating the surplus.

1. **Price Fixing** Governments may set mandatory or artificial prices, interfering with the market's automatic allocation system often with unintended results.
 - a. **Ceiling** When a price is set below the market (equilibrium) price, shortages develop. This usually causes non-price competition among buyers (for example, waiting lines) and reduced production by suppliers.
 - b. **Floor** When a price is set above the market (equilibrium) price, surpluses develop. This usually causes non-price competition among sellers (for example, advertising and "gifts" for customers) and reduced demand by buyers. The price set for airfare before airline industry deregulation is an example of a price floor.

Example 2.2 - Price Ceiling

There are 10,000 two-bedroom apartments for rent for \$1,100 a month in Big City. Big City's council decides that the high rent for a two-bedroom apartment is the reason that the population is decreasing, so it initiates rent control. The two-bedroom apartments now have a ceiling of \$800 a month.

Because the rent is lower, 1,500 more families want to live in Big City; however, landlords decide to change the buildings to retail and office space because it is more profitable, so only 9,000 two-bedroom apartments are available for the 11,500 families that want to rent them.

Even if the council prohibits conversion of existing property when the rent control is enacted, there probably will be fewer residences available for rent, eventually. Any grandfathered changes from residential rental to commercial use still will be made. Planned changes from commercial to residential use will halt. Existing rental residential stock will age and be condemned as unfit for residential use, but there is little incentive for use-lengthening maintenance or new rental residential construction.

2. **The Common (Externalities)** Assets used in common may suffer poor maintenance. The damage to common assets are called externalities or "spillover effects" as the cost is external to the abuser's cost (or once it's divided among the whole community, the cost is insignificant to the abuser/culprit).

Some common negative production externalities gaining prominence in the public eye are air pollution, landfills, and dirty water. Some corporations are taking voluntary steps to curb abuse of these commons to promote goodwill with consumers as well as to delay the advent of mandatory rationing or to minimize its disruption to corporate operations. The transformation of externalities borne by the community as a whole to internal cost borne by individuals is called full-cost accounting.

3. Impact of Shifts in Demand and Supply

- a. **Demand** An increase in demand, when supply doesn't change, will increase the market price. A decrease in demand, when supply doesn't change, will decrease the market price.
- b. **Supply** An increase in supply, when demand doesn't change, will decrease the market price. A decrease in supply, when demand doesn't change, will increase the market price.
- c. **Simultaneous and Similar** An increase in supply and demand will increase output quantity with an indeterminate effect on market price. A decrease in supply and demand will decrease output quantity with an indeterminate effect on market price.
- d. **Simultaneous and Different** An increase in demand and decrease in supply will increase the market price with an indeterminate effect on output quantity. A decrease in demand and increase in supply will decrease the market price with an indeterminate effect on output quantity.

Utility Theory

An assumption of the utility theory is that an individual's objective is to maximize the total utility from available income. Total utility is maximized when the last dollar spent on each of several different goods provides the same utility; in other words, for a fixed amount of income, a higher level of utility cannot be achieved. Total utility is the maximum level of satisfaction that a consumer can receive from buying a good or service.

Example 2.3 - Utility Theory

Owning two pairs of pants and two pairs of shoes, the consumer decides that another pair of pants will provide more utility than another pair of shoes, so the consumer buys another pair of pants. Knowing that s/he has a limited amount to spend in a two-good economy, the consumer will buy pants until buying shoes will provide more utility.

Exhibit 2.6 - Utility Maximization Formula

$\frac{\text{Marginal utility of A}}{\text{Price of A}} = \frac{\text{Marginal utility of B}}{\text{Price of B}}$

- 1. Measurement** Cardinal utility measurements assign numerical (quantitative) values to benefits received from each good, perhaps in length, height, weight, or temperature. Ordinal utility measurements establish a rank (qualitative) to each good, without assigning a specific unit of worth.
- 2. Diminishing Marginal Utility Principle** Equal increments of additional consumption of a good provide smaller and smaller additional units of utility. For instance, the first pair of shoes provides more utility than the 101st. This is similar to the law of diminishing returns.
- 3. Indifference Curve** The various combinations of commodities X and Y that give equal utility to a consumer form an indifference curve. In other words, a consumer is indifferent to, or has no preference for, one combination over another along the curve. Because of the diminishing marginal utility principle theory, indifference curves are nonlinear: if consumers obtained equal utility from the first unit as the last, the relationship would be linear. Indifference curves cannot intersect, are sloped negatively, and are convex to the origin.
- 4. Budget Constraints** All the combinations of two commodities an individual can purchase with a given income at given prices for the two commodities form budget constraints. A change in income causes a parallel shift on the budget constraint line. A change in either or both goods' prices changes the slope of the budget constraint line. If relative prices of both goods change proportionately, a parallel shift in the budget constraint line results.

Production and Costs

Production factors also are called inputs. They can be classified by the type of return that they generate. Capital and land sometimes are combined in one category, as interest is merely the rent paid for the use of capital. Governmental services, capital goods, entrepreneurial services, and research & development can be considered special instances of the basic four factors.

Exhibit 2.7 - Production Factors and Returns

<u>Factor</u>	<u>Return</u>
Labor	Wages
Capital	Interest
Land	Rent
Management	Profit

- 1. Short vs. Long** The short run is a time period in which an entity cannot have only variable amounts of all inputs. In other words, the quantity of at least one input is a fixed cost. The long run is a time period in which an entity can change all inputs – e.g., plant capacity.
- 2. Cost Classification** These classifications assume a short-run time period. In the long-run, all costs are variable, while in the short-run, there are variable and at least one fixed cost.
 - a. Fixed Costs** Fixed costs are those costs that do not change with the level of output. Average fixed costs are total fixed costs divided by output quantity.
 - b. Variable Costs** Variable costs are those costs that vary with the level of output. Average variable costs are total variable costs divided by output quantity.
 - c. Total Costs** Total costs are the sum of fixed *and* variable costs. Average total costs are total costs divided by output quantity.
 - d. Historical (Explicit) Costs** Historical costs are actual expenditures made in producing a product.
 - e. Implicit Costs** Implicit costs are amounts that would have been received if resources had been used for other purposes. Similar to opportunity costs.

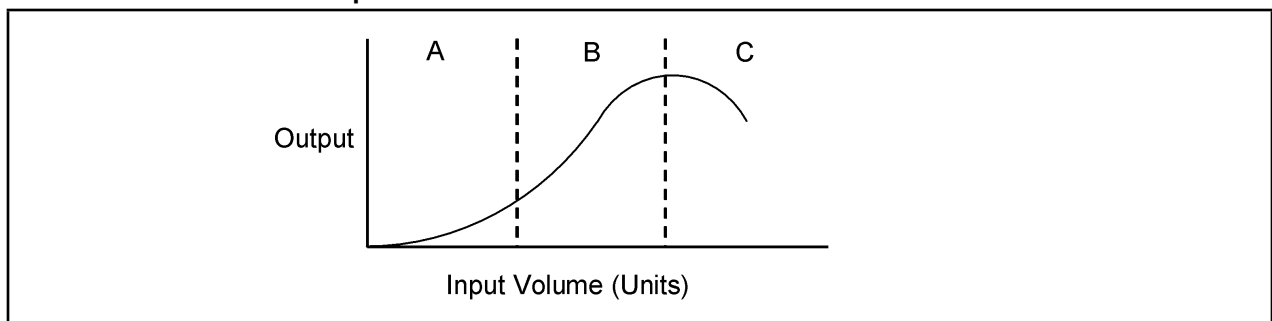
- f. **Opportunity (Alternative) Costs** Opportunity costs are the costs of not engaging in an alternative activity.
- g. **Economic Cost** The economic cost of executing one course of action over another. For example, the economic cost of studying for the CPA is materials, books, and other expenditures. The opportunity cost tied to the CPA exam is the time spent studying instead of the salary that could have been earned working for an employer full-time. Economic cost is the income that an entity must provide in order to attract resource suppliers (for instance, equity investors).
- h. **Economic Profit** Economic profit is total revenue less all economic costs. When economic profit is zero, the firm is earning just a normal profit or a normal rate of return.
- i. **Normal Profit** Normal profit is the cost of keeping entrepreneurial skills in the organization. Another definition is the opportunity cost of using the owner's own resources.

3. **Basis for Decisions** Economic decisions are based on analysis of marginal factors.

- a. **Marginal Revenue** The additional revenue from increasing output by one unit.
- b. **Marginal Cost** The additional cost (fixed and variable) from increasing production by one unit. As fixed costs are fixed, within the specified limits, marginal cost equals variable cost.
- c. **Marginal Profit** The additional profit from increasing output by one unit; the marginal revenue minus marginal cost.
- d. **Marginal Product** The additional output from increasing input by one unit.
- e. **Marginal Revenue Product (MRP)** The marginal revenue product is that additional unit of output at which the marginal revenue from an input is equal to its marginal physical product quantity times the marginal revenue from the sale of an additional unit of output. MRP is calculated as marginal revenue times marginal physical product.

4. **Principle of Diminishing Returns** There is a point beyond which additional units of a variable input will contribute less and less to total production; in other words, the marginal production will decline. Optimal use occurs when a variable input is used up to the point at which the marginal increase in revenue from use of that input is equal to the marginal cost from use of that input. In other words, an entity will profit from use of additional resources up to the point at which marginal revenue product equals marginal resource cost.

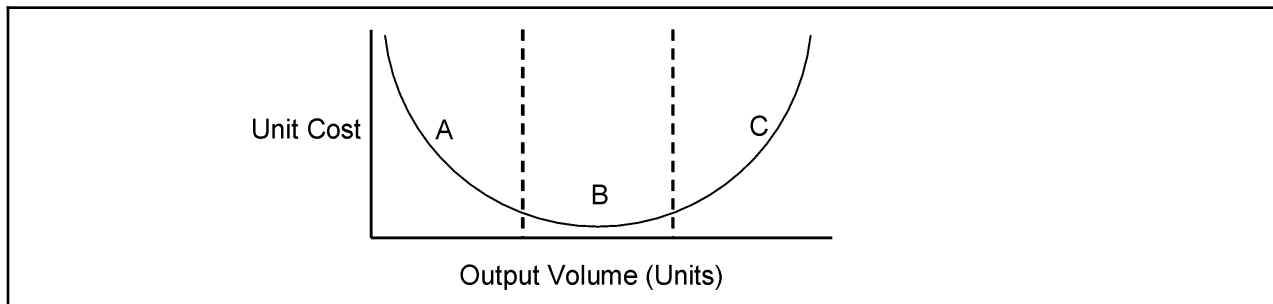
Exhibit 2.8 - Returns on Input



- a. **Marginal Revenue Product** The marginal revenue product is that additional unit of output at which the marginal revenue from an input is equal to its marginal physical product quantity times the marginal revenue from the sale of an additional unit of output.
- b. **Marginal Resource Cost** The marginal resource cost of an input is equal to its market price.

5. **Average Cost Curve** The average cost curve is U-shaped because of economies and diseconomies of scale.

Exhibit 2.9 - Average Cost Curve



- a. **Increasing Returns to Scale** If all outputs are changed by a factor greater than the factor that changes inputs, returns to scale increase. For instance, there are increasing returns to scale, or economies of scale, when inputs double but outputs triple.

As most entities expand output, average costs of production decline due to better use of resources: management, labor, and equipment. Think: specialization. This is shown graphically by the part of the input-return (Exhibit 2.8) and the average-cost (Exhibit 2.9) curves labeled "A."

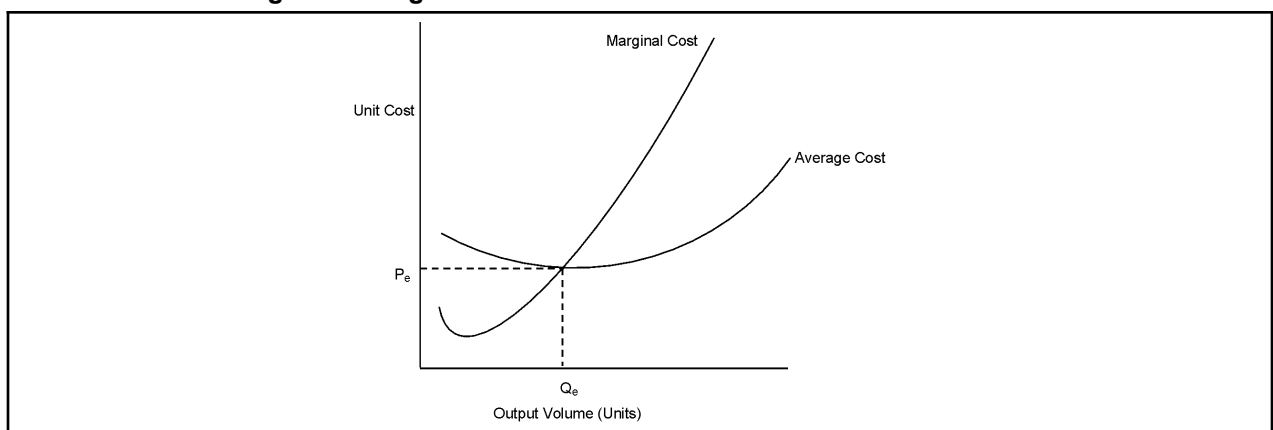
- b. **Constant Returns to Scale** If all outputs are changed by a factor that is the same as the factor that changes inputs, returns to scale remain constant. This is shown graphically by the part of the input-return (Exhibit 2.8) and the average-cost (Exhibit 2.9) curves labeled "B."

- c. **Decreasing Returns to Scale** If all outputs are changed by a factor less than the factor that changes inputs, returns to scale decrease. For instance, there are decreasing returns to scale, or diseconomies of scale, when inputs triple but outputs merely double.

Eventually, as entities continue to expand output, the marginal cost of production tends to increase. The common explanation is the difficulty of managing a large-scale organization. This is shown graphically by the part of the input-return (Exhibit 2.8) and the average-cost (Exhibit 2.9) curves labeled "C."

6. **Marginal and Average Cost Curves** Marginal cost is equal to average cost whenever average cost is at a minimum. If average cost is falling (economies of scale), marginal cost is below average cost. If average cost is rising (diseconomies of scale), marginal cost is above average cost.

Exhibit 2.10 - Average and Marginal Cost Curves



Market Structure and Performance

Using non-price competition, entities can alter the nature of a market somewhat, moving a product from, for instance, a pure competitive market (all suppliers providing a commodity) to a monopolistic competitive market (suppliers providing differentiated products). Advertising and product quality often are considered the two most important methods of non-price competition, either changing the perception of a product or differentiating a product.

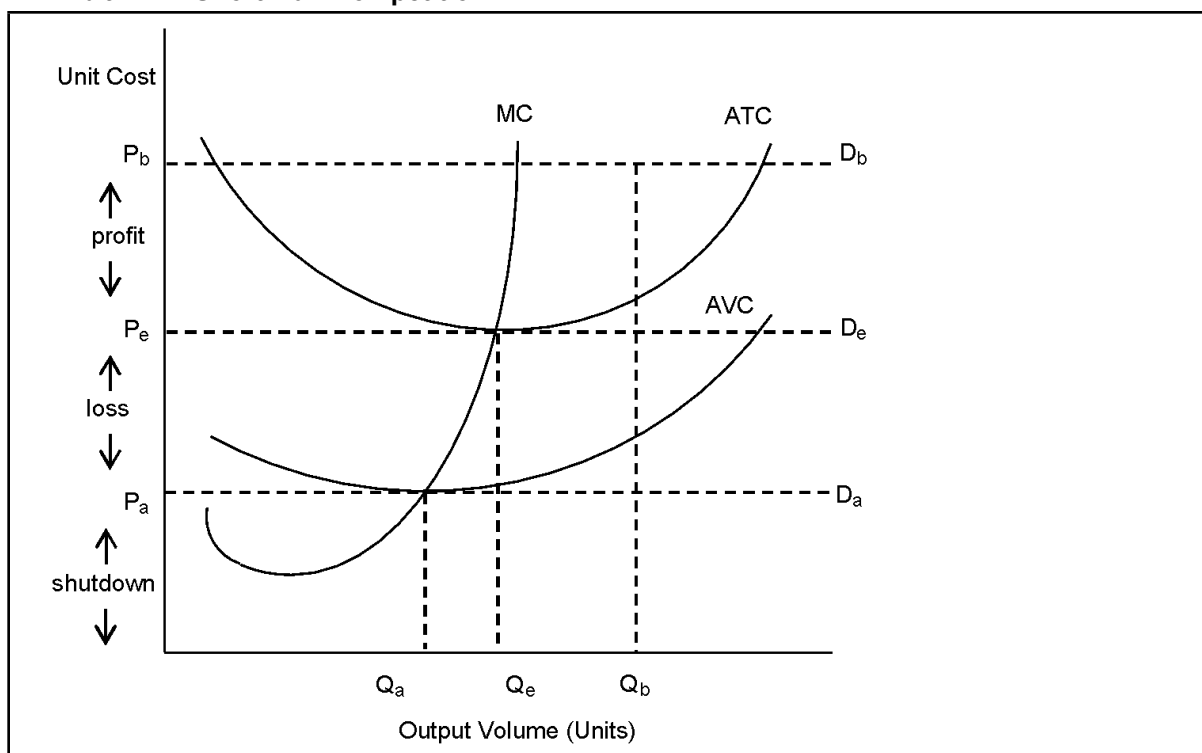
1. **Pure (Perfect) Competition** The classic example of a competitive market is any commodity, for example, iron ore, lumber, or wheat. These are not perfect examples of competitive markets; for instance, environmental and food-handling laws may restrict free entry into or exit from these markets.

- a. **Characteristics** When discussing a purely competitive market, the following are assumed: a large number of buyers and sellers acting independently; a homogeneous or standardized product; free entry into and exit from the market for firms; perfect information; no price controls; and no non-price competition.

Perfect information means that all buyers and sellers have access to the same information. Therefore, no single trader or traders can have a significant impact on market prices.

- b. **Short-Run** A producing entity must sell at the market prices. In other words, a producing entity is a price taker. Thus, the demand curve is perfectly elastic (or horizontal). For profit maximization, the producing entity equates price to marginal cost. If the price is less than average variable cost (lower than P_a in Exhibit 2.11), the entity would stop producing to reduce loss. If the price is above marginal cost (such as P_b in Exhibit 2.11), more producers eventually will enter the market, but in the short-run, economic profit is earned. Between P_e and P_a (in Exhibit 2.11) in the short-run, the producer will continue production to cover some of the fixed costs.

Exhibit 2.11 - Short-Run Competition



- c. **Long-Run** This analysis assumes that all firms are equally efficient. As economic profits are available, more entities will enter the market, eventually driving the price down to a point where no economic profits occur. If too many entities enter the market, eventually driving the price down to a point where economic losses occur, some entities will leave the market, eventually driving the price back up to a point where no economic profits occur.

Because price equals marginal cost, allocation of resources is optimal: entities produce the ideal output (the output at which average cost is lowest). The price is lower and output greater than in any other market structure. An entity in a competitive market in long-run equilibrium earns no economic profit. Exhibit 2.10 shows the long-run equilibrium at P_e and Q_e . At equilibrium, market price equals marginal revenue, which also equals average revenue.

2. **Pure Monopoly** The term *monopoly* comes from the word *monarch*; this connection is due to governments granting exclusive rights to deal in goods or services. Telephone service in the United States used to be an example of a monopolistic market.

- a. **Characteristics** When discussing a monopoly, the following are assumed: a single seller; a unique product without close substitutes; blocked entry for other firms; perfect information; significant price controls; and goodwill advertising.
- b. **Short-Run** The demand schedule is sloped negatively. Marginal revenue lies below demand and is sloped negatively.
- c. **Long-Run** Blocked entry in a monopoly market allows the entity to earn an economic profit, similar to the economic profit earned in a competitive market in the short-run. Price exceeds marginal cost, so there is an under-allocation of resources. The entity produces less than the ideal output. Price is higher and output lower than in a competitive market.
- d. **Natural Monopoly** A natural monopoly exists when economic or technical conditions permit only one efficient supplier. For example, within a geographic area, a gravel supplier is likely to have a monopoly because the increased cost of shipping (due to the gravel's weight) is likely to exceed any price difference that consumers are able to get from a more distant source. Technological conditions include large economies of scale (extremely large operations are prerequisite to achieve low unit costs). Example: Amazon distribution centers.
- e. **Profit Maximization** The entity equates marginal revenue with marginal cost unless price is less than average variable cost. If price is less than average variable cost, the entity ceases production.
- f. **Legislation** Monopoly power is discouraged by the US government because prices are higher and output lower than in a competitive market. Monopolies could lead to price gouging and illegal mergers. Example: popular medications owned by big pharmaceutical companies.
 - (1) **Sherman Act (1890)** Prohibits trade restraint in interstate and foreign trade, including price fixing, boycotts, agreements to divide markets, and resale restrictions.
 - (2) **Clayton Act (1914)** Prohibits mergers (acquiring competitors' stock) if the resulting corporation would tend to lessen competition. Prohibits price discrimination. Prohibits having directors in common between two competing corporations.
 - (3) **Robinson-Patman Act (1936)** Prohibits discounts that are not based on cost differences to large purchasers.
 - (4) **Celler-Kefauver Anti-Merger Act (1950)** Prohibits acquiring competitors' assets if the result would tend to lessen competition.
- g. **Anti-trust Policy** Although a pure monopoly is rare, markets are judged as monopolistic based on how closely they approach the characteristics of a monopoly, either from a performance or market structure perspective.

Performance factors include market performance, technological growth rate, efficiency, and profit. Structure factors include the number and size of competitors, ease of market entry, product differentiation, and buyer/seller distribution.

3. **Monopolistic Competition** Restaurants in the United States is an example of a monopolistic competitive market.

- a. **Characteristics** When discussing a monopolistic competition, the following are assumed: a large number of sellers; differentiated products; relatively easy entry into and exit from the market for firms; some price controls; considerable non-price competition (advertising, brands, etc.).
- b. **Profit Maximization** Each producing entity equates marginal revenue with marginal cost unless price is less than average variable cost. If price is less than average variable cost, an entity ceases production.

- c. **Short-Run** The demand schedule is sloped negatively. Marginal revenue lies below demand and is sloped negatively.
 - d. **Long-Run** Limited entry in a monopolistic competition market allows the entity to earn a normal profit. Price exceeds marginal cost, so there is an under-allocation of resources. Price is higher and output lower than in a competitive market, but generally price is lower and output higher than in a monopoly.
 - (1) **Waste** Entities produce less than the ideal output. The market has too many entities that are too small.
 - (2) **Foreign Competition** Foreign competition tends to offset monopolistic behavior.
4. **Oligopoly** An oligopoly is a market or industry dominated by a small number of sellers that can greatly influence price and other market factors. Oligopoly firms often make decisions based on how they think other firms will act. Cell phone service providers are an example of an oligopoly.
- a. **Measures** The Herfindahl index and concentration ratios measure industry concentration and are used to identify potential oligopolies.
 - b. **Game Theory** The high degree of interaction between oligopolistic competitors makes an oligopoly difficult to analyze. Game theory is the study of strategic decision making, is mainly used in economics, political science, and psychology to understand the logical side of decision science. Game theory can assist in understanding how an oligopoly might behave in the marketplace.
 - c. **Price Leadership** Price leadership occurs when a major firm in an oligopoly announces a price change and other market members match it. Within a geographical area, newspapers often form an oligopolistic market, evidenced by price leadership.
 - d. **Cartel** A cartel is a group of oligopolistic firms intentionally joining to fix prices. This practice is illegal within the United States. OPEC (Organization of Petroleum Exporting Countries) is an example of a cartel, although it has varying success at enforcing its “fixed” prices.

Exercise 2.1 - Oligopoly Behavior

Which of the following concepts can best be used to understand oligopolistic behavior?

- a. Concentration ratio
- b. Inter-industry competition
- c. Game theory model
- d. Herfindahl index

(c) An oligopoly is a market or industry dominated by a small number of sellers that can greatly influence price and other market factors. Oligopolistic firms often make decisions based on how they think other firms will act. The only choice listed which aids in understanding oligopolistic behavior is the game theory model.

Game theory is the study of strategic decision making, is mainly used in economics, political science, and psychology to understand the logical side of decision science. The Herfindahl index and concentration ratios measure industry concentration and can identify oligopolistic situations; they do not assist in understanding behavior. Inter-industry competition is competition among different industries, and is irrelevant to oligopolistic behavior (note that intra-industry competition would relate to oligopolistic behavior).

5. **Regulation** As monopolistic markets produce less goods at higher prices than competitive markets, federal anti-trust policy attempts to promote competition and curtail monopolies. The influence of any one entity (and therefore the monopoly power) tends to diminish as the number of entities in a market increases.

- a. **Arguments** for large entities include: (1) facilitation of innovation by having resources for research and development (R&D); and (2) economies of scale. Arguments against large entities include: (1) market power facilitates an unfair flow of wealth to large entities; (2) restrictions on expansion of output; and (3) little incentive for innovation, and hence for using resources for R&D.
- b. **Measurements** Several factors are used as a measure of monopolistic tendencies in a market. As these factors are characteristic of a monopoly, the greater incidence of these factors, the more that the market is assumed to be a monopoly.

Performance measures include market performance, the rate of technological growth, efficiency, and profit. Market structure measures include the number and size of competitors, distribution of buyers and sellers, ease of entry, and product differentiation. The **concentration ratio** is the percentage of a market's output quantity from its four largest entities.

c. **Taxes**

- (1) **Profit** A tax on profits doesn't change the relationship between revenue and cost, so optimal output is not affected on an entity basis or market level basis (assuming all markets have the same profit tax).
- (2) **License Fee (Lump-Sum Tax)** The fixed and average costs increase, but variable (marginal) costs remain the same. In the short-run, an entity's output remains the same. In the long-run, the increased fixed costs of a competitive market (no economic profit) will drive entities into a loss situation, so some entities will leave the market. Thus, the market price is higher and the output quantity is lower than without the license fee.
- (3) **Per Unit Tax (Sales Tax, Excise Tax, Value-Added Tax)** A per unit tax changes the price that consumers are willing to pay and the price that suppliers are paid. This disconnection decreases marginal revenue, and hence, the output quantity entities are willing to produce. Thus, the output quantity is lower than without the per unit tax.

- d. **Monopoly Encouragement** Several government actions are anti-competition. For instance, large, well-established entities tend to benefit disproportionately by government spending because those entities are familiar with, and have resources to bid on proposals for government contracts, as well as the size to handle large orders.

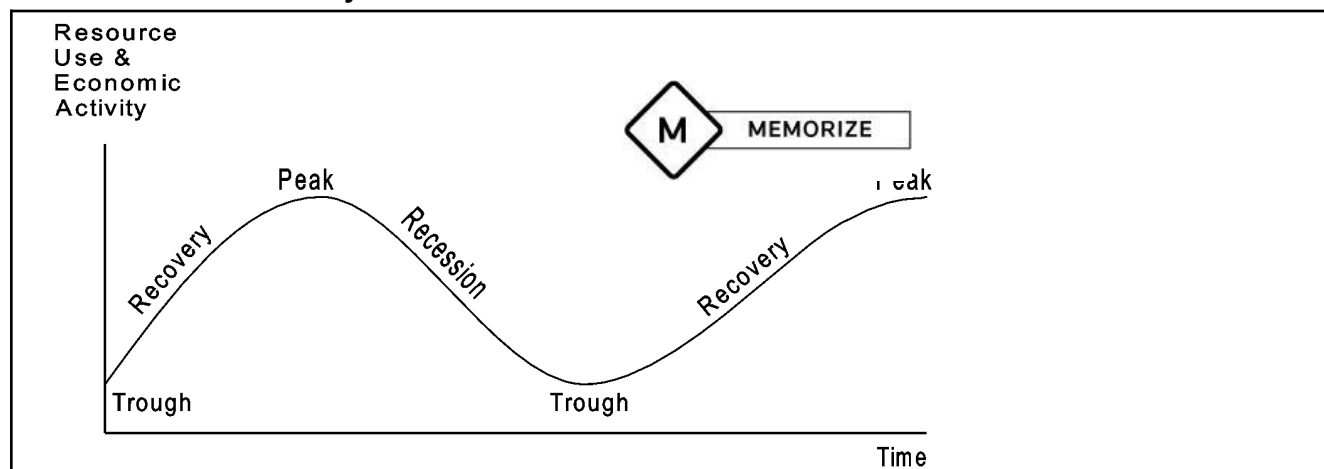
Other anti-competition actions include: patents, copyrights, trademarks, and other similar protection; price supports (such as for agricultural commodities); price ceilings (utility rates); minimum quality standards (such as for food transport); restrictions on foreign entities' access to domestic markets (tariffs or import quotas); costs of compliance with regulations (in effect, a tax); and licensing (radio stations or food handling).

6. **Merger Types** A merger is the union of two entities, generally leading to an increase in size of the resulting entity. When already large and powerful organizations attempt to merge, such as the big 5 health insurers, anti-trust watchdogs stop the process.
 - a. **Vertical** A vertical merger describes mergers along a supply value chain, for example, a car manufacturer purchasing a tire company. The tire operations will contribute to the success of the vehicle.
 - b. **Horizontal** A horizontal merger describes the merger of two entities that are competitors or near-competitors, for example, two software start-ups that both produce data-mining and analytics platforms for their clients. Usually, in a horizontal merger, both companies produce and sell similar products.
 - c. **Conglomerate** A conglomerate merger is the merger of two entities in two completely different markets, for example, a steel manufacturer and a computer manufacturer. A famous example of a conglomerate merger was between the Walt Disney Company, a multinational mass media company, and American Broadcasting Company (ABC), a commercial broadcast television network.

Business Cycles

Business activity waxes and wanes. These fluctuations commonly are referred to as cycles. Economists commonly include investment expenditures in the explanation of business cycles. Businesses or industries that perform much better than average during expansions and much worse than average during recessions are called cyclical; businesses or industry that perform better than average during recessionary phases and worse than average during expansionary phases are called counter-cyclical or defensive.

Exhibit 2.12 - Business Cycle



1. **Phases** A business cycle has four commonly recognized phases. Alternatively, a recovery-recession pair can be considered a cycle, with the trough marking the end of the recession and a peak marking the end of the recovery.
 - a. **Trough** A trough is characterized by low levels of economic activity and resource under-usage.
 - b. **Recovery** (expansion) is characterized by increasing levels of economic activity.
 - c. **Peak** A peak is characterized by high levels of economic activity and full usage of resources.
 - d. **Recession** (contraction) is characterized by decreasing levels of economic activity. During the recession stage, employment levels decrease and inventories frequently build up.

2. **Indicators** Business cycles usually vary in intensity and length. Also, the long-term trend of business activity may be increasing or decreasing; a trough or peak in one cycle may be higher or lower than the same point in a previous cycle. These factors make it difficult to determine changes in phases.

Economists attempt to forecast phase changes using several economic indicators. Indicators are selected because historically they had a high correlation with aggregate economic activity. In one way or another, many indicators are related to investment expenditures. Coincident indicators change at the same time as the activity that they indicate.

- a. **Leading** Indicators that occur before the phase change in the cycle are classified as leading indicators. These include consumer confidence survey results, as well as somewhat more objective measures.

- (1) **Average Hours Worked per Week by Manufacturing Workers** As employers foresee increased demand, they often have current employees work a few additional hours rather than recruit, hire, and train additional employees.
- (2) **Initial Unemployment Claims** A decrease in initial claims indicates that employers foresee increased demand and, thus, are retaining employees.
- (3) **Stock Prices** An increase in stock prices indicates that investors are willing to pay more for the higher returns that they expect, so this indicator often is based on the same factors as consumer confidence.
- (4) **Raw Material Price Change** Prices rise as demand increases, indicating manufacturers are producing more in response to demand from their customers. The employees who make these products will also have more money to spend, fueling demand for the goods they manufacture as well as others.
- (5) **Residential Building Permits** Housing permits indicate that building will start soon, fueling a demand for raw materials. New householders spend proportionately more than others furnishing their new dwellings, leading to increased demand for picture frames and appliances as well as lumber and plumbing supplies.
- (6) **Vendor Delivery Times and Unfilled Durables Orders** As demand increases, vendors have greater difficulty meeting customer requests from on-hand inventory, so delivery times may increase. A backlog of unfilled durable orders inspires new raw material orders and additional hiring for assembly lines as well as boosting consumer confidence of the employees who operate those lines.
- (7) **Money Supply Changes** An increase in bond prices indicates that investors are willing to pay more for the higher returns that they expect, so this indicator often is based on the same factors as consumer confidence.

An increase in bond prices is equivalent to a decrease in effective interest rates. With lower interest rates, additional investment in fixed assets and inventories is cheaper for producers and retailers.

- b. **Trailing** Indicators that occur after the phase change in the cycle are classified as trailing or lagging indicators. These include the average prime rate charged by banks; the unit labor costs in the private business sector; and the average duration of employment, in weeks.

3. **Accelerator Theory** The accelerator theory states that capital investment is related to the rate of change in national income. It assumes that a given level of capital investment corresponds to a given level of output.

- a. Given an economy producing at capacity and a subsequent increase in demand, an increase in capital investment is the only way to meet any increased demand. The demand for capital goods creates a secondary increase in demand, which can only be met with another increase in capital investment. This secondary increase in demand produces a tertiary increase in demand, and so on.

- b. The process of investing to meet demand continues to accelerate. Once a recovery is started, it creates a momentum that continues for some time.

Classical Economics

Classical economic theory holds that an economy is in equilibrium at full employment; the economy generates and maintains full employment over the long run without artificial (government) intervention due to price and wage flexibility.

1. **Assumptions** If people are unemployed, wages experience downward pressure until all people who want to work at the prevailing rates are employed. Therefore, unemployment doesn't exist in the long run. Similarly, if investors have capital that is not invested, returns on capital experience downward pressure until all people who want to invest at the prevailing rates are invested.
 - a. Flexible prices (and wages) allow self-correcting of shortages and surpluses in product (or labor) markets.
 - b. Flexible interest rates allow self-correcting equilibrium of savings vs. investments.
 - c. An increase in money leads to an increase in aggregate demand.
2. **Demand for Money** The impact of money on the level of national income (aggregate demand) usually is stated as $MV = GDP$ or $MV = PQ$, where M = money supply; V = income velocity of money; GDP = gross domestic product; P = aggregate price index; and Q = aggregate output index. Velocity is the average turnover of the money supply in transactions that comprise national income.
3. **Fiscal Policy Implications** A debt-financed increase in government spending has little effect on demand because it is offset by diminished spending in the private sector. An increase in government spending, if financed by printing money, will impact demand. First, the larger quantity of money will increase demand. Secondly, the increase in government spending will lead to a velocity increase, leading to increased demand.

Keynesian Economics

Keynesian economic theory holds that an economy can be in equilibrium at less than full employment. Keynesian economics focuses on spending and fiscal policy (governmental expenditures, taxes, etc.) as determinates of economic activity. An example is the Great Depression and FDR's "New Deal" to pull the economy back up through increased government spending.

1. **Assumptions**
 - a. **Downward Price Inflexibility** Price flexibility doesn't ensure full employment because wage rates are not lowered readily.
 - b. **Savings vs. Investment** Understanding changes in levels of income is dependent on distinguishing between savings and investment functions.
 - c. **Equilibrium** Full employment is not necessarily an attribute of equilibrium.
2. **Production Possibility Frontier (PPF)** The PPF is all the possible combinations of output, with all other factors held constant. In the short run, national income is limited by the amount of resources. Production at the PPF implies full employment and optimal resource use. If production is at the PPF, no additional output can be produced in the short run, because all the resources are being used. Different combinations of goods can be produced, but these combinations will be at or below the PPF.
 - a. **Shift** With an outward shift in the PPF, commonly called economic growth, a nation can have more output. Change in the PPF are caused by changes in resources (land, labor, capital, etc.) or technology.
 - b. **Inflation** If production is at the PPF boundary and demand increases, consumers will bid up prices of goods.

3. **Savings** Loosely speaking, savings are income that are not consumed. Income typically is regarded as the major determinant of savings, but other factors play a role. A low savings rate causes a scarcity of capital for businesses.

Propensities to consume and save commonly are compared among different groups or time periods. Because income can either be spent or saved, the total equals 100% ($MPC + MPS = 100\%$ and $APC + APS = 100\%$).

Exhibit 2.13 - Propensities to Consume and Save

<u>Propensity</u>	=	<u>Numerator</u>	/	<u>Denominator</u>
Average propensity to consume (APC)	=	consumption	/	income
Average propensity to save (APS)	=	savings	/	income
Marginal propensity to consume (MPC)	=	change in consumption	/	change in income
Marginal propensity to save (MPS)	=	change in savings	/	change in income

- a. **Price Expectations** Consumer expectations about price increases or future shortages cause an increase in current purchases to avoid higher prices or to guarantee access. Inflation impairs the future purchasing power of money saved today.
- b. **Interest Rates** Rising interest rates tend to cause increased savings and decreased consumption. Income taxes act as decreases in interest rates.
- c. **Liquid Assets Quantity** People with many liquid assets tend to increase consumption at every level of disposable income.
- d. **Credit** People with large debt loads tend to reduce their consumption.
- e. **Attitude/Incentive** People with a belief in the virtues of saving for tomorrow tend to have lower consumption than those who "spend for today." Social safety nets (such as Medicare, Social Security, unemployment insurance, and disaster assistance) may reduce incentive to save for retirement or contingent emergencies.

Estate and property taxes also may reduce incentives to save rather than consume. Note that the attitude attribute used to explain savings behavior is comparable to the role of the preference attribute used to explain demand.

- f. **Durable Goods Quantity** With a large number of durables, consumption at a high level doesn't translate into spending. For instance, once having bought a washing machine, the consumer doesn't spend any more income (cash outflow) on washing machines for the 20-year life of the machine and yet still uses it to clean clothes (consumes the washing machine) for that period.

4. **Investment** commonly is divided into three components: residential construction, inventories, and plant & equipment. Depreciation (sometimes called **capital consumption allowance**) is a negative component of plant & equipment investment.

- a. **Expected Profitability** A high technology growth rate tends to increase investment, because innovations often are profitable. Real (nominal less inflation factor) interest rate declines tend to increase investment, as new projects have a lower interest cost. A high capital goods (equipment to make goods) stock quantity tends to decrease investment, as entities have no need to spend more to make product.

Higher acquisition and maintenance costs decrease investment, as they lower the investment's expected profitability. Several government actions can change investment: effectively changing the acquisition costs (changing depreciation allowed in determining taxable income); changing tax rates; changing consumers' purchasing preferences or propensity to spend through tax code changes; or increasing government purchases of specific goods or overall quantity.

- b. **Categories** Induced investments increase or decrease to correspond to expansion or contraction of economic activity. Autonomous investments are made due to expected profitability without regard for national income levels. By definition, autonomous investments are constant regardless of expansion or contraction of economic activity.

- c. **Volatility** Investment holds central importance in income determination theory because it tends to be more volatile than other elements of private spending. This volatility is due to capital durability, technology states, expectations, and the acceleration principle.

Repairs can increase the lifespan of capital equipment; this allows flexibility in the replacement schedule. Technological breakthroughs are infrequent and erratic; plus, they usually promote large amounts of investment. Changes in expectations radically alter expected profits. The acceleration principle refers to the disproportionate fluctuation in inventory and capital equipment investments due to changes in sales volume.

5. **Multiplier Coefficient** Any increase in autonomous investment, consumption, or government spending results in a multiplied increase in national income. The same income is spent several times. The impact of this effect is determined by the marginal propensity to save (MPS).

Example 2.4 - Multiplier Effect

The marginal propensity to save is 30%. Clark Company increases its autonomous investment by \$100,000.

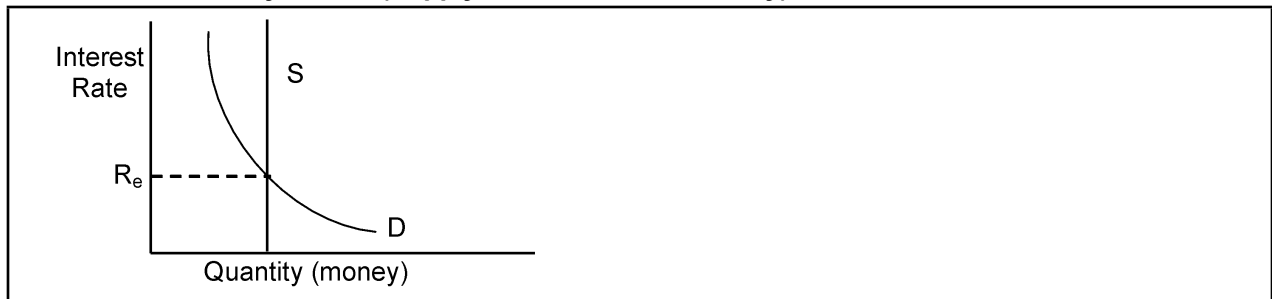
Required: What is the increase in national income?

Discussion: The \$100,000 that Clark spends is income to other entities. These entities (on average) spend $\$100,000 \times 70\% = \$70,000$ and save \$30,000. This \$70,000 is still income to other entities that spend $\$70,000 \times 70\% = \$49,000$ and so on.

Solution: Increase in national income = $\$100,000 + \$70,000 + \$49,000 + \dots = 1 / 0.3 \times \$100,000 = \$333,333$ (rounded).

- a. **Formula** The multiplier coefficient equals $1 / \text{MPS}$. The change in national income (NI) due to a change in spending (SP) is the multiplier coefficient times the change in spending. Algebraically, change in NI = $(1 / \text{MPS}) \times \text{change in SP}$.
- b. **Direction** As the change in spending can be either positive or negative, the effect can be positive or negative. In other words, a negative change in spending can result in a multiplied negative effect on national income.
6. **Model of Closed Economy** In a simple economy without a government, a money market, or international trade, equilibrium income occurs when aggregate savings equals aggregate investment. In other words, equilibrium income occurs when aggregate demand (consumption and investment) equals aggregate supply (measured by production).
7. **Model of Closed Economy with Government** Adding government actions to a simple economy, equilibrium income occurs when aggregate savings plus taxes equals aggregate investment plus government expenditures (assuming a balanced budget). In other words, equilibrium income occurs when aggregate demand (consumption, investment, and government expenditures) equals aggregate supply (production plus taxes).
- a. **Tax Multiplier** Changes in taxes affect the economy through consumption changes. The tax multiplier coefficient equals $-\text{MPC} / \text{MPS}$. The change in national income (NI) due to a change in taxes (T) is the multiplier coefficient times the change in taxes. Algebraically, change in NI = $(-\text{MPC} / \text{MPS}) \times \text{change in T}$.
- b. **Budget Surplus (Deficit)** A balanced budget means that taxes equal government expenditures. When there is a surplus or deficit, this assumption no longer holds true.
8. **International Trade** In a model with international trade, net exports add to aggregate demand and net imports reduce aggregate demand.
9. **Money Market** The supply of, and demand for, money determine the interest rate. The nominal interest rate is the real rate plus an inflation premium or deflation discount. Historically, the real rate ranges from approximately 2% to 4%.

Exhibit 2.14 - Money Market (Supply and Demand for Money)



- a. **Inflation Premium/Deflation Discount** Any expected rate determines the size of the inflation premium (or deflation discount) and hence influences the nominal interest rate.
- b. **Liquidity Preference** Demand for money is influenced heavily by liquidity preference, which depends on motives for holding money. In the illustration in Exhibit 2.14, supply (S) is fixed in the short-run (set by monetary authorities); income is assumed to be fixed; and the equilibrium interest rate (R_e) is where the supply and demand curves intersect.
 - (1) **Transaction Motive** Held to facilitate day-to-day business transactions.
 - (2) **Precaution Motive** Held for contingencies. For instance, an independent contractor ordinarily would have a higher liquidity preference than a salaried employee, all else being equal.
 - (3) **Speculative Motive** Held while waiting for more favorable investment conditions to arise. For instance, the holder doesn't buy bonds now, expecting interest rates to rise and bond prices to fall. Conversely, at high interest rates, entities hold less cash.
- c. **Supply** is set by monetary authorities. In the United States, the Federal Reserve Board (the Fed) is the monetary authority. Varying the supply of money alters the interest rate. In Exhibit 2.14, a shift in the supply curve to the right (an increase in the money supply) will increase the quantity demanded.

Other Theories

Critics of Keynesian economics maintain that focus on spending and fiscal policy overlook the impact that the money supply and credit have on economic activity.

1. **Monetarist Theory** A steady, restrained growth of money supply is more significant than fiscal policy on economic activity, inflation, and employment.
 - a. **Inflation** In the long run, excessive increases in the money supply cause inflation. Inflation can be controlled only by restricting money supply growth.
 - b. **Multiplier Effect** Fiscal policy is too blunt an instrument to tinker with most (small) economic fluctuations. Due to imperfections in measuring business cycle changes, fiscal policy actions intended to ameliorate business cycle changes are initiated too late to have the desired impact. Fiscal policy impacts an economy already finding its own equilibrium, swinging the pendulum too far in the other direction, acting as a magnifier rather than a dampener.
2. **Supply-Side Theory** Cutting taxes stimulates work, savings, and investments and restores incentive to the economy.
 - a. A progressive tax structure is a disincentive to increased investment. Cuts in taxes will produce a recovery due to an increase in aggregate demand and increased motivation for investment. Supply-side theory holds that increased income would result in the same aggregate tax revenues despite the lower tax rates, so spending cuts are not needed.
 - b. Incentives for investment and production provide a stronger economy than fiscal policy of wealth redistribution (from rich to poor).

3. **Neo-Keynesian Theory** A combination of Keynesian and monetarist economic theories. Fiscal policy influences economic activities, but excessive monetary growth leads to inflation. At some unemployment levels, money supply growth primarily leads to increases in output along with some inflation.

Money

Money is a medium of exchange, a standard of value, and a store of value. A broad definition of money is anything accepted as an exchange medium, i.e., parties accept it in trade who would not purchase the medium for their own use, but because it is recognized as a common medium of exchange. For instance, in American colonial times, some school teachers were paid in tobacco. Immediately after World War II, chocolate was a medium of exchange in some parts of Europe. An example today would be Bitcoin.

1. **Definitions** “Narrow” Money is abbreviated as M_1 . The Fed’s monetary growth targets focus on M_2 . M_1 and M_2 are the most commonly referenced measures. “Near” Money includes items such as short-term government securities, non-checking savings deposits, and small time deposits.

Exhibit 2.15 - Components of Various Definitions of Money

Money Components	M_1	M_2	M_3
Currency (coins and bills)	√	√	√
Checking deposits	√	√	√
Non-checking savings		√	√
Small (less than \$100,000) time deposits		√	√
Other time deposits			√

2. **Federal Reserve Board** The Federal Reserve Board (the Fed) controls the money supply, supervises the banking system, facilitates check clearing, serves as the Federal government’s fiscal agent, and holds deposits for member institutions (banks). Each bank must have minimum reserves, calculated on a daily basis. Banks with excess reserves lend money overnight to banks with shortfalls. These overnight loans are called federal funds and the interest rate on these loans is called the federal funds rate.
3. **Monetary Policy** Monetary policy is policy intended to control the money supply. Control of money supply growth is deemed essential to control inflation, spending, and credit availability. Stable interest rates and monetary control are mutually exclusive goals. The Fed focuses sometimes on interest rates and sometimes on money supply.
 - a. **Open-Market Operations** The primary means of monetary control is the purchase and sale of government debt (Treasury Bonds).
 - (1) **Sale** Sales decrease the money supply by removing money from circulation.
 - (2) **Purchase** Purchases increase the money supply by adding money to circulation.
 - b. **Discount Rate** Member banks may borrow from the Fed at a rate known as the discount rate. Lowering the discount rate encourages borrowing and increases the money supply. Conversely, raising the rate decreases the money supply.
 - c. **Reserves** The legal reserve is the percentage of customers’ deposits that banks must keep. The mechanism of changing the reserve requirement is used rarely because it is so powerful.
 - d. **Credit Controls** The Fed may require a minimum down payment on certain purchases. When this minimum applies to securities, it is called a margin requirement. Raising the down payment percentage decreases the money supply.
4. **Lag** Effective monetary policy is complicated by inherent delays. The time that it takes a change in the business cycle to be recognized is recognition lag. Administrative lag is the time for the Fed to implement a change (for example, to buy or sell government debt).

The time that it takes the economy to react to the Fed’s changes is called operational lag. By the time these lags pass, the economy already may have exited the phase that initiated the Fed’s action. Thus, instead of mitigating the effects of one phase of the business cycle, careless Fed action could magnify the effects of the next phase inadvertently.

Inflation and Deflation

Inflation is an increase in the general level of prices. The general price level is related inversely to the purchasing power of money. Hyperinflation is a situation where prices increase at a dramatically fast rate. Deflation is a decrease in the general level of prices for goods and services and in the level of interest rates.

Exercise 2.2 - Inflation Adjustment

A hospital is comparing last year's emergency rescue services expenditures to those from 10 years ago. Last year's expenditures were \$100,500. Ten years ago, the expenditures were \$72,800. The CPI for last year is 168.5 as compared to 121.3 ten years ago. After adjusting for inflation, what percentage change occurred in expenditures for emergency rescue services?

- a. 38.0% increase
- b. 13.8% increase
- c. 0.6% decrease
- d. 18.1% decrease

(c) The inflation adjustment factor = $\{(last\ year's\ CPI)\ 168.5 / 121.3\ (the\ CPI\ ten\ years\ ago)\} = 1.38912$. The expenditures ten years ago adjusted for inflation are $\$72,800 \times 1.38912 = \$101,128$. The inflation-adjusted percentage change in expenditures is $(\$100,500 - \$101,128) / \$101,128 = 0.6\%$ decrease.

1. **Impact** Because holding money during an inflationary period results in an economic loss, inflation discourages savings behavior.
 - a. **Restricts Lending** Usury laws prohibit charging interest over a stated rate. When the inflation rate is high, the stated rate minus the inflation premium may be less than the real interest rate. In this circumstance, credit becomes tight.
 - b. **Relationships Strained** The uncertainty of inflation is a further complication in negotiating long-term contracts. Contracts that were reasonable when signed may become onerous for some of the contracting parties, encouraging breaches.
 - c. **Wealth Redistribution** Inflation arbitrarily redistributes wealth without regard for market operations or social goals. Debtors repay loans in less valuable dollars, reducing the value of the creditors' assets. Pension plans pay pensioners defined benefit pensions in less valuable dollars, making pensions worth less.
2. **Measurement**
 - a. **Consumer Price Index (CPI)** A comparison of the price of items in a "typical" shopping cart to a base value over time.
 - b. **Wholesale Price Index (WPI)** A comparison of the price of items in a "typical" shopping cart at wholesale quantities to a base value.
 - c. **GDP Deflator** A factor that includes all production of an economy at the price used for the GDP calculation.
3. **Cost-Push Theory** Inflation is caused when increased product costs are passed onto consumers in the form of higher prices. Labor unions are considered the primary source of these costs. This theory is of decreased significance with less powerful unions because of fewer manufacturing workers (proportionate to service industry workers) and membership declines.
4. **Demand-Pull Theory** Inflation is caused by excess aggregate demand for goods and services. Usually excess aggregate demand is deemed to be due to expansionary fiscal policy (additional government expenditures).

Unemployment

Full employment theoretically exists when all individuals willing to work at market wages are employed at tasks that use their skills. Unemployment results in foregone output; its economic costs can be measured in terms of the gap between potential and actual GDP. Less measurable are other costs, including degradation associated with the loss of meaningful occupation and lost income on both an individual and societal level.

1. Unemployment

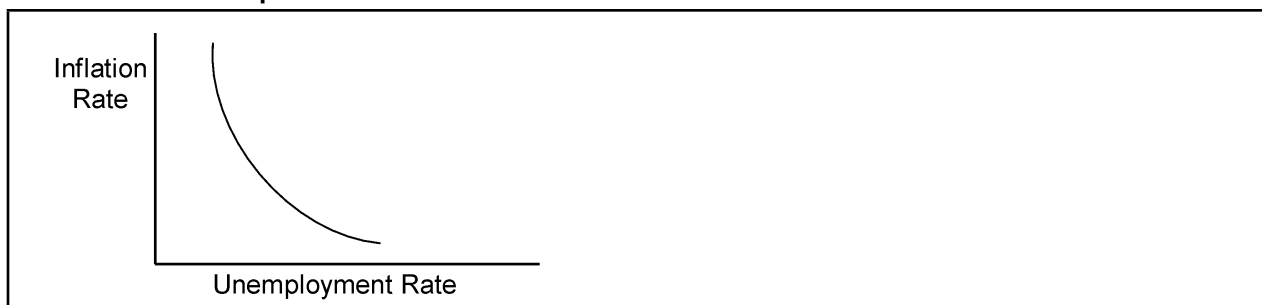
- a. **Frictional** unemployment is due to labor market mechanics. From a policy standpoint, job turnover results in some unemployment in a “fully” employed condition; a 3% unemployment rate may be “full” employment for an economy.

In other words, some individual will be considered ‘unemployed’ between being laid off by employer A and learning about and being hired by employer B, even if employer B has a job opening when the individual is laid off by employer A. This is the most common type of unemployment.

- b. **Structural** Aggregate demand is equal to aggregate labor supply, but the nature of the supply doesn’t match the nature of the demand. For example, unemployed individuals have machinist skills when employers have unfilled engineering jobs. Mismatches can occur in skills, occupation, industries, or geographic location.
- c. **Cyclical** Aggregate demand is less than aggregate labor supply during low points in the economic cycle.

2. **Inflation vs. Unemployment** The Phillips curve attempts to illustrate the relationship between inflation and unemployment.

Exhibit 2.16 - Phillips Curve



- a. **Historical** Historically, economic theory holds inflation and unemployment are related inversely.
Inflation Unemployment
- b. **Modern** economic theory holds there is little relationship between inflation and unemployment; in the long run, the frictional rate remains constant regardless of the inflation rate and the Phillips curve is applicable only in the short run. (In this context, *short run* may last for years).

Government

With the Full Employment Act of 1946, the US Federal government justified entering a market in which market forces do not allocate resources efficiently.

1. **Fiscal Policy** Government actions (taxes, tax credits, expenditures, etc.) intended to result in economic goals (such as a certain national income level, certain income distribution, acceptable unemployment levels, etc.) are referred to as fiscal policy. Other government actions may have an impact on the economy unintended by legislators that is nonetheless foreseeable by economists.
2. **Consumer Goods Spectrum** Private goods are goods for which consumption is able to be traced to one entity. Consumers of private goods purchase as much of a good as they want, with different people in the same community able to purchase differing quantities and levels of quality.

Public goods are goods for which benefits cannot be excluded readily from part of a community. Also, the good itself is not divisible for practical purposes. The decision of quantity and quality for public goods must be decided at a community-wide level.

3. **Production Possibility Frontier** Just as for any other two goods, public and private goods can be plotted to form a production possibility frontier. Publicly treated water is likely close or at the PPF, whereas treated water from small private systems would not be on the PPF.

4. **Allocation** Due to the nature of public goods, there may be inefficiencies with regard to consumption. Because a public good cannot be excluded from certain individuals, people may receive the benefit of the good without paying for it. In other words, some may just get a “free ride.”
5. **Taxation** Taxes often are imposed based on two principles: the ability to pay (a progressive tax structure) and the derived benefit (fee-for-service, such as property taxes paying for trash removal). Unlike customers paying fees to a private entity, taxpayers might not get direct benefits from their expenditures and taxes are not optional.
- a. **Classification** Taxes may be classified in several ways, including the focus on ability to pay or the manner of payment.
- (1) **Direct** taxes include sales taxes, income taxes, and the property taxes that property owners pay. For example, income taxes are paid by (or withheld from) an entity directly.
 - (2) **Indirect** taxes are hidden in foregone income or compliance costs. Although the employer’s share of Social Security and unemployment taxes are paid by employers, this is an indirect tax on employees; employers base the decision to hire employees on the whole compensation cost, including what is required to be paid in Social Security taxes.
 - (3) **Proportional** Entities pay the same proportion regardless of income (or wealth).
 - (4) **Progressive** Entities with higher income (or wealth) pay more tax as a proportion of income (or wealth) than entities with low income (or wealth).
 - (5) **Regressive** Entities with higher income (or wealth) pay less tax as a proportion of income (or wealth) than entities with low income (or wealth).
- b. **Incidence** Taxes may be paid by one entity, but borne by another. For example, landlords may increase rents to cover property taxes. Corporations may pass corporate income and property taxes and excise taxes to consumers with the higher prices they charge for goods. Social Security, unemployment, and other taxes paid by employers are borne indirectly by the employees; presumably wages would be higher if the employer didn’t have to pay the taxes.
- c. **Types**
- (1) **Income** taxes are levied against taxable income. In the United States, the rate structure is progressive, but due to various exclusions, credits, and deductions in calculating taxable income from economic income, the end result (tax paid as a percentage of economic income) is not necessarily progressive.
 - (2) **Property** taxes are levied against wealth, not income. Because entities that rent typically pay property taxes indirectly, taxes on real property may not be as progressive as they first appear. Taxes on property often have exclusions (such as homestead value up to a specified amount or retirement funds) and progressive rates.
 - (3) **Sales** Because sales taxes are levied against income that is spent, rather than saved, sales taxes fall proportionately heavier on entities that spend most of their income. While this may be said to encourage saving, entities with low levels of income may have enough only for essentials and little left for savings. Thus, sales taxes generally are regarded as regressive.
 - (4) **Wage** Social Security taxes are a common example of wage taxes. Social Security taxes are regressive, because after a threshold amount is reached, the whole tax is not levied for the remainder of the year. Indirect taxes such as unemployment taxes also may be considered wage taxes.
 - (5) **Value-Added** A value-added tax (VAT) is common in other industrial nations and considered occasionally in the United States. Each entity in a production and distribution chain pays tax on the difference between its sales and purchases. Consumers ultimately bear the incidence of a VAT.

Under a VAT structure, all entities pay taxes, regardless of income. A VAT tax is held to encourage savings because only consumption is taxed (not consumption and savings, as is the case with an income tax).

6. **Debt Financing** When taxes do not cover expenditures, governments borrow. Debt holders differ from taxpayers in that their participation cannot be mandated.
 - a. **Timing** Taxes result in contemporaneous payment for expenditures. Debt financing extends payment for expenditures over time. If debt-financed expenditures have no future benefit, intergenerational inequity results. Intergenerational inequity is when one generation pays for a different generation's benefits.
 - b. **Market Effect** Government bonds compete with corporate bonds (and to a lesser extent preferred and common stock) changing the quantity supplied. When there already is robust economic activity, this may increase interest rates and reduce corporate borrowing and investment. When there is little economic activity, additional spending shifts aggregate demand which increases national income and encourages investment.
7. **Governmental Transfer Payments** Transfer payments (such as welfare, unemployment compensation, and Social Security) alter the distribution of income to the population.

Globalization

Introduction

Economic globalization is the integration and interdependence of national, regional and local economies through cross-border movement of goods, services, technologies, information, labor, and capital. Economic globalization can be viewed as either a positive or a negative phenomenon. Effects include shrinking family size, immigration to larger cities, and gender role transformations. Some of the other common effects include:

1. **Positive Effects** Increased growth rate of real GDP per capita; decrease in global poverty through spread of free trade and capitalism; increase in educational and health levels; spread of global democracy and military cooperation; and environmental cooperation. Technology has helped develop the positive effects of globalization.
2. **Negative Effects** Increased unemployment due to automation in manufacturing and agriculture (reduces the need for unskilled, uneducated, local labor); spread of disease; capital flight (assets and/or money rapidly flow out of a country as a reaction to increases in taxes, tariffs, labor costs, etc.); increased economic inequality; and cultural assimilation (exposure to different languages, technology, music, cultures, etc. can have a detrimental effect of native cultures); and strain on local and family relationships.
3. **Measuring Globalization** Measurement of economic globalization looks at trade, Foreign Direct Investment (FDI), portfolio investment, and income. There are also indices which attempt to measure globalization in more general terms, such as political, social, cultural, and even environmental aspects of globalization. For example, the KOF Index measures the three main dimensions of globalization: economic, social, and political.

Direction of Trade

When countries specialize in the goods that they produce most efficiently and exchange with other countries, assuming free trade, pure competition, and minimal shipping costs, more is produced than if each country tries to be self-sufficient. Total output is maximized when each country specializes in the product in which it has the greatest comparative advantage.

1. **Absolute Advantage** Absolute advantage for a good exists when the cost of producing that good in one country is less than the cost of producing that good in another country.

Example 2.5 - Absolute Advantage

The Pan Kingdom and Neverland each produce only food and cloth. They have no other trading partners, no trade restrictions, and no transportation costs. In the Pan Kingdom, 1,000 units of input (labor, land, and capital) produces 100 bushels of food or 20 bolts of cloth; this comes to 10/bushel or 50/bolt. In Neverland, 1,000 units of input produces 125 bushels of food or 16 bolts of cloth; this comes to 8/bushel or 62.5/bolt.

Required: Which country has an absolute advantage for producing cloth and which for producing food?

Solution: Neverland has an absolute advantage in producing food and the Pan Kingdom has an absolute advantage in producing cloth; it is cheaper to produce food in Neverland than it is in the Pan Kingdom and it is cheaper to produce cloth in the Pan Kingdom than in Neverland.

Observation: If each country produced half of these goods, with 1,000 units of input, Neverland would produce 62.5 bushels of food and 8 bolts of cloth and the Pan Kingdom, would produce 50 bushels of food and 10 bolts of cloth; this totals 112.5 bushels of food and 18 bolts of cloth. If each country specializes in the good in which it has a comparative (and an absolute) advantage, Neverland produces 125 bushels of food and the Pan Kingdom produces 20 bolts of cloth. No other combination results in more goods produced.

2. **Comparative Advantage** Comparative advantage for a good exists when the opportunity cost of producing that good is less than the cost of producing other goods in the same country, compared to another country.

Example 2.6 - Comparative Advantage

Country\Good	Input	Cotton (Bales)	Input	Wheat (Bushels)
Southland	3	30	2	60
Northland	3	15	2	40
Total	6	45	4	100

Required: Determine what each of the countries should produce

Determining Which Country Should Produce Cotton

Southland produces 10 bales of cotton per unit of resource and 30 bushels of wheat per unit of resource

Southland's opportunity cost of producing cotton is 3 (30/10) bushels of wheat (per bale of cotton)

Northland produces 5 bales of cotton per unit of resource and 20 bushels of wheat per unit of resource

Northland's opportunity cost of producing cotton is 4 (20/5) bushels of wheat (per bale of cotton)

Southland has the lowest opportunity cost of producing cotton ($3 < 4$) and, therefore, it should produce cotton.

Determining Which Country Should Produce Wheat

Southland produces 10 bales of cotton per unit of resource and 30 bushels of wheat per unit of resource

Southland's opportunity cost of producing wheat is $1/3$ (10/30) bales of cotton (per bushel of wheat)

Northland produces 5 bales of cotton per unit of resource and 20 bushels of wheat per unit of resource

Northland's opportunity cost of producing wheat is $1/4$ (5/20) bales of cotton (per bushel of wheat)

Northland has the lowest opportunity cost of producing wheat ($1/4 < 1/3$) and, therefore, it should produce wheat.

3. **Factor Endowment** The Heckscher-Ohlin theory states that regional differences in efficiency occur because of difference in supply of production factors: land, labor, and capital. For instance, farming is favored by a slowly moving river as a reliable irrigation source, but manufacturing is favored by a swiftly moving river as a power source.

Factors generally are classified in the following categories: climatic (weather) and geographical (land) conditions; human capacities (labor); supply and nature of capital accumulation; and proportions of resources. Some economists also include political and social environment (legislated minimum wages and tax credits) and technological environment as factors; these factors were ignored or assumed constant in earlier models. The Heckscher-Ohlin theory assumes the following.

- a. **Product Classification** The theory assumes a given product always uses the same proportion of inputs. This may not be the case. For instance, cows can be milked by hand (a labor-intensive process) or by machine (a capital-intensive process).
- b. **Technology** The theory assumes a given technology is globally available or present. The **Leontief paradox** notes that technology-intensive goods produced by skilled labor may be exported by a labor-poor region to a labor-intensive region at a lower price than the same good produced locally by a labor-intensive process.
- c. **Transportation Cost** The theory assumes transportation costs are minimal. This assumption obviously is contradicted by some products that have prohibitively high shipping charges, such as slate, gravel, and other stone for building construction.
- d. **Consumer Taste** The theory assumes the impact of consumer taste is minimal. Consumer taste plays a considerable role in trade, often resulting in the reverse of factor endowment theory.

For example, wine is imported to the United States from France, although land for vineyards is more plentiful in the United States than France.

The Heckscher-Ohlin theory, as related to international trade, generally states that one should export goods that use its relatively abundant factor (e.g., labor) more intensively, and import goods that use its scarce factors (e.g., capital) intensively.

4. **Specialization** Production factors and efficiency determine which goods countries will export and import. Countries tend to export goods in which they have comparative advantages and import goods in which they have comparative disadvantages.

For instance, in a model with only labor, land, and capital as production factors, countries with a relative abundance of labor will import capital-intensive and land-intensive goods and export labor-intensive goods.

- a. Capital-intensive goods are those requiring a relatively high level of investment, for example, a construction plant to produce aircraft. Technologies that mass produce products or services, as opposed to manual labor, are examples.
 - b. Labor-intensive goods are those requiring a relatively high level of labor, for example, the labor involved in making computer programs. Note that this refers to the labor involved in making programs and applications *not* the usage of these applications. Cheap but effective programmers from India are examples.
 - c. Land-intensive goods are those requiring a relatively high level of land, for example, the land involved in beef production. Vineyards for wine are examples as well.
5. **First Mover Theory** The first mover theory is that entities that first enter a market will dominate it, as late-comers will not be able to capture market share away from the standard-setting pioneers who are able to achieve economies of scale most readily. Subsequent studies indicate that the original research, based on surveys of surviving firms, did not consider the true pioneers of some markets: entities no longer in business when the survey was performed. Example: Uber vs other rideshare companies.
6. **Overlapping Demand** The Linder theory of overlapping demand contends that while factor endowment (focusing on supply) explains raw materials trade, it doesn't adequately explain manufactured goods trade.

The Linder theory (attending to demand) states that as consumers' tastes depend heavily on their income, per-capita income of a country will influence demand, but doesn't predict the direction of trade. Because local entities will produce goods for local demand, the nature of local manufacturing will depend on local per-capita income. Local entities also will make their goods available for export.

The theory also states that countries with similar per-capita income will have greater trade than between countries with dissimilar per-capita income, due to consumers' different tastes. Thus, the United States and Germany both import cars from each other, with consumers perceiving differences between Ford Mustangs and Volkswagen New Beetles.

Trade Barriers

Usually, the effect of trade barriers is to keep resources (land, labor, capital, etc.) in less efficient protected industries rather than move the resources to relatively efficient industries. Real wages and total world output do not reach full potential. General Agreement on Tariffs and Trade (GATT) is an international agreement to reduce trade barriers.

1. **Purpose** Trade restrictions exist due to many factors. An exporting country may allow conditions that are not permitted in a country that would otherwise import goods from that exporting country. For instance, the exporting country may have no health care, minimum safety standards, minimum wage, or minimum age requirements for workers or permit pollution or other practices banned in a country that has a trade barrier.
 - a. **Barrier Support** Competition costs are obvious (direct and concentrated). For instance, it is noticeable when people lose jobs or plants are closed. Special interest groups are established readily with a concentration of publicly known stakeholders, resulting in groups that are strong, well organized, and effective at lobbying for protection.
 - b. **Free Trade Support** Competition benefits are less obvious (marginal and scattered) and often delayed (lower prices, better products, more export industry jobs). For instance, several dispersed entities may each export a little more product, leading to widespread, but individually small, increases in hiring or orders of components from several different suppliers.
2. **Self Sufficiency** Countries may avoid free trade for crucial goods due to reasons such as economic security (possible labor strikes in supplying countries) and national defense (possible political upheaval in other countries or tensions between countries) as well as national pride and supply disruption avoidance (possible transportation disruptions due to weather).

For instance, an island nation may grow some food on a long-run basis, even though it would be cheaper to import it. The economies of countries exporting primarily raw materials are particularly sensitive to fluctuations in the business cycle; these countries may have some local production that evens out employment.

- a. **Incubate Infant Industry** One argument against free trade is that a country has a comparative advantage in the long run, but a temporary disadvantage. Infant industries may seek temporary protection from imports until labor is trained, production techniques are perfected, and economies of scale obtained. In practice, an industry will be slow to admit its maturity. While protected from foreign competition, an industry has little reason to improve efficiency.
- b. **Protect Local Jobs from Cheap Foreign Labor** One argument against free trade is that a country with minimum legislated wages and benefits will be flooded by goods from countries with wages below this minimum, unhealthy or unsafe working conditions and no benefits, putting local workers out of work.

In countries with high hourly wages, worker productivity tends to be higher because of superior employee training, management, and technology. These factors tend to make the labor cost per unit lower. Further, if imports are stopped or restricted domestically, exports will be stopped or restricted by other countries seeking the same sorts of protection; the local jobs involved in manufacturing those exported goods would then be eliminated.

- c. **Fair Competition Tariff** Proponents of the fair competition or scientific tariff argument hold that an import tariff that brings the cost of imported goods up to the domestic price levels the playing field for imports, eliminating an "unfair" advantage foreign producers have due to lower raw material costs, labor costs, etc. Given that some domestic entities have lower costs than others, the import tariff

would likely be set to align foreign prices with the prices of the domestic producer with the highest domestic cost.

This practice is similar to incubation, except it is permanent. The least efficient local producer has little incentive to increase efficiency, other local entities have exceptional profits, and efficient foreign entities are penalized; this could result in import tariffs (also called countervailing tariffs) by the foreign countries.

3. Control Strategies Some control strategies may backfire. For instance, imposing import quotas and tariffs may either reduce domestic imports or encourage the foreign country to institute quotas of its own. Import quotas and tariffs also may encourage smuggling or incite the foreign country in question to adopt additional import quotas in retaliation. International unions of trading nations (for instance, the European Union) or national government barriers to free trade include the following:

- a. **Import Quota** An import quota is a limit on the quantity of specific products that may be imported. In the short run, the balance of payments becomes more favorable, domestic employment increases, and prices on the specified products increase.
- b. **Tariff** Tariffs, or taxes on imports, allow any quantity to be imported, but make it more expensive to do so. Tariffs may be a flat amount per item or a percentage of price.
- c. **Export Incentives** Subsidies are government payments to producers, typically in a protected industry. Indirect subsidies, or incentives, include favorable tax treatment on export-related income. This practice might have similar effects on the foreign country as import quotas or tariffs.
- d. **Substitution** Develop substitutes for imported products, for instance, photovoltaic-generated (solar) electricity replacing electricity generated from imported oil.
- e. **Shift Customer Preferences** Encourage consumers to buy domestic products as a patriotic activity, for instance, saving local jobs or national self-sufficiency. An American business that attempts a “Buy American” campaign for domestic marketing may have it backfire in foreign markets or in America if it uses imported components or raw materials. If a government sponsors this campaign, the potential for backlash might be minimized.
- f. **Domestic Content Quotas** Requiring, or encouraging through favorable tariff treatment, a portion of imported products in protected industries be constructed, at least partially, in the importing nation. Such a requirement typically is used by capital-intensive nations. Thus, parts produced utilizing idle capacity in capital-intensive countries are assembled in labor-intensive countries.

4. European Union (EU) The European Union is a federation of nations with four stated primary objectives: (1) establish European citizenship; (2) ensure freedom, security, and justice; (3) promote economic and social progress; (4) assert Europe’s role in the world. The European Union’s member nations delegate sovereignty to common institutions representing the interests of the EU as a whole on questions of joint interest. More countries are in the EU than are in the European Monetary Union.

- a. **European Monetary Union** The European Monetary Union shares one currency, the euro (€). It has several member nations: Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia, and Spain.
- b. **Other** Denmark and the United Kingdom opted out of the EMU. Sweden has opted out of the EMU by failing to fulfill convergence criteria. Other countries that are part of the EU, are expected to work towards EMU entry requirements. Some countries outside of the EU also elect to use the Euro.

5. North American Free Trade Agreement (NAFTA) Partly in response to the EU, NAFTA is an agreement among Mexico, the United States, and Canada to reduce trade barriers among the three countries. The phase-out of tariffs on goods covered by the agreement was staggered over a lengthy period to allow producers to adapt gradually. NAFTA is considerably smaller in scope, concentrating on economic policies and not attempting integration on the scale of the EU.

6. Dominican Republic—Central America Free Trade Agreement (CAFTA-DR) Signed into law in 2005, the agreement came into force in 2009. CAFTA reduces barriers to US trade with El Salvador, Guatemala,

Honduras, Costa Rica, Nicaragua, and the Dominican Republic. In addition, it also requires important reforms of the domestic legal and business environment that are key to encouraging business development and investment in those five Central American countries and the Dominican Republic. CAFTA makes certain US exports duty-free immediately, while most other tariffs were phased out over a number of years.

Foreign Exchange

Exchange between entities in different countries requires either a common medium of exchange (such as the European market's Euro) or a ready means of converting currencies (such as a foreign currency exchange market).

Exercise 2.3 -Foreign Investment

A US parent company is reviewing the cash flows from its international subsidiaries. In addition to exchange rate risk, which of the following items would be a primary consideration in the company's cash flow analysis?

- Repatriation restrictions
- American depository receipts
- Default risk premium
- Foreign trade deficit

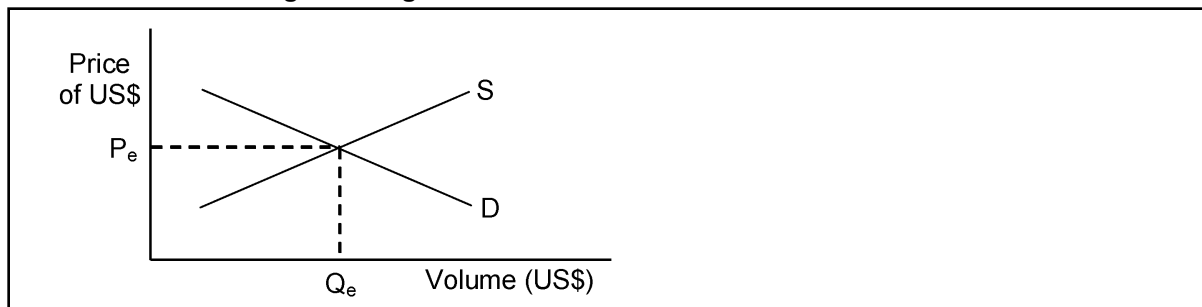
(a) Repatriation is the process of converting a foreign currency into US currency. The amount received depends upon the exchange rate between the two currencies being traded. Capital repatriation is the return of capital from abroad back to its country of origin. When currencies and economic conditions deteriorate, capital-importing countries might place restrictions on the repatriation of capital invested in their foreign subsidiaries.

An American Depository Receipt (ADR) is a negotiable financial instrument issued by a bank to represent a foreign company's publicly traded securities. Default risk premium is the excess of the risk-free rate of return that a lender receives (or an investment offers) for the perceived chance that the borrower will not pay back the loan. This is most common in the bond market, where firms with a greater chance of default pay more interest on a bond than safer, more stable companies pay. Foreign trade deficit is an economic measure of a negative balance of trade in which imports exceed exports, typically on a national level. Only repatriation would be a primary consideration in a US parent's cash flow analysis. (ID: 90617)

- Exchange Rate** An exchange rate is the price of one country's currency in terms of another currency. Currency appreciates when it can buy more units of another currency and depreciates when it can only buy fewer units of another currency.

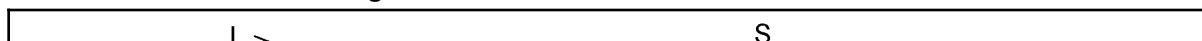
- Market Equilibrium (Floating Exchange Rate)** Prices are set by market forces (supply and demand) just as for other goods. This can lead to occasional extreme short-run fluctuations. In the long run, assuming a free trade situation with perfect information, market interactions will set exchange rates such that relative prices will be equivalent worldwide. For practical purposes, relative price levels have merely significant influence on exchange rates.

Exhibit 2.17 - Floating Exchange Rate



- Government Policy (Fixed Exchange Rate)** A government may set a fixed exchange rate. This has only limited success; to eliminate a surplus or deficit of payments between countries, the rate eventually must be returned to the equilibrium price.

Exhibit 2.18 - Fixed Exchange Rate



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- (1) **High Exchange Rate** If the price is set above the market equilibrium price, shown in Exhibit 2.18 as P_h , there is a surplus; more people are willing to supply than there is demand and a deficit of payments results. In the short-run, deficits may be met by using foreign reserves (previous payment surpluses) or by borrowing from the foreign country's central bank. Usually a country devalues its currency to improve its balance of payments; in other words, it lowers the price of its currency, reversing the effect of the fixed exchange rate set above market equilibrium.
- (2) **Low Exchange Rate** If the price is set below the market equilibrium price, shown in Exhibit 2.18 as P_l , there is a shortage; not enough entities are willing to supply to meet the demand and a surplus of payments results. Eventually, the country will have greater foreign reserves than it wants and will have to raise the price of its currency to avoid further increases to its surplus.
- c. **Managed Float** Market forces primarily guide exchange rates. Governments (or central banks, etc.) intervene to maintain stability during periods of extreme fluctuations.

2. Foreign Exchange Market Operation

- a. **Spot Rate** The spot rate is the rate paid for currency now (on the spot).
- b. **Forward Exchange Rate** The forward exchange rate is the rate agreed to be paid in the future. The difference between the spot rate and the forward exchange rate is called a discount or premium.

If the forward rate is greater than the spot rate, speculators expect the currency to increase in value and, thus, are willing to buy at a premium. If the forward rate is less than the spot rate, speculators expect the currency to decrease in value and, thus, will buy only at a discount.

- c. **Interest Rates** The discount or premium is related to differences between true interest rates (nominal interest rates adjusted for inflation) paid by foreign and domestic banks, which in turn are related to differences in expected inflation between countries. Borrowing in the country with the lowest real interest rate is more advantageous. Borrowing in the country with the lowest nominal interest rate is not necessarily advantageous.

(1) **High Domestic Rate** If the domestic interest rate is higher than the foreign interest rate, the forward exchange contract sells at a premium. If this were not true, speculators would borrow at the lower (foreign) interest rate and invest at the higher rate (in the domestic market) and then sell a forward exchange contract for the principal and interest.

(2) **Low Domestic Rate** If the domestic interest rate is lower than the foreign interest rate, the forward exchange contract sells at a discount.

- 3. **Exchange Rate Influences** One currency will depreciate relative to another at a rate equivalent to the difference in their inflation rates. For example, one effect of a foreign country's currency conversion value changing from 1.5 to the US dollar to 1.7 to the US dollar would be that the foreign country's exports would be less expensive for the United States.

Example 2.7 - Exchange Rates and Inflation

At the beginning of the year, one Pan Kingdom pound (£) buys 2.00 Neverland dollars (N\$). Annual inflation is 8% and 5% in the Pan Kingdom and Neverland, respectively.

Required: What will be the exchange rate at year end?

Solution: The difference in the inflation rate is 3%. The N\$ will depreciate by 3% less than the £. At year-end, one £ buys only N\$1.94. $[(1 - 0.03) \times \text{N}\$2.00]$

- 4. **Risk Avoidance** One way to avoid risk due to currency fluctuations is to minimize receivables and liabilities denominated in foreign currencies. Limiting transactions denominated in foreign currencies may limit an entity's foreign trade unduly, as not all customers or suppliers will be willing to trade in that entity's local currency.
 - a. **Hedge** Hedging involves offsetting a gain or loss on receivables or payables denominated in foreign currencies by purchasing or selling forward exchange contracts. Buying these contracts covers liabilities in the foreign currency; selling covers receivables.
 - b. **Balance** Entities with large amounts of foreign business establish centers to attempt to achieve balance between foreign receivables and payables.
 - c. **Barter** If an entity barter (meaning that transactions are non-monetary) currency fluctuations don't affect the transaction.

Example 2.8 - Barter

Gold, Inc., an American company that makes Sugar Rush Cola, estimates that the cola market in Shiver, a former Soviet bloc country, will be highly profitable in a decade, when Shiver's vast resources are put to efficient use. Gold wants its product to become the cola market leader in Shiver now, in preparation for that period.

Shiver placed restrictions on the exchange of currency to stop the drastic devaluation of rubles shortly after the conversion to a capitalistic market. If Gold imports cola to Shiver now, it will be paid in Shiver rubles. Shiver rubles currently are difficult to exchange into American dollars.

Gold predicts that there is a high probability that, in accordance with its new economic discipline policy, Shiver will replace its rubles with euros at highly unfavorable rates before the decade is finished.

Discussion: Gold's potential customers (wholesalers in Shiver) cannot convert rubles into dollars any more readily than Gold can. However, these customers can swap cola for vodka, which Gold can sell in America. Gold insulates itself from exchange risk by arranging a non-monetary trade.

5. **Foreign Investment Analysis** Foreign operations are more difficult to manage and control than domestic operations. As with any investment, relevant cash flows are the dividends and the potential future sales price. These cash flows must be adjusted for risks generally not considered with domestic investments. Further, both the host and home country may have tax structures that result in paying taxes on the same income to both countries. Also, there may be risk of loss of trade secrets or copyright risk issues.

- a. **Exchange Risk** Exchange risk is the risk that exchange rates will change.
- b. **Sovereignty Risk** Sovereignty risk is risk of significant restrictions on removal of the investment, either as dividends or sale of the operations, including nationalization. Nationalization is government ownership of business. A foreign government could appropriate assets or purchase them through a forced sale. Alternatively, a foreign government could establish a monopoly.

6. **Foreign Presence** Entities can expand into foreign markets in several ways.

- a. **Sales Representative** By contracting with an independent local representative, an entity can sell its goods with a minimum investment (typically, inventory in the host country is the only tangible asset that would be at risk). This arrangement also can result in a minimum of control.
- b. **Sales (or Production) Branch** By establishing a sales branch or plant staffed by employees, an entity would gain more control and also increased risk exposure to control by the host country's government.

For instance, the host government's labor standards and income taxes would apply to the branch employees and income, respectively. Aside from the additional complexity of managing from a distance across cultural lines, attitudes to imported goods in the host country with only a sales branch may make this approach awkward.

- c. **Division** By establishing a stand-alone subsidiary (with production, sales, and perhaps financing) in a foreign country, an entity minimizes upsetting local stakeholders with imported goods. The total investment is larger, with production facilities as well as inventory involved. The host country may limit foreign ownership, compromising the entity's control. Also, duplication of facilities (domestic and foreign) may result.

7. **Multinational Operations** Proponents of multinational operations claim that they tend to support international trade, free trade policies, a more robust international monetary system, and improved cultural tolerance. Large multinational entities' size, complexity, and sophistication may make them difficult for countries to police or shareholders to have an effective say in corporate policies, leading to activities (such as cartels, questionable labor practices, etc.) that are the opposite of those positive characteristics.

- a. **Home Advantages** Royalties, dividends, and profits promote a favorable balance of payments. Local charities and cultural institutions may be supported at a disproportionately higher degree than foreign ones. A multinational entity may be better able to obtain scarce resources than a domestic one.

- b. **Home Disadvantages** include potential reduced domestic investment, training, output, and tax revenues. Jobs may be lost to foreign subsidiaries and weakened unions. There is a greater risk of technology appropriation.
- c. **Host Advantages** include additional investment of capital and technology, training for local labor, increased output and efficiency, stimulation of competition, increased tax revenues, and increased living standards.
- d. **Host Disadvantages** Royalties, dividends, and profits may result in an unfavorable balance of payments. A multinational company may establish transfer pricing among subsidiaries so that profits are reported in the country of lowest taxes or least profit-exporting restrictions. Multinational competition may overwhelm struggling local competition.

As multinational entities are willing to move into a country when the economic climate is favorable, they may be quick to leave as well. There also is an absent landlord effect: local management may have considerable autonomy as long as it meets profitability standards; if the same management had local shareholders, it might concern itself more with local goodwill. In this instance, if foreign shareholders were aware of the entity's actions in the context of host country's business climate, they might demand more such concern from local management.

Balance of Payments

International payments—imports, exports, debt or equity investments—rarely net to zero. The balance of payments (the deficit or surplus) typically is tracked in two principal accounts: current and capital; i.e., the balance of payments is the total of these two accounts.

1. **Current Account** The current account includes the balance of goods and services, net interest and dividends, and net unilateral transfers.
 - a. **Balance of Trade** The difference between total imports and total exports of goods, excluding services, is the balance of trade.
 - b. **Balance of Goods and Services** The difference between total imports and total exports of goods, including services, is the balance of goods and services.
 - c. **Interest and Dividends** Total interest and dividends received within a country on investments outside of a country, offset by total interest and dividends paid outside a country on investments by foreign entities within a country.
 - d. **Unilateral Transfers** Net unilateral transfers affect the deficit or surplus depending on whether the transfer is out or in. Unilateral transfers include foreign aid and payments to relatives. Pension payments often are counted as unilateral transfers.
2. **Capital Account** The capital account tracks capital flows resulting from the exchange of fixed or financial assets (i.e., equipment and securities). A capital account surplus (inflows exceed outflows) indicates that foreign entities buy more domestic equipment and securities than domestic entities buy foreign equipment and securities.
 - a. **Security Sales** Purchases of domestic stocks and bonds by foreign entities, or inflows of investment (credits), increase foreign reserves.
 - b. **Security Purchases** Purchases of foreign stocks and bonds by domestic entities, or outflows of investment (debits), consume foreign reserves.
3. **Deficit and Surplus** A deficit, also called an unfavorable balance of payments, is equalized by additional exports or reductions in reserves. A surplus is equalized by additional imports or increases in reserves. A surplus or deficit may impact the domestic economy.

Example 2.9 - Unfavorable Balance of Payments

More imports than exports cause a deficit balance of payments. If consumers are replacing purchases of domestic products with imported products, domestic demand is reduced, resulting in domestic production reduction and layoffs.

With domestic production reduced, less profit is available for investments. With reduced domestic demand, there is also less investment opportunity. So, domestic investors seek foreign investment opportunity, essentially importing foreign securities, increasing the deficit of balance of payments.

As domestic demand decreases, prices for domestic goods fall. These goods will find buyers among local entities that were importing goods as well as foreign entities, reducing the balance of payments. This automatic correcting process may result in unemployment and deflation.

4. **Control Strategies** Attempts at control usually focus on eliminating deficits in the balance of payments. Since one country's deficit balance is another's surplus balance, these attempts may encounter considerable resistance. See the information on trade barriers in this chapter.
5. **Debtor Nation Consequences**
 - a. **Debt Service** Part of the GDP is used for debt service.
 - b. **Reserves** A reserves reduction may lead to devaluation of money, inflation, and increased exports. There may be increased political pressure for trade protectionism.
 - c. **Deficit** A decline in net imports and shrinking of the deficit in balance of payments.
 - d. **Savings** Interest rates kept high to curb inflation and encourage foreign investment. Increased savings may occur as a result of economic uncertainty or high interest rates.
6. **International Monetary System** In the post-World War II period, the international monetary system was based on fixed exchange rates based on a modified gold standard. The US dollar became the key world currency for transactions and reserves. As war-damaged economies improved, the US dollar remained a key currency, so the US departure from the gold standard in the early 1970s radically changed the international monetary system. Initial agreements to allow currencies to float were disregarded as countries intervened frequently to support their currencies. The 1976 Jamaica Agreement established a system of managed floating exchanges, with each country having some autonomy in managing its exchange rate.
 - a. **International Monetary Fund (IMF)** IMF resources are a currency pool available to cover member countries' short-term deficits in balance of payments.
 - b. **World Bank** The World Bank lends money to underdeveloped countries for development.
 - c. **Euro** The European Common Market combines most member countries' monetary systems into one system with the use of the Euro instead of individual currencies.
 - d. **Dollars** Even transactions not involving any US entities frequently are denominated in US dollars, so there is a relatively high liquidity.

Transfer Pricing

Transfer pricing is the process of establishing prices used between related parties (typically divisions of the same company) for loans, sales or leases of tangible personal property, licensing of intangibles, and the sale of services. It is done to facilitate the determination of income for these divisions. Typically, international transfer pricing receives the most attention because of the tax implications; however, it can be used by an entity in a single location to measure performance by divisions or departments.

Example 2.10 - Transfer Pricing

Grand Prix Motors, Inc., is a multinational corporation with an engine plant in Germany and assembly plants in Sweden and Mexico. Only one set of transfer prices is used for both tax and financial reporting purposes. Of the three countries, corporate income taxes are highest in Sweden and lowest in Mexico.

Accordingly, Grand Prix sets a low transfer price on engines sent to Mexico and a high transfer price on engines sent to Sweden in order to produce the lowest taxable profits in Sweden, low taxable profits in Germany, and highest taxable profits in Mexico. The managers of the German engine plant have bonuses that fluctuate with profits for the German plant, so they reduce the emphasis on producing engines for export to Mexico.

1. **Considerations** Multidivisional and multinational firms use transfer pricing for coordination of divisional objectives, allocating internal resources, and maximizing after-tax profits, among other goals. Interdependencies of profit centers make the method and application of transfer pricing an important subject.

Currently, most companies set transfer prices primarily to minimize overall corporate taxes. This approach ignores other important areas: management incentives among various divisions, allocation of production capacities, and guidance for future capital investment. It's legal to maintain two sets of transfer prices. Most people think of transfer pricing as a tax optimization issue, yet transfer prices also are management tools. They have important decision-making functions, valuing intermediate product so that regional managers may maximize the profit of the company as a whole.

- a. **Tax** Because governments base firms' tax liability on transfer prices, their taxing authorities operate to ensure transfer prices adequately reflect the value of goods and services, challenging firms' established transfer pricing if it is deemed necessary.

For income tax purposes, a company may want to shift income from, or deductions into, a high-tax country. To reduce the amount of customs duties or property taxes, a company may want to reduce inbound price for imports.

- b. **Decision Making** A company may want to reduce amount of income of a particular subsidiary where employees participate in profits. Alternatively, a company may seek to generate information that provides a clear basis for internal decision making. For managerial purposes, when deciding what metric should be selected to evaluate a unit's performance, the following should be considered: controllability of costs, the effect of random shocks, and possible dysfunctional behavior induced by the evaluation system.

2. **Types** Transfer pricing determines how companies price goods or services that they transfer between their own divisions or related companies.

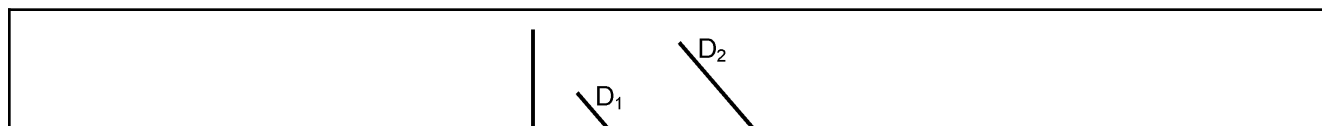
- a. **Market-Based Prices** When a product has an established market, the market price may be used. By definition, these transactions aren't arm's-length deals in an open marketplace, and, unless the involved divisions are at liberty to purchase or sell the goods from any source (a rare occurrence), these prices may not reflect economic reality or be appropriate bases for decision making.
- b. **Variable Cost Prices** In 1956, economist Jack Hirshleifer showed that the best economic result occurred when transfer prices were set either at a market price for the product being shipped or, failing that, the marginal cost of the item to the division making it; however, Hirshleifer's approach does not consider differences in corporate income taxes.
- c. **Full Cost Prices** Full cost prices tend to reduce incentives for the producing division to eliminate unnecessary costs.
- d. **Negotiated Transfer Prices** may be set by the corporate entity, with various degrees of input from regional managers and considerations of market prices, costs, and other factors.

Supplemental Material

Law of Demand—Graphic Illustration

Typically, price is shown on the y-axis and quantity demanded is shown on the x-axis. Demand often is represented as a curve or line to illustrate consumers' smaller demand at a higher price, all other factors remaining the same. With the price and quantity demanded as the axes, there is no means to show changes, such as income changes, except by labeling different demand curves for such changes. An increase in demand is represented by a shift to the right.

Exhibit 2.19 - Positive Demand Curve Shift



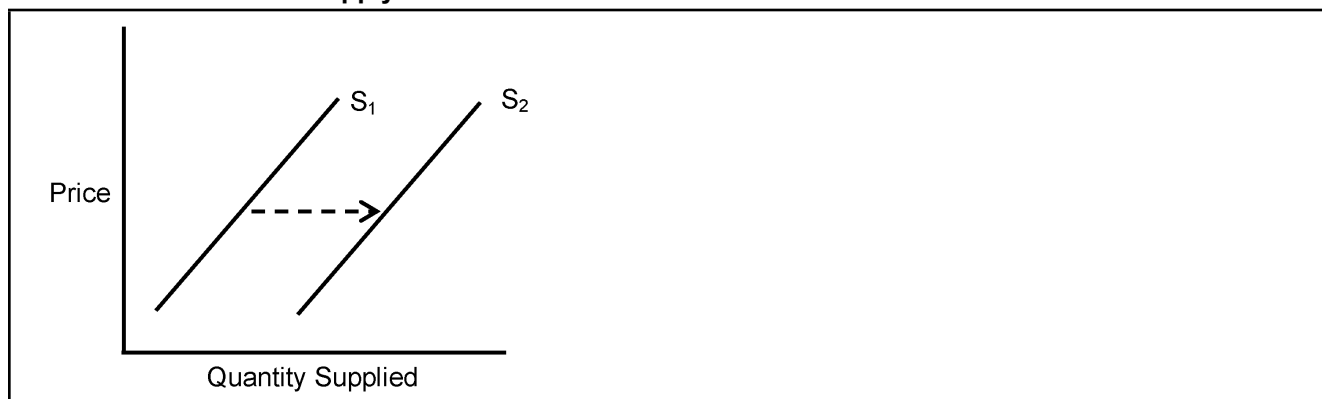
(1) Increase A positive shift in demand results from the following events: increase of substitute's price (Uber for Lyft); decrease in complement's price (land for building); for normal (or luxury) goods, an increase in consumer income; for inferior goods, a decrease in consumer income; expected future price increases, a favorable change in preferences (due, for instance, to an advertising campaign), an increase in the number of consumers, and the end of a boycott.

(2) Decrease A negative shift results from the opposite events.

Supply—Graphic Illustration

Typically, price is shown on the y-axis and quantity supplied is shown on the x-axis. Supply often is represented as a curve or line to illustrate producers' larger supply at a higher price, all other factors remaining the same. An increase in supply is represented by a shift to the right.

Exhibit 2.20 - Positive Supply Curve Shift



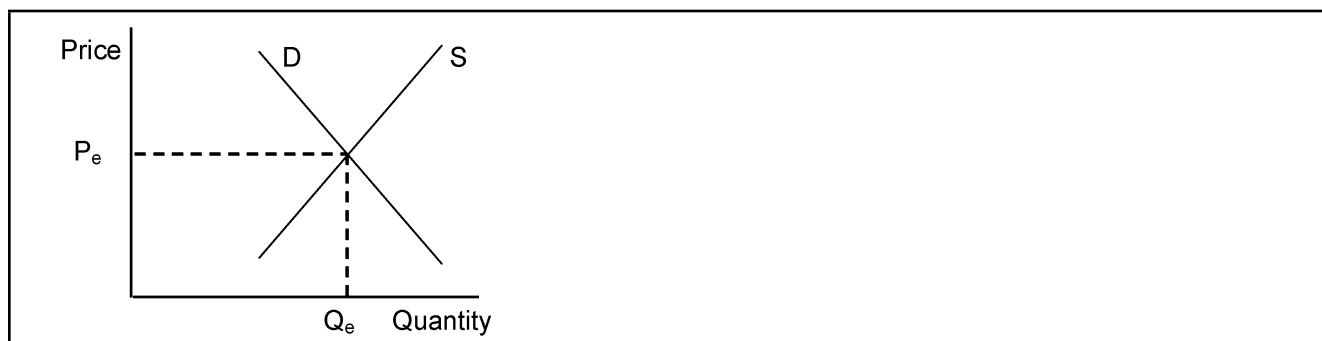
(1) Increase A positive shift in supply results from the following events: decrease of production cost; improvements in technology; a decrease in prices of other goods; and a decrease in expected future prices.

(2) Decrease A negative shift results from the opposite events.

Market—Graphic Illustration

As price is shown on the y-axis and quantity is shown on the x-axis for both the supply and demand graphs, the two graphs can be superimposed to show the market as a whole. The point where the two curves intersect is market equilibrium. P_e is the equilibrium price and Q_e is the equilibrium quantity.

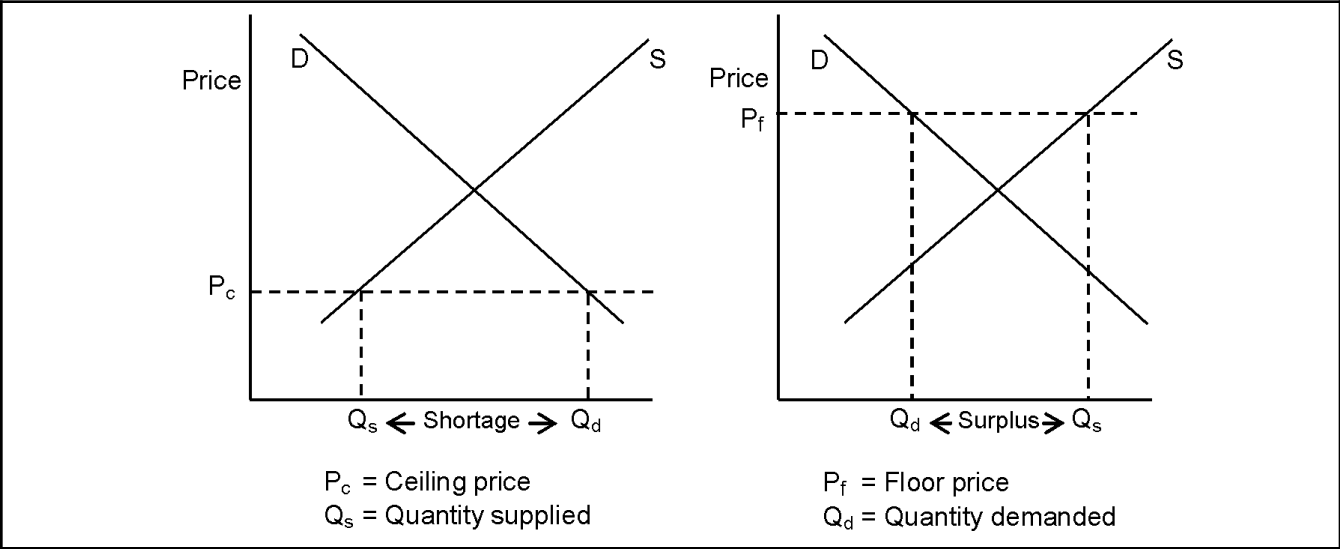
Exhibit 2.21 - Market



Price Fixing—Graphic Illustration

In Exhibit 2.22, the shortage is the difference between Q_d and Q_s in the graph illustrating a ceiling set below market price and the surplus is the difference between Q_d and Q_s in the graph illustrating a floor set above market price.

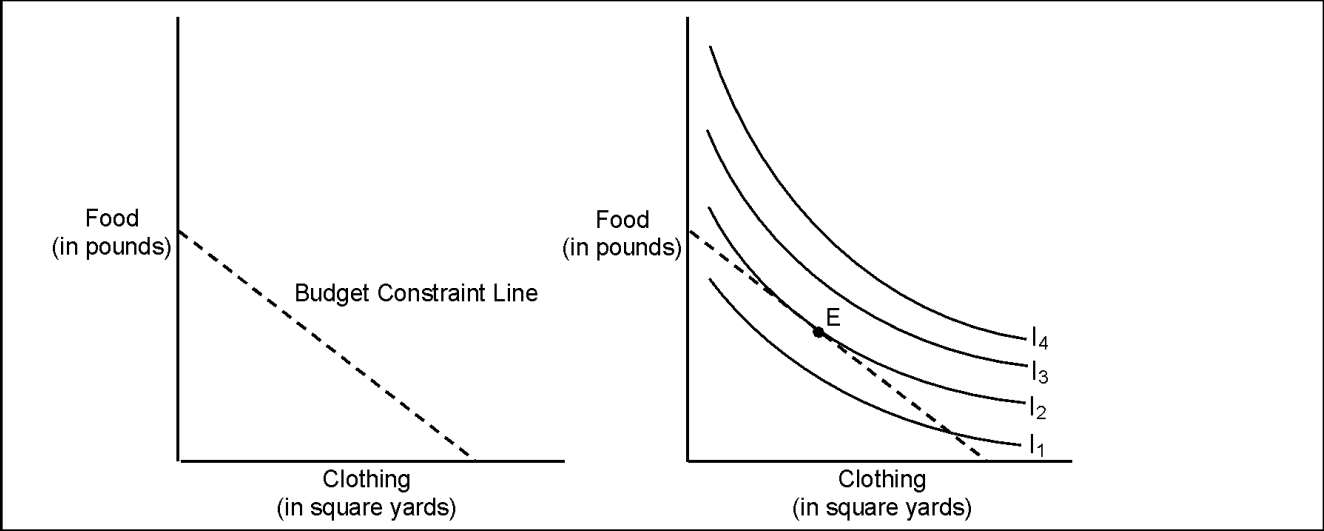
Exhibit 2.22 - Price Ceiling and Floor Graphs



Utility Theory—Graphic Illustration

The x-axis is the quantity of one good and the y-axis is the quantity of the other good. The point of maximum utility is where the budget constraint line is tangent to the highest possible indifference curve.

Exhibit 2.23 - Indifference Curves and Budget Constraint Lines



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