GLOSSARY

Ability-to-pay principle The ability-to-pay principle of taxation refers to the idea that people with greater ability to pay taxes should pay higher taxes. (p. 380)

Absolute advantage One country is said to have an absolute advantage over another in the production of a particular good if it can produce that good using smaller quantities of resources than can the other country. (p. 465)

Abstraction Abstraction means ignoring many details so as to focus on the most important elements of a problem. (p. 8)

Affirmative action Affirmative action refers to active efforts to locate and hire members of underrepresented groups. (p. 453)

Agents Agents are people hired to run a complex enterprise on behalf of the principals, those whose benefit the enterprise is supposed to serve. (p. 317)

Aggregate demand Aggregate demand is the total amount that all consumers, business firms, and government agencies spend on final goods and services. (p. 528)

Allocation of resources Allocation of resources refers to the society's decisions on how to divide up its scarce input resources among the different outputs produced in the economy and among the different firms or other organizations that produce those outputs. (p. 44)

Antitrust policy Antitrust policy refers to programs and laws that preclude the deliberate creation of monopoly and prevent powerful firms from engaging in related "anticompetitive practices." (p. 269)

Applied research Applied research is research whose goal is to invent or improve particular products or processes, often for profit. Note, however, that the military and government health-related agencies provide examples of not-for-profit applied research. (p. 347)

Arbitration Arbitration occurs during collective bargaining when a neutral individual is appointed with the power to decide the issues and force both parties to accept his decisions. (p. 436)

Average physical product (APP) The average physical product (APP) is the total physical product (TPP) divided by the quantity of input. Thus, APP = TPP/X where X = the quantity of input. (p. 124)

Average revenue (AR) The average revenue (AR) is total revenue (TR) divided by quantity. (p. 154)

Average tax rate The average tax rate is the ratio of taxes to income. (p. 375)

Backward-bending A supply curve of labor is backward-bending when a rise in an initially low wage leads to a rise in quantity of labor supplied, but a rise in a wage that was already high reduces the amount supplied. (p. 423)

Barriers to entry Barriers to entry are attributes of a market that make it more difficult or expensive for a new firm to open for business than it was for the firms already present in that market. (p. 213)

Basic research Basic research refers to research that seeks to provide scientific knowledge and general principles rather than coming up with any specific marketable inventions. (p. 347)

Beneficial or detrimental externality An activity is said to generate a beneficial or detrimental externality if that activity causes incidental benefits or damages to others not directly involved in the activity and no corresponding compensation is provided to or paid by those who generate the externality. (p. 308)

Benefits principle The benefits principle of taxation holds that people who derive benefits from a service should pay the taxes that finance it. (p. 381)

Bilateral monopoly A bilateral monopoly is a market situation in which there is both a monopoly on the selling side and a monopsony on the buying side. (p. 434)

Bond A bond is simply an IOU sold by a corporation that promises to pay the holder of the bond a fixed sum of money at the specified *maturity* date and some other fixed amount of money (the *coupon* or *interest payment*) every year up to the date of maturity. (p. 174)

Budget line, household The budget line for a household graphically represents all possible combinations of two commodities that it can purchase, given the prices of the commodities and some fixed amount of money at its disposal. (p. 93)

Budget line, firm A firm's budget line is the locus of all points representing every input combination of inputs that the producer can afford to buy with a given amount of money and given input prices. (p. 144)

Bundling Bundling refers to a pricing arrangement under which the supplier offers substantial discounts to customers if they buy several of the firm's products, so that the price of the bundle of products is less than the sum of the prices of the products if they were bought separately. (p. 275)

Burden of a tax The burden of a tax to an individual is the amount one would have to be given to be just as well off with the tax as without it. (p. 382)

Capital A nation's capital is its available supply of plant, equipment, and software. It is the result of past decisions to make *investments* in these items. (p. 397)

Capitalism Capitalism is an economic system in which most of the production process is controlled by private firms operating in markets with minimal government control. The investors in these firms (called "capitalists") own the firms. (p. 331)

Cartel A cartel is a group of sellers of a product who have joined together to control its production, sale, and price in the hope of obtaining the advantages of monopoly. (p. 237)

Closed economy A closed economy is one that does not trade with other nations in either goods or assets. (pp. 22)

Collective bargaining Collective bargaining is the process of negotiation of

wages and working conditions between a union and the firms in the industry. (p. 434)

Common stock A common stock (also called a share) of a corporation is a piece of paper that gives the holder of the stock a share of the ownership of the company. (p. 174)

Comparative advantage One country is said to have a comparative advantage over another in the production of a particular good *relative to other goods* if it produces that good less inefficiently as compared with the other country. (p. 45)

Complements Two goods are called complements if an increase in the quantity consumed of one increases the quantity demanded of the other, all other things remaining constant. (p. 111)

Concentration of an industry Concentration of an industry measures the share of the total sales or assets of the industry in the hands of its largest firms. (p. 271)

Concentration ratio A concentration ratio is the percentage of an industry's output produced by its four largest firms. It is intended to measure the degree to which the industry is dominated by large firms. (p. 271)

Consumer's surplus Consumer's surplus is the difference between the value to the consumer of the quantity of Commodity X purchased and the amount that the market requires the consumer to pay for that quantity of *X*. (p. 294)

Corporation A corporation is a firm that has the legal status of a fictional individual. This fictional individual is owned by a number of persons, called its *stockholders*, and is run by a set of elected officers and a board of directors, whose chairman is often also in a powerful position. (p. 173)

Correlated Two variables are said to be correlated if they tend to go up or down together. Correlation need not imply causation. (p. 10)

Cost disease of the personal services The cost disease of the personal services is the tendency of the costs and prices of these services to rise persistently faster than those of the average output in the economy. (p. 322)

Credible threat A credible threat is a threat that does not harm the threatener if it is carried out. (p. 248)

Cross elasticity of demand The cross elasticity of demand for product X to a change in the price of another product, Y, is the ratio of the percentage change in quantity demanded of X to the percentage change in the price of Y that brings about the change in quantity demanded. (p. 111)

Cross licensing Cross licensing of patents occurs when each of two firms agrees to let the other use some specified set of its patents, either at a price specified in their agreement or in return for access to the other firm's patents. (p. 339)

Cross-subsidization Cross-subsidization means selling one product of the firm at a loss, which is balanced by higher profits on another of the firm's products. (p. 261)

Demand curve A demand curve is a graphical depiction of a demand schedule. It shows how the quantity demanded of some product will change as the price of that product changes during a specified period of time, holding all other determinants of quantity demanded constant. (p. 54)

Demand schedule A demand schedule is a table showing how the quantity demanded of some product during a specified period of time changes as the price of that product changes, holding all other determinants of quantity demanded constant. (p. 54)

Depletable A commodity is depletable if it is used up when someone consumes it. (p. 312)

Derived demand The derived demand for an input is the demand for the input by producers as determined by the demand for the final product that the input is used to produce. (p. 396)

Direct controls Direct controls are government rules that tell organizations or individuals what processes or raw materials they may use or what products they are permitted to supply or purchase. (p. 360)

Direct taxes Direct taxes are taxes levied directly on people. (p. 375)

Discounting, or computing the present value The process that has been invented for making the magnitudes of payments at different dates comparable to one another is called discounting, or computing the present value. (p. 413)

Division of labor Division of labor means breaking up a task into a number of smaller, more *specialized* tasks so that each worker can become more adept at a particular job. (p. 44)

Dominant strategy A dominant strategy for one of the competitors in a game is a strategy that will yield a higher payoff than any of the other strategies that are possible for her, no matter what choice of strategy is made by her competitors. (p. 244)

Dumping Dumping means selling goods in a foreign market at lower prices than those charged in the home market. (p. 475)

Economic discrimination Economic discrimination occurs when equivalent factors of production receive different payments for equal contributions to output. (p. 446)

Economic model An economic model is a simplified, small-scale version of some aspect of the economy. Economic models are often expressed in equations, by graphs, or in words. (p. 10)

Economic profit Economic profit equals net earnings, in the accountant's sense, minus the *opportunity costs* of capital and of any other inputs supplied by the firm's owners. (pp. 153, 205, 408)

Economic rent Economic rent is any portion of the payment to labor or any other input that does not lead to an increase in the amount of labor supplied. (pp. 402, 426)

Economies of scale Economies of scale are savings that are obtained through increases in quantities produced. Scale economies occur when an *X* percent increase in input use raises output by *more than X* percent, so that the more the firm produces, the lower its per-unit costs become. (pp. 136, 258)

Economies of scope Economies of scope are savings that are obtained through simultaneous production of many different

products. They occur if a firm that produces many commodities can supply each good more cheaply than a firm that produces fewer commodities. (p. 261)

Efficiency A set of outputs is said to be produced efficiently if, given current technological knowledge, there is no way one can produce larger amounts of any output without using larger input amounts or giving up some quantity of another output. (p. 43)

Efficient allocation of resources An efficient allocation of resources is one that takes advantage of every opportunity to make some individuals better off in their own estimation while not worsening the lot of anyone else. (p. 282)

Elastic demand curve A demand curve is elastic when a given percentage price change leads to a larger percentage change in quantity demanded. (p. 106)

Emissions permits Emissions permits are licenses issued by government specifying the maximum amount the license holder is allowed to emit. The licenses are restricted to permit a limited amount of emission in total. Often, they must be purchased from the government or on a special market. (p. 363)

Entrepreneur An entrepreneur is an individual who organizes a new business firm, particularly a firm that offers new products or new productive technology. (p. 334)

Entrepreneurship Entrepreneurship is the act of starting new firms, introducing new products and technological innovations, and, in general, taking the risks that are necessary to seek out business opportunities. (p. 394)

Equilibrium An equilibrium is a situation in which there are no inherent forces that produce change. Changes away from an equilibrium position will occur only as a result of "outside events" that disturb the status quo. (p. 61)

Excess burden The excess burden of a tax to an individual is the amount by which the burden of the tax exceeds the tax that is paid. (p. 382)

Excludable A commodity is excludable if someone who does not pay for it can be kept from enjoying it. (p. 312)

Expansion path The expansion path is the locus of the firm's cost-minimizing input combinations for all relevant output levels. (p. 145)

Export subsidy An export subsidy is a payment by the government to exporters to permit them to reduce the selling prices of their goods so they can compete more effectively in foreign markets. (p. 470)

Externality An activity is said to generate a beneficial or detrimental externality if that activity causes incidental benefits or damages to others not directly involved in the activity, and no corresponding compensation is provided to or paid by those who generate the externality. (pp. 308, 329, 352)

45° line Rays through the origin with a slope of 1 are called 45° lines because they form an angle of 45° with the horizontal axis. A 45° line marks off points where the variables measured on each axis have equal values. (p. 16)

Factors of production Inputs or factors of production are the labor, machinery, buildings, and natural resources used to make outputs. (pp. 20, 393)

Fiscal federalism Fiscal federalism refers to the system of grants from one level of government to the next. (p. 380)

Fixed cost A fixed cost is the cost of an input whose quantity does not rise when output goes up, one that the firm requires to produce any output at all. The total cost of such indivisible inputs does not change when the output changes. Any other cost of the firm's operation is called a variable cost. (p. 24)

Gross domestic product (GDP) Gross domestic product (GDP) is the sum of the money values of all final goods and services produced in the domestic economy and sold on organized markets during a specified period of time, usually a year. (pp. 21, 332)

Herfindahl-Hirschman Index (HHI) The Herfindahl-Hirschman Index (HHI) is an alternative and widely used measure of the degree of concentration of an industry. It is calculated, in essence, by adding together the squares of the market shares of the firms in the industry, although the smallest firms may be left out of the calculation because their small market share numbers have a negligible effect on the result. (p. 271)

High-tech (high-technology) A high-tech (high-technology) firm or industry is one whose products, equipment and production methods utilize highly advanced technology that is constantly modified and improved. Examples are the aerospace, scientific instruments, computer, communications, and pharmaceutical industries. (p. 337)

Horizontal equity Horizontal equity is the notion that equally situated individuals should be taxed equally. (p. 380)

Human capital theory Human capital theory focuses on the expenditures that have been made to increase the productive capacity of workers via education or other means. It is analogous to investment in better machines as a way to increase their productivity. (p. 427)

Incidence of a tax The incidence of a tax is an allocation of the burden of the tax to specific individuals or groups. (p. 383)

Income effect The income effect of a rise in wages is the resulting rise of workers' purchasing power that enables them to afford more leisure. (p. 423)

Income elasticity of demand Income elasticity of demand is the ratio of the percentage change in quantity demanded to the percentage change in income. (p. 110)

Increasing returns to scale Production is said to involve economies of scale, also referred to as increasing returns to scale, if, when all input quantities are increased by X percent, the quantity of output rises by more than X percent. (p. 136)

Index fund An index fund is a mutual fund that chooses a particular stock price index and then buys the stocks (or most of the stocks) that are included in the index. The value of an investment in an index fund depends on what happens to the prices of all stocks in that index. (p. 179)

Indifference curve An indifference curve is a line connecting all combinations of the commodities that are equally desirable to the consumer. (p. 95)

Indirect taxes Indirect taxes are taxes levied on specific economic activities. (p. 375)

Industrial Revolution The Industrial Revolution is the stream of new technology and the resulting growth of output that began in England toward the end of the eighteenth century. (p. 330)

Inelastic demand curve A demand curve is inelastic when a given percentage price change leads to a smaller percentage change in quantity demanded. (p. 106)

Inferior good An inferior good is a commodity whose quantity demanded falls when the purchaser's real income rises, all other things remaining equal. (p. 89)

Inflation Inflation refers to a sustained increase in the general price level. Inflation occurs when prices in an economy rise rapidly. The rate of inflation is calculated by averaging the percentage growth rate of the prices of a selected sample of commodities. (p. 175)

Innovation Innovation is the process that begins with invention and includes improvement to prepare the invention for practical use and marketing of the invention or its products. (pp. 333, 409)

Input-output analysis Input-output analysis is a mathematical procedure that takes account of the interdependence among the economy's industries and determines the amount of output each industry must provide as inputs to the other industries in the economy. (p. 291)

Inputs Inputs or factors of production are the labor, machinery, buildings, and natural resources used to make outputs. (p. 21)

Interest Interest is the payment for the use of funds employed in the production of capital; it is measured as the percent per year of the value of the funds tied up in the capital. (p. 398)

Interest rate The interest rate is the amount that borrowers currently pay to lenders per dollar of the money borrowed—it is the current market price of a loan. (p. 175)

Invention Invention is the act of discovering new products or new ways of making products. (pp. 333, 409)

Investment Investment is the *flow* of resources into the production of new capital. It is the labor, steel, and other inputs devoted to the c*onstruction* of factories, warehouses, railroads, and other pieces of capital during some period of time. (p. 397)

Investment in human capital Investment in human capital is any expenditure on an individual that increases that person's future earning power or productivity. (p. 418)

Invisible hand The invisible hand is a phrase used by Adam Smith to describe how, by pursuing their own self-interests, people in a market system are "led by an invisible hand" to promote the well-being of the community. (p. 52)

Kinked demand curve A kinked demand curve is a demand curve that changes its slope abruptly at some level of output. (p. 242)

Labor union A labor union is an organization made up of a group of workers (usually with the same specialization, such as plumbing or costume design, or in the same industry). The unions represent the workers in negotiations with employers over issues such as wages, vacations, and sick leave. (p. 429)

Laissez-faire Laissez-faire refers to a situation in which there is minimal government interference with the workings of the market system. The term implies that people should be left alone in carrying out their economic affairs. (p. 287)

"Law" of demand The "law" of demand states that a lower price generally increases the amount of a commodity that people in a market are willing to buy. Therefore, for most goods, market demand curves have negative slopes. (p. 90)

"Law" of diminishing marginal utility The "law" of diminishing marginal utility asserts that additional units of a commodity are worth less and less to a consumer in money terms. As the individual's consumption increases, the marginal utility of each additional unit declines. (p. 81)

Law of supply and demand The law of supply and demand states that in a free market the forces of supply and demand generally push the price toward the level at which quantity supplied and quantity demanded are equal. (p. 62)

Limited liability Limited liability is a legal obligation of a firm's owners to pay back company debts only with the money they have already invested in the firm. (p. 174)

Long run The long run is a period of time long enough for all of the firm's current commitments to come to an end. (p. 123)

Marginal analysis Marginal analysis is a method for calculating optimal choices—the choices that best promote the decision maker's objective. It works by testing whether, and by how much, a small change in a decision will move things toward or away from the goal. (p. 82)

Marginal land Marginal land is land that is just on the borderline of being used—that is, any land the use of which would be unprofitable if the farmer had to pay even a penny of rent. (p. 403)

Marginal physical product (MPP) The marginal physical product (MPP) of an input is the increase in total output that results from a one-unit increase in the input quantity, holding the amounts of all other inputs constant. (pp. 125, 394)

Marginal private benefit (MPB) The marginal private benefit (MPB) is the share of an activity's marginal benefit that is received by the persons who carry out the activity. (p. 309)

Marginal private cost (MPC) The marginal private cost (MPC) is the share of an activity's marginal cost that is paid for by the persons who carry out the activity. (p. 309)

Marginal profit Marginal profit is the addition to total profit resulting from one more unit of output. (p. 157)

Marginal revenue (MR) Marginal revenue (MR) is the addition to total revenue resulting from the addition of one unit to total output. Geometrically, marginal revenue is the slope of the total revenue curve at the pertinent output quantity. Its formula is $MR_1 = TR_1 - TR_0$, and so on. (p. 166)

Marginal revenue product (MRP) The marginal revenue product (MRP) of an input is the money value of the additional sales that a firm obtains by selling the marginal physical product of that input. (pp. 126, 394)

Marginal revenue product of labor (MRP_L) The marginal revenue product of labor (MRP_L) is the increase in the employer's total revenue that results when it hires an additional unit of labor. (p. 418)

Marginal social benefit (MSB) The marginal social benefit (MSB) of an activity is the sum of its marginal private benefit (MPB) plus its incidental benefits (positive or negative) that are received by others, and for which those others do not pay. (p. 309)

Marginal social cost (MSC) The marginal social cost (MSC) of an activity is the sum of its marginal private cost (MPC) plus its incidental costs (positive or negative) that are borne by others who receive no compensation for the resulting damage to their well-being. (p. 309)

Marginal tax rate The marginal tax rate is the fraction of each *additional* dollar of income that is paid in taxes. (p. 375)

Marginal utility The marginal utility of a commodity to a consumer (measured in money terms) is the maximum amount of money that she or he is willing to pay for *one more unit* of that commodity. (p. 80)

Market demand curve A market demand curve shows how the total quantity of some product demanded by *all* consumers in the market during a specified period of time changes as the price of that product changes, holding all other things constant. (p. 89)

Market system A market system is a form of economic organization in which resource allocation decisions are left to individual producers and consumers acting in their own best interests without central direction. (p. 46)

Maximin criterion The maximin criterion requires you to select the strategy that yields the maximum payoff on the assumption that your opponent will do as much damage to you as he or she can. (p. 246)

Mediation Mediation takes place during collective bargaining when a neutral individual is assigned the job of persuading the two parties to reach an agreement. (p. 436)

Mercantilism Mercantilism is a doctrine that holds that exports are good for a country, whereas imports are harmful. (p. 469)

Minimum wage law A minimum wage law imposes a floor on wages and prohibits employers from paying their workers less than that amount. (p. 429)

Misallocated resources Resources are misallocated if it is possible to change the way they are used or the combination of goods and services they produce and thereby make consumers better off. (p. 307)

Mixed economy A mixed economy is one with some public influence over the workings of free markets. There may also be some public ownership mixed in with private property. (p. 33)

Monopolistic competition Monopolistic competition refers to a market in which products are heterogeneous but which is otherwise the same as a market that is perfectly competitive. (p. 231)

Monopoly power Monopoly power (or market power) is the ability of a business firm to earn high profits by raising the prices of its products above competitive levels and to keep those prices high for a substantial amount of time. (p. 258)

Monopoly profits Monopoly profits are any excess of the profits earned persistently by a monopoly firm over and above those that would be earned if the industry were perfectly competitive. (p. 217)

Monopsony A monopsony is a market situation in which there is only one buyer. (p. 434)

Moral hazard Moral hazard refers to the tendency of insurance to discourage policyholders from protecting themselves from risk. (pp. 316)

Mutual fund A mutual fund, in which individual investors can buy shares, is a private investment firm that holds a portfolio of securities. Investors can choose among a large variety of mutual funds, such as stock funds, bond funds, and so forth. (p. 178)

Nash equilibrium A Nash equilibrium results when each player adopts the strategy that gives her the highest possible payoff if her rival sticks to the strategy he has chosen. (p. 246)

Natural monopoly A natural monopoly is an industry in which advantages of large-scale production make it possible for a single firm to produce the entire output of the market at lower average cost than a number of firms, each producing a smaller quantity. (p. 214)

Oligopoly An oligopoly is a market dominated by a few sellers, at least several of which are large enough relative to the total market to be able to influence the market price. (p. 235)

Open economy An open economy is one that trades with other nations in goods and services, and perhaps also trades in financial assets. (p. 22)

Opportunity cost The opportunity cost of some decision is the value of the next best alternative that must be given up because of that decision (for example, working instead of going to school). (pp. 37)

Optimal decision An optimal decision is one that best serves the objectives of the decision maker, whatever those objectives may be. It is selected by explicit or implicit comparison with the possible alternative choices. The term *optimal* connotes neither approval nor disapproval of the objective itself. (pp. 37, 150)

Origin (of a graph) The "0" point in the lower-left corner of a graph where the axes meet is called the origin. Both variables are equal to zero at the origin. (p. 13)

Outputs The outputs of a firm or an economy are the goods and services it produces. (p. 20)

Outsourcing Outsourcing is the hiring of workers in foreign counties by U.S. firms to do work formerly carried out in the U.S. (p. 436)

Patent A patent is a privilege granted to an inventor, whether an individual or a firm, that for a specified period of time prohibits anyone else from producing or using that invention without the permission of the holder of the patent.(p. 213)

Payoff matrix A payoff matrix shows how much each of two competitors (players) can expect to earn, depending on the strategic choices each of them makes. (p. 243)

Per-capita income Per-capita income in an economy is the average income of all people in that economy. (p. 330)

Perfect competition Perfect competition occurs in an industry when that industry is made up of many small firms producing homogeneous products, when there is no impediment to the entry or exit of firms, and when full information is available. (p. 194)

Perfectly contestable A market is perfectly contestable if entry and exit are costless and unimpeded. (p. 250)

Plowback Plowback (or retained earnings) is the portion of a corporation's profits that management decides to keep and reinvest in the firm's operations rather than paying out as dividends to stockholders. (p. 176)

Pollution charges Pollution charges (taxes on emissions) are taxes that polluters are required to pay. The amount they pay depends on what they emit and in what quantities. (p. 360)

Portfolio diversification Portfolio diversification means inclusion of a number and variety of stocks, bonds, and other such items in an individual's portfolio. If the individual owns airline stocks, for example, diversification requires the purchase of a stock or bond in a very different industry, such as breakfast cereal production. (p. 178)

Poverty line The poverty line is an amount of income below which a family is considered "poor." (p. 441)

Predatory pricing Predatory pricing is pricing that threatens to keep a competitor out of the market. It is a price that is so low that it will be profitable for the firm that adopts it only if a rival is driven from the market. (p. 273)

Price cap A price cap is a ceiling above which regulators do not permit prices to rise. The cap is designed to provide an efficiency incentive to the firm by allowing it to keep part of any savings in costs it can achieve. (p. 264)

Price ceiling A price ceiling is a maximum that the price charged for a commodity cannot legally exceed. (p. 66)

Price discrimination Price discrimination is the sale of a given product at different prices to different customers of the firm, when there are no differences in the costs of supplying these customers. Prices are also discriminatory if it costs more to supply one customer than another, but they are charged the same price. (p. 221)

(Price) elasticity of demand The (price) elasticity of demand is the ratio of the *percentage* change in quantity demanded to the *percentage* change in price that brings about the change in quantity demanded. (p. 103)

Price floor A price floor is a legal minimum below which the price charged for a commodity is not permitted to fall. (p. 69)

Price leadership Under price leadership, one firm sets the price for the industry and the others follow. (p. 239)

Price taker Under perfect competition, the firm is a price taker. It has no choice but to accept the price that has been determined in the market. (p. 195)

Price war In a price war, each competing firm is determined to sell at a price that is lower than the prices of its rivals, usually regardless of whether that price covers the pertinent cost. Typically, in such a price war, Firm A cuts its price below Firm B's price; B retaliates by undercutting A; and so on and on until some of the competitor firms surrender and let themselves be undersold. (p. 240)

Principals Agents are people hired to run a complex enterprise on behalf of the principals, those whose benefit the enterprise is supposed to serve. (p. 317)

Principle of increasing costs The principle of increasing costs states that as the production of a good expands, the opportunity cost of producing another unit generally increases. (p. 40)

Private good A private good is a commodity characterized by both depletability and excludability. (p. 312)

Process innovation A process innovation is an innovation that changes the way in which a commodity is produced. (p. 345)

Producer's surplus The producer's surplus from a sale is the difference between the market price of the item sold and the lowest price at which the supplier would be willing to provide the item. (p. 294)

Product innovation A product innovation is the introduction of a good or service that is entirely new or involves major modifications of earlier products. (p. 345)

Production indifference curve A production indifference curve (sometimes called an *isoquant*) is a curve showing all the different quantities of two inputs that are just sufficient to produce a given quantity of output. (p. 143)

Production indifference map A production indifference map is a graph whose axes show the quantities of two inputs that are used to produce some output. A curve in the graph corresponds to some given quantity of that output, and the different points on that curve show the different quantities of the two inputs that are just enough to produce the given output. (p. 17)

Production possibilities frontier The production possibilities frontier is a curve that shows the maximum quantities of outputs it is possible to produce with the available resource quantities and the current state of technological knowledge. (pp. 39, 307)

Productivity Productivity is the amount of output produced by a unit of input. (p. 330)

Progressive tax A progressive tax is one in which the average tax rate paid by an individual rises as income rises. (pp. 32, 375)

Proportional tax A proportional tax is one in which the average tax rate is the same at all income levels. (p. 375)

Public good A public good is a commodity or service whose benefits are *not depleted* by an additional user and from which it is generally difficult or *impossible to exclude* people, even if the people are unwilling to pay for the benefits. (p. 312)

Pure monopoly A pure monopoly is an industry in which there is only one supplier of a product for which there are no close substitutes and in which it is very difficult or impossible for another firm to coexist. (p. 212)

Quantity demanded The quantity demanded is the number of units of a good that consumers are willing and can afford to buy over a specified period of time. (p. 53)

Quantity supplied The quantity supplied is the number of units that sellers want to sell over a specified period of time. (p. 57)

Quota A quota specifies the maximum amount of a good that is permitted into the country from abroad per unit of time. (p. 470)

Random walk The time path of a variable such as the price of a stock is said to constitute a random walk if its magnitude in one period (say, May 2, 2005) is equal to its value in the preceding period (May 1, 2005) plus a completely random number. That is: Price on May 2, 2005 = Price on May 1, 2005 + Random number, where the random number (positive or negative) can be obtained by a roll of dice or some such procedure. (p. 185)

Ratchet A ratchet is an arrangement that permits some economic variable, such as investment or advertising, to increase, but prevents that variable from subsequently decreasing. (p. 344)

Rational expectations Rational expectations are forecasts that, while not necessarily correct, are the best that can be made given the available data. Rational expectations, therefore, cannot err systematically. If expectations are rational, forecasting errors are pure random numbers. (p. 702)

Ray through the origin (or Ray) Lines whose *Y*-intercept is zero have so many special uses in economics and other disciplines that they have been given a special name: a ray through the origin, or a ray. (p. 16)

Recession A recession is a period of time during which the total output of the economy declines. (p. 22)

Regressive tax A regressive tax is one in which the average tax rate falls as income rises. (p. 375)

Regulation Regulation of industry is a process established by law that restricts or controls some specified decisions made by the affected firms; it is designed to protect the public from exploitation by firms with monopoly power. Regulation is usually carried out by a special government agency assigned the task of administering and interpreting the law. That agency also acts as a court in enforcing the regulatory laws. (p. 259)

Rent seeking Rent seeking refers to unproductive activity in the pursuit of economic profit—in other words, profit in excess of competitive earnings. (p. 316)

Research and development (R&D) Research and development (R&D) is the activity of firms, universities, and government agencies that seeks to invent new products and processes and to improve those inventions so that they are ready for the market or other users. (p. 335)

Resources Resources are the instruments provided by nature or by people that are used to create goods and services. Natural resources include minerals, soil, water, and air. Labor is a scarce resource, partly because of time limitations (the day has only 24 hours) and partly because the number of skilled workers is limited. Factories and machines are resources made by people. These three types of resources are often referred to as *land*, *labor*, and *capital*. They are also called *inputs* or *factors of production*. (p. 36)

Retained earnings Plowback (or retained earnings) is the portion of a corporation's profits that management decides to keep and reinvest in the firm's operations rather than paying out as dividends to stockholders. (p. 176)

Sales maximization A firm's objective is said to be sales maximization if it seeks to adopt prices and output quantities that make its total revenue (its "sales"), rather than its profits, as large as possible. (p. 240)

Shift in a demand curve A shift in a demand curve occurs when any relevant variable other than price changes. If consumers want to buy *more* at any and all given prices than they wanted previously, the demand curve shifts to the right (or outward). If they desire *less* at any given price, the demand curve shifts to the left (or inward). (p. 55)

Short run The short run is a period of time during which some of the firm's cost commitments will not have ended. (p. 123)

Shortage A shortage is an excess of quantity demanded over quantity supplied. When there is a shortage, buyers cannot purchase the quantities they desire at the current price. (p. 61)

Slope of a budget line The slope of a budget line is the amount of one commodity that the market requires an individual to give up to obtain one additional unit of another commodity without any change in the amount of money spent. (p. 96)

Slope of a curved line The slope of a curved line at a particular point is defined as the slope of the straight line that is tangent to the curve at that point. (p. 14)

Slope of an indifference curve The slope of an indifference curve, referred to as the marginal rate of substitution (MRS) between the commodities, represents the maximum amount of one commodity that the consumer is willing to give up in exchange for one more unit of another commodity. (p. 96)

Slope of a straight line The slope of a straight line is the ratio of the vertical change to the corresponding horizontal change as we move to the right along the line or, as it is often said, the ratio of the "rise" over the "run." (p. 14)

Specialization Specialization means that a country devotes its energies and resources to only a small proportion of the world's productive activities. (p. 713)

Speculation Individuals who engage in speculation deliberately invest in risky assets, hoping to obtain profits from future changes in the prices of these assets. (p. 463)

Statistical discrimination Statistical discrimination is said to occur when the productivity of a particular worker is estimated to be low just because that worker belongs to a particular group (such as women) (p. 456)

Sticky price A price is called sticky if it does not change often even when there is a moderate change in cost. (p. 243)

Stock option A stock option is a contract that permits its owner to buy a specified quantity of stocks of a corporation at a future date, but at the price specified in the contract rather than the stock's market price at the date of purchase. (p. 317)

Stock price index A stock price index, such as the S&P 500, is an average of the prices of a large set of stocks. These stocks are selected to represent the price movements of the entire stock market, or some specified segment of the market, and the chosen set is rarely changed. (p. 179)

Substitutes Two goods are called substitutes if an increase in the quantity consumed of one cuts the quantity demanded of the other, all other things remaining constant. (p. 111)

Substitution effect The substitution effect of a wage increase is the resulting incentive to work more because of the higher relative reward to labor. (p. 422)

Supply curve A supply curve is a graphical depiction of a supply schedule. It shows how the quantity supplied of some product will change as the price of that product changes during a specified period of time, holding all other determinants of quantity supplied constant. (p. 58)

Supply curve of a firm The supply curve of a firm shows the different quantities of output that the firm would be willing to supply at different possible prices during some given period of time. (p. 200)

Supply curve of an industry The supply curve of an industry shows the different quantities of output that the industry would supply at different possible prices during some given period of time. (p. 201)

Supply-demand diagram A supply-demand diagram graphs the supply and demand curves together. It also determines the equilibrium price and quantity. (p. 60)

Supply schedule A supply schedule is a table showing how the quantity supplied of some product changes as the price of that product changes during a specified period of time, holding all other determinants of quantity supplied constant. (p. 57)

Surplus A surplus is an excess of quantity supplied over quantity demanded. When there is a surplus, sellers cannot sell the quantities they desire to supply at the current price. (p. 61)

Takeover A takeover is the acquisition by an outside group (the raiders) of a controlling proportion of a company's stock. When the old management opposes the takeover attempt, it is called a *hostile takeover attempt*. (p. 183)

Tangent A tangent to the curve is *straight* line that *touches*, but does not *cut*, the curve at a particular point. (p. 15)

Tax deduction A tax deduction is a sum of money that may be subtracted before the taxpayer computes his or her taxable income. (p. 376)

Tax exempt A particular source of income is tax exempt if income from that source is not taxable. (p. 376)

Tax loophole A tax loophole is a special provision in the tax code that reduces taxation below normal rates (perhaps to zero) if certain conditions are met. (p. 376)

Tax shifting Tax shifting occurs when the economic reactions to a tax cause prices and outputs in the economy to change, thereby shifting part of the burden of the tax onto others. (p. 384)

Technology trading Technology trading is an arrangement in which a firm voluntarily makes its privately owned technology available to other firms either in exchange for access to the technology of the second company or for an agreed-upon fee. (p. 347)

Theory A theory is a deliberate simplification of relationships used to explain how those relationships work. (p. 10)

Theory of dual labor markets The theory of dual labor markets emphasizes that labor is supplied in two types of market, one with high wages and promising promotion opportunities and the other with low wages and dead-end jobs. (p. 428)

Total physical product (TPP) The firm's total physical product (TPP) is the amount of output it obtains in total from a given quantity of input. (p. 124)

Total profit The total profit of a firm is its net earnings during some period of time. It is equal to the total amount of money the firm gets from sales of its products (the firm's total revenue) minus the total amount that it spends to make and market those products (total cost). (p. 152)

Total revenue The total revenue of a supplier firm is the total amount of money it receives from the purchasers of its products, without any deduction of costs. (p. 153)

Total utility The total utility of a quantity of a good to a consumer (measured in money terms) is the maximum amount of money that he or she is willing to give up in exchange for it. (p. 80)

Trade adjustment assistance Trade adjustment assistance provides special unemployment benefits, loans, retraining programs, and other aid to workers and firms that are harmed by foreign competition. (p. 721)

Transfer payments Transfer payments are sums of money that the government gives certain individuals as outright grants rather than as payments for services rendered to employers. Some common examples are Social Security and unemployment benefits. (p. 32)

Unit-elastic demand curve A demand curve is unit-elastic when a given percentage price change leads to the same percentage change in quantity demanded. (p. 106)

Variable A variable is something measured by a number; it is used to analyze what happens to other things when the size of that number changes (varies). (p. 13)

Variable cost A variable cost is a cost whose total amount changes when the quantity of output of the supplier changes. (pp. 124, 198)

Vertical equity Vertical equity refers to the notion that differently situated individuals should be taxed differently in a way that society deems to be fair. (p. 380)

***Y*-intercept** The *Y*-intercept of a line or a curve is the point at which it touches the vertical axis (the *Y*-axis). The *X*-intercept is defined similarly. (p. 15)

Zero-sum game A zero-sum game is one in which exactly the amount one competitor gains must be lost by other competitors. (p. 247)