Glossary of Terms[1]

A

Ability-to-pay principle (of taxation). The principle that one's tax burden should depend upon the ability to pay as measured by income or wealth. This principle does not specify *how much* more those who are better off should pay.

Absolute advantage (in international trade). The ability of Country A to produce a commodity more efficiently (i.e., with greater output per unit of input) than Country B. Possession of such an absolute advantage does not necessarily mean that A can export this commodity to B successfully. Country B may still have the comparative advantage.

Actual, cyclical, and structural budget. The *actual budget* deficit or surplus is the amount recorded in a given year. This is composed of the *structural budget,* which calculates what government revenues, expenditures, and deficits would be if the economy were operating at potential output, and the *cyclical budget,* which measures the effect of the business cycle on the budget.

Adaptive expectations. See **expectations.**

Adverse selection. A type of market failure in which those people with the highest risk are the most likely to buy insurance. More broadly, adverse selection encompasses situations in which sellers and buyers have different information about a product, such as in the market for used cars.

Aggregate demand. Total planned or desired spending in the economy during a given period. It is determined by the aggregate price level and influenced by domestic investment, net exports, government spending, the consumption function, and the money supply.

Aggregate demand (*AD*) curve. The curve showing the relationship between the quantity of goods and services that people are willing to buy and the aggregate price level, other things equal. As with any demand curve, important variables lie behind the aggregate demand curve, e.g., government spending, exports, and the money supply.

Aggregate supply. The total value of goods and services that firms would willingly produce in a given time period. Aggregate supply is a function of available inputs, technology, and the price level.

Aggregate supply (*AS*) curve. The curve showing the relationship between the output firms would willingly supply and the aggregate price level, other things equal. The *AS* curve tends to be vertical at potential output in the very long run but may be upward-sloping in the short run.

Allocative efficiency. See **Pareto efficiency.**

Appreciation (of a currency). See **depreciation** (of a currency).

Appropriable. Term applied to resources for which the owner can capture the full economic value. In a well-functioning competitive market, appropriable resources are priced and allocated efficiently. Also refer to **inappropriable.**

Arbitrage. The purchase of a good or asset in one market for immediate resale in another market in order to profit from a price discrepancy. Arbitrage is an important force in eliminating price discrepancies, thereby making markets function more efficiently.

Asset. A physical property or intangible right that has economic value. Important examples are plant, equipment, land, patents, copyrights, and financial instruments such as money or bonds.

Asymmetric information. A situation where one party to a transaction has better information than the other party. This often leads to a market failure or even to no market at all.

Automatic (or built-in) stabilizers. The property of a government tax and spending system that cushions income changes in the private sector. Examples include unemployment compensation and progressive income taxes.

[1] Words in bold type within definitions appear as separate entries in the glossary. For a more detailed discussion of particular terms, the text will provide a useful starting point. More complete discussions are contained in Douglas Greenwald, ed., *The McGraw-Hill Encyclopedia of Economics* (McGraw-Hill, New York, 1994), and David W. Pearce, *The MIT Dictionary of Modern Economics,* 4th ed. (Macmillan, London, 1992). For a comprehensive encyclopedia, see Steven N. Durlauf and Lawrence E. Blume, *The New Palgrave Dictionary of Economics,* 8 vols. (Macmillan, London, 2008). A reasonably accurate online dictionary by *The Economist* is at *www.economist.com/research/economics/.*

Average cost. Refer to **cost, average.**

Average cost curve, long-run (*LRAC*, or *LAC*). The graph of the minimum average cost of producing a commodity for each level of output, assuming that technology and input prices are given but that the producer is free to choose the optimal size of plants.

Average cost curve, short-run (*SRAC*, or *SAC*). The graph of the minimum average cost of producing a commodity for each level of output, using the given state of technology, input prices, and existing plant.

Average fixed cost. Refer to **cost, average fixed.**

Average product. Total product or output divided by the quantity of one of the inputs. Hence, the average product of labor is defined as total product divided by the amount of labor input, and similarly for other inputs.

Average revenue. Total revenue divided by total number of units sold—i.e., revenue per unit. Average revenue is generally equal to price.

Average tax rate. Total taxes divided by total income; also known as *effective tax rate.*

Average variable cost. Refer to **cost, average variable.**

B

Balance of international payments. A statement showing all of a nation's transactions with the rest of the world for a given period. It includes purchases and sales of goods and services, gifts, government transactions, and capital movements.

Balance of trade. The part of a nation's balance of payments that deals with imports or exports of *goods,* including such items as oil, capital goods, and automobiles. When services and other current items are included, this measures the *balance on current account.* In balance-of-payments accounting, the current account is financed by the *financial account.*

Balance on current account. See **balance of trade.**

Balance sheet. A statement of the financial position of an entity (person, firm, government) as of a given date, listing **assets** in one column and **liabilities** plus **net worth** in the other. Each item is listed at its actual or estimated money value. Totals of the two columns must balance because net worth is defined as assets minus liabilities.

Balanced budget. Refer to **budget, balanced.**

Bank, commercial. A financial intermediary whose prime distinguishing feature is that it accepts checkable deposits. All financial institutions that hold savings and checkable deposits are called depository institutions.

Bank money. Money created by banks, particularly the checking accounts (part of M_1) that are generated by a multiple expansion of bank reserves.

Bank reserves. Refer to **reserves, bank.**

Barriers to entry. Factors that impede entry into a market and thereby reduce the amount of competition or the number of producers in an industry. Important examples are legal barriers, regulation, and product differentiation.

Barter. The direct exchange of one good for another without using anything as money or as a medium of exchange.

Benefit principle (of taxation)**.** The principle that people should be taxed in proportion to the benefits they receive from government programs.

Bond. An interest-bearing certificate issued by a government or corporation, promising to repay a sum of money (the principal) plus interest at a specified date in the future.

Break-even point (in macroeconomics)**.** For an individual, family, or community, that level of income at which 100 percent is spent on consumption (i.e., the point where there is neither saving nor dissaving). Positive saving begins at higher income levels.

Broad money (M_2). A measure of the **money supply** that includes transactions money (or M_1) as well as savings accounts in banks and similar assets that are very close substitutes for transactions money.

Budget. An account, usually for a year, of planned expenditures and expected receipts. For a government, the receipts are tax revenues. See also **actual, cyclical,** and **structural budget.**

Budget, balanced. A budget in which total expenditures just equal total receipts (excluding any receipts from borrowing).

Budget constraint. See **budget line.**

Budget deficit. For a government, the excess of total expenditures over total receipts, with borrowing not included among receipts. This difference (the deficit) is ordinarily financed by borrowing.

Budget line. A line indicating the combination of commodities that a consumer can buy with a given income at a given set of prices. Also sometimes called the *budget constraint.*

Budget surplus. Excess of government revenues over government spending; the opposite of *budget deficit.*

Business cycles. Fluctuations in total national output, income, and employment, usually lasting for a period of 2 to 10 years, marked by widespread and simultaneous expansion or contraction in many sectors of the economy.

C

$C + I + G + NX$ schedule. A schedule showing the planned or desired levels of aggregate demand for each level of GDP, or the graph on which this schedule is depicted.

The schedule includes consumption (C), investment (I), government spending on goods and services (G), and net exports (NX).

Capital (capital goods, capital equipment). (1) In economic theory, one of the triad of productive inputs (land, labor, and capital). Capital consists of durable produced items that are in turn used in production. (2) In accounting and finance, "capital" means the total amount of money subscribed by the shareholder-owners of a corporation, in return for which they receive shares of the company's stock.

Capital consumption allowance. See **depreciation** (of an asset).

Capital deepening. In economic-growth theory, an increase in the capital-labor ratio. (Contrast with **capital widening.**)

Capital gains. The rise in value of a capital asset, such as land or common stocks, the gain being the difference between the sales price and the purchase price of the asset.

Capital markets (also **financial markets**). Markets in which financial resources (money, bonds, stocks) are traded. These, along with **financial intermediaries,** are institutions through which saving in the economy is transferred to investors.

Capital-output ratio. In economic-growth theory, the ratio of the total capital stock to annual GDP.

Capital widening. A rate of growth in real capital stock just equal to the growth of the labor force (or of the population), so the ratio between total capital and total labor remains unchanged. (Contrast with **capital deepening.**)

Capitalism. An economic system in which most property (land and capital) is privately owned. In such an economy, private markets are the primary vehicles used to allocate resources and generate incomes.

Cardinal utility. See **ordinal utility.**

Cartel. An organization of independent firms producing similar products that work together to raise prices and restrict output. Cartels are illegal under U.S. antitrust laws.

Central bank. A government-established agency (in the United States, the Federal Reserve System) responsible for controlling the nation's money supply and credit conditions and for supervising the financial system, especially commercial banks and other depository institutions.

Change in demand vs. change in quantity demanded. A change in the quantity buyers want to purchase, prompted by any reason other than a change in price (e.g., increase in income, change in tastes), is a *change in demand.* In graphical terms, it is a shift of the demand curve. If, in contrast, the decision to buy more or less is prompted by a change in the good's price, then it is a *change in quantity demanded.* In graphical terms, a change in quantity demanded is a movement along an unchanging demand curve.

Change in supply vs. change in quantity supplied. This distinction for supply is the same as that for demand, so see **change in demand vs. change in quantity demanded.**

Checking accounts (also checkable deposits and bank money). A deposit in a commercial bank or other financial intermediary upon which checks can be written and which is therefore transactions money (or M_1). Checkable deposits are about half of M_1.

Chicago School of Economics. A group of economists (among whom Henry Simons, F. A. von Hayek, and Milton Friedman have been the most prominent) who believe that competitive markets free of government intervention will lead to the most efficient operation of the economy.

Classical approach. See **classical economics.**

Classical economics. The predominant school of economic thought prior to the appearance of Keynes's work; founded by Adam Smith in 1776. Other major figures who followed Smith include David Ricardo, Thomas Malthus, and John Stuart Mill. By and large, this school believed that economic laws (particularly individual self-interest and competition) determine prices and factor rewards and that the price system is the best possible device for resource allocation.

Classical macroeconomics. See **classical theories**.

Classical theories (in macroeconomics). Theories emphasizing the self-correcting forces in the economy. In the classical approach, there is generally full employment, and policies to stimulate aggregate demand have no impact upon output.

Clearing market. A market in which prices are sufficiently flexible to equilibrate supply and demand very quickly. In markets that clear, there is no rationing, unemployed resources, or excess demand or supply. In practice, this is thought to apply to many commodity and financial markets but not to labor or many product markets.

Closed economy. See **open economy.**

Collective bargaining. The process of negotiations between a group of workers (usually a union) and their employer. Such bargaining leads to an agreement about wages, fringe benefits, and working conditions.

Collusion. An agreement between different firms to cooperate by raising prices, dividing markets, or otherwise restraining competition.

Collusive oligopoly. A market structure in which a small number of firms (i.e., a few oligopolists) collude and jointly make their

decisions. When they succeed in maximizing their joint profits, the price and quantity in the market closely approach those prevailing under monopoly.

Command economy. A mode of economic organization in which the key economic functions—*what, how,* and *for whom*—are principally determined by government directive. Sometimes called a *centrally planned economy.*

Commodity money. Money with **intrinsic value;** also, the use of some commodity (cattle, beads, etc.) as money.

Common currency. A situation where several countries form a monetary union with a single currency and a unified central bank; e.g., the European Monetary Union (EMU), which introduced the Euro in 1999.

Common stock. The financial instrument representing ownership and, generally, voting rights in a corporation. A certain share of a company's stock gives the owner title to that fraction of the votes, net earnings, and assets of the corporation.

Communism. A communist economic system (also called *Soviet-style central planning*) is one in which the state owns and controls the means of production, particularly industrial capital. Such economies are also characterized by extensive central planning, with the state setting many prices, output levels, and other important economic variables.

Comparative advantage (in international trade)**.** The law of comparative advantage says that a nation should specialize in producing and exporting those commodities which it can produce at *relatively* lower cost and that it should import those goods for which it is a *relatively* high-cost producer. Thus it is a comparative advantage, not an absolute advantage, that should dictate trade patterns.

Compensating differentials. Differences in wage rates among jobs that serve to offset or compensate for the nonmonetary differences of the jobs. For example, unpleasant jobs that require isolation for many months in Alaska pay wages much higher than those for similar jobs nearer to civilization.

Competition, imperfect. Term applied to markets in which perfect competition does not hold because at least one seller (or buyer) is large enough to affect the market price and therefore faces a downward-sloping demand (or supply) curve. Imperfect competition refers to any kind of market imperfection—pure **monopoly, oligopoly,** or **monopolistic competition.**

Competition, perfect. Term applied to markets in which no firm or consumer is large enough to affect the market price. This situation arises where (1) the number of sellers and buyers is very large and (2) the products offered by sellers are homogeneous (or indistinguishable). Under such conditions, each firm faces a horizontal (or perfectly elastic) demand curve.

Competitive equilibrium. The balancing of supply and demand in a market or economy characterized by **perfect competition.** Because perfectly competitive sellers and buyers individually have no power to influence the market, price will move to the point at which it equals both marginal cost and marginal utility.

Competitive market. See **competition, perfect.**

Complements. Two goods which "go together" in the eyes of consumers (e.g., left shoes and right shoes). Goods are *substitutes* when they compete with each other (as do gloves and mittens).

Compound interest. Interest computed on the accrued total of interest and principal. For example, suppose $100 (the principal) is deposited in an account earning 10 percent interest compounded annually. At the end of year 1, interest of $10 is earned. At the end of year 2, the interest payment is $11, $10 on the original principal and $1 on the interest—and so on in future years.

Concentration ratio. The percentage of an industry's total output accounted for by the largest firms. A typical measure is the *four-firm concentration ratio,* which is the fraction of output accounted for by the four largest firms.

Constant returns to scale. See **returns to scale.**

Consumer price index (CPI). A price index that measures the cost of a fixed basket of consumer goods in which the weight assigned to each commodity is the share of expenditures on that commodity in a base year.

Consumer surplus. The difference between the amount that a consumer would be willing to pay for a commodity and the amount actually paid. This difference arises because the marginal utilities (in dollar terms) of all but the last unit exceed the price. Under certain conditions, the money value of consumer surplus can be measured (using a demand curve diagram) as the area under the demand curve but above the price line.

Consumption. In macroeconomics, the total spending, by individuals or a nation, on consumer goods during a given period. Strictly speaking, consumption should apply only to those goods totally used, enjoyed, or "eaten up" within that period. In practice, consumption expenditures include all consumer goods bought, many of which last well beyond the period in question—e.g., furniture, clothing, and automobiles.

Consumption function. A schedule relating total consumption to

personal **disposable income** (*DI*). Total wealth and other variables are also frequently assumed to influence consumption.

Consumption-possibility line. See **budget line.**

Cooperative equilibrium. In game theory, an outcome in which the parties act in unison to find strategies that will optimize their joint payoffs.

Core rate of inflation. Inflation after removing the influence of volatile elements like food and energy prices. This concept is often used by central banks in inflation targeting.

Corporate income tax. A tax levied on the annual net income of a corporation.

Corporation. The dominant form of business organization in modern capitalist economies. A corporation is a firm owned by individuals or other corporations. It has the same rights to buy, sell, and make contracts as a person would have. It is legally separate from those who own it and has **limited liability.**

Correlation. The degree to which two variables are systematically associated with each other.

Cost, average. Total cost (refer to **cost, total**) divided by the number of units produced.

Cost, average fixed. Fixed cost (refer to **cost, fixed**) divided by the number of units produced.

Cost, average variable. Variable cost (refer to **cost, variable**) divided by the number of units produced.

Cost, fixed. The cost a firm would incur even if its output for the period in question were zero. Total fixed cost is made up of such individual contractual costs as interest payments, mortgage payments, and directors' fees.

Cost, marginal. The extra cost (or the increase in total cost) required to produce 1 extra unit of output (or the reduction in total cost from producing 1 unit less).

Cost, minimum. The lowest attainable cost per unit (whether average, variable, or marginal). Every point on an average cost curve is a minimum in the sense that it is the best the firm can do with respect to cost for the output which that point represents. Minimum average cost is the lowest point, or points, on that curve.

Cost, total. The minimum attainable total cost, given a particular level of technology and set of input prices. *Short-run total cost* takes existing plant and other fixed costs as given. *Long-run total cost* is the cost that would be incurred if the firm had complete flexibility with respect to all inputs and decisions.

Cost, variable. A cost that varies with the level of output, such as raw-material, labor, and fuel costs. Variable costs equal total cost minus fixed cost.

Cost-push inflation. See **supply-shock inflation.**

Credit. (1) In monetary theory, the use of someone else's funds in exchange for a promise to pay (usually with interest) at a later date. The major examples are short-term loans from a bank, credit extended by suppliers, and commercial paper. (2) In balance-of-payments accounting, an item such as exports that earns a country foreign currency.

Cross elasticity of demand. A measure of the influence of a change in one good's price on the demand for another good. More precisely, the cross elasticity of demand equals the percentage change in demand for good A when the price of good B changes by 1 percent, assuming other variables are held constant.

Currency. Coins and paper money.

Currency appreciation (or depreciation). See **depreciation** (of a currency).

Currency board. A monetary institution operating like a central bank for a country that issues only currency that is fully backed by assets denominated in a key foreign currency, often the U.S. dollar.

Current account. See **balance of trade.**

Cyclical budget. See **actual, cyclical, and structural budget.**

Cyclical unemployment. See **frictional unemployment.**

D

Deadweight loss. The loss in real income or consumer and producer surplus that arises because of monopoly, tariffs and quotas, taxes, or other distortions. For example, when a monopolist raises its price, the loss in consumer satisfaction is more than the gain in the monopolist's revenue—the difference being the deadweight loss to society due to monopoly.

Debit. (1) An accounting term signifying an increase in assets or decrease in liabilities. (2) In balance-of-payments accounting, a debit is an item such as imports that reduces a country's stock of foreign currencies.

Decreasing returns to scale. See **returns to scale.**

Deficit spending. Government's expenditures on goods and services and transfer payments in excess of its receipts from taxation and other revenue sources. The difference must be financed by borrowing from the public.

Deflating (of economic data). The process of converting "nominal" or current-dollar variables into "real" terms. This is accomplished by dividing current-dollar variables by a **price index.**

Deflation. A fall in the general level of prices.

Demand curve (or demand schedule). A schedule or curve showing the quantity of a good that buyers would purchase at each price, other things equal. Normally a demand curve has price on

the vertical or *Y* axis and quantity demanded on the horizontal or *X* axis. Also see **change in demand vs. change in quantity demanded.**

Demand for money. A summary term used by economists to explain why individuals and businesses hold money balances. The major motivations for holding money are (1) *transactions demand,* signifying that people need money to purchase things, and (2) *asset demand,* relating to the desire to hold a very liquid, risk-free asset.

Demand-pull inflation. Price inflation caused by an excess demand for goods in general, caused, e.g., by a major increase in aggregate demand. Often contrasted with **supply-shock inflation.**

Demography. The study of the behavior of a population.

Depreciation (of an asset)**.** A decline in the value of an asset. In both business and national accounts, depreciation is the dollar estimate of the extent to which capital has been "used up" or worn out over the period in question. Also termed *capital consumption allowance* in national-income accounting.

Depreciation (of a currency)**.** A nation's currency is said to depreciate when it declines relative to other currencies. For example, if the foreign exchange rate of the dollar falls from 200 to 100 Japanese Yen per U.S. dollar, the dollar's value has fallen, and the dollar has undergone a depreciation. The opposite of a depreciation is an *appreciation,* which occurs when the foreign exchange rate of a currency rises.

Depression. A prolonged period characterized by high unemployment, low output and investment, depressed business confidence, falling prices, and widespread business failures. A milder form of business downturn is a **recession,** which has many of the features of a depression to a lesser extent.

Derived demand. The demand for a factor of production that results (is "derived") from the demand for the final good to which it contributes. Thus the demand for tires is derived from the demand for automobile transportation.

Devaluation. A decrease in the official price of a nation's currency, usually expressed in the currency of another nations (such as the U.S. dollar) or in terms of gold (in a gold standard). The opposite of devaluation is *revaluation,* which occurs when a nation raises its official foreign exchange rate relative to another currency.

Developing country. A country with a per capita income far below that of "developed" nations (the latter usually includes most nations of North America and Western Europe). Same as *less developed country.*

Differentiated products. Products which compete with each other and are close substitutes but are not identical. Differences may be manifest in the product's function, appearance, location, quality, or other attributes.

Diminishing marginal utility, law of. The law which says that as more and more of any one commodity is consumed, its marginal utility declines.

Diminishing returns, law of. A law stating that the additional output from successive increases of one input will eventually diminish when other inputs are held constant. Technically, the law is equivalent to saying that the marginal product of the varying input declines after a point.

Direct taxes. Taxes levied directly on individuals or firms, including taxes on income, labor earnings, and profits. Direct taxes contrast with *indirect taxes,* which are levied on goods and services and thus only indirectly on people, such as sales taxes and taxes on property, alcohol, imports, and gasoline.

Discount rate. (1) The interest rate charged by a Federal Reserve Bank (the central bank) on a loan that it makes to a commercial bank. (2) The rate used to calculate the present value of some asset.

Discounting (of future income)**.** The process of converting future income into an equivalent present value. This process takes a future dollar amount and reduces it by a discount factor that reflects the appropriate interest rate. For example, if someone promises you $121 in 2 years, and the appropriate interest rate or discount rate is 10 percent per year, then we can calculate the present value by discounting the $121 by a discount factor of $(1.10)^2$. The rate at which future incomes are discounted is called the **discount rate.**

Discrimination. Differences in earnings that arise because of personal characteristics that are unrelated to job performance, especially those related to gender, race, ethnicity, sexual orientation, or religion.

Disequilibrium. The state in which an economy is not in **equilibrium.** This may arise when shocks (to income or prices) have shifted demand or supply schedules but the market price (or quantity) has not yet adjusted fully. In macroeconomics, unemployment is often thought to stem from market disequilibria.

Disinflation. The process of reducing a high inflation rate. For example, the deep recession of 1980–1983 led to a sharp disinflation over that period.

Disposable income (*DI*). Roughly, take-home pay, or that part of the total national income that is available to households for consumption or saving. More precisely, it is equal to GDP less all taxes, business saving, and depreciation plus government and other transfer payments and government interest payments.

Disposable personal income. Same as **disposable income.**

Dissaving. Negative saving; spending more on consumption goods during a period than the disposable income available for that period (the difference being financed by borrowing or drawing on past savings).

Distribution. In economics, the manner in which total output and income is distributed among individuals or factors (e.g., the distribution of income between labor and capital).

Distribution theory. See **theory of income distribution.**

Division of labor. A method of organizing production whereby each worker specializes in part of the productive process. Specialization of labor yields higher total output because labor can become more skilled at a particular task and because specialized machinery can be introduced to perform more carefully defined subtasks.

Dominant equilibrium. See **dominant strategy.**

Dominant strategy. In game theory, a situation where one player has a best strategy no matter what strategy the other player follows. When all players have a dominant strategy, we say that the outcome is a *dominant equilibrium.*

Downward-sloping demand, law of. The rule which says that when the price of some commodity falls, consumers will purchase more of that good, other things held equal.

Duopoly. A market structure in which there are only two sellers. (Compare with **oligopoly.**)

E

Econometrics. The branch of economics that uses the methods of statistics to measure and estimate quantitative economic relationships.

Economic efficiency. See **efficiency.**

Economic good. A good that is scarce relative to the total amount of it that is desired. It must therefore be rationed, usually by charging a positive price.

Economic growth. An increase in the total output of a nation over time. Economic growth is usually measured as the annual rate of increase in a nation's real GDP (or real potential GDP).

Economic regulation. See **regulation.**

Economic rent. Refer to **rent, economic.**

Economic surplus. A term denoting the excess in total satisfaction or utility over the costs of production; equals the sum of consumer surplus (the excess of consumer satisfaction over total value of purchases) and producer surplus (the excess of producer revenues over costs).

Economics. The study of how societies use scarce resources to produce valuable commodities and distribute them among different people.

Economics of information. Analysis of economic situations that involve information as a commodity. Because information is costly to produce but cheap to reproduce, market failures are common in markets for informational goods and services such as invention, publishing, and software.

Economies of scale. Increases in productivity, or decreases in average cost of production, that arise from increasing all the factors of production in the same proportion.

Effective tax rate. Total taxes paid as a percentage of the total income or other tax base; also known as *average tax rate.*

Efficiency. Absence of waste, or the use of economic resources that produces the maximum level of satisfaction possible with the given inputs and technology. A shorthand expression for **Pareto efficiency.**

Efficiency-wage theory. According to this theory, higher wages lead to higher productivity. This occurs because with higher wages workers are healthier, have higher morale, and have lower turnover.

Efficient financial market. A financial market displaying the characteristics of an **efficient market.**

Efficient market (also efficient-market theory). A market or theory in which all new information is quickly absorbed by market participants and becomes immediately incorporated into market prices. In economics, efficient-market theory holds that all currently available information is already incorporated into the price of common stocks (or other assets).

Elasticity. A term widely used in economics to denote the responsiveness of one variable to changes in another. Thus the elasticity of X with respect to Y means the percentage change in X for every 1 percent change in Y. For especially important examples, see **price elasticity of demand** and **price elasticity of supply.**

Employed. According to official U.S. definitions, persons are employed if they perform any paid work or if they hold jobs but are absent because of illness, strike, or vacations.

Equal-cost line. A line in a graph showing the various possible combinations of factor inputs that can be purchased with a given quantity of money.

Equal-product curve (or isoquant). A line in a graph showing the various possible combinations of factor inputs which will yield a given quantity of output.

Equation of exchange. A definitional equation which states that $MV \equiv PQ$, or the money stock times velocity of money equals the price level times output. This equation forms the core of **monetarism.**

Equilibrium. The state in which an economic entity is at rest or in which the forces operating on the entity are in balance so that there is no tendency for change.

Equilibrium (for a business firm). That position or level of output in which the firm is maximizing its profit, subject to any constraints it may face, and therefore has no incentive to change its output or price level. In the standard theory of the firm, this means that the firm has chosen an output at which marginal revenue is just equal to marginal cost.

Equilibrium (for the individual consumer). That position in which the consumer is maximizing utility, i.e., has chosen the bundle of goods which, given income and prices, best satisfies the consumer's wants.

Equilibrium, competitive. Refer to **competitive equilibrium.**

Equilibrium, general. Refer to **general-equilibrium analysis.**

Equilibrium, macroeconomic. A GDP level at which intended aggregate demand equals intended aggregate supply. At the equilibrium, desired consumption (C), government expenditures (G), investment (I), and net exports (X) just equal the quantity that businesses wish to sell at the going price level.

Equilibrium unemployment. Equilibrium unemployment arises when people are voluntarily unemployed rather than unemployed because of a failure of labor markets to clear. An example is the frictional unemployed that occurs when people move voluntarily from job to job or in and out of the labor force.

Equimarginal principle. A principle for deciding the allocation of income among different consumption goods. Under this principle, a consumer's utility is maximized by choosing the consumption bundle such that the marginal utility per dollar spent is equal for all goods.

Exchange rate. See **foreign exchange rate.**

Exchange-rate system. The set of rules, arrangements, and institutions under which payments are made among nations. Historically, the most important exchange-rate systems have been the gold exchange standard, the Bretton Woods system, and today's flexible-exchange-rate system.

Excise tax vs. sales tax. An excise tax is one levied on the purchase of a specific commodity or group of commodities (e.g., alcohol or tobacco). A *sales tax* is one levied on all commodities with only a few specific exclusions (e.g., all purchases except food).

Exclusion principle. A criterion by which public goods are distinguished from private goods. When a producer sells a commodity to person A and can easily exclude B, C, D, etc., from enjoying the benefits of the commodity, the exclusion principle holds and the good is a private good. If, as in public health or national defense, people cannot easily be excluded from enjoying the benefits of the good's production, then the good has public-good characteristics.

Exogenous vs. induced variables. Exogenous variables are those determined by conditions outside the economy. They are contrasted with *induced variables,* which are determined by the internal workings of the economic system. Changes in the weather are exogenous; changes in consumption are often induced by changes in income.

Expectations. Views or beliefs about uncertain variables (such as future interest rates, prices, or tax rates). Expectations are said to be *rational* if they are not systematically wrong (or "biased") and use all available information. Expectations are said to be *adaptive* if people form their expectations on the basis of past behavior.

Expected rate of inflation. A process of steady inflation that occurs when inflation is expected to persist and the ongoing rate of inflation is built into contracts and people's expectations.

Expenditure multiplier. See **multiplier.**

Exports. Goods or services that are produced in the home country and sold to another country. These include merchandise trade (like cars), services (like transportation), and interest on loans and investments. *Imports* are simply flows in the opposite direction—into the home country from another country.

External diseconomies. Situations in which production or consumption imposes uncompensated costs on other parties. Steel factories that emit smoke and sulfurous fumes harm local property and public health, yet the injured parties are not paid for the damage. The pollution is an external diseconomy.

External economies. Situations in which production or consumption yields positive benefits to others without those others paying. A firm that hires a security guard scares thieves from the neighborhood, thus providing external security services. Together with external diseconomies, these are often referred to as **externalities.**

External variables. Same as **exogenous variables.**

Externalities. Activities that affect others for better or worse, without those others paying or being compensated for the activity. Externalities exist when private costs or benefits do not equal social costs or benefits. The two major species are **external economies** and **external diseconomies.**

F

Factors of production. Productive inputs, such as labor, land, and capital; the resources needed to produce goods and services. Also called *inputs.*

Fallacy of composition. The fallacy of assuming that what holds for individuals also holds for the group or the entire system.

Federal funds rate. The interest rate that banks pay each other for the overnight use of bank reserves.

Federal Reserve System. The **central bank** of the United States; consists of the Board of Governors and 12 regional Federal Reserve Banks.

Fiat money. Money, like today's paper currency, without **intrinsic value** but decreed (by fiat) to be legal tender by the government. Fiat money is accepted only as long as people have confidence that it will be accepted.

Final good. A good that is produced for final use and not for resale or further manufacture. (Compare with **intermediate goods.**)

Finance. The process by which economic agents borrow from and lend to other agents in order to save and spend.

Financial account. See **balance of trade.**

Financial assets. Monetary claims or obligations by one party against another party. Examples are bonds, mortgages, bank loans, and equities.

Financial economics. That branch of economics which analyzes how rational investors should invest their funds to attain their objectives in the best possible manner.

Financial intermediaries. Institutions which provide financial services and products. These include depository institutions (such as commercial or savings banks) and nondepository institutions (such as money market mutual funds, brokerage houses, insurance companies, or pension funds).

Financial markets. Markets whose products and services consist of financial instruments like stocks and bonds.

Financial system. The markets, firms, and other institutions which carry out the financial decisions of households, businesses, governments, and the rest of the world. Important parts of the financial system include the money market, markets for fixed-interest assets like bonds or mortgages, stock markets for the ownership of firms, and foreign exchange markets which trade the monies of different countries.

Firm (business firm)**.** The basic, private producing unit in an economy. It hires labor, rents or owns capital and land, and buys other inputs in order to make and sell goods and services.

Fiscal-monetary mix. The combination of fiscal and monetary policies used to influence macroeconomic activity. A tight monetary–loose fiscal policy will tend to encourage consumption and retard investment, while an easy monetary–tight fiscal policy will have the opposite effect.

Fiscal policy. A government's program with respect to (1) the purchase of goods and services and spending on transfer payments and (2) the amount and type of taxes.

Fixed cost. Refer to **cost, fixed.**

Fixed exchange rate. See **foreign exchange rate.**

Flexible exchange rates. A system of foreign exchange rates among countries wherein the exchange rates are predominantly determined by private market forces (i.e., by supply and demand) without governments' setting and maintaining a particular pattern of exchange rates; also sometimes called *floating exchange rates.* When the government refrains from any intervention in exchange markets, the system is called a pure flexible-exchange-rate system.

Floating exchange rates. See **flexible exchange rates.**

Flow of funds. The account which traces how money and other financial instruments flow through the economy.

Flow vs. stock. A *flow* variable is one that has a time dimension or flows over time (like the flow through a stream). A *stock* variable is one that measures a quantity at a point of time (like the water in a lake). Income represents dollars per year and is thus a flow. Wealth as of December 2005 is a stock.

Foreign exchange. Currency (or other financial instruments) of different countries that allow one country to settle amounts owed to other countries.

Foreign exchange market. The market in which currencies of different countries are traded.

Foreign exchange rate. The rate, or price, at which one country's currency is exchanged for the currency of another country. For example, if you can buy 10 Mexican pesos for 1 U.S. dollar, then the exchange rate for the peso is 10. A country has a *fixed exchange rate* if it pegs its currency at a given exchange rate and stands ready to defend that rate. Exchange rates which are determined by market supply and demand are called **flexible exchange rates.**

Four-firm concentration ratio. See **concentration ratio.**

Fractional-reserve banking. A regulation in modern banking systems whereby financial institutions are legally required to keep a specified fraction of their deposits in the form of deposits with the central bank (or in vault cash).

Free goods. Those goods that are not **economic goods.** Like air or seawater, they exist in such large quantities that they need not be rationed out among those wishing

to use them. Thus, their market price is zero.

Free trade. A policy whereby the government does not intervene in trading between nations by tariffs, quotas, or other means.

Frictional unemployment. Temporary unemployment caused by changes in individual markets. It takes time, for example, for new workers to search among different job possibilities; even experienced workers often spend a minimum period of unemployed time moving from one job to another. Frictional is thus distinct from *cyclical unemployment,* which results from a low level of aggregate demand in the context of sticky wages and prices.

Full employment. A term that is used in many senses. Historically, it was taken to be that level of employment at which no (or minimal) involuntary unemployment exists. Today, economists rely upon the concept of the **nonaccelerating inflation rate of unemployment** (**NAIRU**) to indicate the highest sustainable level of employment over the long run.

G

Gains from trade. The aggregate increase in welfare accruing from voluntary exchange; equal to the sum of consumer surplus and gains in producer profits.

Galloping inflation. See **inflation.**

Game theory. An analysis of situations involving two or more decision makers with at least partially conflicting interests. It can be applied to the interaction of oligopolistic markets as well as to bargaining situations such as strikes or to conflicts such as games and war.

GDP deflator. The "price" of GDP, i.e., the price index that measures the average price of the components in GDP relative to a base year.

General-equilibrium analysis. Analysis of the equilibrium state for the economy as a whole in which the markets for all goods and services are simultaneously in equilibrium. By contrast, **partial-equilibrium analysis** concerns the equilibrium in a single market.

GNP. See **gross national product.**

Gold standard. A system under which a nation (1) declares its currency unit to be equivalent to some fixed weight of gold, (2) holds gold reserves against its money, and (3) will buy or sell gold freely at the price so proclaimed, with no restrictions on the export or import of gold.

Government debt. The total of government obligations in the form of bonds and shorter-term borrowings. Government debt held by the public excludes bonds held by quasi-governmental agencies such as the central bank.

Government expenditure multiplier. The increase in GDP resulting from an increase of $1 in government purchases.

Gross domestic product, nominal (or **nominal GDP).** The value, at current market prices, of the total final output produced inside a country during a given year.

Gross domestic product, real (or **real GDP).** The quantity of goods and services produced in a nation during a year. Real GDP takes nominal GDP and corrects for price increases.

Gross national product, real (or **real GNP).** Nominal GNP corrected for inflation; i.e., real GNP equals nominal GNP divided by the GNP deflator. This was the central accounting concept in earlier times but has been replaced by **gross domestic product.**

Growth accounting. A technique for estimating the contribution of different factors to economic growth. Using marginal productivity theory, growth accounting decomposes the growth of output into the growth in labor, land, capital, education, technical knowledge, and other miscellaneous sources.

H

Hedging. A technique for avoiding a risk by making a counteracting transaction. For example, if a farmer produces wheat that will be harvested in the fall, the risk of price fluctuations can be offset, or hedged, by selling in the spring or summer the quantity of wheat that will be produced.

Herfindahl-Hirschman Index (HHI). A measure of market power often used in analysis of market structure. It is calculated by summing the squares of the percentage market shares of all participants in a market. Perfect competition would have an HHI of near zero, while complete monopoly has an HHI of 10,000.

High-powered money. Same as **monetary base.**

Horizontal equity vs. vertical equity. *Horizontal equity* refers to the fairness or equity in treatment of persons in similar situations; the principle of horizontal equity states that those who are essentially equal should receive equal treatment. *Vertical equity* refers to the equitable treatment of those who are in different circumstances.

Horizontal integration. See **integration, vertical vs. horizontal.**

Horizontal merger. See **merger.**

Human capital. The stock of technical knowledge and skill embodied in a nation's workforce, resulting from investments in formal education and on-the-job training.

Hyperinflation. See **inflation.**

I

Imperfect competition. Refer to **competition, imperfect.**

Imperfect competitor. Any firm that buys or sells a good in large enough quantities to be able to affect the price of that good.

Implicit-cost elements. Costs that do not show up as explicit money costs but nevertheless should be counted as such (such as the labor cost of the owner of a small store). Sometimes called **opportunity cost,** although "opportunity cost" has a broader meaning.

Imports. See **exports.**

Inappropriability. See **inappropriable.**

Inappropriable. Term applied to resources for which the individual cost of use is free or less than the full social costs. These resources are characterized by the presence of externalities, and thus markets will allocate their use inefficiently from a social point of view.

Incidence (or **tax incidence).** The ultimate economic effect of a tax on the real incomes of producers or consumers (as opposed to the legal requirement for payment). Thus a sales tax may be paid by a retailer, but it is likely that the incidence falls upon the consumer. The exact incidence of a tax depends on the price elasticities of supply and demand.

Income. The flow of wages, interest payments, dividends, and other receipts accruing to an individual or nation during a period of time (usually a year).

Income effect (of a price change)**.** Change in the quantity demanded of a commodity because the change in its price has the effect of changing a consumer's real income. Thus it supplements the **substitution effect** of a price change.

Income elasticity of demand. The demand for any given good is influenced not only by the good's price but by buyers' incomes. Income elasticity measures this responsiveness. Its precise definition is percentage change in quantity demanded divided by percentage change in income. (Compare with **price elasticity of demand.**)

Income statement. A company's statement, covering a specified time period (usually a year), showing sales or revenue earned during that period, all costs properly charged against the goods sold, and the profit (net income) remaining after deduction of such costs. Also called a *profit-and-loss statement.*

Income tax, personal. Tax levied on the income received by individuals in the form of either wages and salaries or income from property, such as rents, dividends, or interest. In the United States, personal income tax is **progressive,** meaning that people with higher incomes pay taxes at a higher average rate than people with lower incomes.

Income velocity of money. See **velocity of money.**

Increasing returns to scale. See **returns to scale.**

Independent goods. Goods whose demands are relatively separate from each other. More precisely, goods A and B are independent when a change in the price of good A has no effect on the quantity demanded of good B, other things equal.

Indexing (or **indexation).** A mechanism by which wages, prices, and contracts are partially or wholly adjusted to compensate for changes in the general price level.

Indifference curve. A curve drawn on a graph whose two axes measure amounts of different goods consumed. Each point on one curve (indicating different combinations of the two goods) yields exactly the same level of satisfaction for a given consumer.

Indifference map. A graph showing a family of indifference curves for a consumer. In general, curves that lie farther northeast from the graph's origin represent higher levels of satisfaction.

Indirect taxes. See **direct taxes.**

Induced variables. See **exogenous vs. induced variables.**

Industry. A group of firms producing similar or identical products.

Infant industry. In foreign-trade theory, an industry that has not had sufficient time to develop the experience or expertise to exploit the economies of scale needed to compete successfully with more mature industries producing the same commodity in other countries. Infant industries are often thought to need tariffs or quotas to protect them while they develop.

Inferior good. A good whose consumption goes down as income rises.

Inflation (or **inflation rate).** The inflation rate is the percentage of annual increase in a general price level. *Hyperinflation* is inflation at extremely high rates (say, 1000, 1 million, or even 1 billion percent a year). *Galloping inflation* is a rate of 50 or 100 or 200 percent annually. *Moderate inflation* is a price-level rise that does not distort relative prices or incomes severely.

Inflation targeting. The announcement of official target ranges for the inflation rate along with an explicit statement that low and stable inflation is the overriding goal of monetary policy. Inflation targeting in hard or soft varieties has been adopted in recent years by many industrial countries.

Innovation. A term particularly associated with Joseph Schumpeter, who meant by it (1) the bringing to market of a new and significantly different product, (2) the introduction of a new production technique, or (3) the opening up of a new market. (Contrast with **invention.**)

Inputs. Commodities or services used by firms in their production processes; also called *factors of production.*

Insurance. A system by which individuals can reduce their exposure to risk of large losses by spreading the risks among a large number of persons.

Integration, vertical vs. horizontal. The production process is one of stages—e.g., iron ore into steel ingots, steel ingots into rolled steel sheets, rolled steel sheets into an automobile body. *Vertical integration* is the combination in a single firm of two or more different stages of this process (e.g., iron ore with steel ingots). *Horizontal integration* is the combination in a single firm of different units that operate at the same stage of production.

Intellectual property rights. Laws governing patents, copyrights, trade secrets, electronic media, and other commodities comprised primarily of information. These laws generally provide the original creator the right to control and be compensated for reproduction of the work.

Interest. The return paid to those who lend money.

Interest rate. The price paid for borrowing money for a period of time, usually expressed as a percentage of the principal per year. Thus, if the interest rate is 10 percent per year, then $100 would be paid for a loan of $1000 for 1 year.

Intermediate goods. Goods that have undergone some manufacturing or processing but have not yet reached the stage of becoming final products. For example, steel and cotton yarn are intermediate goods.

International monetary system (also **international financial system).** The institutions under which payments are made for transactions that reach across national boundaries. A central policy issue concerns the arrangement for determining how foreign exchange rates are set and how governments can affect exchange rates.

Intervention. An activity in which a government buys or sells its currency in the foreign exchange market in order to affect its currency's exchange rate.

Intrinsic value (of money)**.** The commodity value of a piece of money (e.g., the market value of the weight of copper in a copper coin).

Invention. The creation of a new product or discovery of a new production technique. (Distinguish from **innovation.**)

Investment. (1) Economic activity that forgoes consumption today with an eye to increasing output in the future. It includes tangible capital such as houses and intangible investments such as education. *Net investment* is the value of total investment after an allowance has been made for depreciation. *Gross investment* is investment without allowance for depreciation. (2) In finance terms, "investment" has an altogether different meaning and denotes the purchase of a security, such as a stock or a bond.

Investment demand (or **investment demand curve).** The schedule showing the relationship between the level of investment and the cost of capital (or, more specifically, the real interest rate); also, the graph of that relationship.

Invisible hand. A concept introduced by Adam Smith in 1776 to describe the paradox of a laissez-faire market economy. The invisible-hand doctrine holds that, with each participant pursuing his or her own private interest, a market system nevertheless works to the benefit of all as though a benevolent invisible hand were directing the whole process.

Involuntarily unemployed. See **unemployment.**

Isoquant. See **equal-product curve.**

K

Keynesian economics. The body of macroeconomic analysis developed by John Maynard Keynes holding that a market economy does not automatically tend toward a full-employment equilibrium. According to Keynes, the resulting underemployment equilibrium could be cured by fiscal or monetary policies to raise aggregate demand.

Keynesian macroeconomics. A theory of macroeconomic activity used to explain business cycles. It relies on an upward-sloping aggregate supply curve, so that changes in aggregate demand can affect output and employment.

Keynesian school. See **Keynesian economics.**

L

Labor force. In official U.S. statistics, that group of people 16 years of age and older who are either employed or unemployed.

Labor-force participation rate. The ratio of those in the labor force to the entire population 16 years of age or older.

Labor productivity. See **productivity.**

Labor supply. The number of workers (or, more generally, the number of labor-hours) available to an economy. The principal determinants of labor supply are population, real wages, and social traditions.

Labor theory of value. The view, often associated with Karl Marx, that every commodity should be valued solely according to the quantity of labor required for its production.

Laissez-faire ("Leave us alone"). The view that government should interfere as little as possible in economic activity and leave decisions to the marketplace. As expressed by classical economists like Adam Smith, this view held that the role of government should be limited

to maintenance of law and order, national defense, and provision of certain public goods that private business would not undertake (e.g., public health and sanitation).

Land. In classical and neoclassical economics, one of the three basic factors of production (along with labor and capital). More generally, land is taken to include land used for agricultural or industrial purposes as well as natural resources taken from above or below the soil.

Law of diminishing marginal utility. See **diminishing marginal utility, law of.**

Law of diminishing returns. See **diminishing returns, law of.**

Law of downward-sloping demand. The nearly universal observation that when the price of a commodity is raised (and other things are held constant), buyers buy less of the commodity. Similarly, when the price is lowered, other things being constant, quantity demanded increases.

Least-cost rule (of production). The rule that the cost of producing a specific level of output is minimized when the ratio of the marginal revenue product of each input to the price of that input is the same for all inputs.

Legal tender. Money that by law must be accepted as payment for debts. All U.S. coins and currency are legal tender, but checks are not.

Liabilities. In accounting, debts or financial obligations owed to other firms or persons.

Libertarianism. An economic philosophy that emphasizes the importance of personal freedom in economic and political affairs; also sometimes called "liberalism."

Limited liability. The restriction of an owner's loss in a business to the amount of capital that the owner has contributed to the company. Limited liability was an important factor in the rise of large corporations. By contrast, owners in partnerships and individual proprietorships generally have *unlimited liability* for the debts of those firms.

Long run. A term used to denote a period over which full adjustment to changes can take place. In microeconomics, it denotes the time over which firms can enter or leave an industry and the capital stock can be replaced. In macroeconomics, it is often used to mean the period over which all prices, wage contracts, tax rates, and expectations can fully adjust.

Long-run aggregate supply schedule. A schedule showing the relationship between output and the price level after all price and wage adjustments have taken place, and the *AS* curve is therefore vertical.

Lorenz curve. A graph used to show the extent of inequality of income or wealth.

M

M_1. See **money supply.**

Macroeconomic equilibrium. Refer to **equilibrium, macroeconomic.**

Macroeconomics. Analysis dealing with the behavior of the economy as a whole with respect to output, income, the price level, foreign trade, unemployment, and other aggregate economic variables. (Contrast with **microeconomics.**)

Malthusian theory of population growth. The hypothesis, first expressed by Thomas Malthus, that the "natural" tendency of population is to grow more rapidly than the food supply. Per capita food production would thus decline over time, thereby putting a check on population. In general, a view that population tends to grow more rapidly as incomes or living standards of the population rise.

Managed exchange rate. The most prevalent exchange-rate system today. In this system, a country occasionally intervenes to stabilize its currency but there is no fixed or announced parity.

Marginal cost. Refer to **cost, marginal.**

Marginal principle. The fundamental notion that people will maximize their income or profits when the marginal costs and marginal benefits of their actions are equal.

Marginal product (*MP*). The extra output resulting from 1 extra unit of a specified input when all other inputs are held constant. Sometimes called *marginal physical product.*

Marginal product theory of distribution. A theory of the distribution of income proposed by John B. Clark, according to which each productive input is paid according to its **marginal product.**

Marginal propensity to consume (*MPC*). The extra amount that people consume when they receive an extra dollar of disposable income. To be distinguished from the *average propensity to consume,* which is the ratio of total consumption to total disposable income.

Marginal propensity to import (*MPm*). In macroeconomics, the increase in the dollar value of imports resulting from each dollar increase in the value of GDP.

Marginal propensity to save (*MPS*). That fraction of an additional dollar of disposable income that is saved. Note that, by definition, $MRC + MPS = 1$.

Marginal revenue (*MR*). The additional revenue a firm would earn if it sold 1 extra unit of output. In perfect competition, *MR* equals price. Under imperfect competition, *MR* is less than price because, in order to sell the extra unit, the price must be reduced on all prior units sold.

Marginal revenue product (*MRP*) (of an input). Marginal revenue multiplied by marginal product. It is the extra revenue that would

be brought in if a firm were to buy 1 extra unit of an input, put it to work, and sell the extra product it produced.

Marginal tax rate. For an income tax, the percentage of the last dollar of income paid in taxes. If a tax system is progressive, the marginal tax rate is higher than the average tax rate.

Marginal utility (*MU*). The additional or extra satisfaction yielded from consuming 1 additional unit of a commodity, with amounts of all other goods consumed held constant.

Market. An arrangement whereby buyers and sellers interact to determine the prices and quantities of a commodity. Some markets (such as the stock market or a flea market) take place in physical locations; other markets are conducted over the telephone or are organized by computers, and some markets now are organized on the Internet.

Market-clearing price. The price in a supply-and-demand equilibrium. This denotes that all supply and demand orders are filled at that price, so that the books are "cleared" of orders.

Market economy. An economy in which the ***what, how,* and *for whom*** questions concerning resource allocation are primarily determined by supply and demand in markets. In this form of economic organization, firms, motivated by the desire to maximize profits, buy inputs and produce and sell outputs. Households, armed with their factor incomes, go to markets and determine the demand for commodities. The interaction of firms' supply and households' demand then determines the prices and quantities of goods.

Market equilibrium. Same as **competitive equilibrium.**

Market failure. An imperfection in a price system that prevents an efficient allocation of resources. Important examples are **externalities** and **imperfect competition.**

Market power. The degree of control that a firm or group of firms has over the price and production decisions in an industry. In a monopoly, the firm has a high degree of market power; firms in perfectly competitive industries have no market power. **Concentration ratios** are the most widely used measures of market power.

Market share. That fraction of an industry's output accounted for by an individual firm or group of firms.

Marxism. The set of social, political, and economic doctrines developed by Karl Marx in the nineteenth century. As an economic theory, Marxism predicted that capitalism would collapse as a result of its own internal contradictions, especially its tendency to exploit the working classes.

Mean. In statistics, the same thing as "average." Thus for the numbers 1, 3, 6, 10, 20, the mean is 8.

Median. In statistics, the figure exactly in the middle of a series of numbers ordered or ranked from lowest to highest (e.g., incomes or examination grades). Thus for the numbers 1, 3, 6, 10, 20, the median is 6.

Mercantilism. A political doctrine emphasizing the importance of balance-of-payments surpluses as a device to accumulate gold. Proponents therefore advocated tight government control of economic policies, believing that laissez-faire policies might lead to a loss of gold.

Merchandise trade balance. See **balance of trade.**

Merger. The acquisition of one corporation by another, which usually occurs when one firm buys the stock of another. Important examples are (1) *vertical mergers,* which occur when the two firms are at different stages of a production process (e.g., iron ore and steel), (2) *horizontal mergers,* which occur when the two firms produce in the same market (e.g., two automobile manufacturers), and (3) *conglomerate mergers,* which occur when the two firms operate in unrelated markets (e.g., shoelaces and oil refining).

Microeconomics. Analysis dealing with the behavior of individual elements in an economy—such as the determination of the price of a single product or the behavior of a single consumer or business firm. (Contrast with **macroeconomics.**)

Minimum cost. Refer to **cost, minimum.**

Mixed economy. The dominant form of economic organization in noncommunist countries. Mixed economies rely primarily on the price system for their economic organization but use a variety of government interventions (such as taxes, spending, and regulation) to handle macroeconomic instability and market failures.

Model. A formal framework for representing the basic features of a complex system by a few central relationships. Models take the form of graphs, mathematical equations, and computer programs.

Momentary run. A period of time that is so short that production is fixed.

Monetarism. A school of thought holding that changes in the money supply are the major cause of macroeconomic fluctuations.

Monetary base. The net monetary liabilities of the government that are held by the public. In the United States, the monetary base is equal to currency and bank reserves. Sometimes called *high-powered money.*

Monetary economy. An economy in which the trade takes place through a commonly accepted medium of exchange.

Monetary policy. The objectives of the central bank in exercising its control over money, interest rates, and credit conditions. The instruments of monetary policy are primarily open-market operations, reserve requirements, and the discount rate.

Monetary rule. The cardinal tenet of monetarist economic philosophy is the monetary rule which asserts that optimal monetary policy sets the growth of the money supply at a fixed rate and holds to that rate through thick and thin.

Monetary transmission mechanism. In macroeconomics, the route by which changes in the supply of money are translated into changes in output, employment, prices, and inflation.

Monetary union. An arrangement by which several nations adopt a common currency as a unit of account and medium of exchange. The European Monetary Union adopted the Euro as the common currency in 1999.

Money. The means of payment or medium of exchange. For the items constituting money, see **money supply.**

Money, velocity of. Refer to **velocity of money.**

Money demand schedule. The relationship between holdings of money and interest rates. As interest rates rise, bonds and other securities become more attractive, lowering the quantity of money demanded. See also **demand for money.**

Money funds. Shorthand expression for very liquid short-term financial instruments whose interest rates are not regulated. The major examples are money market mutual funds and commercial-bank money market deposit accounts.

Money market. A term denoting the set of institutions that handle the purchase or sale of short-term credit instruments like Treasury bills and commercial paper.

Money supply. The narrowly defined money supply (narrow money, or M_1) consists of coins, paper currency, and all demand or checking deposits; this is transactions money. The broadly defined supply (broad money) includes all items in M_1 plus certain liquid assets or near-monies—savings deposits, money market funds, and the like.

Money-supply effect. The relationship whereby a price rise operating on a fixed nominal money supply produces tight money and lowers aggregate spending.

Money-supply multiplier. The ratio of the increase in the money supply (or in deposits) to the increase in bank reserves. Generally, the money-supply multiplier is equal to the inverse of the required reserve ratio. For example, if the required reserve ratio is 0.125, then the money-supply multiplier is 8.

Monopolistic competition. A market structure in which there are many sellers supplying goods that are close, but not perfect, substitutes. In such a market, each firm can exercise some effect on its product's price.

Monopoly. A market structure in which a commodity is supplied by a single firm. Also see **natural monopoly.**

Monopsony. The mirror image of monopoly: a market in which there is a single buyer; a "buyer's monopoly."

Moral hazard. A type of market failure in which the presence of insurance against an insured risk increases the likelihood that the risky event will occur. For example, a car owner insured 100 percent against auto theft may be careless about locking the car because the presence of insurance reduces the incentive to prevent the theft.

MPC. See **marginal propensity to consume.**

MPS. See **marginal propensity to save.**

Multiplier. A term in macroeconomics denoting the change in an induced variable (such as GDP or money supply) per unit of change in an external variable (such as government spending or bank reserves). The *expenditure multiplier* denotes the increase in GDP that would result from a $1 increase in expenditure (say, on investment).

Multiplier model. In macroeconomics, a theory developed by J. M. Keynes that emphasizes the importance of changes in autonomous expenditures (especially investment, government spending, and net exports) in determining changes in output and employment. Also see **multiplier.**

N

NAIRU. See **nonaccelerating inflation rate of unemployment.**

Nash equilibrium. In game theory, a set of strategies for the players where no player can improve his or her payoff given the other player's strategy. That is, given player A's strategy, player B can do no better, and given B's strategy, A can do no better. The Nash equilibrium is also sometimes called the *noncooperative equilibrium.*

National debt. Same as **government debt.**

National income and product accounts (NIPA). A set of accounts that measures the spending, income, and output of the entire nation for a quarter or a year.

National saving rate. Total saving, private and public, divided by net domestic product.

Natural monopoly. A firm or industry whose average cost per unit of production falls sharply over the entire range of its output, as, e.g., in local electricity distribution.

Thus a single firm, a monopoly, can supply the industry output more efficiently than can multiple firms.

Natural rate of unemployment. The same concept as the **nonaccelerating inflation rate of unemployment (NAIRU).**

Neoclassical model of growth. A theory or model used to explain long-term trends in the economic growth of industrial economies. This model emphasizes the importance of capital deepening (i.e., a growing capital-labor ratio) and technological change in explaining the growth of potential real GDP.

Net domestic product (NDP). GDP less an allowance for depreciation of capital goods.

Net exports. In the national product accounts, the value of exports of goods and services minus the value of imports of goods and services.

Net foreign investment. Net saving by a country abroad; approximately equal to net exports.

Net investment. Gross investment minus depreciation of capital goods.

Net worth. In accounting, total assets minus total liabilities.

New classical macroeconomics. A theory which holds that (1) prices and wages are flexible and (2) people make forecasts in accordance with the **rational-expectations hypothesis.**

Nominal GDP. See **gross domestic product, nominal.**

Nominal (or money) interest rate. The **interest rate** paid on different assets. This represents a dollar return per year per dollar invested. Compare with the **real interest rate,** which represents the return per year in goods per unit of goods invested.

Nonaccelerating inflation rate of unemployment (NAIRU). An unemployment rate that is consistent with a constant inflation rate. At the NAIRU, upward and downward forces on price and wage inflation are in balance, so there is no tendency for inflation to change. The NAIRU is the unemployment rate at which the long-run Phillips curve is vertical.

Noncooperative equilibrium. See **Nash equilibrium.**

Nonrenewable resources. Those natural resources, like oil and gas, that are essentially fixed in supply and whose regeneration is not quick enough to be economically relevant.

Normative vs. positive economics. *Normative economics* considers "what ought to be"—value judgments, or goals, of public policy. *Positive economics,* by contrast, is the analysis of facts and behavior in an economy, or "the way things are."

Not in the labor force. That part of the adult population that is neither working nor looking for work.

O

Okun's Law. The empirical relationship, discovered by Arthur Okun, between cyclical movements in GDP and unemployment. The law states that when actual GDP declines 2 percent relative to potential GDP, the unemployment rate increases by about 1 percentage point. (Earlier estimates placed the ratio at 3 to 1.)

Oligopoly. A situation of imperfect competition in which an industry is dominated by a small number of suppliers.

Open economy. An economy that engages in international trade (i.e., imports and exports) of goods and capital with other countries. A *closed economy* is one that has no imports or exports.

Open-economy multiplier. Multiplier analysis as applied to economies that have foreign trade. The open-economy multiplier is smaller than the closed-economy multiplier because there is a leakage of spending into imports as well as into saving.

Open-market operations. The activity of a central bank in buying or selling government bonds to influence bank reserves, the money supply, and interest rates. If securities are bought, the money paid out by the central bank increases commercial-bank reserves, and the money supply increases. If securities are sold, the money supply contracts.

Opportunity cost. The value of the best alternative use of an economic good. Thus, say that the best alternative use of the inputs employed to mine a ton of coal was to grow 10 bushels of wheat. The opportunity cost of a ton of coal is thus the 10 bushels of wheat that *could* have been produced but were not. Opportunity cost is particularly useful for valuing nonmarketed goods such as environmental health or safety.

Optimal currency area. A grouping of regions or countries which have high labor mobility or have common and synchronous aggregate supply or demand shocks. Under such conditions, significant changes in exchange rates are not necessary to ensure rapid macroeconomic adjustment, and the countries can have fixed exchange rates or a common currency.

Ordinal utility. A dimensionless utility measure used in demand theory. Ordinal utility enables one to state that A is preferred to B, but we cannot say by how much. That is, any two bundles of goods can be ranked relative to each other, but the absolute difference between bundles cannot be measured. This contrasts with *cardinal utility,* or dimensional utility, which is sometimes used in the analysis of behavior toward risk. An example of a cardinal measure comes when we say that a substance at 100 K (kelvin) is twice as hot as one at 50 K.

Other things constant. A phrase (sometimes stated "*ceteris paribus*") which signifies that a factor under consideration is changed while all other factors are held constant or unchanged. For example, a downward-sloping demand curve shows that the quantity demanded will decline as the price rises, as long as other things (such as incomes) are held constant.

Outputs. The various useful goods or services that are either consumed or used in further production.

P

Paradox of thrift. The principle, first proposed by John Maynard Keynes, that an attempt by a society to increase its saving may result in a reduction in the amount which it actually saves.

Paradox of value. The paradox that many necessities of life (e.g., water) have a low "market" value while many luxuries (e.g., diamonds) with little "use" value have a high market price. It is explained by the fact that a price reflects not the total utility of a commodity but its marginal utility.

Pareto efficiency (or **Pareto optimality).** A situation in which no reorganization or trade could raise the utility or satisfaction of one individual without lowering the utility or satisfaction of another individual. Under certain limited conditions, perfect competition leads to allocative efficiency. Also called *allocative efficiency*.

Partial-equilibrium analysis. Analysis concentrating on the effect of changes in an individual market, holding other things equal (e.g., disregarding changes in income).

Partnership. An association of two or more persons to conduct a business which is not in corporate form and does not enjoy limited liability.

Patent. An exclusive right granted to an inventor to control the use of an invention for, in the United States, a period of 20 years. Patents create temporary monopolies as a way of rewarding inventive activity and, like other intellectual property rights, are a tool for promoting invention among individuals or small firms.

Payoff table. In game theory, a table used to describe the strategies and payoffs of a game with two or more players. The profits or utilities of the different players are the *payoffs*.

Payoffs. See **payoff table.**

Perfect competition. Refer to **competition, perfect.**

Personal disposable income. Personal income minus taxes plus transfers. The amount households have for consumption and saving.

Personal income. A measure of income before taxes have been deducted. More precisely, it equals disposable personal income plus net taxes.

Personal saving. That part of income which is not consumed; in other words, the difference between disposable income and consumption.

Personal saving rate. The ratio of personal saving to personal disposable income, in percent.

Phillips curve. A graph, first devised by A. W. Phillips, showing the tradeoff between unemployment and inflation. In modern mainstream macroeconomics, the downward-sloping "tradeoff" Phillips curve is generally held to be valid only in the short run; in the long run, the Phillips curve is usually thought to be vertical at the nonaccelerating inflation rate of unemployment (NAIRU).

Policy-ineffectiveness theorem. A theorem which asserts that, with rational expectations and flexible prices and wages, anticipated government monetary or fiscal policy cannot affect real output or unemployment.

Portfolio theory. An economic theory that describes how rational investors allocate their wealth among different financial assets—that is, how they put their wealth into a "portfolio."

Positive economics. See **normative vs. positive economics.**

Post hoc fallacy. From the Latin, *post hoc, ergo propter hoc,* which translates as "after this, therefore because of this." This fallacy arises when it is assumed that because event A precedes event B, it follows that A *causes* B.

Potential GDP. High-employment GDP; more precisely, the maximum level of GDP that can be sustained with a given state of technology and population size without accelerating inflation. Today, it is generally taken to be equivalent to the level of output corresponding to the **nonaccelerating inflation rate of unemployment (NAIRU).** Potential output is not necessarily maximum output.

Potential output. Same as **potential GDP.**

Poverty. Today, the U.S. government defines the "poverty line" to be the minimum adequate standard of living.

PPF. See **production-possibility frontier.**

Present value (of an asset). Today's value for an asset that yields a stream of income over time. Valuation of such time streams of returns requires calculating the present worth of each component of the income, which is done by applying a discount rate (or interest rate) to future incomes.

Price. The money cost of a good, service, or asset. Price is measured in monetary units per unit of the good (as in 3 dollars per 1 hamburger).

Price discrimination. A situation where the same product is sold to different consumers for different prices.

Price-elastic demand (or elastic demand). The situation in which price elasticity of demand exceeds 1 in absolute value. This signifies that the percentage change in quantity demanded is greater than the percentage change in price. In addition, elastic demand implies that total revenue (price times quantity) rises when price falls because the increase in quantity demanded is so large. (Contrast with **price-inelastic demand.**)

Price elasticity of demand. A measure of the extent to which quantity demanded responds to a price change. The elasticity coefficient (price elasticity of demand E_p) is the percentage change in quantity demanded divided by percentage change in price. In figuring percentages, use the averages of old and new quantities in the numerator and of old and new prices in the denominator; disregard the minus sign. Refer also to **price-elastic demand, price-inelastic demand,** and **unit-elastic demand.**

Price elasticity of supply. Conceptually similar to **price elasticity of demand,** except that it measures the supply responsiveness to a price change. More precisely, the price elasticity of supply measures the percentage change in quantity supplied divided by the percentage change in price. Supply elasticities are most useful in perfect competition.

Price flexibility. Price behavior in "auction" markets (e.g., for many raw commodities or the stock market), in which prices immediately respond to changes in demand or in supply.

Price index. An index number that shows how the average price of a bundle of goods changes over time. In computation of the average, the prices of the different goods are generally weighted by their economic importance (e.g., by each commodity's share of total consumer expenditures in the **consumer price index**).

Price-inelastic demand (or inelastic demand). The situation in which price elasticity of demand is below 1 in absolute value. In this case, when price declines, total revenue declines, and when price is increased, total revenue goes up. Perfectly inelastic demand means that there is no change at all in quantity demanded when price goes up or down. (Contrast with **price-elastic demand** and **unit-elastic demand.**)

Price of GDP. See **GDP deflator.**

Private good. See **public good.**

Producer price index. The price index of goods sold at the wholesale level (such as steel, wheat, oil).

Producer surplus. The difference between the producer sales revenue and the producer cost. The producer surplus is generally measured as the area above the supply curve but under the price line up to the amount sold.

Product, average. Refer to **average product.**

Product, marginal. Refer to **marginal product.**

Product differentiation. The existence of characteristics that make similar goods less-than-perfect substitutes. Thus locational differences make similar types of gasoline sold at separate points imperfect substitutes. Firms enjoying product differentiation face a downward-sloping demand curve instead of the horizontal demand curve of the perfect competitor.

Production function. A relation (or mathematical function) specifying the maximum output that can be produced with given inputs for a given level of technology; applies to a firm or, as an aggregate production function, to the economy as a whole.

Production-possibility frontier (*PPF*). A graph showing the menu of goods that can be produced by an economy. In a frequently cited case, the choice is reduced to two goods, guns and butter. Points outside the *PPF* (to the northeast of it) are unattainable. Points inside it are inefficient since resources are not being fully employed, resources are not being used properly, or outdated production techniques are being utilized.

Productive efficiency. A situation in which an economy cannot produce more of one good without producing less of another good; this implies that the economy is on its production-possibility frontier.

Productivity. A term referring to the ratio of output to inputs (total output divided by labor inputs is *labor productivity*). Productivity increases if the same quantity of inputs produces more output. Labor productivity increases because of improved technology, improvements in labor skills, or capital deepening.

Productivity growth. The rate of increase in **productivity** from one period to another. For example, if an index of labor productivity is 100 in 2004 and 101.7 in 2005, the rate of productivity growth is 1.7 percent per year for 2005 over 2004.

Productivity of capital, net. See **rate of return on capital.**

Profit. (1) In accounting terms, total revenue minus costs properly chargeable against the goods sold (see **income statement**). (2) In economic theory, the difference between sales revenue and the full opportunity cost of resources involved in producing the goods.

Profit-and-loss statement. See **income statement.**

Progressive, proportional, and regressive taxes. A progressive tax weighs more heavily upon the rich; a regressive tax does the opposite. More precisely, a tax is *progressive* if the average tax rate (i.e., taxes divided by income) is higher for

those with higher incomes; it is a *regressive* tax if the average tax rate declines with higher incomes; it is a *proportional* tax if the average tax rate is equal at all income levels.

Property rights. Rights that define the ability of individuals or firms to own, buy, sell, and use the capital goods and other property in a market economy.

Proportional tax. See **progressive, proportional, and regressive taxes.**

Proprietorship, individual. A business firm owned and operated by one person.

Protectionism. Any policy adopted by a country to protect domestic industries against competition from imports (most commonly, a tariff or quota imposed on such imports).

Public choice (also **public-choice theory).** Branch of economics and political science dealing with the way that governments make choices and direct the economy. This theory differs from the theory of markets in emphasizing the influence of vote maximizing for politicians, which contrasts to profit maximizing by firms.

Public debt. See **government debt.**

Public good. A commodity whose benefits are indivisibly spread among the entire community, whether or not particular individuals desire to consume the public good. For example, a public-health measure that eradicates polio protects all, not just those paying for the vaccinations. To be contrasted with *private goods,* such as bread, which, if consumed by one person, cannot be consumed by another person.

Pure economic rent. See **rent, economic.**

Q

Quantity demanded. See **change in demand vs. change in quantity demanded.**

Quantity equation of exchange. A tautology, $MV \equiv PQ$, where M is the money supply, V is the income velocity of money, and PQ (price times quantity) is the money value of total output (nominal GDP). The equation must always hold exactly since V is defined as PQ/M.

Quantity supplied. See **change in supply vs. change in quantity supplied.**

Quantity theory of money and prices. A theory of the determination of output and the overall price level holding that prices move proportionately with the money supply. A more cautious approach put forth by monetarists holds that the money supply is the most important determinant of changes in nominal GDP (see **monetarism**).

Quota. A form of import protectionism in which the total quantity of imports of a particular commodity (e.g., sugar or cars) during a given period is limited.

R

Random-walk theory (of stock market prices)**.** See **efficient market.**

Rate of inflation. See **inflation.**

Rate of return (or **return) on capital.** The yield on an investment or on a capital good. Thus, an investment costing $100 and yielding $12 annually has a rate of return of 12 percent per year.

Rate of return on investment. The net dollar return per year for every dollar of invested capital. For example, if $100 of investment yields $12 per year of return, the rate of return on investment is 12 percent per year.

Rational expectations. See **expectations.**

Rational-expectations hypothesis. A hypothesis which holds that people make unbiased forecasts and, further, that people use all available information and economic theory to make these forecasts.

Rational-expectations macroeconomics. A school holding that markets clear quickly and that expectations are rational. Under these and other conditions it can be shown that predictable macroeconomic policies have no effect on real output or unemployment. Sometimes called **new classical macroeconomics.**

Real-business-cycle (RBC) theory. A theory that explains business cycles purely as shifts in aggregate supply, primarily due to technological disturbances, without any reference to monetary or other demand-side forces.

Real GDP. See **gross domestic product, real.**

Real interest rate. The interest rate measured in terms of goods rather than money. It is thus equal to the money (or nominal) interest rate less the rate of inflation.

Real wages. The purchasing power of a worker's wages in terms of goods and services. It is measured by the ratio of the money wage rate to the consumer price index.

Recession. A period of significant decline in total output, income, and employment, usually lasting from 6 months to a year and marked by widespread contractions in many sectors of the economy. See also **depression.**

Regressive tax. See **progressive, proportional, and regressive taxes.**

Regulation. Government laws or rules designed to control the behavior of firms. The major kinds are *economic regulation* (which affects the prices, entry, or service of a single industry, such as telephone service) and *social regulation* (which attempts to correct externalities that prevail across a number of industries, such as air or water pollution).

Renewable resources. Natural resources (like agricultural land) whose services replenish regularly and which, if properly managed, can yield useful services indefinitely.

Rent, economic (or **pure economic rent).** Term applied to income earned from land. The total supply of land available is (with minor qualifications) fixed, and the return paid to the landowner is rent. The term is often extended to the return paid to any factor in fixed supply—i.e., to any input having a perfectly inelastic or vertical supply curve.

Required reserve ratio. See **reserves, bank.**

Reserves, bank. That portion of deposits that a bank sets aside in the form of vault cash or non-interest-earning deposits with Federal Reserve Banks. In the United States, banks are required to hold 10 percent of checking deposits (or transactions accounts) in the form of reserves.

Reserves, international. International money held by a nation to stabilize or "peg" its foreign exchange rate or provide financing when the nation faces balance-of-payments difficulties. Today, the bulk of reserves are U.S. dollars, with Euros and Japanese yen the other major reserve currencies.

Resource allocation. The manner in which an economy distributes its resources (its factors of production) among the potential uses so as to produce a particular set of final goods.

Returns to scale. The rate at which output increases when all inputs are increased proportionately. For example, if all the inputs double and output is exactly doubled, that process is said to exhibit *constant returns to scale.* If, however, output grows by less than 100 percent when all inputs are doubled, the process shows *decreasing returns to scale;* if output more than doubles, the process demonstrates *increasing returns to scale.*

Revaluation. An increase in the official foreign exchange rate of a currency. See also **devaluation.**

Ricardian view of fiscal policy. A theory developed by Harvard's Robert Barro which holds that changes in tax rates have no impact upon consumption spending because households foresee, say, that tax cuts today will require tax increases tomorrow to finance the government's financing requirements.

Risk. In financial economics, refers to the variability of the returns on an investment.

Risk averse. A person is risk-averse when, faced with an uncertain situation, the displeasure from losing a given amount of income is greater than the pleasure from gaining the same amount of income.

Risk spreading. The process of taking large risks and spreading them around so that they are but small risks for a large number of people. The major form of risk spreading is **insurance,** which is a kind of gambling in reverse.

Rule of 70. A useful shortcut for approximating compound interest. A quantity that grows at r percent per year will double in about $70/r$ years.

S

Sacrifice ratio. The sacrifice ratio is the cumulative loss in output, measured as a percent of one year's GDP, associated with a one-percentage-point permanent reduction in inflation.

Sales tax. See **excise tax vs. sales tax.**

Saving function. The schedule showing the amount of saving that households or a nation will undertake at each level of income.

Say's Law of Markets. The theory that "supply creates its own demand." J. B. Say argued in 1803 that, because total purchasing power is exactly equal to total incomes and outputs, excess demand or supply is impossible. Keynes attacked Say's Law, pointing out that an extra dollar of income need not be spent entirely (i.e., the marginal propensity to spend is not necessarily unity).

Scarcity. The distinguishing characteristic of an economic good. That an economic good is scarce means not that it is rare but only that it is not freely available for the taking. To obtain such a good, one must either produce it or offer other economic goods in exchange.

Scarcity, law of. The principle that most things that people want are available only in limited supply (the exception being **free goods**). Thus goods are generally scarce and must somehow be rationed, whether by price or some other means.

Schedule (demand, supply, aggregate demand, aggregate supply). Term used interchangeably with "curve," as in demand curve, supply curve, etc.

Securities. A term used to designate a wide variety of financial assets, such as stocks, bonds, options, and notes; more precisely, the documents used to establish ownership of these assets.

Short run. A period in which not all factors can adjust fully. In microeconomics, the capital stock and other "fixed" inputs cannot be adjusted and entry is not free in the short run. In macroeconomics, prices, wage contracts, tax rates, and expectations may not fully adjust in the short run.

Short-run aggregate supply schedule. The schedule showing the relationship between output and prices in the short run wherein changes in aggregate demand can affect output; represented by an upward-sloping or horizontal *AS* curve.

Shutdown price (or **point** or **rule).** In the theory of the firm, the shutdown point comes at that point where the market price is just sufficient to cover average variable cost

and no more. Hence, the firm's losses per period just equal its fixed costs; it might as well shut down.

Single-tax movement. A nineteenth-century movement, originated by Henry George, holding that continued poverty in the midst of steady economic progress was attributable to the scarcity of land and the large rents flowing to landowners. The "single tax" was to be a tax on economic rent earned from landownership.

Slope. In a graph, the change in the variable on the vertical axis per unit of change in the variable on the horizontal axis. Upward-sloping lines have positive slopes, downward-sloping curves (like demand curves) have negative slopes, and horizontal lines have slopes of zero.

Social insurance. Mandatory insurance provided by government to improve social welfare by preventing the losses created by market failures such as moral hazard or adverse selection.

Social overhead capital. The essential investments on which economic development depends, particularly for sanitation and drinking water, transportation, and communications; sometimes called *infrastructure.*

Social regulation. See **regulation.**

Socialism. A political theory which holds that all (or almost all) the means of production, other than labor, should be owned by the community. This allows the return on capital to be shared more equally than under capitalism.

Speculator. Someone engaged in speculation, i.e., someone who buys (or sells) a commodity or financial asset with the aim of profiting from later selling (or buying) the item at a higher (or lower) price.

Spillovers. Same as **externalities.**

Stagflation. A term, coined in the early 1970s, describing the coexistence of high unemployment, or *stag*nation, with persistent in*flation.* Its explanation lies primarily in the inertial nature of the inflationary process.

Statistical discrimination. Treatment of individuals on the basis of the average behavior or characteristics of members of the group to which they belong. Statistical discrimination can be self-fulfilling by reducing incentives for individuals to overcome the stereotype.

Stock, common. Refer to **common stock.**

Stock market. An organized marketplace in which common stocks are traded. In the United States, the largest stock market is the New York Stock Exchange, on which are traded the stocks of the largest U.S. companies.

Stock vs. flow. See **flow vs. stock.**

Strategic interaction. A situation in oligopolistic markets in which each firm's business strategies depend upon its rival's plans. A formal analysis of strategic interaction is given in **game theory.**

Structural budget. See **actual, cyclical, and structural budget.**

Structural unemployment. Unemployment resulting because the regional or occupational pattern of job vacancies does not match the pattern of worker availability. There may be jobs available, but unemployed workers may not have the required skill or the jobs may be in different regions from where the unemployed workers live.

Subsidy. A payment by a government to a firm or household that provides or consumes a commodity. For example, governments often subsidize food by paying for part of the food expenditures of low-income households.

Substitutes. Goods that compete with each other (as do gloves and mittens). By contrast, goods that go together in the eyes of consumers (such as left shoes and right shoes) are *complements.*

Substitution effect (of a price change)**.** The tendency of consumers to consume more of a good when its relative price falls (to "substitute" in favor of that good) and to consume less of the good when its relative price increases (to "substitute" away from that good). This substitution effect of a price change leads to a downward-sloping demand curve. (Compare with **income effect.**)

Substitution rule. A rule which asserts that if the price of one factor falls while all other factor prices remain the same, firms will profit by substituting the now-cheaper factor for all the other factors. The rule is a corollary of the **least-cost rule.**

Supply curve (or supply schedule). A schedule showing the quantity of a good that suppliers in a given market desire to sell at each price, holding other things equal.

Supply shock. In macroeconomics, a sudden change in production costs or productivity that has a large and unexpected impact upon aggregate supply. As a result of a supply shock, real GDP and the price level change unexpectedly.

Supply-shock inflation. Inflation originating on the supply side of markets from a sharp increase in costs. In the aggregate supply-and-demand framework, cost-push is illustrated as an upward shift of the *AS* curve. Also called *cost-push inflation.*

Supply-side economics. A view emphasizing policy measures to affect aggregate supply or potential output. This approach holds that high marginal tax rates on labor and capital incomes reduce work effort and saving.

T

Tangible assets. Those assets, such as land or capital goods like computers, buildings, and automobiles, that are used to produce further goods and services.

Tariff. A levy or tax imposed upon each unit of a commodity imported into a country.

Tax incidence. See **incidence.**

Technological change. A change in the process of production or an introduction of a new product such that more or improved output can be obtained from the same bundle of inputs. It results in an outward shift in the production-possibility curve. Often called *technological progress.*

Technological progress. See **technological change.**

Terms of trade (in international trade). The "real" terms at which a nation sells its export products and buys its import products. This measure equals the ratio of an index of export prices to an index of import prices.

Theory of income distribution. A theory explaining the manner in which personal income and wealth are distributed in a society.

Time deposit. Funds, held in a bank, that have a minimum "time of withdrawal"; included in broad money but not in M_1 because they are not accepted as a means of payment. Similar to *savings deposits.*

Total cost. Refer to **cost, total.**

Total factor productivity. An index of productivity that measures total output per unit of total input. The numerator of the index is total output (say, GDP), while the denominator is a weighted average of inputs of capital, labor, and resources. The growth of total factor productivity is often taken as an index of the rate of technological progress. Also sometimes called *multifactor productivity.*

Total product (or output). The total amount of a commodity produced, measured in physical units such as bushels of wheat, tons of steel, or number of haircuts.

Total revenue (TR). Price times quantity, or total sales.

Trade balance or **merchandise trade balance.** See **balance of trade.**

Trade barrier. Any of a number of protectionist devices by which nations discourage imports. Tariffs and quotas are the most visible barriers, but in recent years nontariff barriers (or NTBs), such as burdensome regulatory proceedings, have replaced more traditional measures.

Transactions demand for money. See **demand for money.**

Transactions money (M_1). A measure of the **money supply** which consists of items that are actually for transactions, namely, currency and checking accounts.

Transfer payments, government. Payments made by a government to individuals, for which the individual performs no current service in return. Examples are social security payments and unemployment insurance.

Treasury bills (T-bills). Short-term bonds or securities issued by the federal government.

U

Unemployed. People who are not employed but are actively looking for work or waiting to return to work.

Unemployment. (1) In economic terms, *involuntary unemployment* occurs when there are qualified workers who are willing to work at prevailing wages but cannot find jobs. (2) In the official (U.S. Bureau of Labor Statistics) definition, a worker is unemployed if he or she (*a*) is not working and (*b*) either is waiting for recall from layoff or has actively looked for work in the last 4 weeks. See also **frictional unemployment** and **structural unemployment.**

Unemployment rate. The percentage of the labor force that is unemployed.

Unit-elastic demand. The situation, between **price-elastic demand** and **price-inelastic demand,** in which price elasticity is just equal to 1 in absolute value. See also **price elasticity of demand.**

Unlimited liability. See **limited liability.**

Usury. The charging of an interest rate above a legal maximum on borrowed money.

Utility (also **total utility**). The total satisfaction derived from the consumption of goods or services. To be contrasted with *marginal utility,* which is the additional utility arising from consumption of an additional unit of the commodity.

V

Value, paradox of. Refer to **paradox of value.**

Value added. The difference between the value of goods produced and the cost of materials and supplies used in producing them. In a $1 loaf of bread embodying $0.60 worth of wheat and other materials, the value added is $0.40. Value added consists of the wages, interest, and profit components added to the output by a firm or industry.

Value-added tax (VAT). A tax levied upon a firm as a percentage of its value added.

Variable. A magnitude of interest that can be defined and measured. Important variables in economics include prices, quantities, interest rates, exchange rates, dollars of wealth, and so forth.

Variable cost. Refer to **cost, variable.**

Velocity of money. In serving its function as a medium of exchange, money moves from buyer to seller to new buyer and so on. Its "velocity" refers to the speed of this movement.

Vertical equity. See **horizontal equity vs. vertical equity.**

Vertical integration. See **integration, vertical vs. horizontal.**

Vertical merger. See **merger.**

W

Wealth. The net value of tangible and financial items owned by a nation or person at a point in time. It equals all assets less all liabilities.

Welfare economics. The normative analysis of economic systems, i.e., the study of what is "wrong" or "right" about the economy's functioning.

Welfare state. A concept of the mixed economy arising in Europe in the late nineteenth century and introduced in the United States in the 1930s. In the modern conception of the welfare state, markets direct the detailed activities of day-to-day economic life while governments regulate social conditions and provide pensions, health care, and other aspects of the social safety net.

What, how,* and *for whom. The three fundamental problems of economic organization. *What* is the problem of how much of each possible good and service will be produced with the society's limited stock of resources or inputs. *How* is the choice of the particular technique by which each good shall be produced. *For whom* refers to the distribution of consumption goods among the members of that society.

Y

Yield. Same as the **interest rate** or **rate of return** on an asset.

Z

Zero economic profit. In a perfectly competitive industry in long-run equilibrium, there will be zero economic profit. This definition pertains to all revenues less all costs, including the implicit costs of factors owned by the firms.

Zero-profit point. For a business firm, that level of price at which the firm breaks even, covering all costs but earning zero profit.

GOVERNMENT DEBT SINCE THE AMERICAN REVOLUTION

U.S. PRICE LEVEL SINCE 1800

U.S. Consumer Price Index (2008 = 100)

120
80
60
40
20
16
12
8
6
4

Price Level

1800 1825 1850 1875 1900 1925 1950 1975 2000

FAMILY TREE OF ECONOMICS

PHYSIOCRATS

Quesnay, 1758

David Ricardo, 1817

SOCIALISM

K. Marx, 1867
V. Lenin, 1917

MERCANTILISTS

17th and 18th Centuries

Adam Smith, 1776

CLASSICAL SCHOOL

T.R. Malthus, 1798

J.S. Mill, 1848

NEOCLASSICAL ECONOMICS

Walras, Marshall, Fisher, 1880–1910

J.M. Keynes, 1936

MODERN MAINSTREAM ECONOMICS