

Glossary

- 100 per cent reserve banking** a situation in which banks' reserves equal 100 per cent of their deposits
- absolute advantage** one person has an absolute advantage over another if an hour spent in performing a task earns more than the other person can earn in an hour at the task
- accounting profit** the difference between a firm's total revenue and its explicit cost
- adverse selection** the pattern in which insurance tends to be purchased disproportionately by those who are most costly for companies to insure
- aggregate demand (AD) curve** shows the relationship between short-run equilibrium output Y and the rate of inflation π ; the name of the curve reflects the fact that short-run equilibrium output is determined by, and equals, total planned spending in the economy: increases in inflation reduce planned spending and short-run equilibrium output, so the aggregate demand curve is downward-sloping
- aggregate supply shock** either an inflation shock or a shock to potential output; adverse aggregate supply shocks of both types reduce output and increase inflation
- aggregation** the adding up of individual economic variables to obtain economywide totals
- allocative function of price** to direct resources away from overcrowded markets and toward markets that are underserved
- appreciation** an increase in the value of a currency relative to other currencies
- assets** anything of value that one owns
- asymmetric information** where buyers and sellers are not equally informed about the characteristics of products or services
- asymmetric shocks** affect different economies in different ways at the same time
- attainable point** any combination of goods that can be produced using currently available resources
- autarky** a situation in which a country is economically self-sufficient
- automatic stabilisers** automatic changes in the government budget deficit which help to dampen fluctuations in economic activity
- autonomous expenditure** the portion of planned aggregate expenditure that is independent of output
- average benefit** the total benefit of undertaking n units of an activity divided by n
- average cost** the total cost of undertaking n units of an activity divided by n
- average labour productivity** output per person employed
- average total cost (ATC)** total cost divided by total output
- average variable cost (AVC)** variable cost divided by total output
- balanced-budget multiplier** the effect on short-run equilibrium output of an increase in government purchases financed by an equal increase in taxation. As the change in output equals the change in government purchases, the balanced budget multiplier equals one
- balance-of-payments deficit** the net decline in a country's stock of international reserves over a year
- balance-of-payments surplus** the net increase in a country's stock of international reserves over a year
- bank reserves** cash or similar assets held by commercial banks for the purpose of meeting depositor withdrawals and payments
- barrier to entry** any force that prevents firms from entering a new market
- barter** the direct trade of goods or services for other goods or services
- basic elements of a game** the players, the strategies available to each player and the payoffs each player receives for each possible combination of strategies
- bequest saving** saving done for the purpose of leaving an inheritance
- Bertrand competition** firms choose a price and accept that quantity sold depends on demand at that price
- better-than-fair gamble** a gamble whose expected value is positive
- bond** a legal promise to repay a debt, usually including both the principal amount and regular interest payments
- boom** a particularly strong and protracted expansion

- Bretton Woods system** an exchange rate system centred on the US dollar
- buyer's reservation price** the largest euro amount the buyer would be willing to pay for a good
- buyer's surplus** the difference between the buyer's reservation price and the price he or she actually pays
- capital gains** increases in the value of existing assets
- capital good** a long-lived good, which is itself produced and used to produce other goods and services
- capital inflows** purchases of domestic assets by foreign households and firms
- capital losses** decreases in the value of existing assets
- capital outflows** purchases of foreign assets by domestic households and firms
- cartel** a coalition of firms that agrees to restrict output for the purpose of earning an economic profit
- 'cash on the table'** economic metaphor for unexploited gains from exchange
- central planning** the allocation of economic resources is determined by a political and administrative mechanism that gathers information as to technology, resource availability and end demands for goods and services
- change in demand** a shift of the entire demand curve
- change in supply** a shift of the entire supply curve
- change in the quantity demanded** a movement along the demand curve that occurs in response to a change in price
- change in the quantity supplied** a movement along the supply curve that occurs in response to a change in price
- closed economy** an economy that does not trade with the rest of the world
- Coase theorem** if at no cost people can negotiate the purchase and sale of the right to perform activities that cause externalities, they can always arrive at efficient solutions to the problems caused by externalities
- collective good** a good or service that, to at least some degree, is non-rival but excludable
- comparative advantage** one person has a comparative advantage over another in a task if his or her opportunity cost of performing a task is lower than the other person's opportunity cost
- compensating wage differential** a difference in the wage rate – negative or positive – that reflects the attractiveness of a job's working conditions
- commitment device** a way of changing incentives so as to make otherwise empty threats or promises credible
- commitment problem** a situation in which people cannot achieve their goals because of an inability to make credible threats or promises
- common market** the member states agree to free up trade in services and to permit liberalised (in the limiting case, free) movement of labour and capital
- complements** two goods are complements in consumption if an increase in the price of one causes a leftward shift in the demand curve for the other (or if a decrease causes a rightward shift)
- compound interest** the payment of interest not only on the original deposit but on all previously accumulated interest
- constant (or parameter)** a quantity that is fixed in value
- constant returns to scale** a production process is said to have constant returns to scale if, when all inputs are changed by a given proportion, output changes by the same proportion
- consumer price index (CPI)** for any period, measures the cost in that period of a standard basket of goods and services relative to the cost of the same basket of goods and services in a fixed year, called the *base year*
- consumer surplus** the difference between a buyer's reservation price for a product and the price actually paid
- consumption expenditure (or consumption)** spending by households on goods and services, such as food, clothing and entertainment
- consumption function** the relationship between consumption spending and its determinants, in particular disposable (after-tax) income
- consumption possibilities** the combinations of goods and services that a country's citizens might feasibly consume
- contractionary policies** government policy actions designed to reduce planned spending and output
- costly-to-fake principle** to communicate information credibly to a potential rival, a signal must be costly or difficult to fake

- cost-plus regulation** a method of regulation under which the regulated firm is permitted to charge a price equal to its explicit costs of production plus a mark-up to cover the opportunity cost of resources provided by the firm's owners
- coupon payments** regular interest payments made to the bondholder
- coupon rate** the interest rate promised when a bond is issued
- Cournot competition** firms choose an output and accept the market price
- credible promise** a promise that is in the interests of the promissor to keep when the time comes to act.
- credible threat** a threat to take an action that is in the threatener's interest to carry out
- cross-price elasticity of demand** the percentage by which the quantity demanded of the first good changes in response to a 1 per cent change in the price of the second
- crowding out** the tendency of increased government deficits to reduce investment spending
- customer discrimination** the willingness of consumers to pay more for a product produced by members of a favoured group, even if the quality of the product is unaffected
- customs union** the members, in addition to permitting free trade between them, agree to a single and common set of trade restrictions (or 'commercial policy') with respect to non-members
- cyclical unemployment** the extra unemployment that occurs during periods of recession
- cyclically adjusted budget deficit** eliminates automatic changes by evaluating the government's budget deficit at a constant level of output
- deadweight loss** the reduction in total economic surplus that results from the adoption of a policy
- decision tree (or game tree)** a diagram that describes the possible moves in a game in sequence and lists the payoffs that correspond to each possible combination of moves
- deflating (a nominal quantity)** the process of dividing a nominal quantity by a price index (such as the CPI) to express the quantity in real terms
- deflation** a situation in which the prices of most goods and services are falling over time so that inflation is negative
- demand curve** a schedule or graph showing the quantity of a good that buyers wish to buy at each price
- demand for money** the amount of wealth an individual chooses to hold in the form of money
- demand shock** sudden or unexpected change in planned aggregate expenditure (PAE)
- dependent variable** a variable in an equation whose value is determined by the value taken by another variable in the equation
- depreciation** a decrease in the value of a currency relative to other currencies
- depression** a particularly severe or protracted recession
- devaluation** a reduction in the official value of a currency (in a fixed exchange rate system)
- differentiation** finding the slope or rate of change of a function using algebra rather than geometry
- diminishing returns to capital** if the amount of labour and other inputs employed is held constant, then the greater the amount of capital already in use, the less an additional unit of capital adds to production
- diminishing returns to labour** if the amount of capital and other inputs in use is held constant, then the greater the quantity of labour already employed, the less each additional worker adds to production
- disappearing political discourse** the theory that people who support a position may remain silent, because speaking out would create a risk of being misunderstood
- discouraged workers** people who say they would like to have a job but have not made an effort to find one in the recent past
- discretionary fiscal policy** decisions by government to increase or decrease the levels of government purchases, transfer payments and taxation
- diversification** the practice of spreading one's wealth over a variety of different financial investments to reduce overall risk
- dividend** a regular payment received by shareholders for each share that they own
- dominant strategy** one that yields a higher payoff no matter what the other players in a game choose
- dominated strategy** any other strategy available to a player who has a dominant strategy
- duration** the length of an unemployment spell

economic efficiency (also called **efficiency**) occurs when all goods and services are produced and consumed at their respective socially optimal levels

economic loss an economic profit that is less than zero

economic profit (or supernormal profit or excess profit) the difference between a firm's total revenue and the sum of its explicit and implicit costs

economic rent that part of the payment for a factor of production that exceeds the owner's reservation price

economics the study of how people make choices under conditions of scarcity and of the results of those choices for society

economic surplus the economic surplus from taking any action is the benefit of taking that action minus its cost

economic union there is centralised effective decision making on economic policies affecting the countries of the union

economic of scale *see* increasing returns to scale

efficient (or Pareto efficient) a situation is efficient if no change is possible that will help some people without harming others

efficient markets hypothesis the theory that the current price of stock in a company reflects all the relevant information about its current and future earnings prospects

efficient point any combination of goods for which currently available resources do not allow an increase in the production of one good without a reduction in the production of the other

elastic demand is elastic with respect to price if the price elasticity of demand is greater than 1

emissions trading a system whereby firms can trade emission reductions, with the result that any given level of emissions reduction is undertaken by those with the lowest costs of achieving reductions

employer discrimination an arbitrary preference by an employer for one group of workers over another

entrepreneurs people who create new economic enterprises

equation a mathematical expression that describes the relationship between two or more variables

equilibrium a system is in equilibrium when there is no tendency for it to change

equilibrium exchange rate *see* fundamental value of the exchange rate

equilibrium price and **equilibrium quantity** the values of price and quantity for which quantity supplied and quantity demanded are equal

equity *see* share

European Central Bank (ECB) the Central Bank of the Eurosystem which comprises all countries using the euro as their currency

European Currency Unit (ECU) composite or 'basket' currency including specific amounts of EMS currencies

European Monetary System (EMS) the system by which EU countries attempted to fix exchange rates, 1979–98

European System of Central Banks (ESCB) the ECB and the national Central Banks of all member states including those who do not use the euro as their currency

Eurosystem those EU member states which use the euro as their currency and for whom the ECB is their Central Bank

excess demand the amount by which quantity demanded exceeds quantity supplied when the price of a good lies below the equilibrium price

excess profit *see* economic profit

excess supply the amount by which quantity supplied exceeds quantity demanded when the price of a good exceeds the equilibrium price

Exchange Rate Mechanism (ERM) countries in the ERM maintained their bilateral exchange rates within an agreed band of fluctuation around the central rate

expansion a period in which the economy is growing at a rate significantly above normal

expansionary gap a negative output gap, which occurs when actual output is higher than potential output ($Y > Y^*$)

expansionary policies government policy actions intended to increase planned spending and output

expected value of a gamble the sum of the possible outcomes of the gamble multiplied by their respective probabilities

- explicit costs** the actual payments a firm makes to its factors of production and other suppliers
- external benefit (or positive externality)** a benefit of an activity received by people other than those who pursue the activity
- external cost (or negative externality)** a cost of an activity that falls on people other than those who pursue the activity
- externality** an external cost or benefit of an activity
- factor of production** an input used in the production of a good or service
- fair gamble** a gamble whose expected value is zero
- Federal Open Markets Committee (FOMC)** the key decision-making body in the Federal Reserve System and the Fed's equivalent of the ECB's Governing Council
- final goods or services** goods or services consumed by the ultimate user; because they are the end products of the production process, they are counted as part of GDP
- financial intermediaries** firms that extend credit to borrowers using funds raised from savers
- fiscal policy** decisions that determine the government's budget, including the amount and composition of government expenditures and government revenues
- Fisher effect** the tendency for nominal interest rates to be high when inflation is high and low when inflation is low
- fixed cost** the sum of all payments made to the firm's fixed factors of production
- fixed exchange rate** an exchange rate whose value is set by official government policy
- fixed factor of production** an input whose quantity cannot be altered in the short run
- flexible (floating) exchange rate** an exchange rate whose value is not officially fixed but varies according to the supply of and demand for the currency in the foreign exchange market
- flow** a measure that is defined per unit of time
- foreign exchange market** the market on which currencies of various nations are traded for one another
- fractional-reserve banking system** a banking system in which bank reserves are less than deposits so that the reserve–deposit ratio is less than 100 per cent
- free-rider problem** an incentive problem in which too little of a good or service is produced because non-payers cannot be excluded from using it
- free-trade area** group of countries that has agreed to permit goods produced in one of them to be imported into any other member country free of tariff or quota restrictions
- frictional unemployment** the short-term unemployment associated with the process of matching workers with jobs
- full-employment output** *see* potential output
- fundamental value of the exchange rate (or equilibrium exchange rate)** the exchange rate that equates the quantities of the currency supplied and demanded in the foreign exchange market
- Gini coefficient** a measure of equality of distribution that compares the actual distribution with a benchmark of absolute equality
- Governing Council** the ECB's supreme decision-making body
- government budget deficit** the excess of government spending over tax collections ($G - T$)
- government budget surplus** the excess of government tax collections over government spending ($T - G$); the government budget surplus equals public saving
- government purchases** purchases by central and local governments of final goods and services; government purchases do *not* include *transfer payments*, which are payments made by the government in return for which no current goods or services are received, nor do they include interest paid on the government debt
- gross domestic product (GDP)** the market value of the final goods and services produced in a country during a given period
- human capital** an amalgam of factors such as education, training, experience, intelligence, energy, work habits, trustworthiness and initiative that affect the value of a worker's marginal product
- human capital theory** a theory of pay determination that says a worker's wage will be proportional to his or her stock of human capital

- hurdle method of price discrimination** the practice by which a seller offers a discount to all buyers who overcome some obstacle
- hyperinflation** a situation in which the inflation rate is extremely high
- imperfectly competitive firm** a firm that has at least some control over the market price of its product
- implicit costs** the opportunity costs of the resources supplied by the firm's owners
- import function** the relationship between imports and income
- income effect** the change in the quantity demanded of a good that results because of a change in real income of purchasers arising from the price change
- income elasticity of demand** the percentage by which quantity demanded changes in response to a 1 per cent change in income
- income–expenditure multiplier** the effect of a 1 unit change in autonomous expenditure on short-run equilibrium output; for example, a multiplier of 5 means that a 10 unit decrease in autonomous expenditure reduces short-run equilibrium output by 50 units
- increasing returns to scale** a production process is said to have increasing returns to scale if, when all inputs are changed by a given proportion, output changes by more than that proportion; also called **economies of scale**
- independent variable** a variable in an equation whose value determines the value taken by another variable in the equation
- indexing** the practice of increasing a nominal quantity each period by an amount equal to the percentage increase in a specified price index; indexing prevents the purchasing power of the nominal quantity from being eroded by inflation
- indifference curve** a smoothly convex curve; its slope is the consumer's marginal rate of substitution (MRS) between two goods
- induced expenditure** the portion of planned aggregate expenditure that depends on output Y
- inefficient point** any combination of goods for which currently available resources enable an increase in the production of one good without a reduction in the production of the other
- inelastic** demand is inelastic with respect to price if the price elasticity of demand is less than 1
- inferior good** one whose demand curve shifts leftward when the incomes of buyers increase and rightward when the incomes of buyers decrease
- inflation shock** a sudden change in the normal behaviour of inflation, unrelated to the nation's output gap
- in-kind transfer** a payment made not in the form of cash, but in the form of a good or service
- intermediate goods or services** goods or services used up in the production of final goods and services and therefore not counted as part of GDP
- international capital flows** flows of funds between lenders and borrowers located in different countries
- international reserves** foreign currency assets held by a Central Bank for the purpose of purchasing the domestic currency in the foreign exchange market
- intertemporal substitution** a means of moving consumption across time by substituting consumption in one year for consumption in another year
- investment** spending by firms on final goods and services, primarily capital goods and housing
- 'invisible hand' theory** Adam Smith's theory that the actions of independent, self-interested buyers and sellers will often result in the most efficient allocation of resources
- involuntary part-time workers** people who say they would like to work full-time but are able to find only part-time work
- labour force** the total number of employed and unemployed people in the economy
- labour mobility** the movement of workers between jobs, firms and industries
- labour union** a group of workers who bargain collectively with employers for better wages and working conditions
- law of diminishing marginal utility** the tendency for the additional utility gained from consuming an additional unit of a good to diminish as consumption increases beyond some point
- law of diminishing returns** a property of the relationship between the amount of a good or service produced and the amount of a variable factor required to produce it; it says that when some factors of production are fixed, increased production of the good eventually requires ever-larger increases in the variable factor

- law of one price** if transportation costs are relatively small, the price of an internationally traded commodity must be the same in all locations
- 'lemons' model** George Akerlof's explanation of how asymmetric information tends to reduce the average quality of goods offered for sale
- liabilities** the debts one owes
- life-cycle saving** saving to smooth out the household's consumption path
- long run** a period of time of sufficient length that all the firm's factors of production are variable
- long-run aggregate supply (LRAS) line** a vertical line showing the economy's potential output Y^*
- long-run equilibrium** a situation in which actual output equals potential output and the inflation rate is stable; graphically, long-run equilibrium occurs when the *AD* curve, the *SRAS* line and the *LRAS* line all intersect at a single point
- Lorenz curve** the graph of the cumulative distribution of income or wealth by percentages of households or individuals from poorest to richest
- M1** sum of currency outstanding and balances held in chequing accounts
- M2** all the assets in M1 plus some additional assets that are usable in making payments but at greater cost or inconvenience than the use of currency or cheques
- M3** all assets in M2 plus marketable securities with a high degree of liquidity and price certainty
- macroeconomic policies** government actions designed to affect the performance of the economy as a whole
- macroeconomics** the study of the performance of national economies and the policies that governments use to try to improve that performance
- main refinancing operations** the type of OMO used by the ECB to control the supply of reserves to the banking system
- main refinancing rate** the interest rate which commercial banks pay to borrow reserves from the ECB
- marginal benefit** the increase in total benefit that results from carrying out one additional unit of an activity
- marginal cost** the increase in total cost that results from carrying out one additional unit of an activity
- marginal cost** as output changes from one level to another, the change in total cost divided by the corresponding change in output
- marginal product of labour (MP)** the additional output a firm gets by employing one additional unit of labour
- marginal propensity to consume (MPC)**, or, c , the amount by which consumption rises when disposable income rises by one euro. We assume that $0 < c < 1$
- marginal propensity to import** the proportion of a change in income which is spent on imports
- marginal revenue** the change in a firm's total revenue that results from a one-unit change in output
- marginal utility** the additional utility gained from consuming an additional unit of a good
- market** the market for any good consists of all buyers or sellers of that good
- market equilibrium** occurs in a market when all buyers and sellers are satisfied with their respective quantities at the market price
- market power** a firm's ability to raise the price of a good without losing all its sales
- means-tested** a benefit programme whose benefit level declines as the recipient earns additional income
- medium of exchange** an asset used in purchasing goods and services
- menu costs** the costs of changing prices
- merit goods** goods produced under non-market conditions by the state for political reasons
- microeconomics** the study of individual choice under scarcity and its implications for the behaviour of prices and quantities in individual markets
- Monetary Policy Committee (MPC)** the key decision-making body in the Bank of England
- monetary policy** determination of the nation's money supply
- monetary union** the member states have a single currency
- money** any asset that can be used in making purchases
- money demand curve** shows the relationship between the aggregate quantity of money demanded M and the nominal interest rate i ; because an increase in the nominal interest rate increases the opportunity cost of holding money, which reduces the quantity of money demanded, the money demand curve slopes down

- monopolistically competitive firm** one of a large number of firms that produce slightly differentiated products that are reasonably close substitutes for one another
- moral hazard** the tendency of people to expend less effort protecting those goods that are insured against theft or damage
- mutual fund** a financial intermediary that sells shares in itself to the public, then uses the funds raised to buy a wide variety of financial assets
- Nash equilibrium** any combination of strategies in which each player's strategy is his or her best choice, given the other players' strategies
- national saving** the saving of the entire economy, equal to GDP less consumption expenditures and government purchases of goods and services, or $Y - C - G$
- natural monopoly** a monopoly that results from economies of scale
- natural rate of unemployment** the part of the total unemployment rate that is attributable to frictional and structural unemployment; equivalently, the unemployment rate that prevails when cyclical unemployment is zero, so that the economy has neither a recessionary nor an expansionary output gap
- negative demand shock** a decrease in autonomous expenditure which shifts the aggregate demand curve to the left
- negative externality** *see* **external cost**
- negative income tax (NIT)** a system under which the government would grant every citizen a cash payment each year, financed by an additional tax on earned income
- net exports** exports minus imports
- no-bailout clause** a provision in the Maastricht Treaty which prohibits the ESCB from lending to national governments
- nominal exchange rate** the rate, or price, at which two currencies can be traded for each other
- nominal GDP** a measure of GDP in which the quantities produced are valued at current-year prices; nominal GDP measures the *current money value* of production
- nominal interest rate** (or market interest rate) the annual percentage increase in the nominal value of a financial asset
- nominal price** the absolute price of a good in euro terms
- nominal quantity** a quantity that is measured in terms of its current euro value
- non-excludable good** a good that is difficult, or costly, to exclude non-payers from consuming
- non-rival good** a good whose consumption by one person does not diminish its availability for others
- normal good** one whose demand curve shifts rightward when the incomes of buyers increase and leftward when the incomes of buyers decrease
- normal profit** the opportunity cost of the resources supplied by a firm's owners, equal to accounting profit minus economic profit
- normative analysis** addresses the question of whether a policy *should* be used; normative analysis inevitably involves the values of the person doing the analysis
- oligopolist** a firm that produces a product for which only a few rival firms produce close substitutes
- open economy** an economy that trades with other countries
- open-market operations (OMOs)** open-market purchases and open-market sales
- open-market purchase** the purchase of government bonds from the public by the ECB for the purpose of increasing the supply of bank reserves and the money supply
- open-market sale** the sale by the ECB of government bonds to the public for the purpose of reducing bank reserves and the money supply
- opportunity cost** the opportunity cost of an activity is the value of the next-best alternative that must be forgone in order to undertake the activity
- optimal combination of goods** the affordable combination that yields the highest total utility
- optimum currency area** a group of countries for which the benefits of replacing national currencies with a common currency exceed the costs
- output gap** the difference between the economy's potential output and its actual output at a point in time ($Y^* - Y$)

- overvalued exchange rate** an exchange rate that has an officially fixed value greater than its fundamental value
- Pareto efficient** *see* efficient
- participation rate** the percentage of the working-age population in the labour force (that is, the percentage that is either employed or looking for work)
- payoff matrix** a table that describes the payoffs in a game for each possible combination of strategies
- perfect hurdle** a threshold that completely segregates buyers whose reservation prices lie above it from others whose reservation prices lie below it, imposing no cost on those who jump the hurdle
- perfectly competitive market** a market in which no individual supplier has significant influence on the market price of the product
- perfectly discriminating monopolist** a firm that charges each buyer exactly his or her reservation price
- perfectly elastic demand** demand is perfectly elastic with respect to price if price elasticity of demand is infinite
- perfectly elastic supply** supply is perfectly elastic with respect to price if elasticity of supply is infinite
- perfectly inelastic demand** demand is perfectly inelastic with respect to price if price elasticity of demand is zero
- perfectly inelastic supply** supply is perfectly inelastic with respect to price if elasticity is zero
- planned aggregate expenditure (PAE)** total planned spending on final goods and services
- policy reaction function** describes how the action a policy maker takes depends on the state of the economy
- poll tax** a tax that collects the same amount from every tax-payer
- portfolio allocation decision** the decision about the forms in which to hold one's wealth
- positional arms control agreement** an agreement in which contestants attempt to limit mutually offsetting investments in performance enhancement
- positional arms race** a series of mutually offsetting investments in performance enhancement that is stimulated by a positional externality
- positional externality** occurs when an increase in one person's performance reduces the expected reward of another in situations in which reward depends on relative performance
- positive analysis** addresses the economic consequences of a particular event or policy, not whether those consequences are desirable
- positive demand shock** an increase in autonomous expenditure which shifts the aggregate demand curve to the right
- positive externality** *see* external benefit
- potential output (or potential GDP or full-employment output)** the amount of output (real GDP) that an economy can produce when using its resources, such as capital and labour, at normal rates
- poverty threshold** the level of income below which a family is 'poor'
- precautionary saving** saving for protection against unexpected setbacks, such as the loss of a job or a medical emergency
- present value** for an annual interest rate r , the present value (PV) of a payment (M) to be received T years from now is the amount that would have to be deposited today at interest rate r to generate a balance of M
- price ceiling** a maximum allowable price, specified by law
- price discrimination** the practice of charging different buyers different prices for essentially the same good or service
- price elasticity of demand** percentage change in quantity demanded that results from a 1 per cent change in price
- price elasticity of supply** the percentage change in quantity supplied that occurs in response to a 1 per cent change in price
- price index** a measure of the average price of a given class of goods or services relative to the price of the same goods and services in a base year
- price level** a measure of the overall level of prices at a particular point in time as measured by a price index such as the CPI
- price setter** a firm with at least some latitude to set its own price
- price taker** a firm that has no influence over the price at which it sells its product

principal amount the amount originally lent

prisoner's dilemma a game in which each player has a dominant strategy, and when each plays it, the resulting payoffs are smaller than if each had played a dominated strategy

private saving the saving of the private sector of the economy is equal to the after-tax income of the private sector minus consumption expenditures ($Y - T - C$); private saving can be further broken down into household saving and business saving

producer surplus the amount by which price exceeds the seller's reservation price

production possibilities curve a graph that describes the maximum amount of one good that can be produced for every possible level of production of the other good

profit the total revenue a firm receives from the sale of its product minus all costs – explicit and implicit – incurred in producing it

profitable firm a firm whose total revenue exceeds its total cost

profit-maximising firm a firm whose primary goal is to maximise the difference between its total revenues and total costs

progressive tax one in which the proportion of income paid in taxes rises as income rises

proportional income tax one under which all tax-payers pay the same proportion of their incomes in taxes

protectionism the view that free trade is injurious and should be restricted

public good a good or service that, to at least some degree, is both non-rival and non-excludable

public saving the saving of the government sector is equal to net tax payments minus government purchases ($T - G$)

purchasing power parity (PPP) the theory that nominal exchange rates are determined as necessary for the law of one price to hold

pure commons good one for which non-payers cannot easily be excluded and for which each unit consumed by one person means one less unit available for others

pure monopoly the only supplier of a unique product with no close substitutes

pure private good one for which non-payers can easily be excluded and for which each unit consumed by one person means one less unit available for others

pure public good a good or service that, to a high degree, is both non-rival and non-excludable

quantity equation money times velocity equals nominal GDP: $M \times V = P \times Y$

quota a legal limit on the quantity of a good that may be imported

rate of inflation the annual percentage rate of change in the price level, as measured, for example, by the CPI

rate of return on an investment equals the value of marginal product expressed as a percentage of the purchase price

rational person someone with well-defined goals who tries to fulfil those goals as best she can

rationing function of price to distribute scarce goods to those consumers who value them most highly

reaction function shows the preferred response of a firm in terms of a decision variable as a response to a value of that variable chosen by the other firm(s)

real exchange rate the price of the average domestic good or service *relative* to the price of the average foreign good or service, when prices are expressed in terms of a common currency

real GDP a measure of GDP in which the quantities produced are valued at the prices in a base year rather than at current prices; real GDP measures the actual *physical volume* of production

real interest rate the annual percentage increase in the purchasing power of a financial asset; the real interest rate on any asset equals the nominal interest rate on that asset minus the inflation rate

real price the euro price of a good relative to the average euro price of all other goods

real quantity a quantity that is measured in physical terms – for example, in terms of quantities of goods and services

real wage the wage paid to workers measured in terms of real purchasing power; the real wage for any given period is calculated by dividing the nominal (euro) wage by the CPI for that period

recessionary gap a positive output gap, which occurs when potential output exceeds actual output ($Y^* > Y$)

recession (or contraction) a period in which the economy is growing at a rate significantly below normal

regressive tax a tax under which the proportion of income paid in taxes declines as income rises

- regulation** legal intervention in markets to alter the way in which firms or consumers behave
- relative price** the price of a specific good or service in comparison to the prices of other goods and services
- relative purchasing power parity** the theory that the nominal rate of appreciation or depreciation equals the difference in inflation rates between the two countries
- repeated prisoner's dilemma** a standard prisoner's dilemma that confronts the same players repeatedly
- reserve–deposit ratio** bank reserves divided by deposits
- residual demand curve** shows the price and output combinations available to a firm given other firms' decisions
- revaluation** an increase in the official value of a currency (in a fixed exchange rate system)
- risk averse person** someone who would refuse any fair gamble
- risk neutral person** someone who would accept any gamble that is fair or better
- risk premium** the rate of return that financial investors require to hold risky assets minus the rate of return on safe assets
- saving** current income minus spending on current needs
- saving rate** saving divided by income
- seller's reservation price** the smallest money amount for which a seller would be willing to sell an additional unit, generally equal to marginal cost
- seller's surplus** the difference between the price received by the seller and his or her reservation price
- share (or equity)** a claim to partial ownership of a firm
- short run** a period of time sufficiently short that at least some of the firm's factors of production are fixed
- short-run aggregate supply (SRAS) line** a horizontal line showing the current rate of inflation, as determined by past expectations and pricing decisions
- short-run equilibrium** a situation in which inflation equals the value determined by past expectations and pricing decisions, and output equals the level of short-run equilibrium output that is consistent with that inflation rate; graphically, short-run equilibrium occurs at the intersection of the *AD* curve and the *SRAS* line
- short-run equilibrium output** the level of output at which output *Y* equals planned aggregate expenditure *PAE*; short-run equilibrium output is the level of output that prevails during the period in which prices are predetermined
- skill-biased technological change** technological change that affects the marginal products of higher-skilled workers differently from those of lower-skilled workers
- slope** in a straight line, the ratio of the vertical distance the straight line travels between any two points (**rise**) to the corresponding horizontal distance (**run**)
- socially optimal quantity** the quantity of a good that results in the maximum possible economic surplus from producing and consuming the good
- speculative attack** a massive selling of domestic currency assets by financial investors
- stabilisation policies** government policies that are used to affect planned aggregate expenditure, with the objective of eliminating output gaps
- statistical discrimination** the practice of making judgements about the quality of people, goods or services based on the characteristics of the groups to which they belong
- stock** a measure that is defined at a point in time
- store of value** an asset that serves as a means of holding wealth
- structural policy** government policies aimed at changing the underlying structure, or institutions, of the nation's economy
- structural unemployment** the long-term and chronic unemployment that exists even when the economy is producing at a normal rate
- substitutes** two goods are substitutes in consumption if an increase in the price of one causes a rightward shift in the demand curve for the other (or if a decrease causes a leftward shift)
- substitution effect** the change in the quantity demanded of a good that results because buyers switch to substitutes when the price of the good changes
- sunk cost** a cost that is beyond recovery at the moment a decision must be made
- supernormal profit** *see* economic profit

- supply curve** a curve or schedule showing the quantity of a good that sellers wish to sell at each price
- symmetric shocks** affect different economies in the same way and at the same time
- synchronised business cycles** mean that countries experience recession or expansion at the same time and require similar rather than different stabilisation policies
- tacit collusion** firms behaving in a manner that resembles what might emerge from a collusive agreement because they recognise their interdependence
- tariff** a tax imposed on an imported good
- tax multiplier** the effect of a 1 unit change in autonomous taxes on short-run equilibrium output. Because the marginal propensity to consume is less than one, the tax multiplier will be smaller than the income-expenditure multiplier
- time value of money** the fact that a given euro amount today is equivalent to a larger euro amount in the future, because the money can be invested in an interest-bearing account in the meantime. After T years:
 $PV = M/(1 + r)^T$
- tit-for-tat** a strategy for the repeated prisoner's dilemma in which players co-operate on the first move, then mimic their partner's last move on each successive move
- total cost** the sum of all payments made to the firm's fixed and variable factors of production
- total surplus** the difference between the buyer's reservation price and the seller's reservation price
- trade balance (or net exports)** the value of a country's exports less the value of its imports in a particular period (quarter or year)
- trade creation** replacing more costly domestic production by less costly imported goods
- trade deficit** when imports exceed exports, the difference between the value of a country's imports and the value of its exports in a given period
- trade diversion** replacing lower-cost imports by higher-cost imports
- trade surplus** when exports exceed imports, the difference between the value of a country's exports and the value of its imports in a given period
- trade symmetry** freeing trade has symmetrical effects as between sectors and countries
- tragedy of the commons** the tendency for a resource that has no price to be used until its marginal benefit falls to zero
- transaction costs** costs involved in exchanging one currency for another
- transfer payments** payments the government makes to the public for which it receives no current goods or services in return
- ultimatum bargaining game** one in which the first player has the power to confront the second player with a take-it-or-leave-it offer
- unattainable point** any combination of goods that cannot be produced using currently available resources
- undervalued exchange rate** an exchange rate that has an officially fixed value less than its fundamental value
- unemployment rate** the number of unemployed people divided by the labour force
- unemployment spell** a period during which an individual is continuously unemployed
- unit elastic** demand is unit elastic with respect to price if the price elasticity of demand equals 1
- unit of account** a basic measure of economic value
- value added** for any firm, the market value of its product or service minus the cost of inputs purchased from other firms
- value of marginal product of labour (VMP)** the money value of the additional output a firm gets by employing one additional unit of labour
- variable** a quantity that is free to take a range of different values
- variable cost** the sum of all payments made to the firm's variable factors of production
- variable factor of production** an input whose quantity can be altered in the short run
- velocity** a measure of the speed at which money circulates, or, equivalently, the value of transactions completed in a period of time divided by the stock of money required to make those transactions; numerically, $V = (P \times Y)/M$, where V is velocity, $P \times Y$ is nominal GDP and M is the money supply whose velocity is being measured

vertical intercept in a straight line, the value taken by the dependent variable when the independent variable equals zero

wealth the value of assets minus liabilities

wealth effect the tendency of changes in asset prices to affect households' wealth and thus their spending on consumption goods

winner-take-all labour market one in which small differences in human capital translate into large differences in pay

world price the price at which a commodity is traded internationally

X-inefficiency where market power results in inefficient production rather than higher profits