Course Companion

Pearson Edexcel · International A-Level · Economics

Every topic handout in one volume

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Choice, models and market adjustment

Pearson Edexcel · International A-Level · Economics

Pearson Edexcel International AS Economics (WEC11), specification Issue 2, June 2018. This topic covers spec sections 1.3.1–1.3.4 in full: introductory concepts (rows 1–6), consumer behaviour and demand (rows 1–3), supply (rows 1–2) and price determination (rows 1–4). One original market model runs through the worked examples so every number cross-checks: demand $Q_d = 140 - 2P$ and supply $Q_s = 20 + 4P$, with P in currency units per item and Q in items per day, giving equilibrium $P = 20$, $Q = 100$.

Must-know for this topic:

Family	Relationship
demand	$Q_d = 140 - 2P$; PED $= \dfrac{\%\Delta Q_d}{\%\Delta P}$; TR $= P \times Q$
elasticities	YED $= \dfrac{\%\Delta Q}{\%\Delta \text{income}}$; XED $= \dfrac{\%\Delta Q_a}{\%\Delta P_b}$; PES $= \dfrac{\%\Delta Q_s}{\%\Delta P}$
supply	$Q_s = 20 + 4P$; shift causes: costs, technology, taxes, subsidies, disasters
equilibrium	$Q_d = Q_s$; surplus areas CS $= \frac{1}{2} \times Q \times (P_{max} - P^*)$, PS $= \frac{1}{2} \times Q \times (P^* - P_{min})$

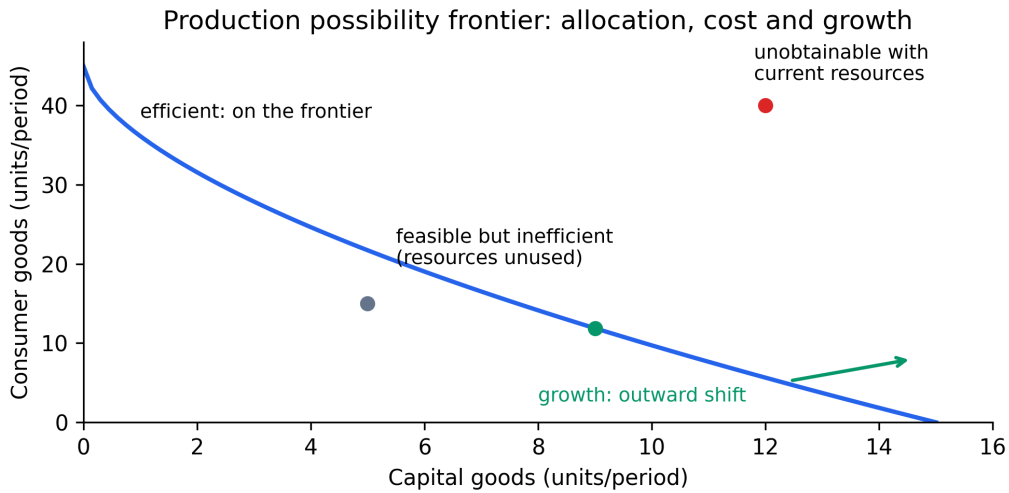
Introductory concepts

Economics is a **social science**: it cannot run controlled laboratory experiments on whole economies, so it builds MODELS based on stated assumptions and uses the **ceteris paribus** (all other things equal) assumption to isolate one relationship at a time (1.3.1.1). A **positive statement** can in principle be tested against evidence ("the tax raised £3bn"); a **normative statement** adds a value judgement ("the tax is too high") – and such value judgements influence economic decision making and policy (1.3.1.2).

Scarcity is unlimited wants against finite resources; resources are renewable or non-renewable; scarcity forces choice, and the real cost of any choice is its **opportunity cost** – the benefit of the next-best alternative forgone. A free good (air) needs no sacrifice; an economic good does (1.3.1.3). The **production possibility frontier** (PPF) depicts maximum productive potential: points ON the frontier are efficient, points inside are feasible but wasteful, points outside are unobtainable with current resources; its slope gives opportunity cost, which rises as the frontier bends because resources are not equally suited to all uses (marginal analysis: the cost of ONE more unit). Movements ALONG the frontier are reallocations; SHIFTS come from more or better resources or technology – capital goods (machines) versus consumer goods is itself a PPF choice, and producing more capital goods raises

productivity and future growth (1.3.1.4).

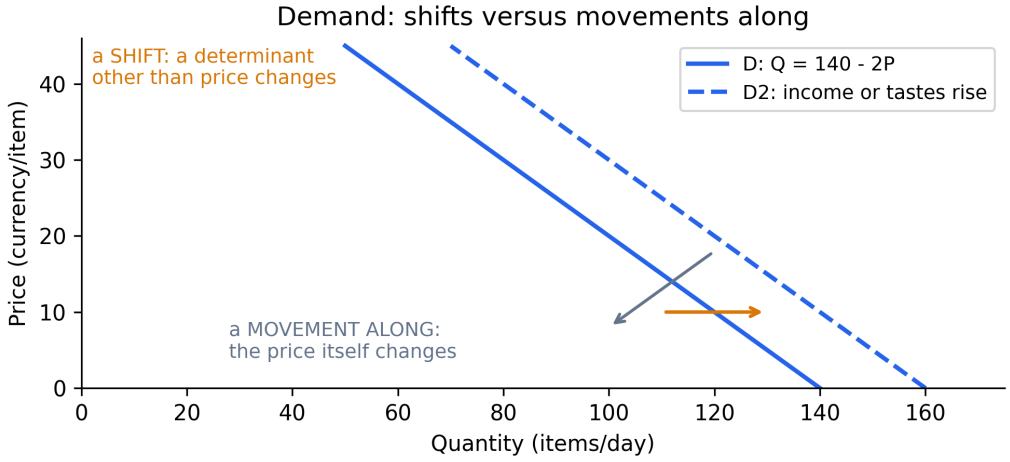
Specialisation and the division of labour (Adam Smith's pin factory) raise output per worker but can make work repetitive and skills narrow; specialisation requires exchange, and money makes exchange work – as a **medium of exchange** , a measure and store of value, and a method of deferred payment (1.3.1.5). Financial markets channel saving to businesses and individuals, facilitate the exchange of goods and services, provide forward markets in commodities and currencies, and provide a market for equities. Economies are organised along a spectrum: free market (price allocates), command (state allocates) and **mixed economy** (the state provides public goods, redistributes and regulates alongside markets) – free markets answer the what/how/for-whom questions without a planner but may produce inequality and market failure; command economies co-ordinate directly but misread preferences and weaken incentives (1.3.1.6).



Original model; points, shift and labels are specified in the teaching text.

Consumer behaviour and demand

Rational decision making is an ASSUMPTION: consumers maximise **utility** and firms maximise profit (1.3.2.1a). Consumers may depart from this: herding (copying others), habitual behaviour, inertia, poor computational skills, the need to feel valued, and framing or bias (1.3.2.1b). Demand is the quantity buyers are willing AND able to purchase at each price over a period. A change in the good's own price is a movement ALONG the demand curve; a change in any other determinant SHIFTS it: prices of **substitutes** or **complements** , real income, tastes, the size and age distribution of the population, and advertising (1.3.2.2). Diminishing **marginal utility** – each extra item gives less additional satisfaction than the last – explains why the individual demand curve slopes DOWNWARD: you only buy another unit at a lower price (**diminishing marginal utility**).

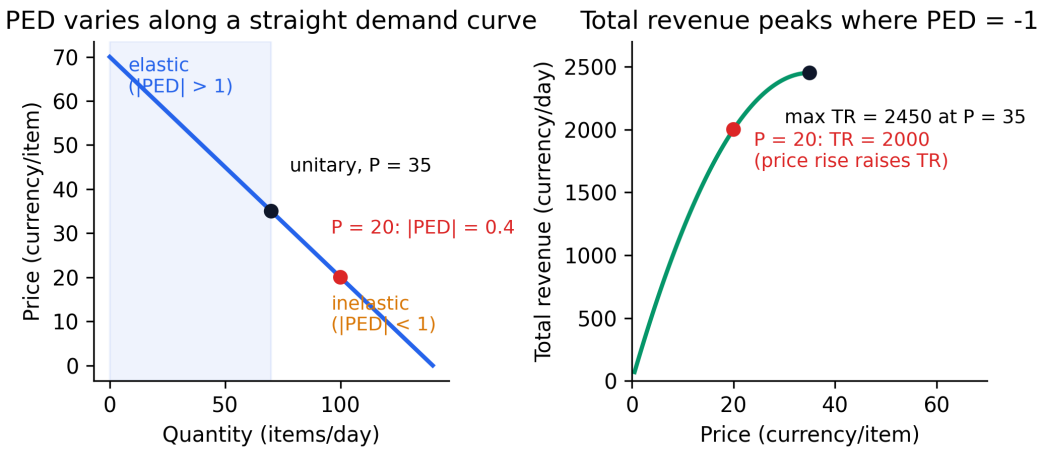


Original model on the shared demand curve; the determinant list is in the text.

Elasticities of demand

Price elasticity of demand (PED) $= \frac{\%\Delta Q_d}{\%\Delta P}$. On the shared model at $P = 20$: raising price to 22 changes Q_d from 100 to 96, so $\%\Delta Q = -4\%$, $\%\Delta P = +10\%$ and PED $= -0.4$ – price inelastic (1.3.2.3b–c). The five cases: perfectly elastic (horizontal), elastic ($|PED| > 1$), unitary ($|PED| = 1$), inelastic ($|PED| < 1$), perfectly inelastic (vertical). PED depends on substitutes available, branding, the share of the budget spent on the good, addictiveness and durability (1.3.2.3d). **Total revenue** $TR = P \times Q$: at $P = 20$, $TR = 2000$; at $P = 22$, $TR = 22 \times 96 = 2112$ – when demand is inelastic, a price rise RAISES revenue (1.3.2.3e,g). Along a straight-line demand curve PED is NOT constant: elastic at high prices, unitary at the midpoint, inelastic at low prices, so TR is maximised exactly where $|PED| = 1$ – here at $P = 35$, $Q = 70$, $TR = 2450$ (1.3.2.3f).

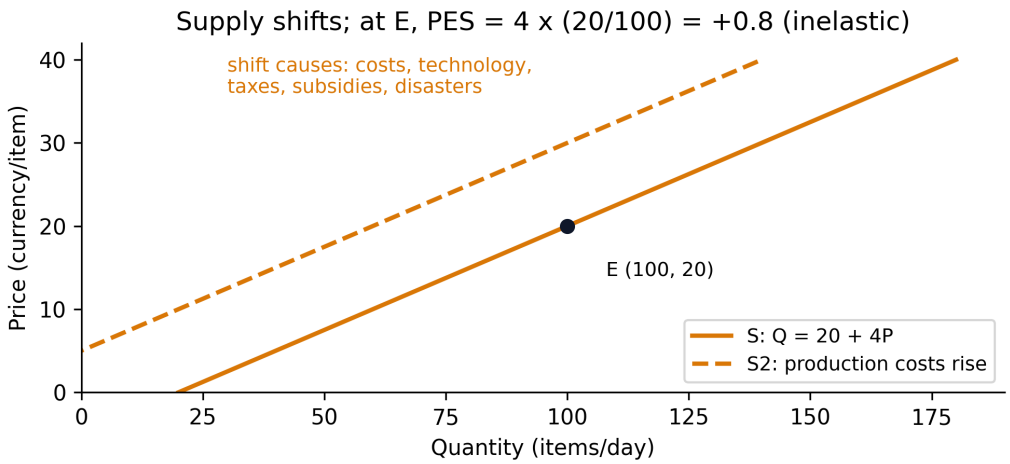
Income elasticity of demand (YED) $= \frac{\%\Delta Q}{\%\Delta \text{income}}$: income up 10% raising quantity 8% gives YED $= +0.8$ – a NORMAL good, income inelastic; YED > 1 is income elastic, YED < 0 an INFERIOR good (1.3.2.3h). **Cross elasticity of demand** (XED) $= \frac{\%\Delta Q_a}{\%\Delta P_b}$: XED > 0 means substitutes, XED < 0 complements, XED ≈ 0 unrelated – good X up 10% raising quantity of Y 10% gives XED $= +1.0$, close substitutes (1.3.2.3i). Firms use PED for pricing and revenue planning, YED for forecasting over the business cycle, XED for pricing rival and bundled goods; government uses PED to predict tax revenue and the burden of indirect taxes (1.3.2.3j).



Both panels are computed from the shared demand curve; the marked points are $P = 20$ and $P = 35$.

Supply

Supply is the quantity sellers are willing AND able to offer at each price over a period; a change in the good's own price is a movement ALONG the supply curve, and a shift comes from production costs, new technology, indirect taxes (specific = so much per unit; ad valorem = a percentage of price), subsidies, or natural disasters (1.3.3.1). **Price elasticity of supply** (PES) $= \frac{\%\Delta Q_s}{\%\Delta P}$: on the shared supply curve at $P = 20$, a rise to 24 moves Q_s from 100 to 116, so PES $= \frac{16\%}{20\%} = +0.8$ – inelastic supply (1.3.3.2a–b). PES depends on the time period (supply is more elastic in the long run), availability of stock and perishability, mobility of factors of production, legal constraints, and spare capacity (1.3.3.2c). The SHORT RUN has at least one fixed factor; the LONG RUN has all factors variable, which is why supply response, and therefore PES, grows with time (1.3.3.2d).



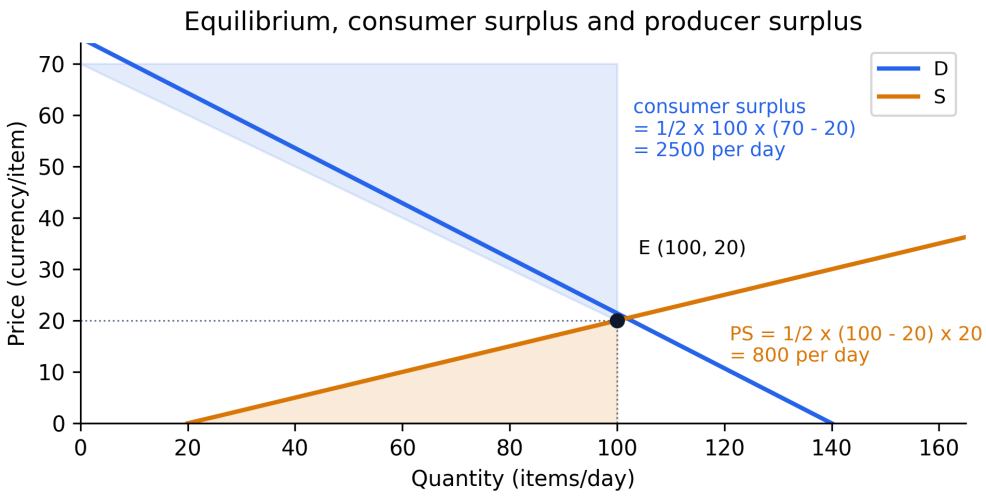
Original model on the shared supply curve; the shift list matches the spec row.

Price determination, surplus and the price mechanism

Equilibrium is where $Q_d = Q_s$: $140 - 2P = 20 + 4P$ gives $120 = 6P$, so $P^* = 20$ currency units and $Q^* = 100$ items/day (1.3.4.1a). At $P = 15$, $Q_d = 110$ and $Q_s = 80$: **excess demand** of 30 items/day puts upward pressure on price; at $P = 25$, $Q_s = 120 > Q_d = 90$ (excess supply of 30) pushes price down, and market forces eliminate both disequilibria as quantities move along unchanged curves (1.3.4.1c). A shift in demand or supply changes equilibrium price AND quantity in predictable directions: demand right raises both; supply right lowers price and raises quantity; when BOTH shift, one variable's direction depends on relative shifts, so demand right with supply left certainly raises price, but quantity depends on which shift dominates (1.3.4.1b).

Consumer surplus is the gap between what buyers would pay (the demand curve) and what they pay: $CS = \frac{1}{2} \times 100 \times (70-20) = 2500$ currency units/day, where 70 is the vertical intercept of the demand curve. **Producer surplus** is the gap between the price received and the minimum acceptable supply price: the supply curve reaches price zero at $Q = 20$, so $PS = \frac{1}{2} \times (100-20) \times (20-0) = 800$ per day (1.3.4.2a). A demand rise increases both surpluses at the new equilibrium; a supply fall reduces consumer surplus and its price effect raises – then limits – producer surplus (1.3.4.2b).

The **price mechanism** allocates scarce resources through three functions: RATIONING (a higher price rations a scarcer good), INCENTIVE (a higher price rewards producers of the scarce good) and SIGNALLING (the price change carries information about where resources are valued); the same mechanism works in local, national and global markets (1.3.4.3).

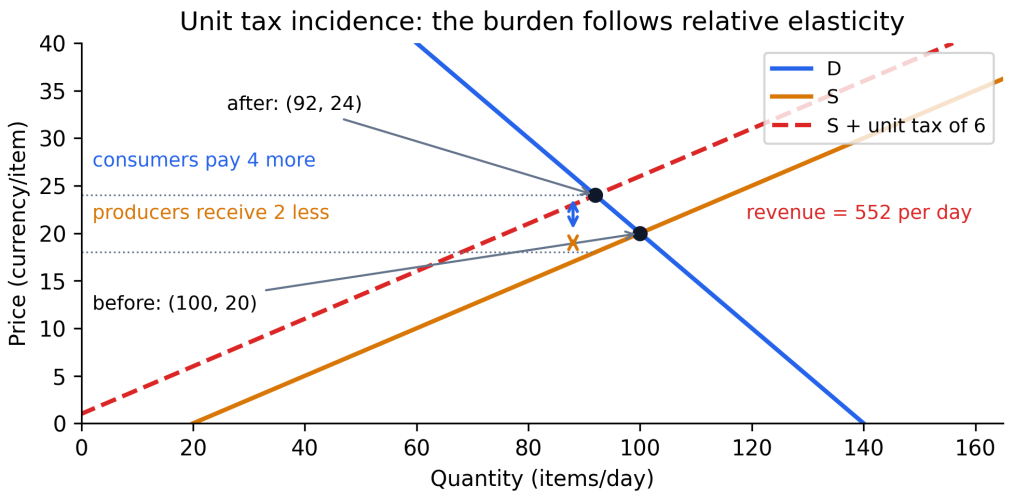


Original model; the shaded areas are computed in the text.

Indirect taxes and subsidies

An **indirect tax** raises costs: a specific tax is a fixed amount per unit and shifts supply up vertically by the tax. On the shared model, a unit tax of 6 gives a new supply (in consumer prices) $Q_s = 20 + 4(P - 6) = 4P - 4$; setting $140 - 2P = 4P - 4$ gives $P_c = 24$ and $Q = 92$; producers keep $24 - 6 = 18$. Consumers pay 4 more (24 − 20), producers receive 2 less (20 − 18), so the 6-unit tax splits 4:2 (1.3.4.4a–b). Government revenue is $6 \times 92 = 552$ currency units/day. **Tax incidence** follows relative elasticity: here PED at the original equilibrium is −0.4 (demand is relatively inelastic) and PES is +0.8, so consumers bear the larger share; if demand were more elastic than supply, producers would bear more. Demand falls, so output and employment in the market fall, and the price rise contributes to inflation.

A **subsidy** of 6 per unit shifts supply DOWN: $Q_s = 20 + 4(P + 6) = 4P + 44$; $140 - 2P = 4P + 44$ gives $P_c = 16$, $Q = 108$, producers receive $16 + 6 = 22$. Consumers gain 4 (20 − 16), producers gain 2 (22 − 20), output rises to 108, and the government (taxpayer) pays $6 \times 108 = 648$ currency units/day (1.3.4.4c–d). The same incidence logic applies: the more inelastic side of the market gains less from a subsidy.



Original model; the tax, the price split and the revenue figure are computed in the text.

Checklist

- Economics as a social science; models and ceteris paribus (1.3.1.1). Positive vs normative statements and value judgements in policy (1.3.1.2).
- Scarcity, renewable vs non-renewable resources, opportunity cost, free vs economic goods (1.3.1.3).
- PPF: potential, efficiency, unobtainable points, marginal opportunity cost, growth and decline, movements vs shifts, capital vs consumer goods and productivity (1.3.1.4).
- Specialisation and division of labour; money's four functions; the five roles of financial markets (1.3.1.5).
- Free market, command and mixed economies; advantages, disadvantages, the state's role (1.3.1.6).
- Rationality assumption and its six limits; demand, movements vs shifts and their five determinants; diminishing marginal utility and the downward slope (1.3.2.1–2).
- PED, YED, XED: formulae, the five PED cases, PED's five determinants, TR and the TR-maximising price, normal vs inferior goods, substitutes vs complements, significance for firms, consumers and government (1.3.2.3).
- Supply, movements vs shifts with the five shift causes incl. specific and ad valorem taxes; PES with its five influences, short run vs long run (1.3.3).
- Equilibrium from $Q_d = Q_s$; excess demand and supply eliminated; double-shift indeterminacy; consumer and producer surplus areas; rationing, incentive and signalling across market types (1.3.4.1–3).

- Indirect taxes and subsidies: prices, quantities, revenue/cost, and incidence by relative elasticity (1.3.4.4).

Boundary notes: quantitative skills QS1–QS4 are exercised throughout (percentages, index numbers, fractions) and calculators are allowed in WEC11/WEC12. Answers must define the elasticity sign convention (Edexcel accepts PED reported as negative or as absolute value – state which). All worked numbers are original and internally consistent with the model $Q_d = 140 - 2P$, $Q_s = 20 + 4P$.

Market failure and government intervention

Pearson Edexcel · International A-Level · Economics

Pearson Edexcel International AS Economics (WEC11), specification Issue 2, June 2018. This topic covers spec sections 1.3.5–1.3.6 in full: market failure (six rows) and government intervention in markets (two rows). The shared model continues from topic 1, drawn in inverse form: demand (marginal private benefit) $P = 70 - Q/2$, supply (marginal private cost) $P = Q/4 - 5$, market equilibrium $Q = 100$, $P = 20$ – and an external cost or benefit of 6 per unit reproduces the topic-1 tax and subsidy equilibria, so every welfare area below cross-checks against those numbers.

Must-know for this topic:

Family	Relationship
externalities	$MSC = MPC + EC$; $MSB = MPB + EB$; optimum where $MSB = MSC$
welfare areas	loss $= \frac{1}{2} \times (Q_m - Q^*) \times$ marginal gap at Q_m; here $= \frac{1}{2} \times 8 \times 6 = 24$
price controls	max price 16 $\rightarrow$ shortage $Q_d - Q_s = 24$; min price 24 $\rightarrow$ surplus 24
intervention	taxes, subsidies, price controls, permits, property rights, provision, regulation, information

Sources of market failure

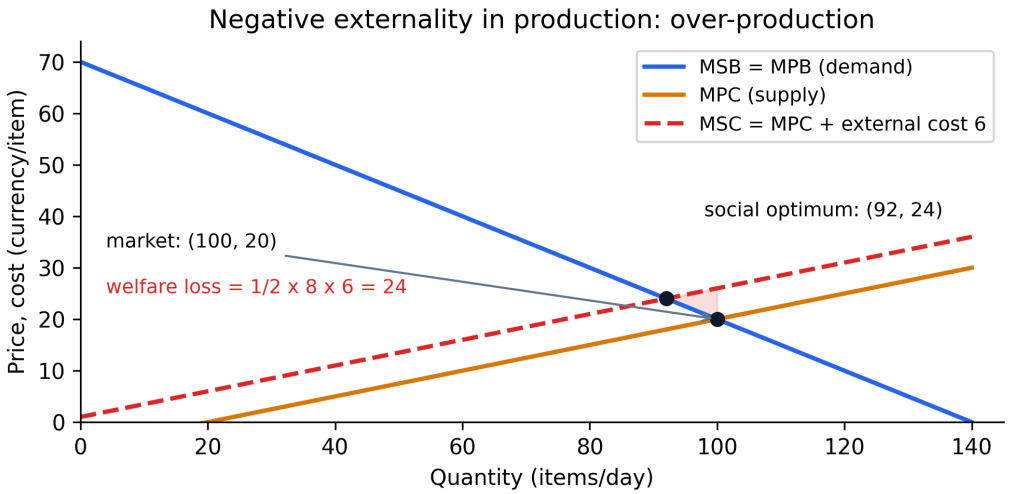
Market failure means too much or too little of a good is produced and/or consumed compared with the socially optimal level of output (1.3.5.1a). The sources (1.3.5.1b): **externalities**, the free-rider problem and the non-provision of public goods, imperfect market information, moral hazard, and speculation and market bubbles. Each is a reason the price mechanism's signals fail to value every cost and benefit, so the market equilibrium is not the social optimum.

Externalities

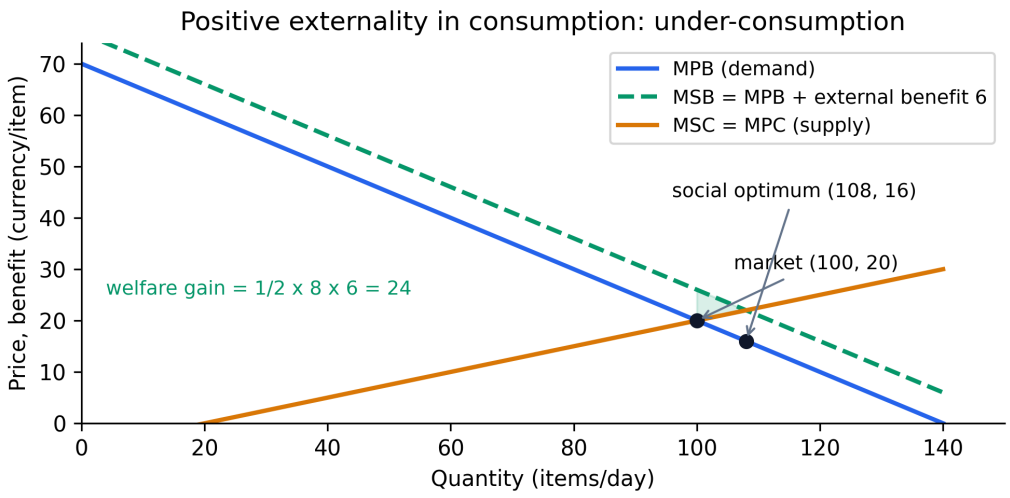
Private benefit/cost is what the decision-maker enjoys or pays; the **external benefit** or **external cost** falls on third parties; the social value sums them: **social benefit** $= MPB + EB$ and **social cost** $= MPC + EC$ (1.3.5.2a–b). Externalities come from production (a factory's emissions are an external cost of production; training that benefits other firms is an external benefit of production) or from consumption (vaccination conveys external benefits of consumption; congestion and pollution from driving are external costs of consumption) (1.3.5.2c).

Diagrammatically, marginal analysis puts Q on the horizontal axis. Negative externality of production: demand is $MSB = MPB : P = 70 - Q/2$ and supply is

$MPC : P = Q/4 - 5$, so the market trades at $(100, 20)$; with an external cost of 6 per unit $MSC = MPC + 6$ crosses MSB at $Q^* = 92$ – the market OVER-produces by 8, and the **welfare loss** triangle between the curves over $[92, 100]$ is $\frac{1}{2} \times 8 \times 6 = 24$ currency units/day (1.3.5.2d). Positive externality of consumption: $MSB = MPB + 6$ crosses MPC at $Q^* = 108$ – the market UNDER-consumes by 8, and the welfare GAIN available over $[100, 108]$ is the same $\frac{1}{2} \times 8 \times 6 = 24$. Contexts to know cold (1.3.5.2e): transport (congestion, pollution), health (vaccination, passive smoking), education (spillovers from a skilled workforce), environment (emissions), financial (risk externalities of bank failure).



Original model; the market and social optima and the welfare-loss area are computed in the text.

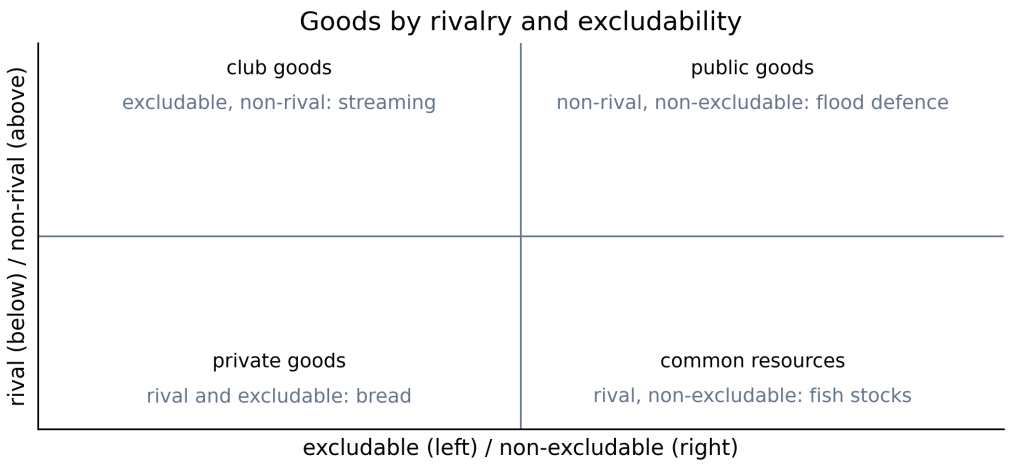


Original model; the welfare-gain area mirrors the loss case with an external benefit of 6.

Public goods, information gaps, moral hazard and bubbles

Private goods are rival (one person's consumption reduces what is left) and excludable (non-payers can be stopped); **public goods** are non-rival and non-excludable – a flood defence protects everyone at once and cannot be withheld (1.3.5.3a). The **free-rider problem** means nobody can be charged, so private firms cannot cover costs and public goods are not provided by the private sector at all – the state must provide them (1.3.5.3b).

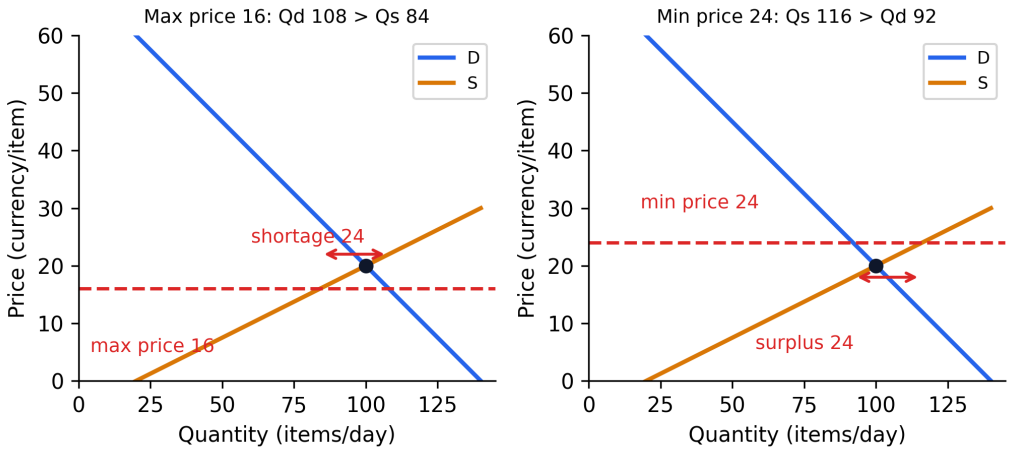
Information is symmetric when both sides know the same things; **asymmetric information** (the used-car seller knows the car, the insurer knows less than the insured) creates information gaps that misallocate resources in healthcare (patients cannot judge treatment), education (students cannot judge course quality), pensions (complexity hides value) and insurance (adverse selection) (1.3.5.4). **Moral hazard** arises AFTER a contract when the protected party takes more risk: insured drivers drive less carefully, bails encourage banks to lend recklessly – consumers pay higher premiums, producers and workers carry the risk, and governments face bailout bills in insurance and banking alike (1.3.5.5). Market **bubbles** arise when speculation feeds on itself: buyers buy only to resell, prices detach from fundamentals and then crash – housing and stocks and shares are the specification contexts, and the burst hits consumers (negative equity, pension losses), producers (collapsed demand), workers (unemployment) and governments (recession, bailouts) (1.3.5.6).



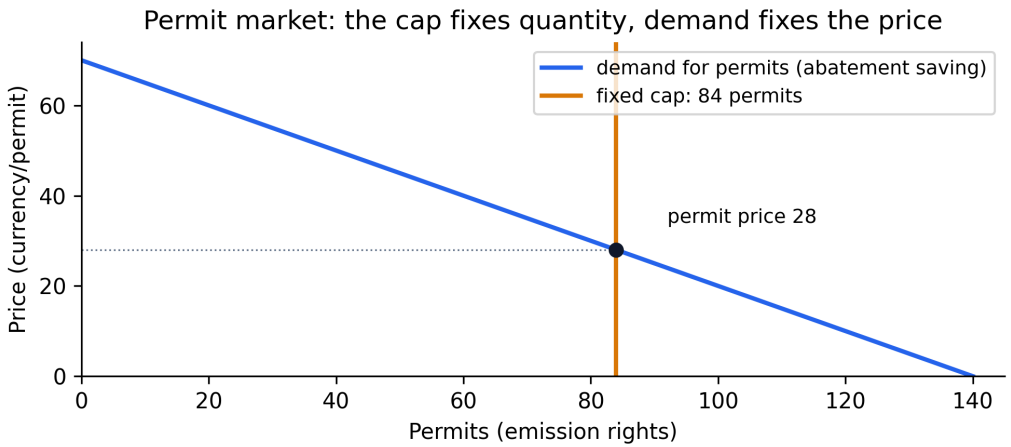
The quadrant places the specification's public/private distinction in context; only the pure public corner fails by free-riding.

Government intervention: purpose and methods

Intervention exists to correct market failure – to move output towards the social optimum (1.3.6.1a). The methods (1.3.6.1b): indirect taxation (ad valorem and specific – a Pigouvian tax equal to the marginal external cost 6 shifts supply to the social optimum $(92, 24)$, exactly the topic-1 tax arithmetic); subsidies (6 per unit corrects the positive externality to $(108, 16)$); **maximum prices** (set at 16, below equilibrium, for affordability: $Q_d = 108 > Q_s = 84$, a shortage of 24 – rationing, queues and black markets follow); **minimum (guaranteed) prices** (set at 24, above equilibrium, to protect producers: $Q_s = 116 > Q_d = 92$, a surplus of 24 – the government may have to buy and store it); **tradeable pollution permits** (the cap fixes total emissions – here 84 permits – and demand sets the permit price, 28 in our model, so firms with low abatement costs sell permits to firms with high ones); extension of **property rights** (giving victims the right to sue internalises the externality); state provision (public goods, health, education); **regulation** (bans, standards, price caps); and the provision of information (closing information gaps). Contexts (1.3.6.1c): health, housing, education, transport, environment, energy, agriculture and commodities.



Original model; the shortage and surplus of 24 items/day at prices 16 and 24 are computed in the text.



Original model; the vertical cap meets the demand curve at a permit price of 28.

Government failure

Government failure is intervention that results in a NET welfare loss – the cure costs more than the disease (1.3.6.2a). The causes (1.3.6.2b): information gaps (the state misjudges the externality's size, so the tax of 6 overshoots and wastes the triangle it meant to save); unintended consequences (minimum prices create surpluses; maximum prices create black markets); excessive administrative costs (collecting, enforcing, storing); lack of incentives (state providers face no competition); and moral hazard (guaranteed prices or bailouts change behaviour). Every intervention answer

should close by weighing the correction against these costs.

Checklist

- Market failure defined; the five sources named (1.3.5.1).
- Private/external/social benefits and costs; production vs consumption externalities; MSC/MSB diagrams with market vs social optimum and the welfare-loss/gain areas; the five contexts (1.3.5.2).
- Rivalry and excludability; public vs private goods; free-riding and non-provision (1.3.5.3).
- Symmetric vs asymmetric information; information gaps in healthcare, education, pensions, insurance (1.3.5.4).
- Moral hazard after the contract; effects in insurance and banking (1.3.5.5).
- How bubbles arise; effects in housing and stocks on all four groups (1.3.5.6).
- Purpose of intervention; the eight methods with the max/min price shortages and surpluses computed; the eight contexts (1.3.6.1).
- Government failure as net welfare loss with its five causes (1.3.6.2).

Boundary notes: diagrams carry marks – axes labelled, curves named (MPB/MSB, MPC/MSC), the optimum and the welfare area identified. State the assumption that the externality is constant at 6 per unit (in reality marginal external costs vary with output). All worked numbers are original and consistent with the shared model of topic 1.

Output measures, spending and the multiplier

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Pearson Edexcel International AS Economics (WEC12), specification Issue 2, June 2018. This topic covers spec sections 2.3.1–2.3.5 in full: measures of economic performance (four rows), aggregate demand (five rows), aggregate supply (three rows), national income (four rows) and economic growth (four rows) – 66 lettered objectives in total. Worked numbers are original unless labelled SAM (Sample Assessment Materials, WEC12/01), and every calculation below is internally consistent.

Must-know for this topic:

Family	Relationship
national income	real GDP $= \frac{\text{nominal}}{\text{deflator}} \times 100$; per capita $= \frac{\text{real}}{\text{population index}} \times 100$
inflation	$\text{CPI} = \sum(\text{weight}_i \times \frac{P_{i,1}}{P_{i,0}} \times 100)$
aggregate demand	$AD = C + I + G + (X - M)$
multiplier	$k = \frac{1}{1-MPC} = \frac{1}{MPW}$, $MPW = MPS + MPT + MPM$; $\Delta Y = k \times \text{injection}$

Measures of economic performance

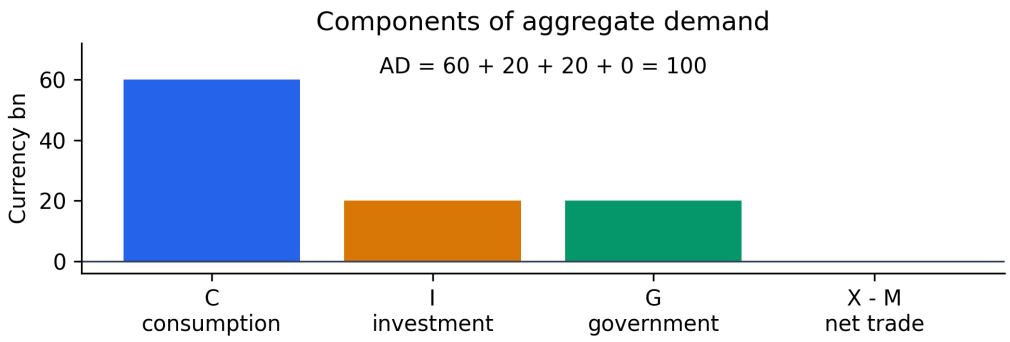
Economic growth is the rate of change of REAL Gross Domestic Product – the value of output produced within a country (2.3.1.1a); **Gross National Income** (GNI) adds net income earned abroad by residents and is an alternative measure of national income. Distinguish REAL (deflated) from NOMINAL (current prices), TOTAL from PER CAPITA (divided by population), and VALUE from VOLUME (quantity) measures (2.3.1.1c): with nominal GDP index 112 and a price deflator of 108, real GDP $= \frac{112}{108} \times 100 = 103.7$; dividing by a population index of 102 gives real GDP per capita = 101.7 – a growth of 1.7% in living standards against 3.7% real growth (2.3.1.1a). Compare growth rates across countries and over time, and use **Purchasing Power Parities** (PPP) – exchange rates that equalise the price of identical baskets – to make fair international comparisons of real GDP/GNI, since market exchange rates understate living standards in low-price countries (2.3.1.1d–e). Positive growth raises output; negative growth cuts it, and a **recession** is two consecutive quarters of negative growth (2.3.1.1f–g). GDP/GNI limitations for living standards: non-market activity, the shadow economy, income distribution, working hours, environmental damage, and price differences (2.3.1.1h); national happiness and wellbeing indicators (life expectancy, corruption perception, reported happiness) complement it – above a threshold, higher real income buys little extra SUBJECTIVE

happiness (2.3.1.1i).

Inflation is a sustained rise in the general price level; **deflation** is a sustained fall; **disinflation** is a slower rate of RISE – prices still rising (2.3.1.2a). *(SAM WEC12/01 Q12(b), adapted)* India's CPI inflation fell from about 12% in 2010 to about 9% in 2011 and from about 11% in 2013 to about 6% in 2015: each year prices ROSE, but the rate of increase fell – disinflation, never deflation, since the rate stayed positive. Calculate a **consumer price index** (CPI) from a weighted basket: weights 50/30/20 over three goods with price relatives 110/100/120 give CPI $= 0.5 \times 110 + 0.3 \times 100 + 0.2 \times 120 = 109$, so inflation is 9% (2.3.1.2b). CPI limitations: a fixed basket, quality change, and the representative household (2.3.1.2c); the producer (wholesale) price index signals FUTURE inflation because producer costs pass through to consumer prices (2.3.1.2d). Causes of inflation: DEMAND-PULL (AD beyond capacity), COST-PUSH (input costs raising prices), and excessive money supply growth (2.3.1.2e); deflation comes from falling AD, a rise in AS, or a falling money supply (2.3.1.2f). Effects of inflation and deflation hit consumers (real incomes, savings), the government (tax receipts, debt values), firms (planning, costs), workers (real wages), income distribution (borrowers gain, lenders lose), investment (uncertainty), UK competitiveness, and the current account (2.3.1.2g).

Unemployment is measured by the ILO definition: those without work who are available and actively seeking (2.3.1.3a). Causes: FRICTIONAL (between jobs), SEASONAL, STRUCTURAL (skills mismatch), DEMAND-DEFICIENCY, and REAL-WAGE inflexibility (wages stuck above equilibrium) (2.3.1.3b). Effects: consumers lose income, firms lose demand, workers lose skills, public finances lose tax and pay benefits, the economy operates INSIDE its PPF, and society carries costs of crime and exclusion (2.3.1.3c). **Underemployment** – employed people wanting more hours or a job matching their skills – is distinct from unemployment (2.3.1.3d). Watch rates of employment, unemployment AND economic inactivity together, and note net migration's significance for labour supply (2.3.1.3e–f).

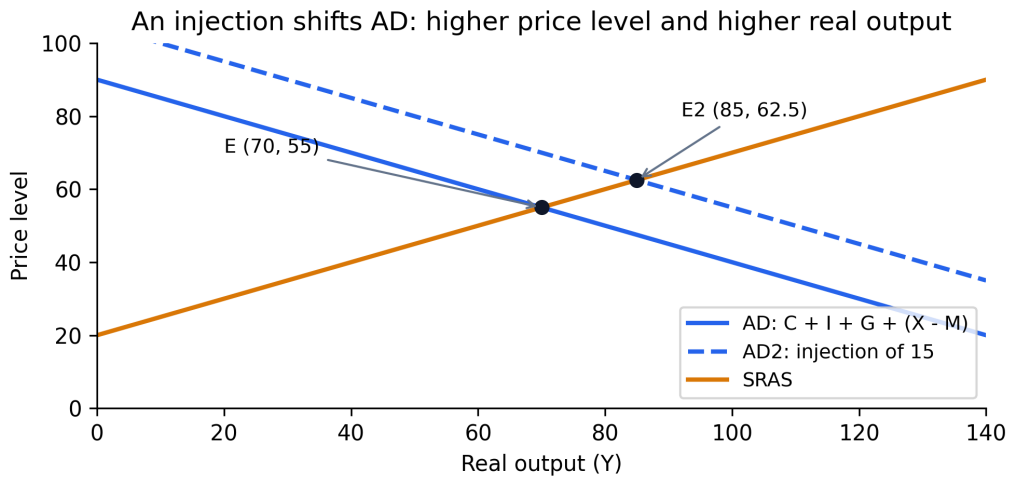
The **balance of payments** records transactions with the rest of the world; the CURRENT ACCOUNT trades goods and services, plus primary and secondary income (2.3.1.4a); a deficit on trade in goods and services means imports exceed exports; a current-account deficit or surplus is the balance on the whole account (2.3.1.4b–c).



Original data; the C = 60, I = 20, G = 20, X − M = 0 split is used throughout this topic.

Aggregate demand

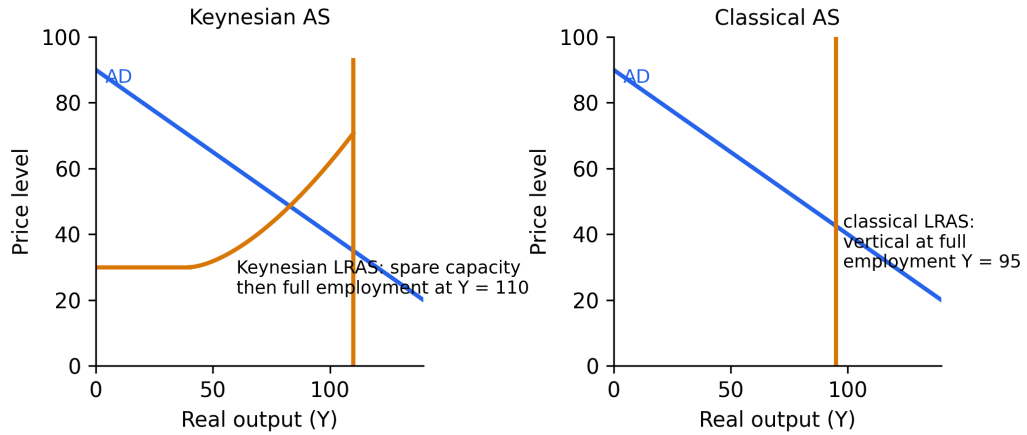
Aggregate demand is the total planned spending on domestic output: $AD = C + I + G + (X - M)$ – with C = 60, I = 20, G = 20 and net trade 0, AD = 100 (2.3.2.1a–b). The AD curve slopes DOWN with the price level (wealth, trade and interest-rate effects); a price-level change moves ALONG it, any change in C, I, G or net trade SHIFTS it (2.3.2.1c). Consumption responds to disposable income, interest rates, consumer confidence, welfare payments, wealth effects and the availability of credit; whatever is not consumed is saved – the **savings ratio** is saving as a share of income, and it changes with confidence, interest rates and wealth (2.3.2.2). Investment distinguishes GROSS from NET (net = gross minus depreciation) and responds to economic growth, interest rates, business confidence, credit and corporation tax; governments promote it through tax relief, subsidies and lower corporation tax (2.3.2.3). Government expenditure follows fiscal policy, the level of activity (benefits fall in booms), market-failure correction and political priorities (2.3.2.4). The net trade balance moves with real income (imports rise when Y rises), the exchange rate, the global economy, protectionism and non-price factors such as quality and design (2.3.2.5).



Original model: AD P = 90 − Y/2, SRAS P = 20 + Y/2, equilibrium (70, 55); an injection of 15 shifts AD to (85, 62.5).

Aggregate supply

Aggregate supply is the total planned output at each price level; the AS curve rises with the price level, price changes move ALONG it, and cost or productivity changes SHIFT it (2.3.3.1). Short-run AS shifts with raw material and energy costs, exchange rates (imported inputs) and tax rates (2.3.3.2). The LONG-RUN AS curve comes in two shapes: the KEYNESIAN curve is horizontal with spare capacity, curves up as full employment approaches and turns vertical at capacity; the CLASSICAL curve is vertical at the full-employment output – the classical economy always tends back there (2.3.3.3a). LRAS shifts with technology, productivity, education and skills, regulation and tax, demography and net migration, and competition policy (2.3.3.3b).

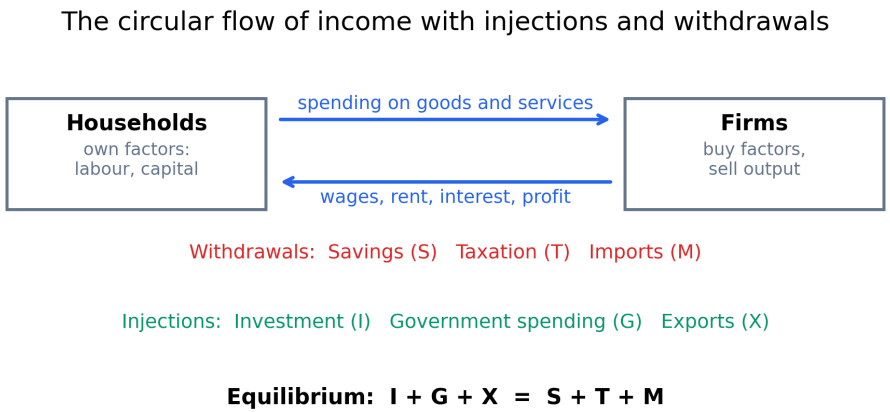


Original diagrams; the same AD curve meets each shape at a different implied adjustment story.

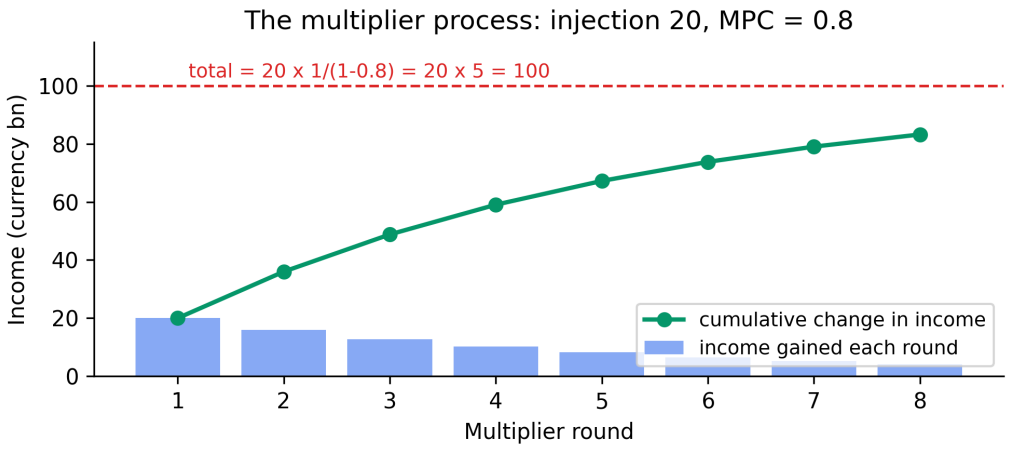
National income and the multiplier

The **circular flow of income** links households and firms: households supply factors and buy output; INCOME equals OUTPUT equals EXPENDITURE. **Wealth** is a stock of assets; **income** is a flow (2.3.4.1). INJECTIONS add spending – investment, government expenditure, exports; WITHDRAWALS remove it – saving, taxation, imports (2.3.4.2a–c). Net injections raise the equilibrium level of real national output; net withdrawals lower it, and equilibrium returns when $I + G + X = S + T + M$ (2.3.4.2d). Equilibrium real output sits where AD meets AS, and shifts in AD or AS move it – the (70, 55) model economy moves to (85, 62.5) with an injection of 15 (2.3.4.3).

The **multiplier** turns an injection into a larger change in income: each round of spending becomes income, part is re-spent, and the process accumulates (2.3.4.4a). The **marginal propensity to consume** (MPC) drives it; withdrawals drain it through MPS, MPT and MPM (2.3.4.4b). $k = \frac{1}{1-MPC} = \frac{1}{MPW}$ (2.3.4.4c). *(SAM WEC12/01 Q9, adapted)* With MPC = 0.5, $k = \frac{1}{1-0.5} = 2$, so a £30 billion investment raises national income by $2 \times 30 =$ £60 billion. With $MPW = MPS\,0.1 + MPT\,0.15 + MPM\,0.25 = 0.5$, $k = \frac{1}{0.5} = 2$ again; with MPC = 0.8, $k = 5$ and an injection of 20 raises income by 100 in total – the rounds 20, 16, 12.8, 10.24 … sum to 100 (2.3.4.4d). The bigger the multiplier, the bigger the AD shift a given injection buys – which is why the SAME stimulus works differently in economies with different import propensities.



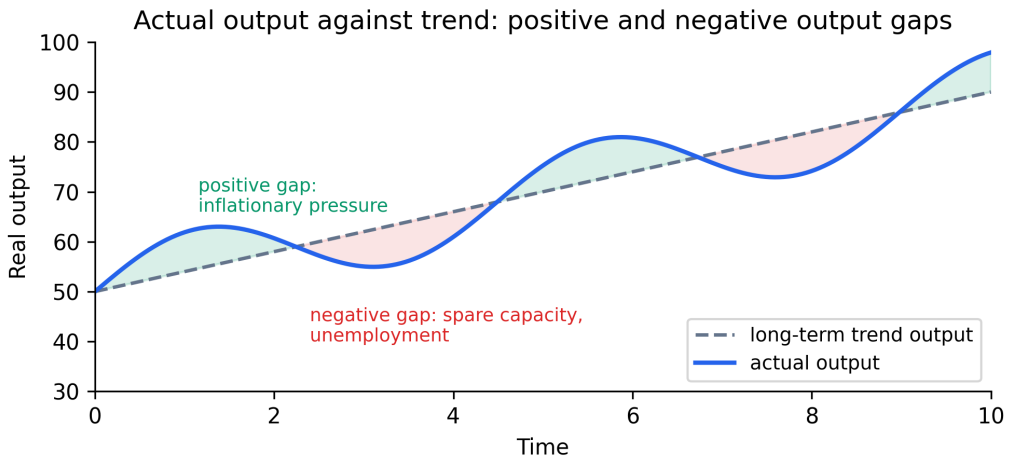
Original schematic; the equilibrium condition is the multiplier's drain condition.



Original data; the cumulative change converges to 20 x 5 = 100.

Economic growth

ACTUAL growth is a movement towards the PPF (more output from given capacity); POTENTIAL growth is an outward shift of the PPF (more capacity) (2.3.5.1a). Actual growth comes from any component of AD rising – consumption, investment, government spending or net trade – and international trade matters because export-led growth adds demand without domestic inflation (2.3.5.1b–c). Potential growth comes from domestic and foreign direct investment, innovation, a growing labour force (including net migration) and stronger competition (2.3.5.1d); PRODUCTIVITY growth is the deepest driver of long-run growth rates (2.3.5.1e). Benefits of growth: higher living standards, lower unemployment, higher profits, more investment, higher tax revenues and better public services (2.3.5.2). Costs: opportunity costs (investment instead of consumption), environmental damage, trade deficits as imports surge, greater inequality, and inflation if growth runs past capacity (2.3.5.3). An OUTPUT GAP is the difference between actual output and the long-term trend (2.3.5.4a): a POSITIVE gap means actual output above trend – inflationary pressure; a NEGATIVE gap means spare capacity and unemployment (2.3.5.4b–c). Gaps are hard to measure because the trend itself is estimated, data arrives late and is revised (2.3.5.4d).



Original cycle; the shaded bands mark the positive and negative gaps of spec 2.3.5.4.

Checklist

- Real versus nominal, total versus per capita, value versus volume GDP/GNI; PPP comparisons; recession definition; GDP limitations and wellbeing indicators (2.3.1.1).
- Inflation, deflation, disinflation; CPI from a weighted basket (109 → 9%); PPI as a leading indicator; demand-pull, cost-push and money-supply causes; the eight effect groups (2.3.1.2).
- ILO unemployment; the five causes; effects on six groups; underemployment; employment, inactivity and migration (2.3.1.3).
- Balance of payments components; goods-and-services balance; current-account deficit and surplus (2.3.1.4).
- AD = C + I + G + (X − M); movements versus shifts; the influences on C (and the savings ratio), I (gross vs net), G and net trade (2.3.2).
- SRAS shift factors; Keynesian versus classical LRAS shapes and their shift factors (2.3.3).

- Circular flow; injections and withdrawals; I + G + X = S + T + M; equilibrium from AD/AS (2.3.4.1–3).
- The multiplier: process, MPC/MPS/MPT/MPM, k = 1/(1−MPC) = 1/MPW, SAM's 2 × £30bn = £60bn and the 5 × 20 = 100 example (2.3.4.4).
- Actual versus potential growth; AD-side and capacity-side causes; the six benefits and five costs; positive and negative output gaps and their measurement (2.3.5).

Boundary notes: quantitative skills QS1–QS4 and QS9 are examined throughout (ratios, fractions, graphs and data interpretation); calculators are allowed. Diagrams must label axes, curves and equilibria, and show the SHIFT arrow. Answers to 8+ mark questions earn Application marks by using the context's data (the SAM mark schemes award Knowledge/Application/Analysis separately). Worked examples are original or adapted from the WEC12/01 Sample Assessment Materials (identifiable by the SAM label) with arithmetic re-derived.

Inflation, unemployment and policy judgement

Pearson Edexcel · International A-Level · Economics

Pearson Edexcel International AS Economics (WEC12), specification Issue 2, June 2018. This topic covers spec section 2.3.6 in full: the six macroeconomic objectives, the four conflicts between them, supply-side policies (free market and interventionist) and demand-side policies (fiscal and monetary, with the central bank's roles). Worked examples are original or adapted from the WEC12/01 Sample Assessment Materials and labelled SAM.

Must-know for this topic:

Family	Content
objectives	growth; low stable inflation; low unemployment; current-account equilibrium; balanced budget; income equality
conflicts	inflation ↔ unemployment (Phillips curve); growth ↔ environment; inflation ↔ current account; growth ↔ equality
supply-side	free market (deregulation, privatisation, tax cuts, welfare reform, bureaucracy cuts) vs interventionist (education, investment incentives, infrastructure, start-up finance, regional policy)
demand-side	fiscal (G, T) and monetary (interest rates, QE, lending criteria, reserve ratios); reflationary vs deflationary

Macroeconomic objectives

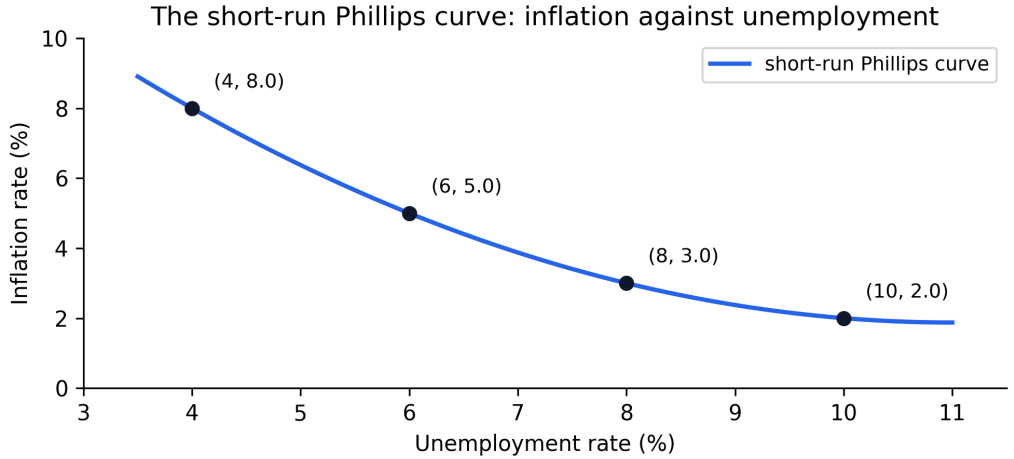
Governments pursue six objectives (2.3.6.1): economic GROWTH (rising real GDP); a LOW AND STABLE rate of inflation (an **inflation target** anchors expectations); LOW unemployment (waste of resources, PPF inside); BALANCE OF PAYMENTS equilibrium on the current account (sustainability of external borrowing); a BALANCED government budget (debt sustainability over the cycle); and GREATER income equality (equity and cohesion). Each objective has a measure from topic 3 – real GDP growth, CPI inflation, the ILO unemployment rate, the current-account balance, the budget balance, and an inequality measure – and each carries a trade-off against at least one other objective.

Conflicts between objectives

INFLATION versus UNEMPLOYMENT: the short-run **Phillips curve**

shows the trade-off – points (4, 8), (6, 5), (8, 3), (10, 2) trace inflation against unemployment, so cutting inflation from 8% to 3% costs unemployment rising from 4% to 8% in the short run (2.3.6.2a). GROWTH versus the ENVIRONMENT: faster output raises emissions and resource use – the SAM's India extract shows Delhi closing

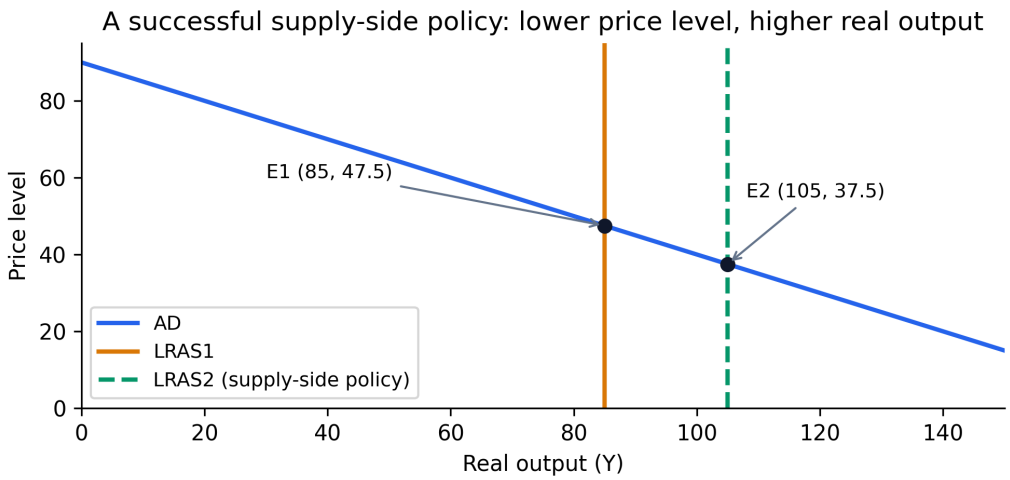
schools for severe smog while growth ran above 7% (2.3.6.2b). INFLATION versus the CURRENT ACCOUNT: reflation raises incomes, sucking in imports and raising prices, which worsens competitiveness – both move the current account towards deficit (2.3.6.2c). GROWTH versus EQUALITY: growth driven by skilled sectors can widen income gaps even as average incomes rise (2.3.6.2d). Judgement questions want the conflict NAMED, the mechanism EXPLAINED, and the trade-off WEIGHED – that is where the evaluation marks live.



Original illustrative curve; the four labelled points are the worked trade-off pairs.

Supply-side policies

Supply-side policy raises productivity, competition and incentives – they shift LRAS right (2.3.6.3a). FREE MARKET policies (2.3.6.3b): **deregulation** of product and labour markets (lower costs, easier entry); **privatisation** (profit discipline); reduction in taxation (work and investment incentives); changing welfare payment levels (incentives to accept work); cutting bureaucracy costs for firms. INTERVENTIONIST policies (2.3.6.3c): investment in education, training and skills (productivity of labour); incentives to encourage investment (tax incentives or subsidies); infrastructure investment (reducing firms' costs); finance for business start-ups; regional policy (spreading activity to lagging regions). Strengths: market policies are cheap and quick to announce and can raise incentives; interventionist policies fix real capacity constraints. Weaknesses: market policies may worsen equality and their incentives are uncertain; interventionist policies are slow, costly, and subject to government failure (information gaps, cost overruns) (2.3.6.3d).

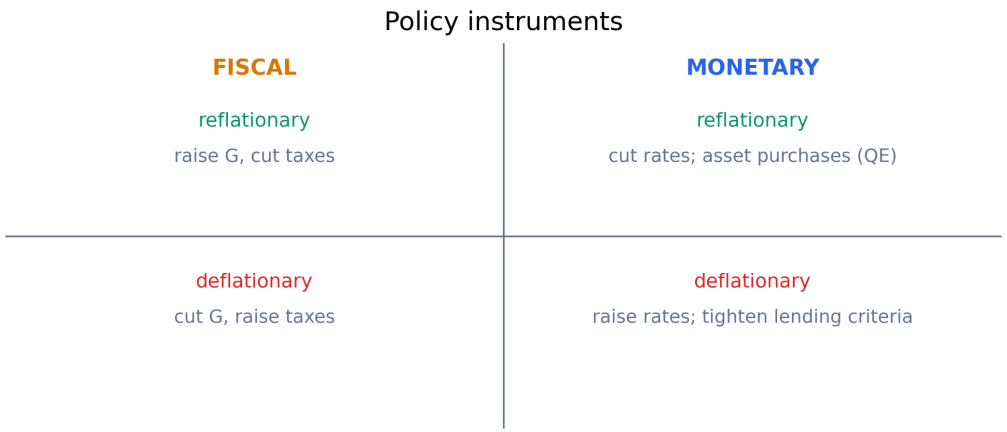


Original model: LRAS shifts from 85 to 105 along AD $P = 90 - Y/2$, cutting the price level from 47.5 to 37.5 while output rises.

Demand-side policies and the central bank

Demand-side policy manages AD (2.3.6.4a): **Fiscal policy** uses government spending and taxation; **Monetary policy** uses interest rates, asset purchases (quantitative easing), lending criteria and reserve asset (liquidity) requirements. REFLATIONARY policy raises AD (higher G, lower T, lower interest rates, QE); DEFLATIONARY policy cuts AD (the reverse). In the AD/LRAS model a reflation with multiplier 2 – spending up 10 raises income 20 – raises output only while spare capacity exists; against a vertical LRAS it mainly raises the price level. *(SAM WEC12/01 Q10, adapted)* **Quantitative easing** is the central bank's purchase of government or corporate bonds: it improves the availability of loans, stimulating consumption and investment, boosting AD and the price level – Japan used it to fight deflation. *(SAM Q12(a), adapted)* The **base rate** is the cost of borrowing set by the central bank; India's cut from 6.5% to 6.25% (November 2016) eased borrowing costs to support demand.

The CENTRAL BANK (2.3.6.4d): implements monetary policy (setting the base rate, conducting QE); pursues an inflation target (credibility anchors expectations – the key to the Phillips trade-off easing over time); acts as banker to the government (managing its accounts and debt); and as banker to the banks – **lender of last resort** stopping solvent banks failing in a panic. Strengths of demand-side policy: monetary policy is quick, technical and insulated from politics; fiscal policy directly targets demand and distribution. Weaknesses: monetary policy works only through indirect channels with long and variable lags; fiscal policy is slow to legislate, crowds out private spending, and enlarges the budget deficit (2.3.6.4e).



Original schematic; the four quadrants organise the specification's instrument lists.

Checklist

- The six objectives with their measures (2.3.6.1).
- The four conflicts: Phillips curve points (4, 8) to (10, 2); growth vs environment (India smog); inflation vs current account; growth vs equality (2.3.6.2).
- Supply-side: the five free-market and five interventionist instruments; strengths and weaknesses of each family (2.3.6.3).
- Demand-side: fiscal vs monetary; reflationary vs deflationary; the four monetary instruments; QE defined with its mechanism (SAM Q10); the base rate (SAM Q12a, India 6.5 → 6.25).
- The central bank's four roles incl. lender of last resort; strengths and weaknesses of demand-side policy (2.3.6.4).

Boundary notes: essay answers follow the WEC rubric – Knowledge, Application, Analysis and Evaluation are marked separately (20-mark essays: 12 KAA + 8 evaluation, with level caps for missing diagrams or context). Supply-side versus demand-side evaluation should reference the time horizon: demand-side works in the short run, supply-side in the long run. Worked examples are original or SAM-adapted as labelled, with arithmetic re-derived.

Firms, costs, growth and competition

Pearson Edexcel · International A-Level · Economics

Pearson Edexcel International A Level Economics (WEC13), specification Issue 2, June 2018. This topic covers spec sections 3.3.1–3.3.3 in full: types, sizes and growth of businesses and business objectives (3.3.1); revenue, costs and profits with economies of scale (3.3.2); and the whole market-structures spectrum from perfect competition to contestability (3.3.3) – 57 lettered objectives. The demand side stays on the shared model (AR: $P = 70 - Q/2$), and the cost machinery is built from one original table so every figure cross-checks.

Must-know for this topic:

Family	Relationship
revenue	$TR = P \times Q$; $AR = TR/Q$; $MR = \Delta TR/\Delta Q$ (here $MR = 70 - Q$)
costs	$TC = TFC + TVC$; $ATC = TC/Q$; $AVC = TVC/Q$; $MC = \Delta TC/\Delta Q$
profit	profit max where $MR = MC$; shutdown where $P < \min AVC$; break-even at $P = \min ATC$
structures	CR4 here = 40+25+15+10 = 90%; monopoly $Q_m = 40$, $P_m = 50$, profit 800, DWL 200

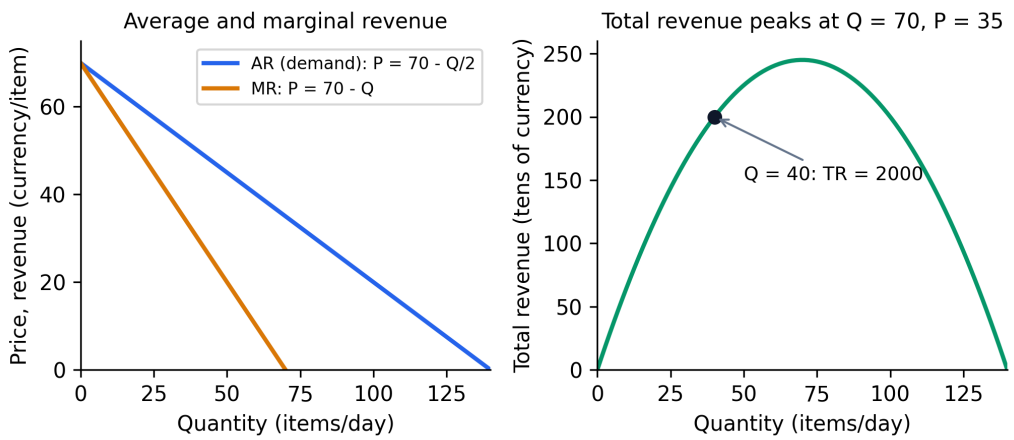
Types, sizes and growth of businesses

Business **types** (3.3.1.1): private sector organisations (owned by shareholders or proprietors for profit); state-owned enterprises in the public sector; for-profit versus NOT-FOR-PROFIT organisations (surplus reinvested, not distributed); co-operatives (owned by members, one member one vote); and joint ventures (two firms pool resources for one project, sharing risk and control). Sizes run from **SMEs** (small and medium enterprises) to large corporations (3.3.1.2a). Businesses grow ORGANICALLY (reinvested profits, new products, new outlets) or by MERGER and TAKEOVER (3.3.1.2b): FORWARD vertical integration buys a customer stage (a brewer buys pubs); BACKWARD vertical buys a supplier stage (the brewer buys a hop farm); HORIZONTAL integration buys a rival at the same stage; CONGLOMERATE integration buys an unrelated business. Advantages: vertical secures supply or outlets and internalises mark-ups; horizontal cuts costs and market rivalry; conglomerate spreads risk. Disadvantages: integration is costly, cultures clash, and size invites diseconomies and regulation (3.3.1.2c). Growth constraints: the size of the market, access to finance, the owner's objectives, and government regulation and bureaucracy (3.3.1.2d); firms stay small where markets are local, finance is thin, owners prefer control, or rules bite – and grow where the reverse holds (3.3.1.2e). Growth affects businesses (market power, scale), workers (jobs, but restructuring) and consumers (lower prices versus less choice) (3.3.1.2f); **Demergers** split conglomerates back

into focused units when coordination fails, with mirror effects on all three groups (3.3.1.2g).

Business objectives

Objectives (3.3.1.3): **profit maximisation** ($MR = MC$); REVENUE MAXIMISATION (revenue max where $MR = 0$ – here $Q = 70$, $P = 35$, exactly the topic-1 unitary-PED point); SALES VOLUME MAXIMISATION (largest output subject to covering costs); and BEHAVIOURAL theories – SATISFICING, where managers aim for a satisfactory result rather than the maximum (Herbert Simon). The DIVORCE OF OWNERSHIP FROM CONTROL makes objectives contestable: shareholders (principals) want profit; managers (agents) run the firm daily and may prefer growth, pay or quiet lives – the **principal-agent problem** (3.3.1.3b). Formulae: profit max at $MR = MC$; revenue max at $MR = 0$; sales-volume max at $AR = ATC$ (normal profit constraint) (3.3.1.3c).



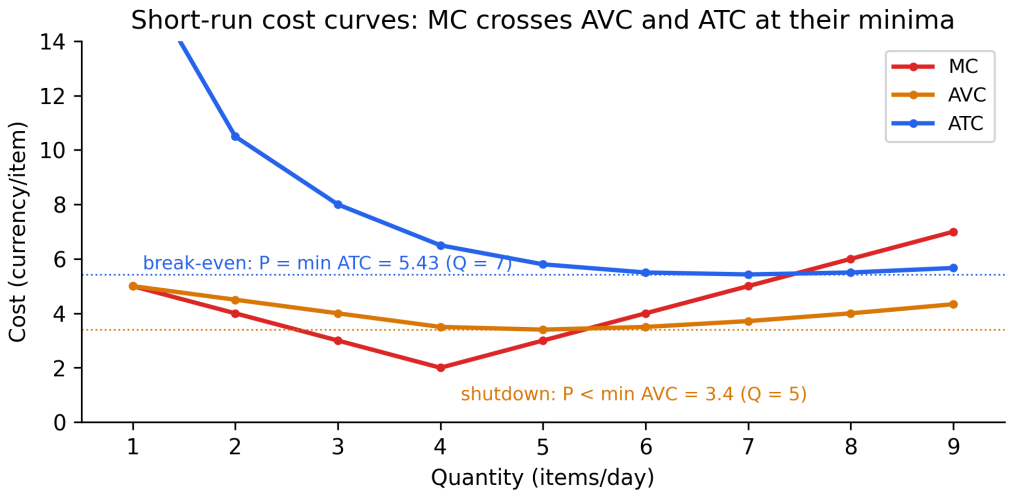
Original model: AR $P = 70 - Q/2$, MR $P = 70 - Q$; TR(40) = 2000 and the TR maximum at (70, 35).

Revenue, costs and profits

Revenue (3.3.2.1): $TR = P \times Q$, $AR = TR/Q$ (the demand curve) and $MR = \Delta TR/\Delta Q$; when the demand curve is a straight line, MR has TWICE its slope – AR $P = 70 - Q/2$ gives MR $P = 70 - Q$. PED links to revenue: with $|PED| > 1$ a price cut RAISES revenue (MR positive), with $|PED| < 1$ it lowers it – at Q = 40, price 50, TR = 2000 and MR = 30 (positive, so still in the elastic range).

Costs (3.3.2.2): the SHORT RUN has at least one fixed factor, and the **law of diminishing returns** makes marginal product fall as more variable input is added to it – which is why marginal cost eventually rises and the cost curves take their U-shapes. The original table (TFC = 12): TVC for Q = 1…9 runs 5, 9, 12, 14, 17, 21, 26, 32, 39, so MC runs 5, 4, 3, 2, 3, 4, 5, 6, 7, falling while specialisation dominates and rising once diminishing returns bite. $TC = TFC + TVC$; per unit, ATC and AVC are U-shaped and MC cuts EACH at its minimum: AVC is minimised at $Q = 5$ (3.4) and ATC at $Q = 7$ (5.43). Marginal product and marginal cost are mirror images (high MP → low MC); average product mirrors AVC; total product mirrors TC; and in the LONG RUN all factors are variable, so only then can the whole cost structure change (3.3.2.2d).

Profits and losses (3.3.2.4): **normal profit** is the minimum return keeping the entrepreneur in the industry – an opportunity COST, included in ATC; **super-normal profit** is anything above it ($P > ATC$); a LOSS is $P < ATC$. The firm should SHUT DOWN in the short run only when $P < \min AVC = 3.4$: below that, revenue fails to cover even variable costs; between AVC and ATC it trades at a loss smaller than its fixed costs, which are sunk in the short run. In the long run the exit point is $P = \min ATC = 5.43$.

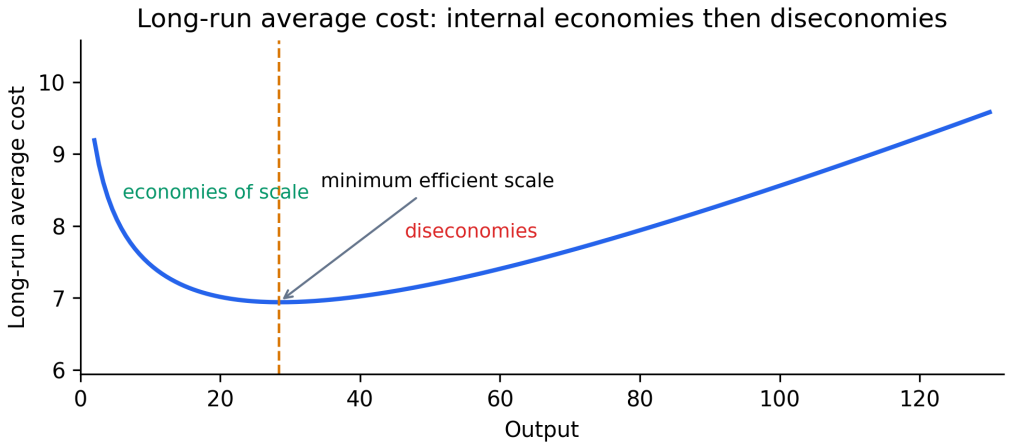


Original table plotted: MC crosses AVC at its minimum (3.4, Q = 5) and ATC at its minimum (5.43, Q = 7).

Economies and diseconomies of scale

The long-run average cost curve (LRAC) falls with INTERNAL economies of scale, flattens at the **minimum efficient scale** (MES) – the smallest output at which lowest average cost is achieved – and rises with diseconomies (3.3.2.3a–b). Internal economies (inside the firm, 3.3.2.3d): FINANCIAL (cheaper borrowing), TECHNICAL (larger plant), MANAGERIAL (specialist managers), MARKETING (spread advertising), PURCHASING (bulk discounts), RISK-BEARING (diversified products). EXTERNAL economies (industry-wide, 3.3.2.3e): availability of skilled labour, access to transport links, sharing knowledge. Diseconomies (3.3.2.3f): com-

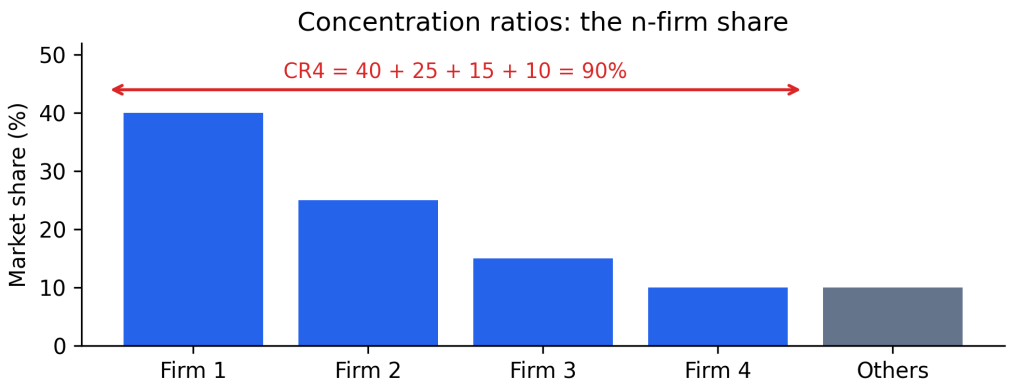
munication problems, coordination problems, and X-INEFFICIENCY (costs drifting above the achievable minimum for lack of competitive pressure).



Original curve: internal economies of scale to the MES, then diseconomies.

Efficiency and concentration

The four efficiency concepts (3.3.3.1): ALLOCATIVE efficiency ($P = MC$ – price reflects marginal cost to society); PRODUCTIVE efficiency (output at minimum ATC); DYNAMIC efficiency (investment and innovation over time, funded by profits); and X-INEFFICIENCY (wasteful production above the cost floor). Each market structure scores differently – perfect competition is allocatively and productively efficient in the long run but dynamically weak; monopoly may be dynamically efficient but is rarely allocatively so. The n-firm **concentration ratio** (3.3.3.2): with shares 40, 25, 15, 10 and 10, the four-firm ratio is $CR4 = 40 + 25 + 15 + 10 = 90\%$ – a concentrated market; its significance: high ratios flag market power (but miss foreign competition and contestability).



Original data: CR4 = 90 percent of a five-firm market.

Market structures: competition to monopoly

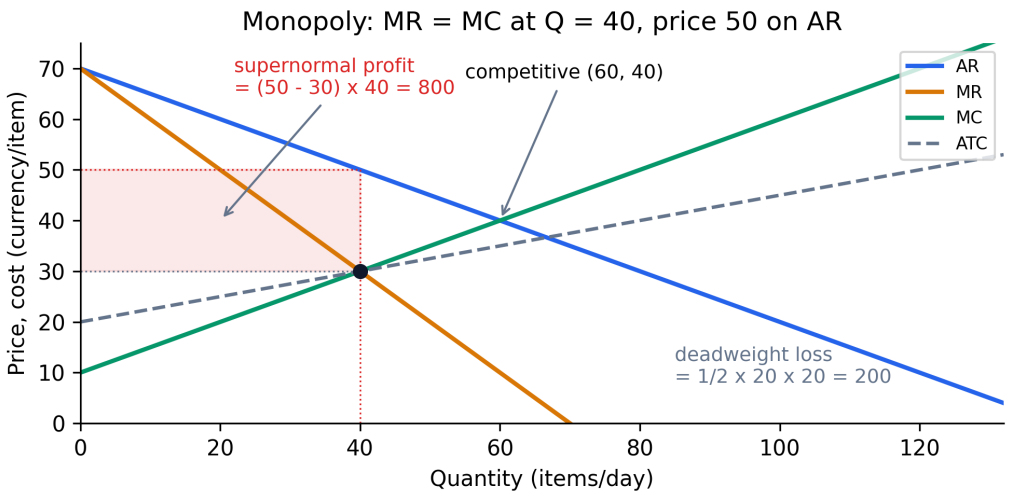
Perfect competition (3.3.3.3): many small firms, identical products, perfect information, free entry and exit – each firm is a PRICE TAKER, so $P = AR = MR$; short-run profit maximisation at $MC = MR$, long-run entry driving price to $P = \min ATC$ – only normal profit, with productive AND allocative efficiency ($P = MC$) in the long run; the short-run shutdown is $P < AVC$.

Monopolistic competition (3.3.3.4): many firms, DIFFERENTIATED products – physically (features), by marketing (advertising, packaging) or distribution (shop, online, telephone) – so each faces a downward-sloping demand curve: short-run supernormal profits attract entry, which in the long run drives profits to normal while price sits above MC (excess capacity, not allocatively efficient).

Oligopoly (3.3.3.5): few large INTERDEPENDENT firms behind barriers to entry – economies of scale, LIMIT PRICING (pricing below the profit-maximising level to deter entry), patents, branding, SUNK COSTS and legal barriers (3.3.3.5b). Interdependence brings strategic behaviour: the simple two-firm, two-outcome game below shows why collusion is fragile – defecting is each firm's dominant strategy, so both end at the **Nash equilibrium** (2, 2) although collusion (4, 4) pays both better (3.3.3.5c). Collusion can be formal (**cartels**) or tacit (PRICE LEADERSHIP); PRICE WARS break out when the discipline fails. Collusion benefits producers (higher profits) at the cost of consumers (higher prices), workers (uncertain) and governments (deadweight loss, illegality) (3.3.3.5d). Price competition includes price wars, PREDATORY PRICING (below cost to drive out entrants) and limit pricing (3.3.3.5e); NON-PRICE competition runs through advertising and branding, quality, endorsement, product placement and after-sales service (3.3.3.5f) – each with costs and benefits to firms, consumers, employees and suppliers (3.3.3.5g).

Monopoly (3.3.3.6): one seller behind barriers; profit maximisation where $MR = MC$. On the shared model with MC $P = 10 + Q/2$: $70 - Q = 10 + Q/2$

gives $Q_m = 40$; price on the AR curve is $P_m = 50$; with $ATC = 30$ at that output, supernormal profit is $(50 - 30) \times 40 = 800$ per day. Against the competitive benchmark ($P = MC$: $Q_c = 60$, $P_c = 40$) the monopoly raises price by 10, cuts output by 20 and creates a deadweight loss of $\frac{1}{2} \times 20 \times 20 = 200$ (3.3.3.6c–d). A **natural monopoly** has falling average costs over the whole market (one network is cheapest) – its implication: regulate rather than fragment (3.3.3.6e). **third-degree price discrimination** (3.3.3.6f) needs market power, separable groups with different PEDs, and no resale: charging each group its profit-maximising price raises producer surplus, benefits price-elastic groups with lower prices and harms inelastic groups (3.3.3.6g). Monopoly is productively and allocatively inefficient but may be dynamically efficient (3.3.3.6h).



Original model: MR = MC at (40, 30); price 50 on AR; supernormal profit 800 shaded; deadweight loss 200 against the competitive (60, 40).

Prisoners' dilemma: both collude (4, 4) beats the Nash outcome (2, 2)

Firm A \ Firm B	collude	defect
collude	A 4 B 4	A 1 B 6
defect	A 6 B 1	A 2 B 2 <- Nash equilibrium defect, defect (2, 2)

Original payoffs: the Nash equilibrium (2, 2) is worse for both than collusion (4, 4).

Monopsony and contestability

Monopsony (3.3.3.7): ONE buyer facing many sellers – conditions: the buyer dominates the input market (a single big employer in a town). It pushes the input price BELOW the competitive level: the firm gains (lower costs, higher profits) while suppliers or EMPLOYEES lose (lower wages), and output falls – consumers may gain from lower prices if cost savings are passed on (3.3.3.7b).

Contestability (3.3.3.8): a market is contestable when ENTRY AND EXIT are cheap – the key is SUNK COSTS: with none, hit-and-run entry disciplines incumbents. Implications: even a single incumbent keeps profits near normal and prices near competitive levels, often through LIMIT PRICING (3.3.3.8a–b). Contestability benefits consumers (low prices, choice) and disciplines firms; its costs fall on incumbents' shareholders, and low sunk costs mean little commitment to quality investment (3.3.3.8c–d).

Checklist

- Business types (private, state, not-for-profit, co-operatives, joint ventures); SMEs vs large corporations; organic growth and the four integrations with advantages and disadvantages; growth constraints; why firms stay small; growth and demerger effects on businesses, workers, consumers (3.3.1).
- Objectives: profit max (MR = MC), revenue max (MR = 0, Q = 70 here), sales-volume max, satisficing; the principal-agent problem and the divorce of ownership from control (3.3.1.3).
- TR/AR/MR with the twice-the-slope rule and the PED link (3.3.2.1).
- Short-run cost curves from diminishing returns: the table with MC 5→2→7, AVC min 3.4 at Q = 5, ATC min 5.43 at Q = 7; the four mirror relationships; normal/supernormal profit; shutdown and break-even rules (3.3.2.2, 3.3.2.4).
- LRAC, MES, six internal and three external economies, three diseconomies (3.3.2.3).
- Allocative, productive, dynamic efficiency and X-inefficiency; CR4 = 90% calculation and significance (3.3.3.1–2).
- Perfect competition (price taker, LR P = min ATC, efficient), monopolistic competition (differentiation, excess capacity), oligopoly (barriers, the prisoners' dilemma with Nash (2, 2) vs collusion (4, 4), cartels, price leadership, price wars, predatory and limit pricing, non-price competition), monopoly (Qm 40, Pm 50, profit 800, DWL 200, natural monopoly, third-degree price discrimination) (3.3.3.3–6).
- Monopsony and contestability with sunk costs (3.3.3.7–8).

Boundary notes: WEC13 papers are 2 hours, 80 marks and draw on Units 1-2. Diagrams carry marks: label AR/MR/MC/ATC, mark Qm and Pm, shade the profit box and the deadweight triangle. Worked numbers are original and consistent.

Labour markets and government intervention

Pearson Edexcel · International A-Level · Economics

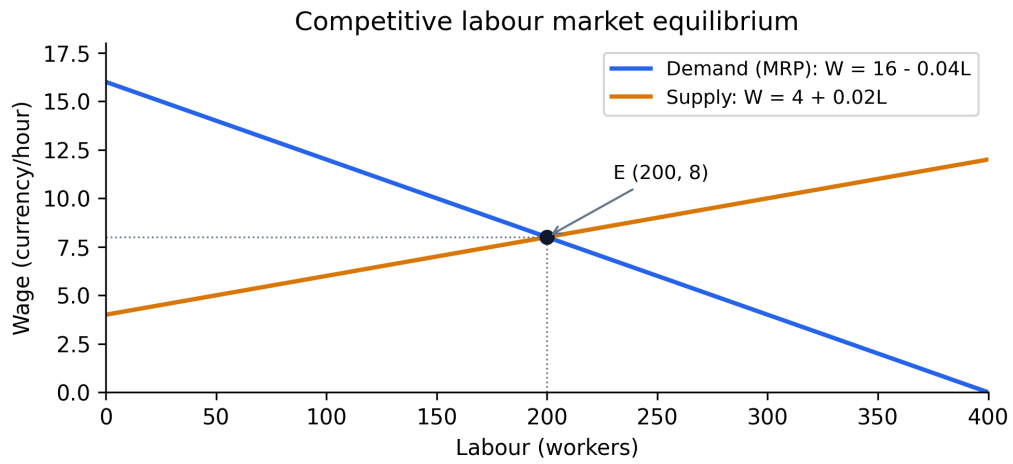
Pearson Edexcel International A Level Economics (WEC13), specification Issue 2, June 2018. This topic covers spec sections 3.3.4–3.3.5 in full: labour markets (four rows) and government intervention in product and labour markets (two rows) – 19 lettered objectives. The labour model is shared with the existing sheet 5.2 monopsony numbers: supply $W = 4 + 0.02L$, demand (MRP) $W = 16 - 0.04L$, equilibrium $L = 200$, $W = 8$.

Must-know for this topic:

Family	Relationship
labour demand	derived from the product: MRP = MP × product price
equilibrium	supply $W = 4 + 0.02L$ meets demand $W = 16 - 0.04L$ at $(200, 8)$
wage controls	min wage 9 → L_d 175 vs L_s 250 (75 unemployed); max wage 6 → L_d 250 vs L_s 100 (shortage 150)
intervention	product-market measures (six families) with five impact axes and four limits

The demand for and supply of labour

The demand for labour in an occupation is a **derived demand** – it follows demand for the final product; it also follows labour PRODUCTIVITY, the price of the product, and the wage rate relative to the price of capital (3.3.4.1a). The ELASTICITY of labour demand depends chiefly on the elasticity of demand for the product, the proportion of labour in costs, the substitutability of capital, and time (3.3.4.1b). The SUPPLY of labour to an occupation responds to the size of the population, net migration, income tax rates, the level of welfare benefits, government regulations and **trade unions** (3.3.4.2c); its elasticity depends on the time period, the vocationalness of skills, and geographic and occupational mobility (3.3.4.2d).



Original model: supply W = 4 + 0.02L, demand W = 16 − 0.04L, equilibrium (200, 8).

Wage determination and labour market failure

Competitive equilibrium sets the wage where supply meets demand: $4 + 0.02L = 16 - 0.04L$ gives $0.06L = 12$, so $L = 200$ workers and $W = 8$ per hour (3.3.4.3a). A shift in EITHER curve moves the equilibrium: product demand up shifts MRP right (higher wage AND employment); migration or benefit reform shifts supply (3.3.4.3b). In the PUBLIC SECTOR, wages are often set by bargaining and budget formulas rather than the market – a pay review body can leave public wages above or below market-clearing levels (3.3.4.3c). Market failure: **geographical immobility** (housing costs, family ties, region information) leaves unemployment in one region beside vacancies in another; **occupational immobility** (training costs, skill specificity, discrimination) traps workers in declining occupations – both cause persistent mismatch unemployment (3.3.4.4).

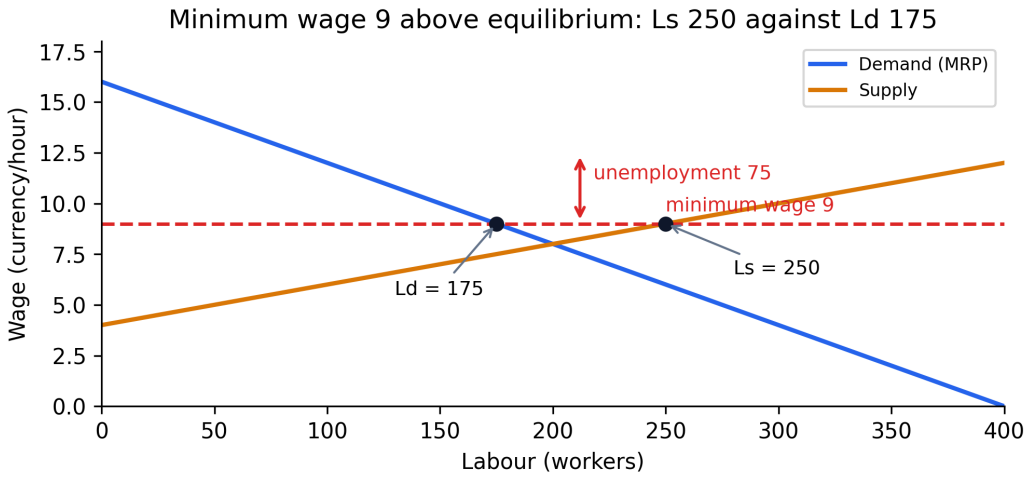
Government intervention in product markets

The case for intervention (3.3.5.1a): market power (monopoly and monopsony from topics 2 and 5), externalities, information gaps and equity. To control MONOPOLIES AND MERGERS (3.3.5.1b): price regulation (RPI − X caps), profit regulation, quality standards, performance targets, referral to regulatory authorities, and merger-control legislation. To promote COMPETITION AND CONTESTABILITY (3.3.5.1c): tax incentives and grants for small businesses and FDI, deregulation, **privatisation**, competitive tendering for public contracts, and trade liberalisation. To protect SUPPLIERS AND EMPLOYEES (3.3.5.1d): local sourcing rules, employment legislation against exploitation, barriers to foreign entrants, restrictions on monopsony power, and **nationalisation**. Each measure moves PRICE, PROFIT, EFFI-

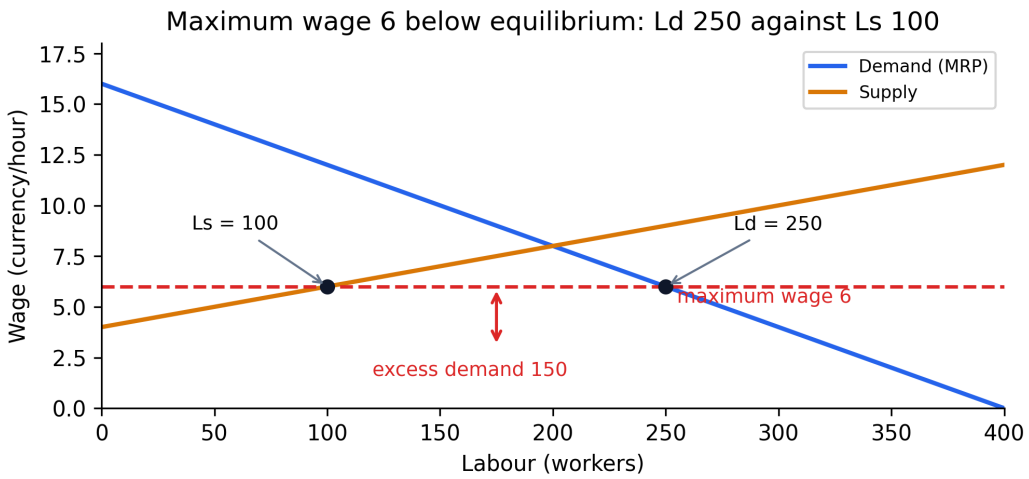
CIENCY, QUALITY and CHOICE (3.3.5.1e) – the five impact axes examiners want addressed. LIMITS to intervention (3.3.5.1f): **regulatory capture** (the regulator serves the regulated), asymmetric information, inadequate resources, and lack of regulatory power.

Government intervention in labour markets

The case (3.3.5.2a): monopsony exploitation (wages below MRP), in-work poverty, immobility, discrimination and exploitation. The instruments (3.3.5.2b): **maximum wage** controls (rare – public-sector pay caps: a max wage of 6 in our model leaves demand 250 against supply 100, a shortage of 150 – vacancies unfilled); **minimum wage** (a floor of 9 lifts Ls to 250 but cuts Ld to 175: 75 workers unemployed, though each employed worker earns more and poverty may fall); direct taxes such as national insurance and corporation tax (raise the cost of employing); measures to reduce immobility (training, relocation grants, housing supply – attacking the root causes of section 3.3.4.4); and anti-discrimination and anti-exploitation law.



Original model: at the 9 floor, Ls 250 against Ld 175 – 75 unemployed workers.



Original model: at the 6 cap, Ld 250 against Ls 100 – a shortage of 150 workers.

Checklist

- Labour demand as derived demand with its four influences; its elasticity factors (3.3.4.1).
- Labour supply with its six influences; elasticity of supply (3.3.4.2).
- Competitive equilibrium (200, 8) from the model; shift analysis; public-sector wage setting (3.3.4.3).
- Geographical and occupational immobility: causes and consequences (3.3.4.4).
- The case for product-market intervention; the six monopoly-control, five competition-promotion and five supplier/employee-protection measures; the five impact axes; the four limits incl. regulatory capture (3.3.5.1).
- Labour-market intervention: maximum wage 6 (shortage 150), minimum wage 9 (75 unemployed), direct taxes, mobility measures, anti-discrimination (3.3.5.2).

Boundary notes: WEC13 essays carry 12 KAA + 8 evaluation marks with level caps for missing diagrams or named groups. Wage-control answers must show BOTH quantities and the gap, and minimum-wage evaluation should weigh the unemployment count against the distributional gain (and note that with a MONOPSONIST employer, a well-placed minimum can RAISE employment). Worked numbers are original on the model shared with sheet 5.2.

Globalisation, trade and international finance

Pearson Edexcel · International A-Level · Economics

Pearson Edexcel International A Level Economics (WEC14), specification Issue 2, June 2018. This topic covers spec sections 4.3.1–4.3.3 in full: the characteristics, causes and effects of globalisation (three rows); trade and the global economy – specialisation, terms of trade, trading blocs and protectionism (five rows); and the balance of payments, exchange rates and international competitiveness (three rows). Worked examples are original or adapted from the WEC14/01 Sample Assessment Materials (labelled SAM) with arithmetic re-derived; the tariff model reuses the shared micro demand and supply curves ($Q_d = 140 - 2P$, $Q_s = 20 + 4P$).

Must-know for this topic:

Family	Relationship
terms of trade	$ToT = \frac{\text{export price index}}{\text{import price index}} \times 100$; SAM: $\frac{128.9}{117.1} \times 100 = 110.1$
comparative advantage	lowest opportunity cost, NOT most output; trade ratio between the two opportunity costs
tariff (shared model)	world price 12: imports 48; tariff 4: imports 24, revenue 96, DWL 48
depreciation	Marshall–Lerner ($

Globalisation

Globalisation shows three characteristics (4.3.1.1): trade grows as a proportion of GDP; transnational companies (**TNCs**) and foreign direct investment (**FDI**) gain importance; and migration increases. Its causes over the last 50 years (4.3.1.2a): trade liberalisation; more and larger trading blocs; political change (the Soviet system's breakdown, China opening up); reduced transport and communication costs; and the increased significance of TNCs. FDI by TNCs happens to access markets, resources, cheaper labour and tax advantages, and its impact on RECIPIENT countries runs both ways – investment, jobs, technology and tax revenue against crowding out, profit repatriation and influence over policy (4.3.1.2b). Possible benefits of globalisation (4.3.1.3a): higher growth, higher tax revenue, economies of scale, lower prices with higher consumer surplus, more choice, higher living standards. Possible costs (4.3.1.3b): displaced workers, exploitation of workers, the environment, lost revenue through TRANSFER PRICING, within-country inequality, and TNC influence on domestic policy.

Specialisation and comparative advantage

Specialisation and trade raise total output, but they concentrate economies on narrow industries whose prices can collapse – the benefits and costs of specialisation in the international context (4.3.2.1a). The theory of COMPARATIVE ADVANTAGE (4.3.2.1b): a country has comparative advantage where it produces at the LOWEST OPPORTUNITY COST – distinct from ABSOLUTE advantage (most output per input). Original example: Country A makes 4 wheat or 2 cloth per labour hour, Country B makes 1 wheat or 1 cloth. A has absolute advantage in BOTH; but one cloth costs A two wheat while one cloth costs B only one wheat – A specialises in wheat, B in cloth, and a trade ratio between the two opportunity costs (say 1.5 wheat per cloth) lets BOTH consume beyond their own frontiers: A buys cloth at 1.5 wheat instead of forgoing 2; B sells cloth at 1.5 wheat instead of 1. Assumptions: constant costs, no transport costs, full employment, perfect factor mobility. Limitations: costs are rarely constant, transport and trade barriers exist, factors are not perfectly mobile, and exchange rates and TNCs blur the story.

Comparative advantage: output per labour hour

	Wheat per hour	Cloth per hour	Opportunity cost
Country A	4	2	1 cloth = 2 wheat
Country B	1	1	1 cloth = 1 wheat

A: absolute advantage in both goods; B: comparative advantage in cloth (lower cost)

Trading at 1.5 wheat per cloth lets BOTH countries consume beyond their own PPF

Original data: output per labour hour; the trade ratio 1.5 wheat per cloth sits between the two opportunity costs.

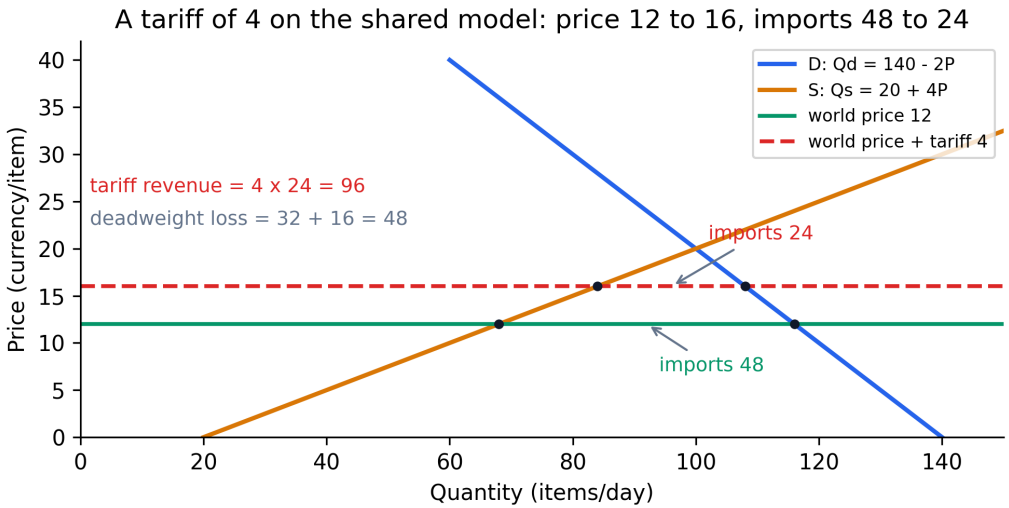
Terms of trade, trading blocs and protectionism

The **terms of trade** (4.3.2.3) measure export prices against import prices: $ToT = \frac{\text{export price index}}{\text{import price index}} \times 100$. *(SAM WEC14/01 Q3)* Tanzania's export price index rose from 100 to 128.9 while its import price index rose to 117.1, so its terms of trade $= \frac{128.9}{117.1} \times 100 = 110.1$ – a 10.1% improvement. The terms move with relative inflation, relative productivity, relative labour costs, the exchange rate and import/export prices (4.3.2.3b); a RISE improves export revenue per unit and living standards (imports cost fewer exports) but a rise driven by dearer exports can worsen the balance of trade if demand is inelastic (4.3.2.3c). Trade PATTERNS (4.3.2.2) shift with emerging economies, changing comparative advantage, trading blocs and bilateral agreements,

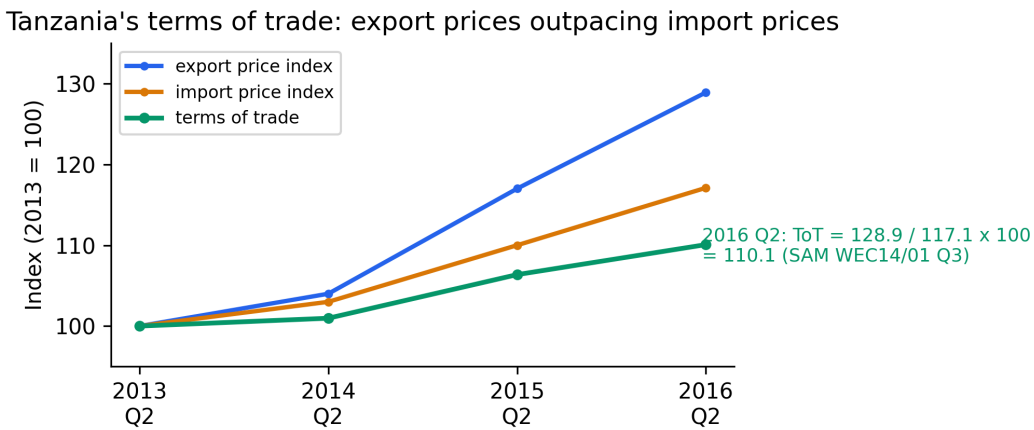
relative exchange rates and protectionism.

The WTO promotes trade liberalisation through negotiation rounds, rules and dispute settlement (4.3.2.4a). Trading blocs deepen in stages (4.3.2.4b): **free-trade areas** (no internal barriers), customs unions (plus a common external tariff), **common markets** (plus free factor movement), economic and monetary unions (plus a shared currency). Membership brings TRADE CREATION (cheap partner production replaces dear domestic) but risks TRADE DIVERSION (dear partner production replaces cheap world production once the external tariff bites), plus lower costs and prices, economies of scale, lower transaction costs and factor mobility (4.3.2.4c); blocs can conflict with the WTO's most-favoured-nation principle (4.3.2.4d).

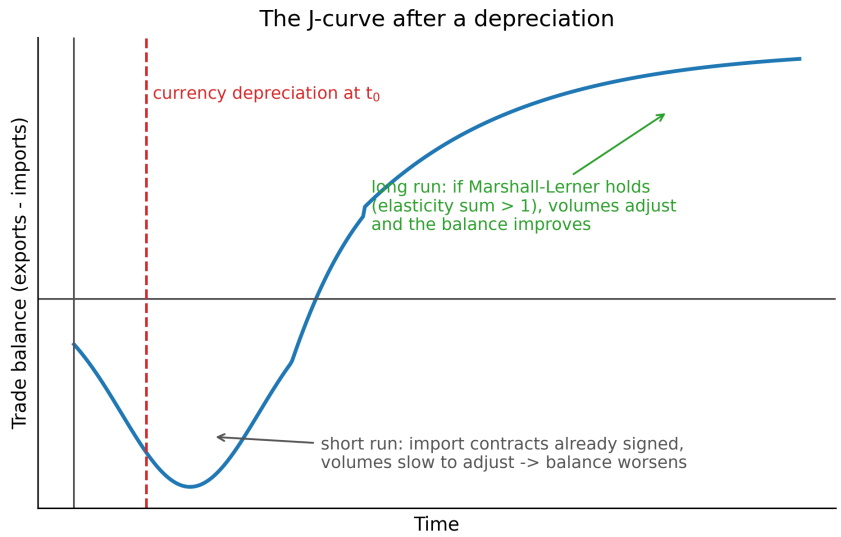
Restrictions on free trade (**protectionism**, 4.3.2.5) are justified to protect infant (and geriatric) industries, domestic employment, national security, against **dumping**, to correct a current-account deficit, or to raise revenue (4.3.2.5a); the types are **tariffs**, quotas, non-tariff barriers and subsidies to domestic producers (4.3.2.5b). On the shared model at a world price of 12: $Q_d = 116$ against $Q_s = 68$, so imports are 48. A tariff of 4 raises the domestic price to 16: imports fall to 24, government collects $4 \times 24 = 96$, producers gain, consumers lose 448 – of which 304 goes to producers and 96 to the government, leaving a deadweight loss of $32 + 16 = 48$ (4.3.2.5c: consumers lose, producers and the government gain, living standards and equality typically fall with the price rise).



Original model: world price 12 with imports 48; the tariff of 4 cuts imports to 24, raises 96 in revenue and destroys 48 of welfare.



SAM data: export prices outpaced import prices, lifting the terms of trade to 110.1.



An illustrative J-curve: the trade balance can worsen initially, then improve as volumes respond. This path is conditional; other current-account components are held unchanged.

Balance of payments and exchange rates

The balance of payments (4.3.3.1) has the CURRENT ACCOUNT (trade in goods and services plus primary and secondary income – topic 3) and the CAPITAL AND FINANCIAL ACCOUNTS (asset transactions, reserves). Current-account deficits follow deficient competitiveness, strong domestic demand, or commodity price collapses; surpluses mirror them (4.3.3.1b). Imbalances can be reduced by expenditure-reducing

policies (deflation), expenditure- switching policies (depreciation, tariffs) and supply-side competitiveness policies (4.3.3.1c); global imbalances matter because surplus savings finance deficit borrowing, storing up corrections (4.3.3.1d).

Exchange-rate systems (4.3.3.2a): **fixed exchange rate** (pegged, state-maintained), **managed exchange rate** (market-set within a band the state defends) and **floating exchange rate** (market-set). Government intervenes through foreign-currency transactions, interest rates and quantitative easing (4.3.3.2b). Floating rates move with relative interest rates, relative inflation (the purchasing power parity theory – currencies adjust until baskets cost the same), the current account, economic strength, capital flight, expectations and speculation, and global shocks such as commodity price falls (4.3.3.2c). A RISE under a fixed rate is a REVALUATION; under a float it is an APPRECIATION; a fall is DEVALUATION versus DEPRECIATION (4.3.3.2d–e). A **depreciation** can make exports cheaper abroad and imports dearer, depending on price pass-through. In the traditional benchmark with initially balanced trade, perfectly elastic export and import supply, and full pass-through, the **Marshall–Lerner condition** - requires the magnitudes of export and import demand elasticities to sum to more than one for the trade balance to improve. A **J-curve** J is possible: the trade balance can worsen initially before quantities respond; later improvement is conditional. The current account also includes income and transfers. Depreciation can attract FDI through cheaper domestic assets, but uncertainty can deter investment; dearer imported inputs can add inflationary pressure and affect output and jobs (4.3.3.2f); competitive depreciations invite retaliation and trade wars (4.3.3.2g).

International competitiveness

Competitiveness is measured by relative productivity rates, relative unit labour costs and relative export prices (4.3.3.3a); it is influenced by productivity, human-capital quality, the exchange rate, wage and non-wage costs, regulations, infrastructure quality and non-price factors (4.3.3.3b). Measures to raise it: education and training, investment incentives, privatisation and deregulation, reducing the currency's value, and trade liberalisation (4.3.3.3c). A competitive economy enjoys export growth, jobs and FDI; an uncompetitive one suffers persistent current- account deficits, deindustrialisation and forced deflation (4.3.3.3d).

Checklist

- Globalisation's three characteristics, five causes, FDI reasons and impacts; six benefits and six costs (4.3.1).
- Specialisation's benefits and costs; absolute versus comparative advantage with the 4/2 and 1/1 table; the trade ratio between the opportunity costs; assumptions and limitations (4.3.2.1).
- Trade patterns and their five shift factors (4.3.2.2).
- Terms of trade formula with the SAM Tanzania calculation (110.1); its five influences; effects on export revenue, living standards and the trade balance (4.3.2.3).
- WTO role; the four bloc types; trade creation versus diversion; bloc-WTO conflicts (4.3.2.4).
- Six motives and four types of restriction; the tariff arithmetic – price 12 to 16, imports 48 to 24, revenue 96, DWL 48 – with the five impact groups (4.3.2.5).
- BoP components; deficit causes; three imbalance remedies; global imbalances (4.3.3.1).
- Fixed, managed and floating systems; three intervention routes; seven floating-rate factors; revaluation vs appreciation, devaluation vs depreciation; Marshall–Lerner and the J-curve; depreciation's six impact channels; competitive depreciations (4.3.3.2).
- Competitiveness: three measures, seven influences, five measures to raise it, advantages and problems (4.3.3.3).

Boundary notes: WEC14 is 2 hours, 80 marks, drawing on Units 1–3 – expect AD/AS, market failure and business-economics material inside global questions. Data questions reward index-number work (the ToT calculation) and diagram labels (D, S, world price, tariff line, revenue box, DWL triangles). Worked examples are original or SAM-adapted as labelled.

Poverty, the state and development

Pearson Edexcel · International A-Level · Economics

Pearson Edexcel International A Level Economics (WEC14), specification Issue 2, June 2018. This topic covers spec sections 4.3.4–4.3.6 in full: poverty and inequality (two rows); the role of the state in the macroeconomy – public expenditure, taxation, borrowing and macroeconomic policy (four rows); and growth and development measures, constraints and strategies (four rows). All worked numbers are original and re-derived below.

Must-know for this topic:

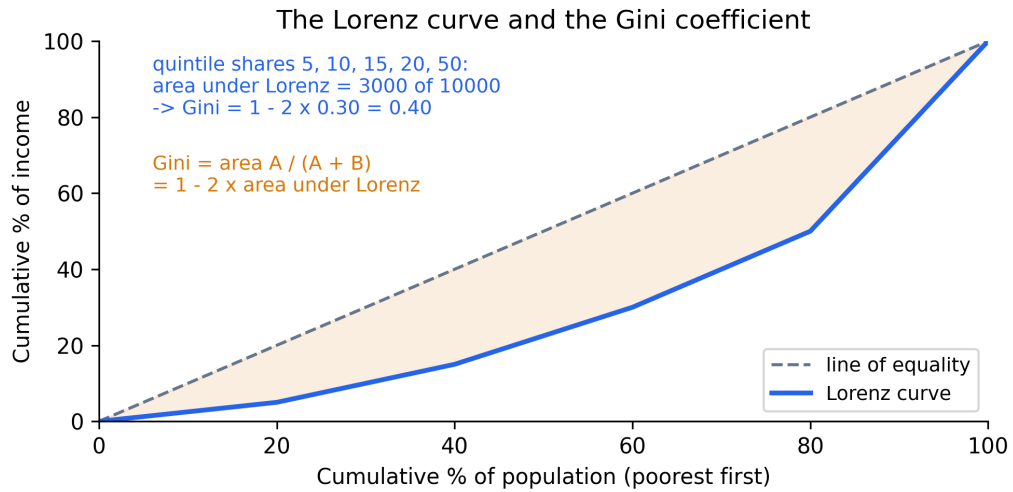
Family	Relationship
Gini	Gini $= 1 - 2 \times \frac{\text{area under the Lorenz curve}}{\text{whole square}}$; quintile shares 5/10/15/20/50 $\rightarrow$ 0.40
Laffer	revenue $= t(1-t) \times 400$; maximum 100 at $t = 50\%$
HDI	geometric mean of education, health and income indices
deficits	fiscal deficit (a flow) vs national debt (a stock); structural vs cyclical

Poverty

Absolute poverty is inability to meet basic needs. The World Bank's international extreme-poverty line was updated in June 2025 to 3.00 international dollars per person per day, measured at 2021 purchasing-power parity. State the line, PPP basis and reference date when comparing estimates. **Relative poverty** is deprivation against the society's norm, often measured using a stated share of median household income (4.3.4.1a–b). Reference: World Bank poverty-line update. Causes of changes in both (4.3.4.1c): economic growth (can reduce absolute poverty, depending on its distribution), education and training, welfare benefits, tax-structure changes, structural change (industrial decline deepens relative poverty in left-behind regions), aid, and civil wars and conflict.

Inequality

Wealth inequality concerns the stock of assets; **income inequality** the flow of earnings (4.3.4.2a). Measurement (4.3.4.2b): the **Lorenz curve** plots cumulative income against cumulative population from the poorest up; the **Gini coefficient** is the area between the equality line and the Lorenz curve divided by the whole triangle beneath the equality line – equivalently $1 - 2\times$ (area under the Lorenz as a share of the square). Original example: quintile shares 5, 10, 15, 20 and 50 percent give a Lorenz curve over (0,0), (20,5), (40,15), (60,30), (80,50), (100,100); the area under it is $50 + 200 + 450 + 800 + 1500 = 3000$ of the 10000 square, so Gini $= 1 - 2 \times 0.30 = 0.40$ – a fairly unequal distribution. Causes of inequality (4.3.4.2c): within countries – wages and skills, wealth-holding, inheritance, globalisation's skill premium; between countries – growth histories, institutions and geography. Its impacts (4.3.4.2d): enterprise and incentives may suffer at the extremes; savings concentration; unequal education; migration incentives; life expectancy gaps. Development and economic change first WIDEN inequality (industrialisation) then can narrow it (4.3.4.2e); free-market capitalism generates inequality by rewarding scarce skills and capital – the price of its incentives (4.3.4.2f).



Original data: quintile shares 5, 10, 15, 20, 50 give a Gini of 0.40.

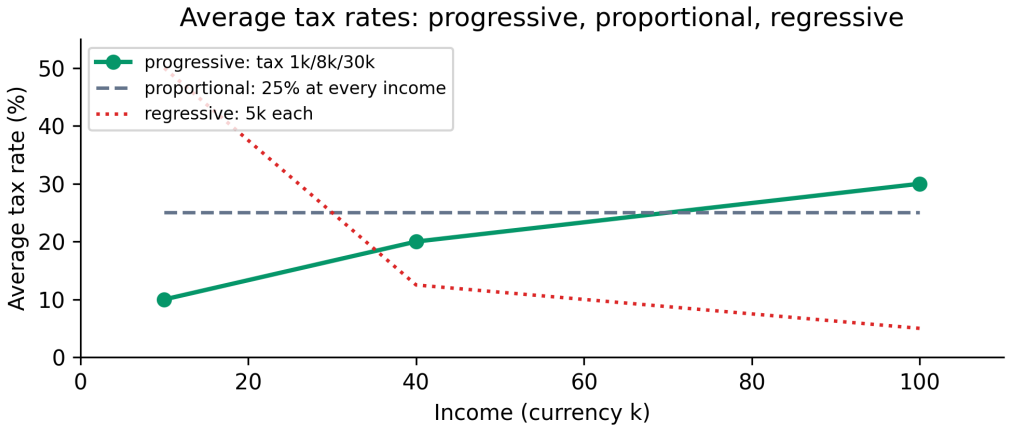
Public expenditure, taxation and borrowing

Public expenditure divides into CAPITAL expenditure (assets), CURRENT expenditure (running costs) and TRANSFER PAYMENTS (benefits, no output received) (4.3.5.1a); its size and pattern change with incomes, age distributions and expectations in an international context (4.3.5.1b); its GDP share matters for productivity and growth, CROWDING OUT, and the tax level (4.3.5.1c).

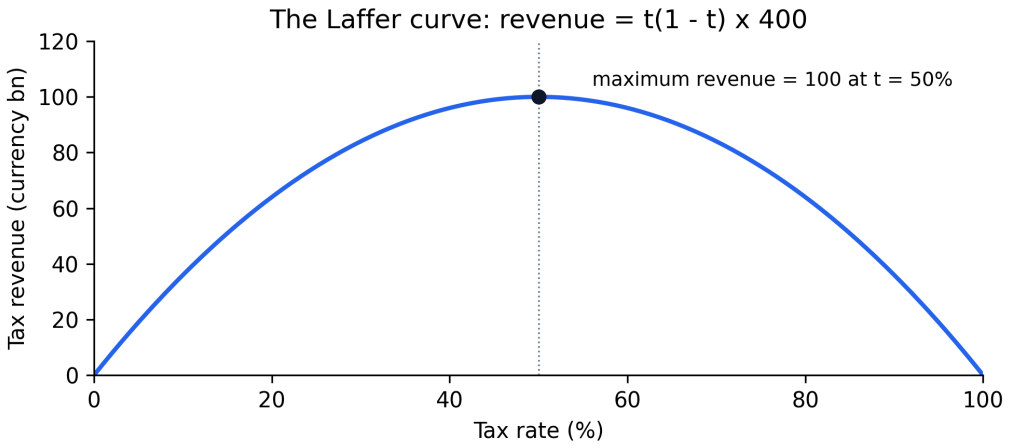
Taxes (4.3.5.2a–b): DIRECT on income and wealth (income tax, corporation tax) versus INDIRECT on spending (VAT, excise); PROGRESSIVE (average rate rises with income), PROPORTIONAL (flat), REGRESSIVE (average rate falls). Original example: taxes of 1k, 8k and 30k on incomes of 10k, 40k and 100k are progressive (average rates 10, 20, 30 percent); a flat 25 percent is proportional; a 5k charge on everyone is sharply regressive (50 against 5 percent). The effects of tax changes (4.3.5.2c) run through work incentives, revenue (the **Laffer curve**: revenue $= t(1-t) \times 400$ peaks at 100 when $t = 50\%$ – beyond it, avoidance and shrinking activity cut revenue), income distribution, output and employment, the price level, the trade balance and FDI.

Public borrowing (4.3.5.3a): a **fiscal deficit** is one year's shortfall; the **na-**

tional debt is the accumulated stock. AUTOMATIC STABILISERS move the budget with the cycle without policy change; DISCRETIONARY policy is a chosen change. A STRUCTURAL deficit persists at full employment; a CYCLICAL deficit exists only because output is below trend. Deficit and debt sizes (4.3.5.3b) follow the cycle, recessions, banking rescues and demography; their significance (4.3.5.3c): interest rates and crowding out, DEBT SERVICING costs, and INTERGENERATIONAL EQUITY – today's borrowing is tomorrow's taxpayers' bill.



Original data: average rates under progressive, proportional and regressive schedules.



Original model: revenue t(1−t) × 400 peaks at 100 when the rate is 50 percent.

Macroeconomic policies and the state

Governments combine FISCAL policy, MONETARY policy, EXCHANGE-RATE policy, SUPPLY-SIDE policies and DIRECT CONTROLS to reduce deficits and debt, control inflation, respond to external shocks and cut poverty and inequality (4.3.5.4a) – the 2008 global financial crisis saw worldwide reflationary demand-side responses: bank rescues, near-zero interest rates and quantitative easing (4.3.5.4b). TNCs are controlled by anti-avoidance rules and TRANSFER-PRICING regulation – with limits: footloose firms relocate (4.3.5.4c). Policy changes ripple across local, national and global economies (4.3.5.4d); policymakers face inaccurate information, risks and uncertainties, and uncontrollable external shocks (4.3.5.4e).

Growth and development

Development is broader than growth. The **Human Development Index** (HDI, 4.3.6.1a) combines three components, each measured as an index between 0 and 1: EDUCATION (mean and expected years of schooling), HEALTH (life expectancy at birth) and INCOME (GNI per capita, PPP, log-scaled), combined by geometric mean. Advantages: broader than GDP, comparable, capped; limitations: hides distribution, omits freedom, environment and gender gaps (4.3.6.1b). Other measures (4.3.6.1c): the share of adult male labour in agriculture, clean-water access, energy per capita, internet, mobile-phone and doctor access per thousand.

Constraints (4.3.6.2): ECONOMIC – commodity-price volatility, **primary product dependency** (the Prebisch–Singer hypothesis: primary prices trend down against manufactures), the **savings gap** (the Harrod–Domar model: growth needs the savings ratio ÷ the capital–output ratio, and poor economies save too little), the foreign-currency gap, capital flight, demography, debt, credit access, infrastructure, education and skills (4.3.6.2a); NON-ECONOMIC – corruption, poor governance, civil wars, migration, terrorism (4.3.6.2b).

Strategies (4.3.6.3): MARKET-ORIENTATED – trade liberalisation, FDI promotion, subsidy removal, privatisation, floating exchange rates, microfinance (4.3.6.3a); INTERVENTIONIST – human capital, protectionism, managed rates, infrastructure, joint ventures with TNCs, buffer stocks (4.3.6.3b); OTHER – industrialisation (the **Lewis dual-sector model** : surplus agricultural labour transfers to industry at low wages, funding accumulation), tourism, primary-industry development, debt relief, aid (4.3.6.3c). International institutions (4.3.6.3d): the WORLD BANK (concessional project loans), the IMF (crisis lending and conditionality) and NGOs (grass-roots delivery).

Checklist

- Absolute versus relative poverty with measures; the seven causes of change (4.3.4.1).
- Wealth versus income inequality; the Lorenz curve and Gini with the 0.40 calculation; causes, six impacts, development's effect, capitalism's significance (4.3.4.2).
- Capital/current/transfer expenditure; three drivers of its size; productivity, crowding out, taxation (4.3.5.1).
- Direct vs indirect; progressive/proportional/regressive with the 10-20-30 example; the seven effect channels incl. the Laffer peak of 100 at 50% (4.3.5.2).
- Deficit vs debt; stabilisers vs discretionary; structural vs cyclical; size factors; interest, servicing, intergenerational equity (4.3.5.3).
- The five policy families with four aims; 2008 demand-side responses; TNC control and its limits; local-national-global impacts; three policymaker problems (4.3.5.4).
- HDI's three components and measurement; advantages and limitations; six other development measures (4.3.6.1).
- The eleven economic and five non-economic constraints, incl. Prebisch–Singer, Harrod–Domar and capital flight (4.3.6.2).
- Market-orientated, interventionist and other strategies incl. the Lewis model; World Bank, IMF, NGOs (4.3.6.3).

Boundary notes: WEC14 Section C essays offer 20-mark evaluative questions – knowledge/application/analysis 12 plus evaluation 8, with level caps for missing diagrams or named contexts. Calculation marks reward the index and Gini arithmetic shown above. All worked numbers are original and internally consistent.