Course Companion

Pearson Edexcel · International GCSE · Economics

Every topic handout in one volume

全部专题讲义合集

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The economic problem and economic assumptions

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Pearson Edexcel International GCSE in Economics (4EC1), specification Issue 3, February 2026. This topic covers spec sections 1.1.1–1.1.2 in full: the economic problem (five lettered rows) and economic assumptions (three rows). Worked numbers are original and re-derived below.

Must-know for this topic:

Family	Content
scarcity	unlimited wants, finite resources → choice
opportunity cost	the next-best alternative forgone, for consumers, producers and government
PPF	on the curve = fully employed; inside = unemployed resources; outside = unobtainable; shifts = growth
assumptions	consumers maximise benefit, firms maximise profit – with named exceptions

The economic problem

Scarcity 稀缺性 is the problem of unlimited wants against finite resources: there is not enough of everything for everyone, so choices must be made (1.1.1a). Every choice has an **opportunity cost** 机会成本 – the benefit of the next-best alternative forgone – and this cost applies to every economic agent: the CONSUMER choosing between goods, the PRODUCER between products, and the GOVERNMENT between spending programmes (a hospital means fewer schools) (1.1.1b).

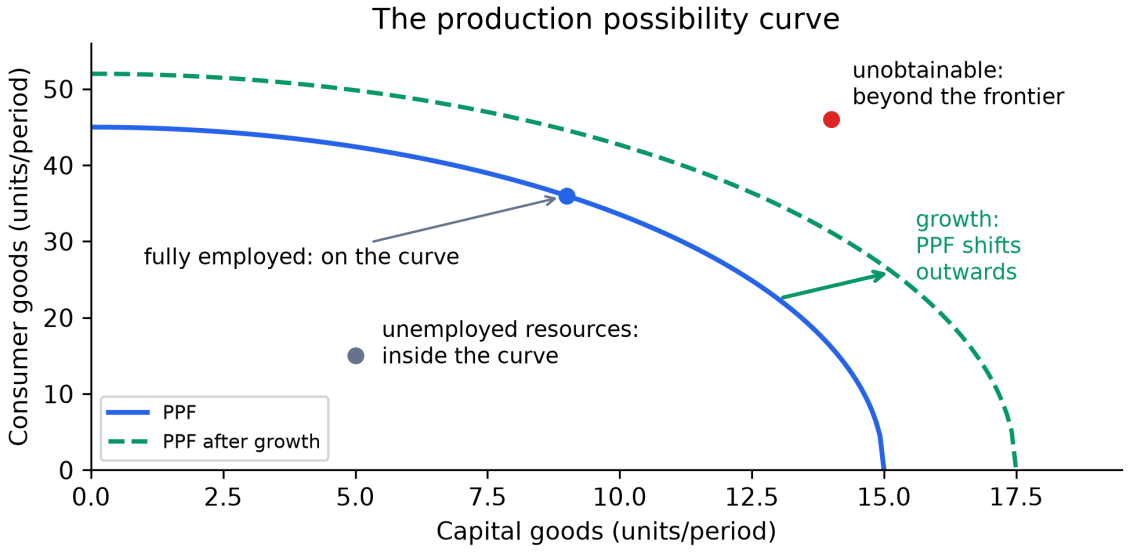
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An open-pit mine: resources are scarce, so every use of them has an opportunity cost

The **production possibility curve** 生产可能性曲线 (PPC/PPF) shows these choices as a diagram (1.1.1c): the maximum productive potential of an economy is the curve itself; a point ON the curve means fully employed resources; a point INSIDE the curve means unemployed or underused resources; a point BEYOND the curve is unobtainable with current resources; moving along the curve reallocates resources at an opportunity cost; and the whole frontier SHIFTS OUTWARDS with positive **economic growth** 经济增长 and INWARDS with negative growth (1.1.1d). Causes of positive growth: more resources (labour, capital), better technology, improved education. Causes of negative growth: resource destruction, disaster, war (1.1.1e). On the bowed curve below, one more capital good costs more and more consumer goods – resources are not equally suited to both uses.

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Original model: the labelled points show full employment, unemployment and unobtainable production.

Economic assumptions

The base assumptions (1.1.2a): consumers aim to MAXIMISE THEIR BENEFIT (utility) and businesses aim to MAXIMISE THEIR PROFIT. Consumers may not maximise their benefit because (1.1.2b): they are not always good at calculating their benefits; habits are hard to give up; and they sometimes copy others' behaviour. Producers may not maximise profit because (1.1.2c): managers may REVENUE-maximise or SALES-maximise instead; producers may prioritise caring for customers; and producers may carry out charitable work. These exceptions matter: they explain real behaviour that the pure assumption misses, and they feed the IAL syllabus's behavioural ideas (herding, habit, satisficing).

consumers maximise benefit	**producers maximise profit**
but they may not, because:	but they may not, because:
they miscalculate benefits	managers maximise revenue or sales
habits are hard to give up	they put customers first
they copy others	they do charitable work

The base assumptions and why each may fail (1.1.2).

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Worked example. An original workshop can make 20 desks or 40 chairs per day on a straight frontier: the opportunity cost of one more desk is $\frac{40}{20} = 2$ chairs, so five more desks cost $5 \times 2 = 10$ chairs per day. Reallocating existing resources MOVES ALONG the frontier; more resources or better technology SHIFT it. A workshop with idle machines receiving a new order moves from INSIDE the frontier towards it – its frontier has not shifted; capacity was always there, unused.

Checklist

- Scarcity and the need for choice (1.1.1a).
- Opportunity cost for consumers, producers and government (1.1.1b).
- The PPF diagram: maximum potential, fully employed/unemployed resources, opportunity cost, outwards/inwards shifts, possible and unobtainable production (1.1.1c–d).
- Causes of positive and negative economic growth (1.1.1e).
- The two base assumptions (1.1.2a); the three consumer exceptions (1.1.2b); the three producer exceptions (1.1.2c).

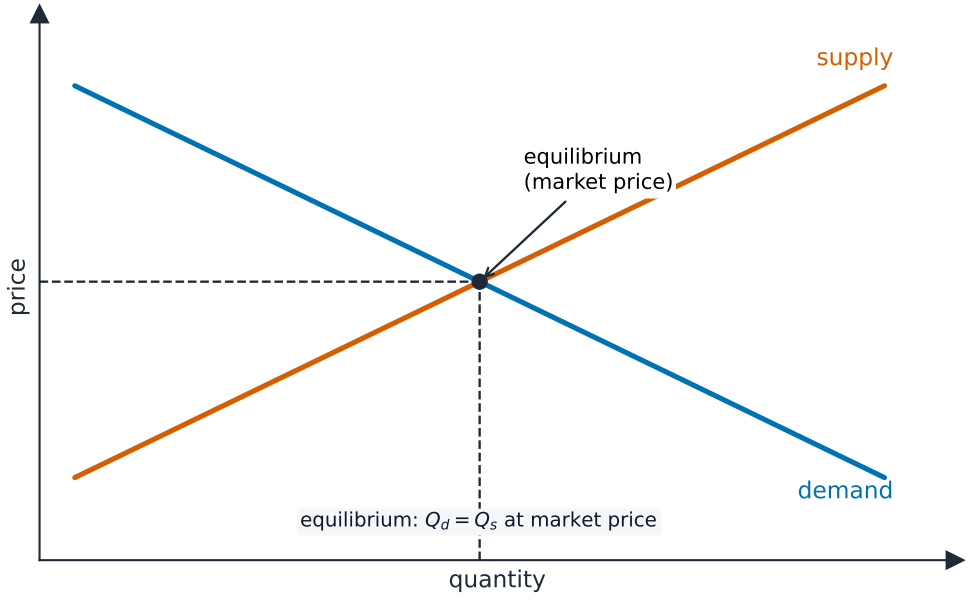
Boundary notes: 4EC1 Paper 1 (microeconomics and business economics) and Paper 2 (macroeconomics and the global economy) are each 1 hour 30 minutes and 80 marks; calculators are allowed. Definitions carry one mark each – learn them word-perfect. Diagrams must label axes, the frontier and the points. All worked numbers are original.

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Demand, supply, equilibrium and elasticity

Pearson Edexcel · International GCSE · Economics

Pearson Edexcel International GCSE in Economics (4EC1), specification Issue 3, February 2026. This topic covers spec sections 1.1.3–1.1.4 in full: demand, supply and market equilibrium (10 lettered rows) and elasticity (19 rows). The shared market model runs through the worked examples: demand $Q_d = 140 - 2P$, supply $Q_s = 20 + 4P$, equilibrium $P = 20$ and $Q = 100$.



Supply and demand meet at the equilibrium market price

Must-know for this topic:

Family	Relationship
equilibrium	$Q_d = Q_s$ (here P = 20, Q = 100)
excess	at P = 12: excess demand = 116 − 68 = 48; at P = 25: excess supply = 120 − 90 = 30
PED	$= \frac{\%\Delta Q_d}{\%\Delta P}$; TR test: price up and TR up → inelastic
PES / YED	$= \frac{\%\Delta Q_s}{\%\Delta P}$ / $= \frac{\%\Delta Q_d}{\%\Delta \text{income}}$ (luxury > 1, normal > 0, inferior < 0)

Demand, supply and market equilibrium

Demand 需求 is the quantity consumers are willing AND able to buy at each price over a period (1.1.3a). A change in the good's own price causes a MOVEMENT ALONG the demand curve; a change in any other determinant SHIFTS it – advertising, income, fashion and tastes, the price of SUBSTITUTES (a rise shifts demand

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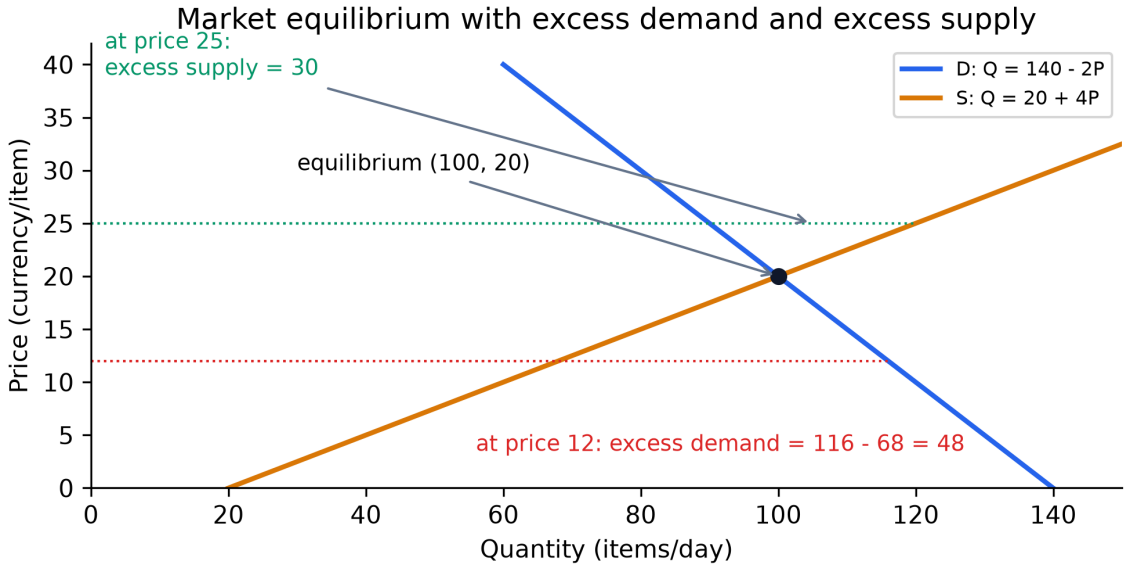
for this good right) and of COMPLEMENTS (a rise shifts it left), and demographic changes (1.1.3b–c). **Supply** 供给 is the quantity producers are willing AND able to sell at each price (1.1.3d); own-price changes move ALONG the supply curve, while costs of production, technology, indirect taxes, subsidies and natural factors (disasters, weather) SHIFT it (1.1.3e–f).



Shoppers in a market: the price settles where the amount buyers want equals the amount sellers offer

Equilibrium 均衡 is where demand meets supply: $140 - 2P = 20 + 4P$ gives $P^* = 20$ currency units and $Q^* = 100$ items/day (1.1.3g). Shift analysis (1.1.3h): demand rising raises both equilibrium price and quantity; supply rising raises quantity but lowers price; both shifting leaves one variable indeterminate. EXCESS DEMAND at P = 12: $Q_d = 116$ against $Q_s = 68$, a shortage of 48; EXCESS SUPPLY at P = 25: $Q_s = 120$ against $Q_d = 90$, a surplus of 30 (1.1.3i). Market forces remove both: shortage bids the price UP, surplus pushes it DOWN, until the market returns to equilibrium (1.1.3j).

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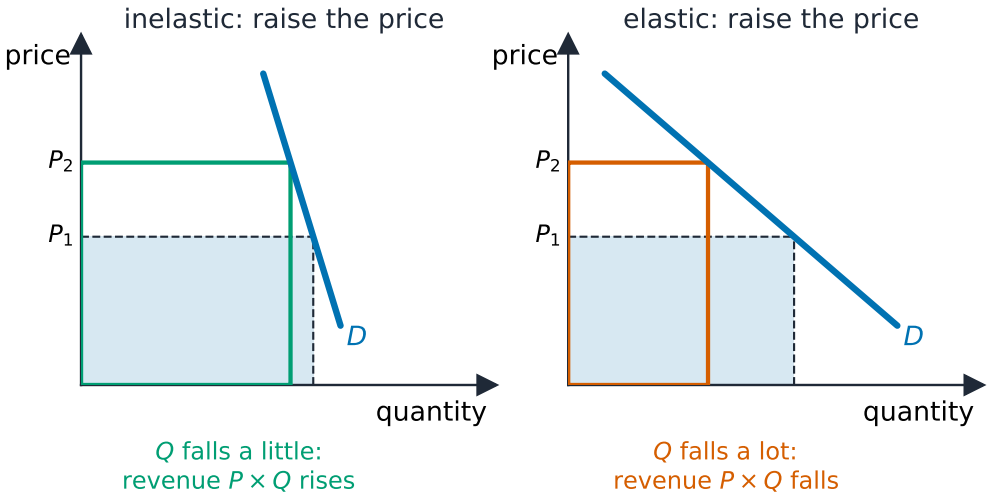
Original model: the shortage at 12 and the surplus at 25 are computed in the text.

Elasticity

Price elasticity of demand 需求价格弹性 (PED, 1.1.4a–b): $PED = \frac{\%\Delta Q_d}{\%\Delta P}$. Calculation: price rising from 20 to 22 moves Q_d from 100 to 96, so $PED = \frac{-4\%}{+10\%} = -0.4$ (1.1.4c). The five interpretations (1.1.4e): 0 perfectly inelastic (vertical), between 0 and −1 inelastic, −1 unitary, beyond −1 elastic, infinite perfectly elastic (horizontal). PED depends on substitutes, the degree of necessity, the percentage of income spent on the good, and time (1.1.4f). The TOTAL REVENUE test (1.1.4g): TR = $P \times Q$; at P = 20, TR = 2000; at P = 22, TR = 2112 – a price rise RAISING revenue proves inelastic demand; on the shared curve TR peaks at 2450 where P = 35 (unitary PED).

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inelastic: raise $P \Rightarrow TR \uparrow$ · elastic: raise $P \Rightarrow TR \downarrow$



The same price rise raises revenue when demand is inelastic, but lowers it when demand is elastic

Price elasticity of supply 供给价格弹性 (PES, 1.1.4h–l): $PES = \frac{\%\Delta Q_s}{\%\Delta P}$; on the shared model price 20 → 24 moves Q_s 100 → 116, so PES $= \frac{16\%}{20\%} = +0.8$ (inelastic supply). PES depends on the factors of production (their mobility), availability of stocks, spare capacity and time (1.1.4m). Examples (1.1.4n): manufactured products tend to be MORE elastic (stocks, spare capacity, quick retooling); primary products LESS elastic (growing periods, perishability, fixed land).

Income elasticity of demand 需求收入弹性 (YED, 1.1.4o–q): $YED = \frac{\%\Delta Q_d}{\%\Delta \text{income}}$; income +10% raising quantity +8% gives YED = +0.8. Interpretation (1.1.4r): YED > 1 LUXURY, a normal necessity has $0 < YED < 1$, YED $= 1$ means unit income elasticity, and YED < 0 means INFERIOR. Significance (1.1.4s): PED guides indirect taxes (inelastic goods raise reliable revenue) and subsidies; YED guides firms' forecasts over the cycle – luxury sellers boom with incomes, demand for inferior goods may rise as incomes fall, holding other influences constant.

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Original model: elastic at the top of the demand curve, inelastic at the bottom; TR peaks where PED is unitary.

Data-response practice

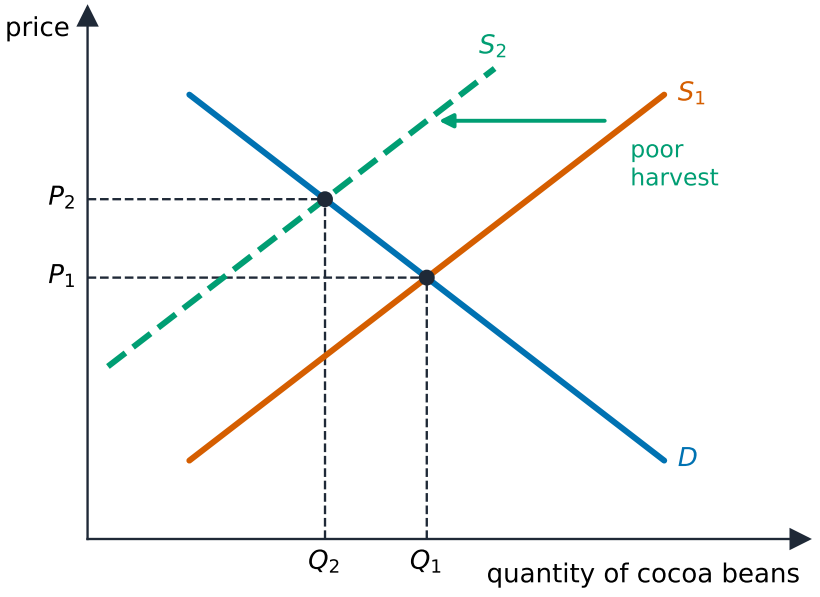
Extract. Most of the world's cocoa beans are grown in Côte d'Ivoire and Ghana. In 2023 and 2024 heavy rain, then drought and a plant disease destroyed much of the harvest there. In 2024 the world price of cocoa beans rose above \$10,000 per tonne, about four times its price in early 2023. New cocoa trees take several years to produce beans, so farmers could not quickly grow more. Chocolate makers paid more for beans and raised the prices of their chocolate bars.

A chocolate maker raised the price of one bar from \$1.00 to \$1.20. Its weekly sales fell from 500,000 bars to 450,000 bars.

Questions

- (a) Identify **one** factor that shifted the supply of cocoa beans in the extract. [1]
- (b) Draw a demand and supply diagram to show the effect of the poor harvest on the market for cocoa beans. [4]
- (c) Calculate the price elasticity of demand for the chocolate bars. [2]
- (d) Calculate the change in the chocolate maker's weekly total revenue, and explain the result. [3]
- (e) Explain **two** reasons why the supply of cocoa beans is price inelastic. [4]
- (f) Evaluate whether the chocolate maker should raise the price of its bars again. [9]

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A poor harvest shifts supply left: the price rises from P_1 to P_2 and the quantity falls from Q_1 to Q_2.

Model answers

(a) Bad weather (heavy rain or drought), or plant disease.

(b) The diagram shows demand D and supply S_1 meeting at P_1, Q_1. The poor harvest shifts supply **left** to S_2. At the old price there is now excess demand, so the price rises to P_2 and the quantity bought and sold falls to Q_2. Marks: labelled axes, both supply curves, the arrow showing the shift, and the new price and quantity.

(c) $\%\Delta Q_d = \frac{450{,}000-500{,}000}{500{,}000} \times 100 = -10\%$ and $\%\Delta P = \frac{1.20-1.00}{1.00} \times 100 = +20\%$, so $PED = \frac{-10}{20} = -0.5$. Demand is price inelastic.

(d) Total revenue before $= 500{,}000 \times 1.00 = \$500{,}000$; after $= 450{,}000 \times 1.20 = \$540{,}000$. Revenue rose by \$40,000 a week. Demand is price inelastic ($PED = -0.5$): the percentage fall in sales (10%) is smaller than the percentage rise in price (20%), so the higher price brings in more money.

(e) First, new cocoa trees take several years to produce beans, so farmers cannot quickly grow more when the price rises: supply responds slowly. Second, cocoa needs particular land and climate, so production cannot easily move to other places. (Other good answers: beans cannot be stored for long, and farmers have little spare capacity.)

(f) *For a further rise:* demand is price inelastic ($PED = -0.5$), so a higher price raises revenue, as part (d) shows. The firm's costs are rising because beans are much dearer, and a higher price protects its profit. Many rival makers face the same costs, so they are likely to raise prices too, and customers may not switch.

Against a further rise: PED is measured over one small price change and may not stay the same. At a higher price buyers may switch to other snacks or to cheaper

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own-brand chocolate, so demand could become more elastic. If incomes are falling, some buyers may stop buying chocolate. A firm that raises prices more than its rivals may lose customers for the long term. The firm could instead make the bar slightly smaller or use less cocoa, which keeps the price the same.

Judgement: a small further rise is likely to raise revenue in the short run, because demand is inelastic and costs are high. But the firm should watch its rivals' prices and its weekly sales, because demand may become more elastic as the price climbs. If cocoa prices fall when harvests recover, it may be better to keep the price stable than to lose loyal customers.

What examiners reward: a correctly labelled diagram, working shown for each calculation, and in the "evaluate" answer points on both sides that use the extract's numbers, ending with a judgement.

Checklist

- Demand and supply definitions; movements versus shifts with the five demand and five supply determinants (1.1.3a–f).
- Equilibrium from $Q_d = Q_s$; shift analysis; excess demand 48 at P = 12 and excess supply 30 at P = 25; market-force adjustment (1.1.3g–j).
- PED definition, formula, calculation (−0.4), the five value ranges, four influence factors, the TR test (2000 → 2112 → 2450) (1.1.4a–g).
- PES definition, formula, calculation (+0.8), five ranges, four factors, manufactured vs primary (1.1.4h–n).
- YED definition, formula, calculation (+0.8), luxury/normal/inferior thresholds; significance for business and government (1.1.4o–s).

Boundary notes: Paper 1 (microeconomics, 80 marks) mixes MCQ, short answer, data response and open questions; calculators allowed. Use precise definitions; diagram marks need labelled axes, curves, equilibria and the shift arrow. All worked numbers are original on the shared model.

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The mixed economy and externalities

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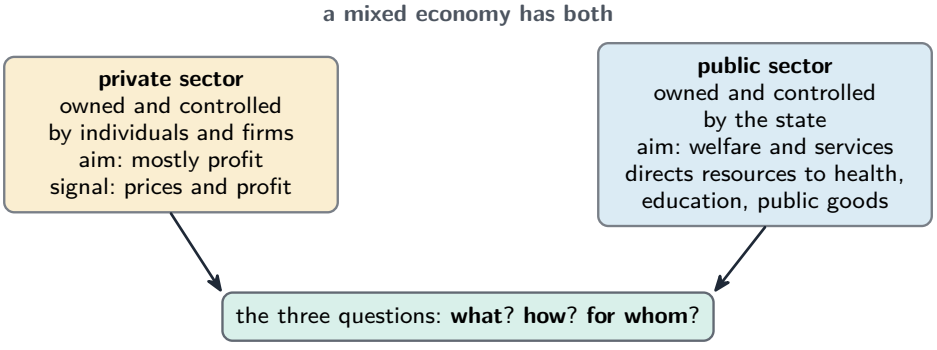
Pearson Edexcel International GCSE in Economics (4EC1), specification Issue 3, February 2026. This topic covers spec sections 1.1.5–1.1.6 in full: the mixed economy (11 lettered rows) and externalities (5 rows). The externality diagram reuses the shared model (demand $Q_d = 140 - 2P$, supply $Q_s = 20 + 4P$) with an external cost of 6 per unit.

Must-know for this topic:

Family	Content
sectors	public (state-owned) vs private; ownership, control, aims
three questions	what, how, for whom – answered by market AND state in a mixed economy
public goods	non-excludable + non-rival → free-rider problem → private non-provision
social cost	social cost = private cost + external cost; social benefit = private benefit + external benefit

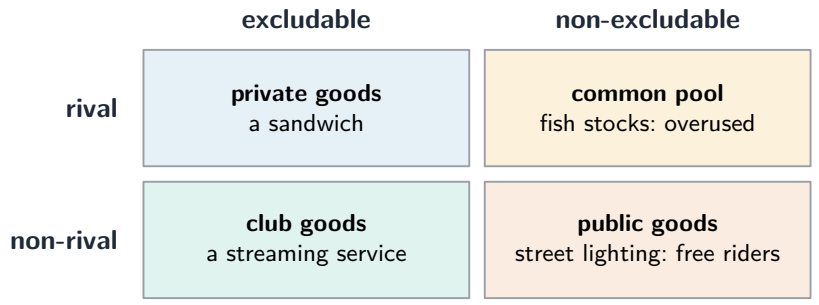
The mixed economy

A **mixed economy** 混合经济 contains both a private sector and a public sector (1.1.5a–b). The **private sector** 私营部门 is owned and controlled by individuals and firms aiming (mostly) for profit; the **public sector** 公共部门 is owned and controlled by the state, aiming at welfare and service provision – the difference is ownership, control and aims (1.1.5c). The three questions (WHAT to produce, HOW to produce and FOR WHOM) are answered by BOTH mechanisms in a mixed economy: prices and profit signal the market part; government directs resources to health, education and public goods (1.1.5d).



In a mixed economy both sectors answer the three questions

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non-rival + non-excludable → free-rider problem → the market under-provides or provides none

Public goods are non-rival and non-excludable, so the market under-provides them.

Market failure 市场失灵 is the inefficient allocation of resources – the market produces too much or too little of a good compared with the social optimum (1.1.5e); because of it governments intervene – to correct externalities, provide public goods, and protect consumers (1.1.5f). **Public goods** 公共物品 are non-excludable (no one can be stopped from using them) and non-rival (one person's use does not reduce another's) – street lighting, flood defence. Non-excludability creates the FREE-RIDER problem: no one pays, so no private firm supplies them, so the public sector must (1.1.5g). Both sectors produce goods and services (1.1.5h); their relative importance differs across economies – Cuba against the USA against Sweden (1.1.5i). **Privatisation** 私有化 is the transfer of ownership from the public to the private sector (1.1.5j); its effects on consumers (lower prices if efficiency is passed on, but higher if a monopoly results), workers (job losses from efficiency drives), businesses (new profit opportunities) and government (a one-off sale receipt, then lost dividends and possible subsidy savings) (1.1.5k).

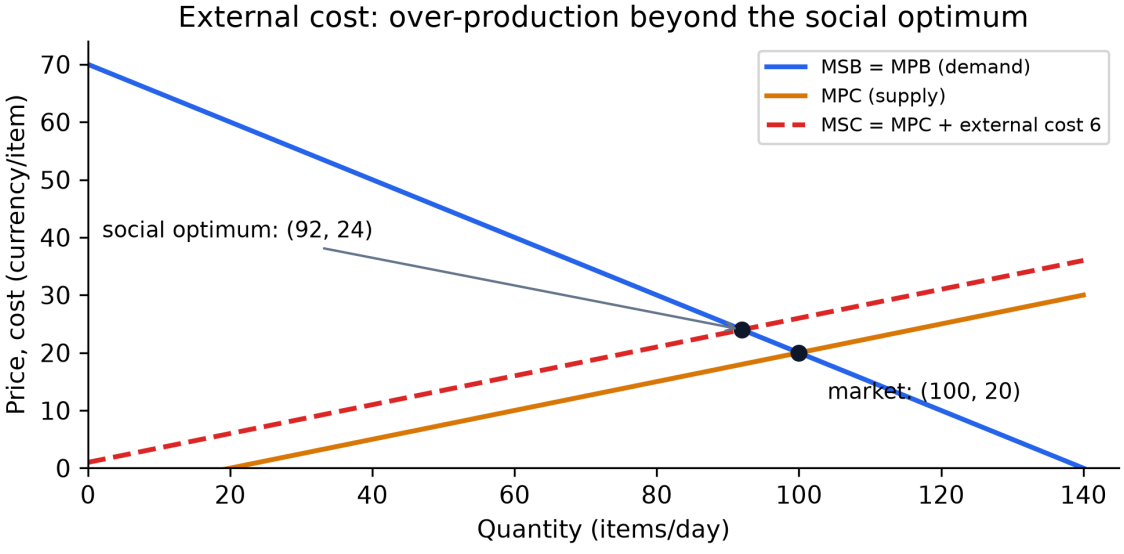
Externalities

External costs 外部成本 of production are costs falling on THIRD PARTIES, not on the producer or consumer – pollution, congestion, environmental damage (1.1.6a–b). **External benefits** 外部收益 of consumption are benefits falling on third parties – education, healthcare, vaccinations (1.1.6c–d). The formulae (1.1.6e): SOCIAL COST = PRIVATE COST + EXTERNAL COST; SOCIAL BENEFIT = PRIVATE BENEFIT + EXTERNAL BENEFIT. Worked model: with demand $Q_d = 140 - 2P$ (marginal private benefit) and supply $Q_s = 20 + 4P$ (marginal private cost), the market trades at $(100, 20)$; if production carries an external cost of 6 per unit, the social optimum sits at $(92, 24)$ – the market OVER-PRODUCES by 8 units because buyers and sellers never see the externality.

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Industrial pollution: a negative externality, a cost paid by people outside the transaction



Original model: MSC = MPC + 6 crosses MSB at (92, 24); the market equilibrium (100, 20) over-produces.

Data-response practice

Extract. Single-use plastic bags are cheap to make and are given away free in many shops, but used bags block drains, harm wildlife and can stay in the environment for hundreds of years. In October 2015 the UK government required large shops in England to charge 5p for each single-use bag. In 2014 the seven largest supermarkets had handed out about 7.6 billion bags. By 2021 their sales of single-use bags had fallen

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by about 97%. In May 2021 the charge rose to 10p and was extended to all shops. Shops were asked to give the money raised to good causes. Some shoppers switched to thicker "bags for life", which use more plastic per bag.

Questions

- (a) Define *external cost*. [2]
- (b) Calculate the approximate number of single-use bags handed out by the seven largest supermarkets after a 97% fall from 7.6 billion. [2]
- (c) Explain why a free market produces too many plastic bags. You may use a diagram. [4]
- (d) Explain **one** advantage of a charge compared with a complete ban on plastic bags. [3]
- (e) Evaluate whether a charge is the best way to reduce plastic waste. [9]

Model answers

(a) An external cost is a cost of producing or consuming a good that falls on a third party, someone not involved in buying or selling it, and that is not paid by the buyer or seller.

(b) $7.6 \text{ billion} \times (1 - 0.97) = 7.6 \times 0.03 = 0.228$ billion, about 228 million bags a year.

(c) Shops and shoppers consider only their private costs and benefits. The damage to drains, wildlife and the environment falls on third parties, so social cost (private cost + external cost) is greater than private cost. On the diagram above, the market trades where demand meets private cost, at a higher quantity than the social optimum, where social benefit equals social cost. Too many bags are produced and used.

(d) A charge still lets people who really need a bag buy one, while most shoppers bring their own: the bags go to those who value them most. A charge also raises money that can be used for good causes or for cleaning up. A ban gives no choice at all and may cause problems for shoppers who make unplanned trips.

(e) *For the charge:* it worked. Use fell by about 97%, far more than many expected, which shows that demand for free bags was very price elastic when a small price was added. It is cheap for the government to run, because shops collect the money. It makes the private cost closer to the social cost, so people pay for some of the damage they cause.

Against the charge: a 5p or 10p charge does not measure the true external cost, so it may be too low or too high. Some shoppers switched to "bags for life", which use more plastic, so total plastic may have fallen less than the number of bags. The charge is regressive in a small way, since 10p is a larger share of a low income. It does nothing about other plastic waste such as food packaging.

Other policies: a ban removes the bags completely but gives no choice and raises no money. Regulation of packaging, subsidies for recycling and reusable bags, and education campaigns can work alongside a charge.

Judgement: for plastic bags, a charge has been very effective at low cost, because a

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small price changed habits. It is not enough on its own to reduce plastic waste in general: it should be combined with rules on packaging and support for recycling, and the charge should be checked so that "bags for life" do not simply replace thin bags.

What examiners reward: a definition that names the third party, a correct calculation with units, an externality diagram with labelled private and social curves, and an evaluation that uses the extract's numbers and ends with a judgement.

Checklist

- Mixed economy definition; public and private sectors; ownership, control and aims (1.1.5a–c).
- The three questions answered by both mechanisms (1.1.5d).
- Market failure as inefficient allocation; why it forces intervention (1.1.5e–f).
- Public goods: non-excludability, non-rivalry, the free-rider problem and non-provision (1.1.5g).
- Both sectors produce; relative importance differs by economy (1.1.5h–i).
- Privatisation definition and its effects on consumers, workers, businesses, government (1.1.5j–k).
- External costs with three examples; external benefits with three examples (1.1.6a–d).
- The two social-cost/benefit formulae with the (100, 20) → (92, 24) worked model (1.1.6e).

Boundary notes: definitions carry one mark each – non-excludable, non-rival, free-rider and privatisation are the most examined. Diagram marks want MSC/MSB curves labelled and the over-production gap identified. All worked numbers are original on the shared model.

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Production, productivity and business costs

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Pearson Edexcel International GCSE in Economics (4EC1), specification Issue 3, February 2026. This topic covers spec sections 1.2.1–1.2.3 in full: production (three rows), productivity and division of labour (four rows) and business costs, revenues and profit (three rows). Worked numbers are original and re-derived below.

Must-know for this topic:

Family	Relationship
productivity	output ÷ input; 8 → 10 items per worker-hour is +25%
revenue	TR = $P \times Q$; AR = TR/Q; MR = $\Delta TR/\Delta Q$ (here $70 - Q$)
costs	TC = TFC + TVC; ATC = TC/Q; AVC = TVC/Q; profit = TR − TC
scale	LRAC falls (economies), flattens (efficient point), rises (diseconomies)

Production

The **factors of production** 生产要素 are LAND (natural resources), LABOUR (human effort), CAPITAL (man-made aids to production) and ENTERPRISE (the risk-taking organiser) (1.2.1a). The economy's sectors (1.2.1b): PRIMARY (extracting: farming, fishing, mining), SECONDARY (manufacturing and construction) and TERTIARY (services). Their importance CHANGES over time (1.2.1c): as economies develop, employment and output shift from primary to secondary to tertiary – developed economies are service-dominated; the deindustrialisation of old manufacturing regions is the same shift seen from the other side.

Productivity and division of labour

Productivity 生产率 is output per unit of input (1.2.2a) – for labour, items per worker-hour. Productivity rises 25% when output per worker-hour goes from 8 to 10: $\frac{10-8}{8} \times 100 = 25\%$. Factors affecting productivity (1.2.2b): LAND – fertiliser, drainage, irrigation, land reclamation; LABOUR – quality of labour through education and training (human capital) and the impact of migration; CAPITAL – more capital and technological advances. The **division of labour** 劳动分工 is specialisation, with each worker repeating one task in the production process (1.2.2c). Advantages (1.2.2d): workers become quick at their task (higher productivity), less time is lost switching tasks, and training is cheaper per task. Disadvantages: the work becomes boring (low morale, high staff turnover), workers' skills narrow, and interdependence means one hold-up stops the whole line – and over-standardised output risks unemployment if

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that one product's demand falls.



A car assembly line: dividing work into small repeated tasks raises output per worker

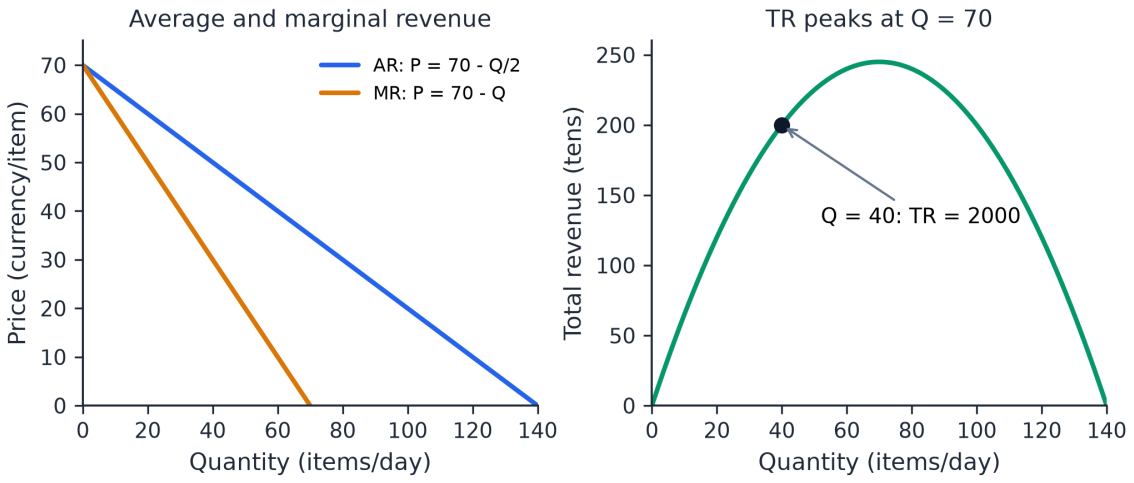
Business costs, revenues and profit

Revenue (1.2.3a): TR = $P \times Q$; AR = TR/Q (the demand curve – AR $P = 70 - Q/2$); MR = $\Delta TR/\Delta Q$ (here $70 - Q$); at $Q = 40$ with price 50, TR = 2000; TR peaks at 2450 where $Q = 70$.

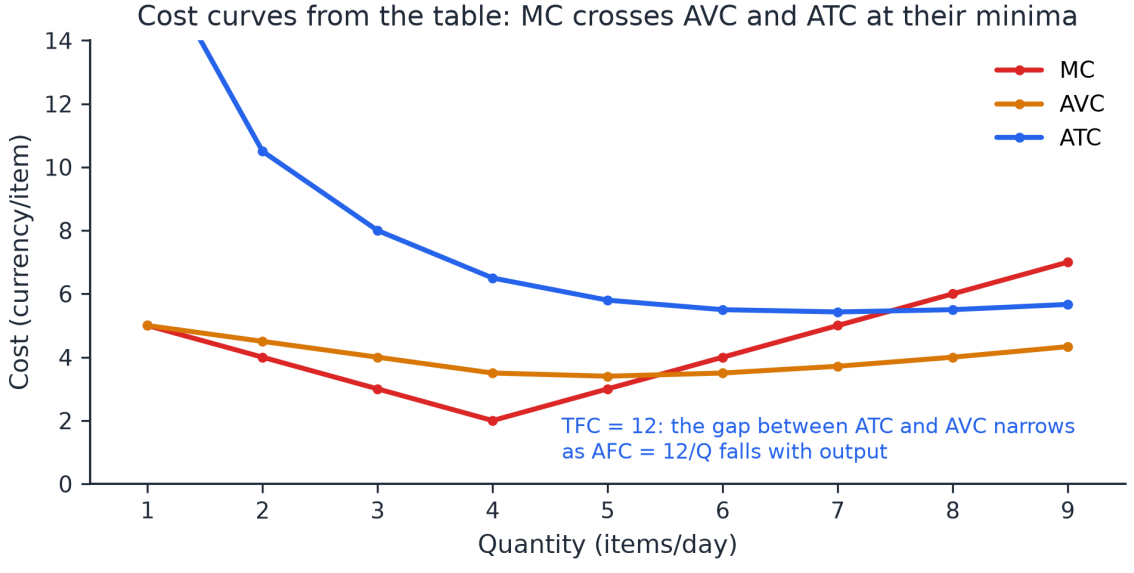
Costs (1.2.3a): the original table with TFC = 12 and TVC = $5, 9, 12, 14, 17, 21, 26, 32, 39$ for $Q = 1 \ldots 9$ gives MC = $5, 4, 3, 2, 3, 4, 5, 6, 7$ (falling then rising – specialisation first, diminishing returns later); AVC = TVC/Q with minimum 3.4 at $Q = 5$; ATC = TC/Q with minimum 5.43 at $Q = 7$. ATC and AVC converge as output grows because AFC = $12/Q$ shrinks. PROFIT = $TR - TC$.

Economies of scale 规模经济 are falling long-run average costs as output grows (1.2.3b). INTERNAL economies (inside the firm): purchasing (bulk buying), marketing (advertising spread over more units), technical (larger machines), financial (cheaper borrowing), managerial (specialist managers), risk bearing (a wider product range). EXTERNAL economies (industry-wide): skilled labour in the area, infrastructure, access to suppliers, similar businesses clustering. **Diseconomies of scale** 规模不经济 are rising LRAC (1.2.3c): bureaucracy, communication problems, lack of control, and the distance between top management and workers at the bottom. The LRAC diagram (1.2.3c) shows internal economies as the falling section, the MOST EFFICIENT POINT at minimum LRAC, and diseconomies on the rising section.

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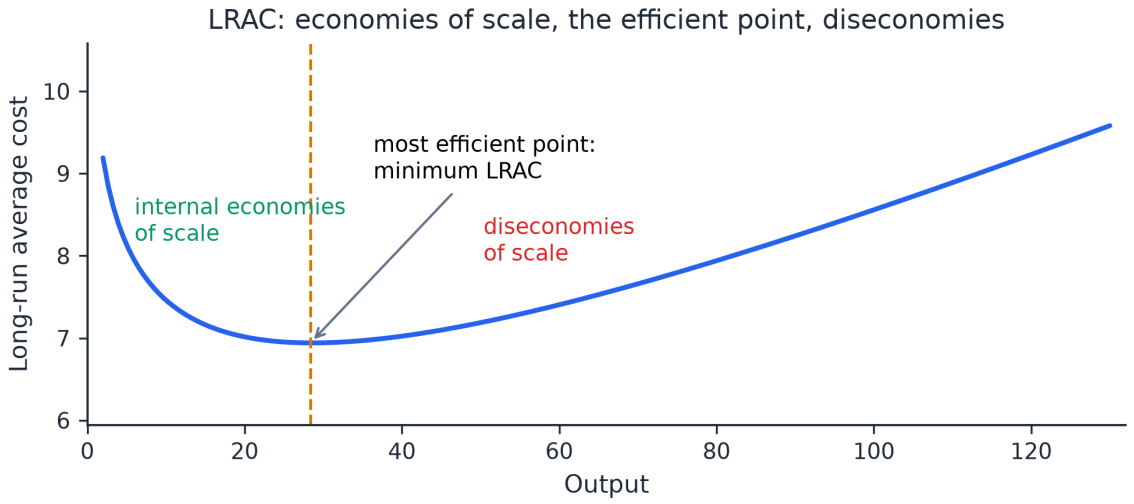


Original model: AR $P = 70 - Q/2$ with MR $P = 70 - Q$; $TR(40) = 2000$ and the TR maximum at $Q = 70$.



Original data: TFC 12; MC crosses AVC at its minimum (3.4) and ATC at its minimum (5.43).

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Original curve: internal economies, the most efficient point, diseconomies.

Data-response practice

Extract. BYD, a Chinese car maker, sold about 3.0 million electric and hybrid vehicles in 2023 and about 4.3 million in 2024. It makes many of its own parts, including batteries, chips and motors, in very large factories. Buying materials in bulk and spreading the cost of research and factories over millions of cars helped BYD cut its prices; in 2024 its cheapest electric car sold in China for under 70,000 yuan. Running dozens of factories and hundreds of thousands of workers also brings problems of communication and control.

Table: illustrative costs of a car maker

Output (thousand cars per year)	Total cost ($ million)
1,000	25,000
3,000	66,000
4,300	86,000

Questions

- (a) Calculate the percentage increase in BYD's sales between 2023 and 2024. [2]
- (b) Using the table, calculate the average cost per car at each output. [3]
- (c) Explain **two** internal economies of scale that BYD may gain. [4]
- (d) Explain **one** diseconomy of scale that BYD may suffer. [2]
- (e) Evaluate whether large firms are always more efficient than small firms. [9]

Model answers

(a) $\frac{4.3-3.0}{3.0} \times 100 \approx 43\%$.

(b) Average cost $= \frac{\text{total cost}}{\text{output}}$. At 1,000 thousand cars: $\frac{25{,}000 \text{ million}}{1 \text{ million}} = \$25{,}000$. At 3,000

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thousand: $\frac{66{,}000}{3} = \$22{,}000$. At 4,300 thousand: $\frac{86{,}000}{4.3} = \$20{,}000$. Average cost falls as output rises: economies of scale.

(c) **Purchasing economies:** BYD buys materials such as steel and lithium in huge amounts, so suppliers give it lower prices per unit. **Technical economies:** very large factories can use expensive automated machines and production lines, which are only worth buying at high output; making its own batteries also spreads the cost of battery research over millions of cars. (Other answers: financial economies, as large firms borrow more cheaply; marketing economies, as advertising costs are spread over more cars.)

(d) **Communication and control problems:** with many factories and hundreds of thousands of workers, messages pass through many layers of managers. Decisions become slow and mistakes are harder to spot, which can raise average cost.

(e) *Large firms can be more efficient:* economies of scale lower average cost, as the table shows ($25,000 down to $20,000 per car). Large firms can afford research and new technology, and they can borrow more cheaply.

But not always: beyond a certain size, diseconomies of scale (slow communication, low worker motivation, weak control) can make average cost rise again. Small firms are flexible, can change quickly and know their customers personally. In some markets the market is small or customers want personal service (a local hairdresser or a specialist bakery), so there is no room for a very large firm to gain economies of scale. Large firms with market power may also face little pressure to keep costs down.

Judgement: large firms are usually more efficient in industries with high fixed costs and mass markets, such as car making, where economies of scale are large. They are not always more efficient: it depends on the industry, the size of the market and whether the firm has grown past its most efficient size. Many industries have both large firms and successful small ones.

What examiners reward: average cost calculated as total cost divided by output with units, economies of scale named and linked to the firm in the extract, and an evaluation that recognises diseconomies and the size of the market.

Checklist

- The four factors of production (1.2.1a).
- The three sectors and how their importance shifts with development (1.2.1b–c).
- Productivity definition with the 25% calculation; its factors by land, labour and capital (1.2.2a–b).
- Division of labour with advantages and disadvantages for workers and businesses (1.2.2c–d).
- TR, AR, MR with the shared model's numbers (1.2.3a).
- TFC, TVC, TC, AVC, ATC and the table's minima; profit = TR − TC (1.2.3a).

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- Economies of scale: the six internal and four external types; the four diseconomies; the LRAC diagram with the most efficient point (1.2.3b–c).

Boundary notes: Paper 1 data questions reward the table arithmetic above – ATC to 2 decimal places where needed. The six internal economies are a learned list (purchasing, marketing, technical, financial, managerial, risk bearing). All worked numbers are original.

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Business competition, the labour market and government intervention

Pearson Edexcel · International GCSE · Economics

Pearson Edexcel International GCSE in Economics (4EC1), specification Issue 3, February 2026. This topic covers spec sections 1.2.4–1.2.6 in full: business competition – competition, monopoly and oligopoly (10 rows); the labour market (6 rows); and government intervention (4 rows). The labour model is supply $W = 4 + 0.02L$ against demand $W = 16 - 0.04L$; the monopoly model is AR $P = 70 - Q/2$ with MC $P = 10 + Q/2$.



Market structures range from perfect competition to monopoly

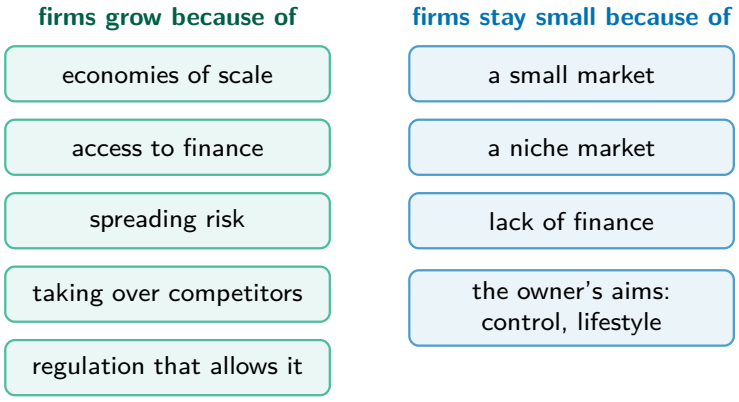
Must-know for this topic:

Family	Relationship
labour market	equilibrium (200 workers, wage 8); shifts move both
minimum wage	at 9: L_d 175 vs L_s 250 $\rightarrow$ 75 unemployed
monopoly	MR = MC at Q 40, price 50, profit $(50 - 30) \times 40 = 800$
intervention	taxation, subsidies, fines, regulation, pollution permits

Competition

Competition 竞争 advantages (1.2.4a): EFFICIENCY (firms must cut costs to survive), CHOICE, QUALITY, INNOVATION and LOWER PRICES for consumers; the economy gains allocated resources. Disadvantages: duplicated capacity, and firms may cut corners to undercut. Large firms exploit economies of scale, branding and finance, but can suffer diseconomies and lose touch with customers; small firms are flexible and personal but lack scale and bargaining power (1.2.4b). Growth of firms (1.2.4c): government regulation (constrains or enables), access to finance, economies of scale, the desire to spread risk, and the desire to take over competitors. Firms stay small (1.2.4d): the size of the market, a NICHE market's nature, lack of finance, and the entrepreneur's aims (control, lifestyle).

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Growth and staying small (1.2.4c-d).

A **monopoly** 垄断 is a market dominated by one firm (1.2.4e) – features: one business dominates, unique product, a PRICE-MAKER, and barriers to entry: legal barriers, patents, marketing budgets, technology, high start-up costs (1.2.4f). Advantages (1.2.4g): economies of scale may lower unit costs, dynamic innovation from large profits, and a stable supplier. Disadvantages: higher prices and lower output than competition, restricted choice, possible X-inefficiency, and little pressure to innovate. Model: with AR $P = 70 - Q/2$ and MC $P = 10 + Q/2$, the monopolist sets MR $= 70 - Q$ equal to MC: $Q_m = 40$, price $= 50$ on the AR curve; with ATC $= 30$ at that output, supernormal profit $= (50 - 30) \times 40 = 800$ per day – against the competitive benchmark $(60, 40)$, a deadweight loss of 200.

An **oligopoly** 寡头垄断 is a market dominated by a few large firms (1.2.4h) – features: few large firms, DIFFERENT products, barriers to entry, COLLUSION (against the consumer's interest), non-price competition and price competition (1.2.4i). Advantages (1.2.4j): choice through differentiation, innovation funded by large profits, and economies of scale. Disadvantages: collusion and CARTELS fixing high prices; PRICE WARS that destroy profit and can drive firms out.

The labour market

The demand for labour (1.2.5a) is DERIVED from demand for the final product; it is affected by the availability of substitutes (machines) and the productivity of the workforce. The supply of labour (1.2.5b) responds to population size, migration, the age distribution, retirement and school-leaving ages, female participation, skills and qualifications, and geographical/occupational mobility. The QUANTITY and QUALITY of labour matter to business (1.2.5c); education and training raise **human capital** 人力资本 and labour quality (1.2.5d). The labour diagram (1.2.5e): supply $W = 4 + 0.02L$ meets demand $W = 16 - 0.04L$ at $(200, 8)$ – wage 8, employment 200; a shift in demand (product demand rising) raises both; a shift in supply (migration) raises employment and lowers the wage. **Trade unions** 工会 bargain for better working conditions and

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higher wages (1.2.5f) – pushing above equilibrium creates unemployment the same way a minimum wage does.

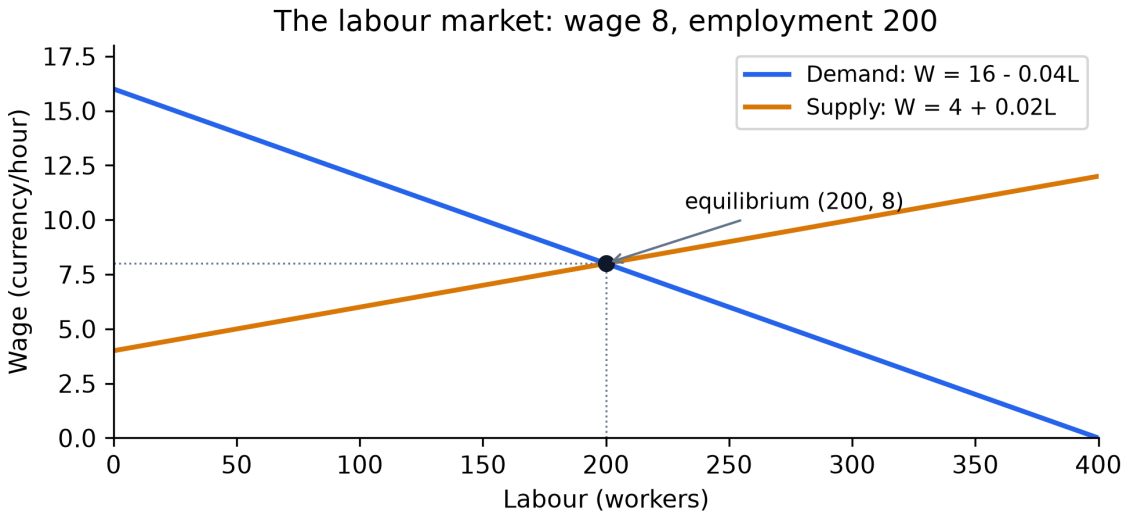


A garment factory: the wage is the price of labour, set by its demand and supply

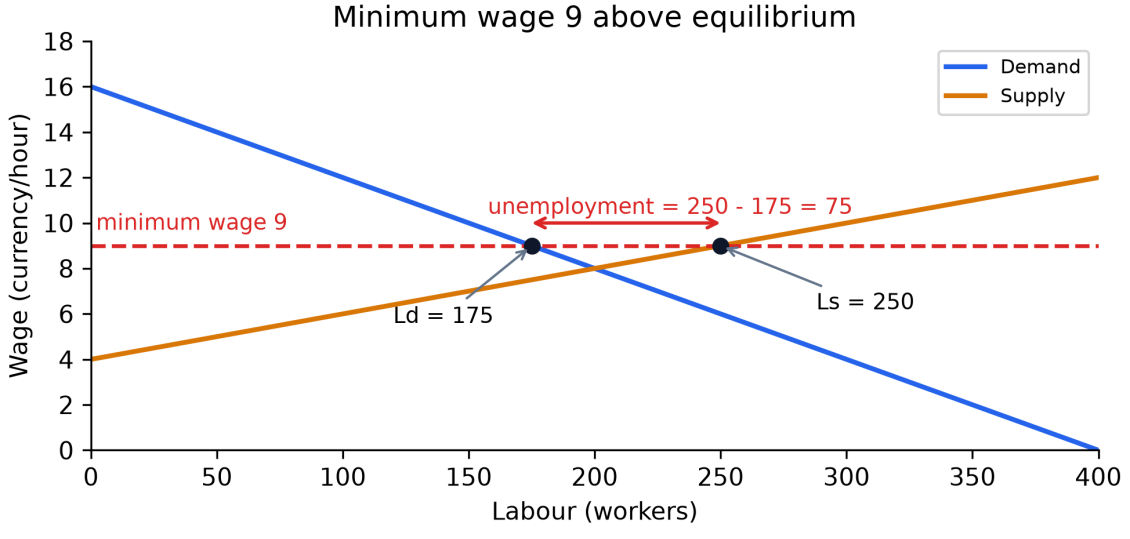
Government intervention

Policies for externalities (1.2.6a): **Taxation** 征税 (raises the private cost towards the social cost), **subsidies** 补贴 (internalise external benefits), **fines** 罚款, **regulation** 监管 and **pollution permits** 污染许可证 (capping total emissions and letting firms trade). Each has advantages (targeted, revenue-raising, market-based) and disadvantages (hard to set correctly, enforcement costs, regressive effects) (1.2.6b). Competition regulation (1.2.6c): to PROMOTE competition, LIMIT monopoly power, PROTECT consumer interests and CONTROL mergers and takeovers. Labour-market intervention (1.2.6d): the **minimum wage** 最低工资 exists to prevent exploitation and reduce in-work poverty; at wage 9 the model gives $L_d = 175$ against $L_s = 250$ – 75 workers unemployed – so its advantage (higher pay for the employed, poverty reduction) trades against disadvantages (unemployment, higher business costs, price rises).

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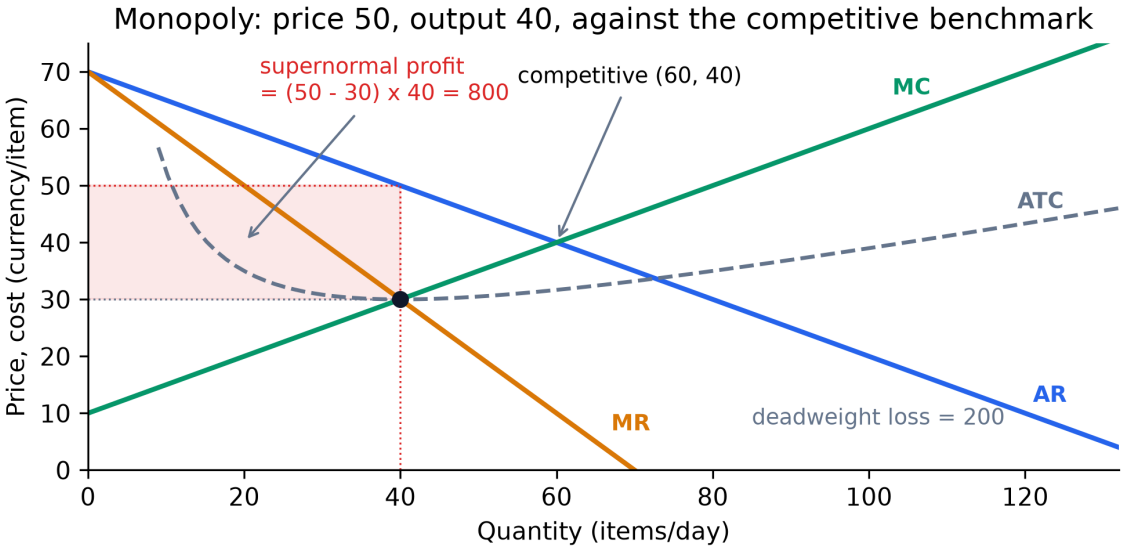


Original model: wage 8 and employment 200 where the curves cross.



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

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Original model: price 50 and output 40 with supernormal profit 800, against the competitive output 60 at price 40.

Data-response practice

Extract. The UK's National Living Wage, the legal minimum hourly wage for workers aged 21 and over, rose from £11.44 in April 2024 to £12.21 in April 2025. The government said the rise would help about 3 million low-paid workers and reduce in-work poverty. Many cafés, shops and care homes employ workers on the minimum wage. Some owners said they would raise prices, cut staff hours or use more self-service machines, because employers' national insurance payments also rose in April 2025. Others said better pay would help them keep staff and reduce the cost of training new workers.

Questions

- (a) Calculate the percentage increase in the National Living Wage between April 2024 and April 2025. [2]
- (b) A café employs 10 workers on the minimum wage for 30 hours a week each. Calculate the increase in its weekly wage bill. [2]
- (c) With the help of a diagram, explain the possible effect of a minimum wage set above the equilibrium wage. [4]
- (d) Explain **two** ways the café might respond to the higher wage bill. [4]
- (e) Evaluate whether raising the minimum wage is the best way to reduce poverty. [9]

Model answers

(a) $\frac{12.21-11.44}{11.44} \times 100 \approx 6.7\%$.

(b) The rise per hour is $12.21 - 11.44 = £0.77$. Hours per week $= 10 \times 30 = 300$.

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Increase = 300 × 0.77 = £231 a week.

(c) On the minimum-wage diagram above, the minimum wage is set above the equilibrium wage. At this higher wage, firms demand less labour (L_d falls) because workers cost more, while more people want to work (L_s rises). The gap between them is unemployment (75 workers in the model). Workers who keep their jobs earn more.

(d) The café could **raise its prices**, passing the cost on to customers; if demand for coffee is price inelastic it keeps most of its sales. It could **cut staff hours or jobs**, or replace some work with machines such as self-service ordering. (Other answers: accept lower profit, or improve productivity so fewer hours are needed.)

(e) *For the minimum wage:* it raises pay for about 3 million low-paid workers directly, at no cost to the government budget. Higher pay can reduce staff turnover, so firms save on hiring and training, and workers may be more productive. Low-paid workers spend most of their income, which raises demand in the economy.

Against the minimum wage: if it is set too high, firms employ fewer people or cut hours, and the people who lose work are often the least skilled. Small firms such as cafés may raise prices, which hurts poor consumers too, or close. Many poor households have no one in work (for example pensioners or the sick), so a minimum wage does not help them at all.

Other policies: benefit payments and tax credits can target poor households directly, including those without work, but cost the government money. Education and training raise workers' skills and productivity, which raises pay in the long run.

Judgement: a minimum wage is an effective way to raise the pay of low-paid workers, as long as it is not raised so fast that jobs are lost. It is not the best single way to reduce poverty, because it misses households without work. It works best combined with targeted benefits and training.

What examiners reward: calculations with the working shown, a labour-market diagram with L_d, L_s and the unemployment gap labelled, responses linked to the café in the question, and a balanced judgement.

Checklist

- Competition's five advantages and the economy-level effects; large vs small firms; five growth factors; four reasons firms stay small (1.2.4a–d).
- Monopoly: definition, six features and five barriers; advantages and disadvantages; the model (40, 50, 800, DWL 200) (1.2.4e–g).
- Oligopoly: definition, seven features; advantages and the cartel/price-war disadvantages (1.2.4h–j).
- Labour demand (derived, substitutes, productivity) and supply (eight factors); quantity and quality; human capital (1.2.5a–d).
- The labour diagram with equilibrium (200, 8) and shift analysis; trade unions (1.2.5e–f).

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- Externality policies (five) with pros and cons; competition regulation's four aims; the minimum wage with the 75-unemployed arithmetic (1.2.6a–d).

Boundary notes: Paper 1's 20-mark questions often ask for one diagram with both equilibria and the unemployment gap labelled. Lists (barriers, features) are definition-mark material. All worked numbers are original on the shared models.

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Government and the economy

Pearson Edexcel · International GCSE · Economics

Pearson Edexcel International GCSE in Economics (4EC1), specification Issue 3, February 2026. This topic covers spec sections 2.1.1–2.1.3 in full: the six macroeconomic objectives (rows a–f of 2.1.1), government policies (2.1.2a–d) and the trade-offs between objectives (2.1.3a). Worked numbers are original and re-derived below.

Must-know for this topic:

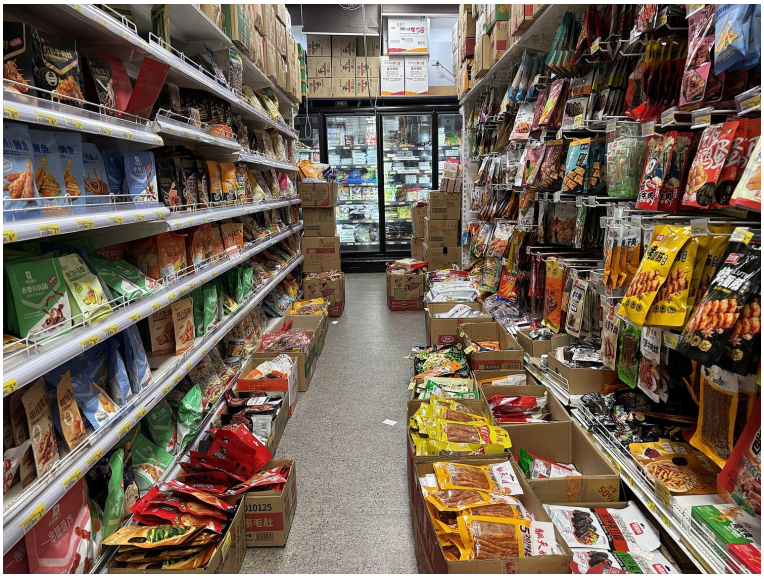
Family	Content
CPI	weights 50/30/20 with relatives 110/100/120 → CPI 109 → 9% inflation
objectives	growth, low stable inflation, low unemployment, current-account balance, environment, redistribution
AD/AS	AD $P = 90 - Y/2$ vs SRAS $P = 20 + Y/2$ at $(70, 55)$; reflation → $(85, 62.5)$
trade-offs	unemployment ↔ inflation; growth ↔ inflation; growth ↔ environment; inflation ↔ current account

The macroeconomic objectives

Economic growth 经济增长 (2.1.1a) is the increase in real GDP; it is measured by GDP increases, but GDP has LIMITATIONS (non-market activity, distribution, environmental damage, price differences). The **economic cycle** 经济周期 diagram shows BOOM (above trend), DOWNTURN, RECESSION (below trend, falling output) and RECOVERY. Each stage moves growth, inflation and unemployment together: a boom raises growth and inflation and cuts unemployment; a recession does the reverse. Growth's impacts: employment, living standards, poverty, productive potential, inflation (if demand outruns capacity) and the environment. **Inflation** 通货膨胀 (2.1.1b) is a sustained rise in the price level (deflation: a sustained fall), measured by the **consumer price index** 消费者价格指数 (CPI) – a weighted basket: weights 50/30/20 over goods with price relatives 110/100/120 give CPI = 55+30+24 = 109, so inflation is 9%. DEMAND-PULL inflation comes from AD shifting right (output AND prices rise); COST-PUSH from SRAS shifting left (prices rise, output falls). Interest rates and inflation move opposite: higher rates cut demand and inflation. Inflation hits prices, wages (real pay), exports (dearer), unemployment (if policy deflates), MENU COSTS, SHOE-LEATHER COSTS, uncertainty, confidence and investment. LOW UNEMPLOYMENT (2.1.1c) is measured by the **ILO unemployment measure** 国际劳工组织失业测量; its types are CYCLICAL, STRUCTURAL, SEASONAL, VOLUNTARY and FRICTIONAL; its impacts run through output, wasted resources, poverty, benefit spending, lost tax revenue, confidence and society. A CURRENT-ACCOUNT SURPLUS OR BALANCE (2.1.1d) means exports near imports in goods

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(visibles) and services (invisibles); deficits follow poor quality or dear domestic goods and an overvalued exchange rate; a deficit leaks demand abroad (fewer domestic jobs) and can weaken the exchange rate, which raises import prices. ENVIRONMENTAL PROTECTION (2.1.1e) targets visual, noise, air and water pollution – through taxation, subsidy, regulation, fines, pollution permits and public parks. REDISTRIBUTION (2.1.1f) attacks income inequality and absolute/relative poverty through progressive taxation, benefit payments, and education and healthcare investment.



A supermarket aisle: inflation is measured by the changing price of a fixed basket of goods

economic growth

low inflation

full employment

balance of payments

The four macroeconomic objectives

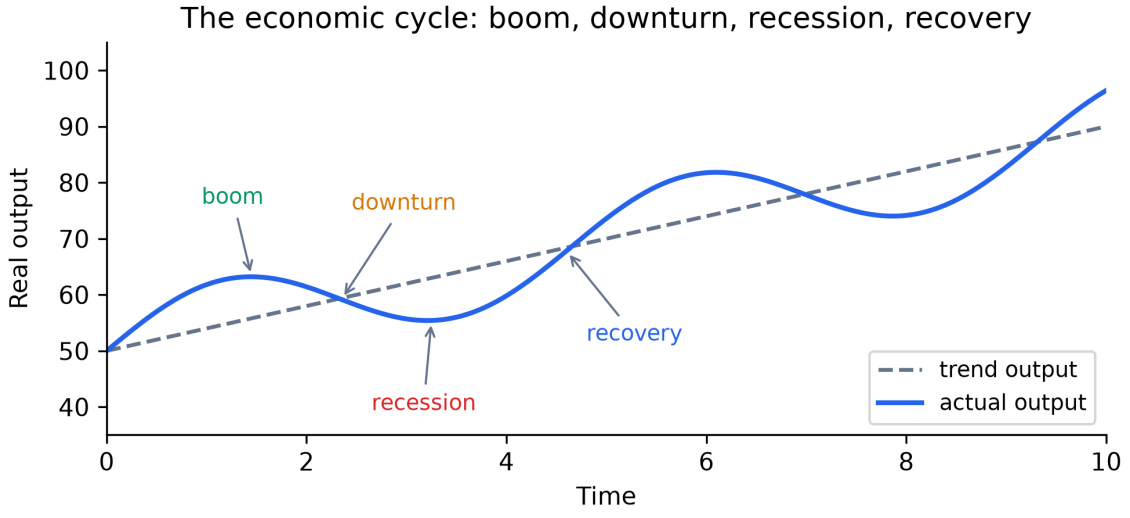
Government policies

Fiscal policy 财政政策 (2.1.2a) uses government revenue (DIRECT taxes on income, INDIRECT on spending) and expenditure; a FISCAL DEFICIT (spending above revenue) reflates but risks debt and crowding out; a SURPLUS deflates. **Monetary policy** 货币政策 (2.1.2b) is focused on INTEREST-RATE changes set by the central

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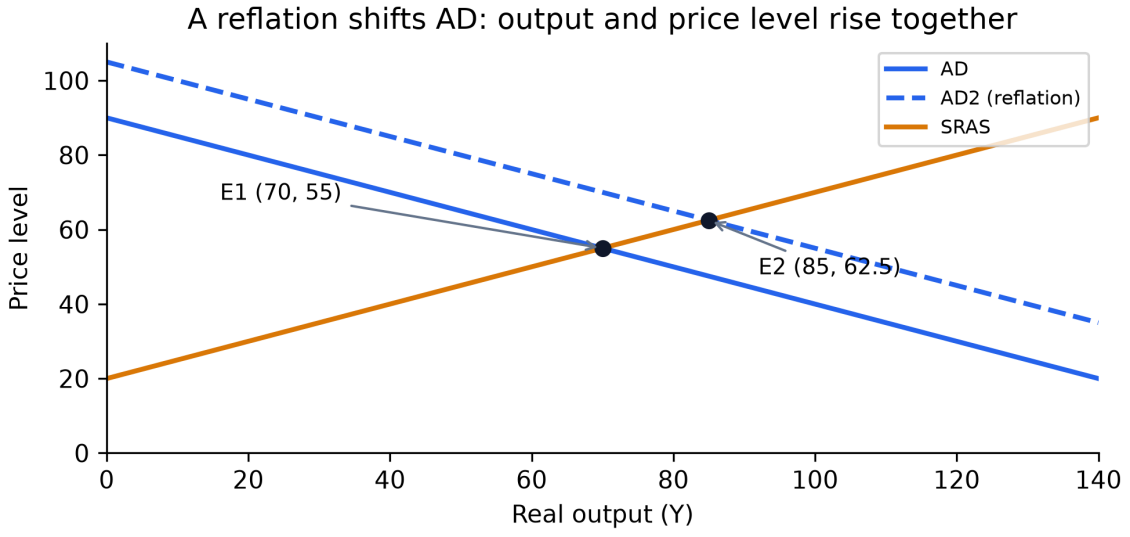
bank: higher rates raise borrowing costs, cutting consumption and investment (the transmission mechanism) and cooling inflation; the central bank may also use ASSET PURCHASES (quantitative easing) to add money when rates are near zero. **Supply-side policy** 供给侧政策 (2.1.2c) raises productivity and total output: privatisation, deregulation, education and training, regional policies, infrastructure spending, lower business taxes (to stimulate investment) and lower income taxes (to encourage work). GOVERNMENT CONTROLS (2.1.2d): regulation, legislation, fines and pollution permits – each with advantages (direct effect, flexibility) and disadvantages (enforcement cost, unintended consequences).

On the AD/AS model, a reflationary fiscal or monetary policy shifts AD from $P = 90 - Y/2$ up by 15: equilibrium moves from $(70, 55)$ to $(85, 62.5)$ – more output, higher prices; supply-side policy shifts SRAS right instead, raising output with LOWER prices.

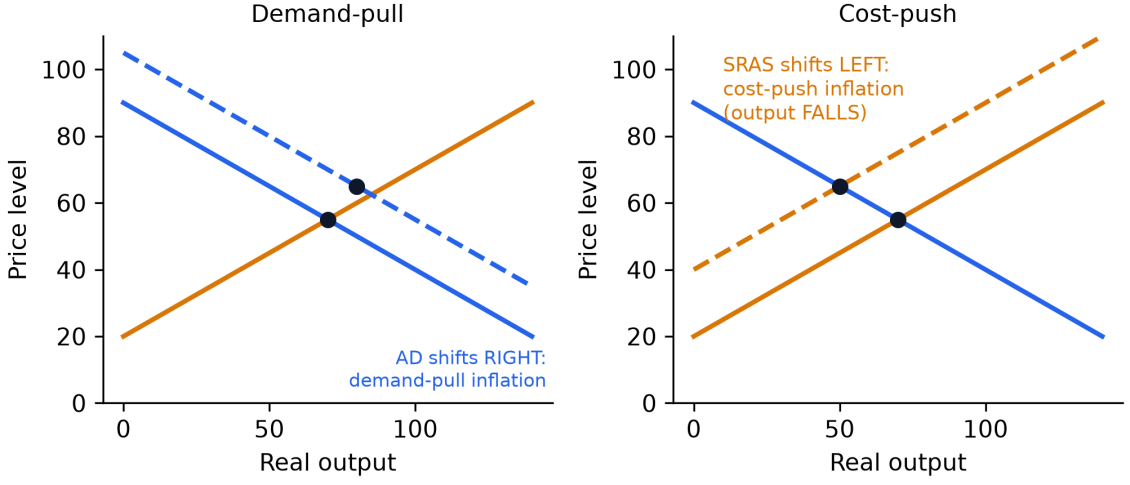


Original cycle with boom, downturn, recession and recovery annotated.

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Original model: the reflation moves equilibrium from (70, 55) to (85, 62.5).



Original panels: AD right raises output with prices; SRAS left (cost-push at (50, 65)) raises prices and cuts output.

Relationships between objectives and policies

The trade-offs (2.1.3a): UNEMPLOYMENT and INFLATION – deflating demand cuts inflation but costs jobs; GROWTH and INFLATION – fast growth overheats into demand-pull inflation; GROWTH and ENVIRONMENTAL PROTECTION – output raises pollution; INFLATION and the CURRENT ACCOUNT – dearer exports worsen the trade balance. Every policy answer should name the trade-off it accepts.

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Data-response practice

Extract. UK inflation reached 11.1% in October 2022, its highest rate for 41 years. Most of the rise came from energy and food: after Russia invaded Ukraine in February 2022, world prices of gas, oil and wheat jumped. To bring inflation down, the Bank of England raised its interest rate (Bank Rate) from 0.1% in December 2021 to 5.25% by August 2023. Mortgage payments rose for many households, and firms delayed investment. Inflation fell back to the 2% target in May 2024, but unemployment rose from under 4% in 2022 to over 4% in 2024.

Table: Country K's price index

Group	Weight	Price index (base year = 100)
Food	30	115
Energy	20	130
Other goods and services	50	104

Questions

- (a) Define *inflation*. [2]
- (b) Using the table, calculate Country K's consumer price index, and state its inflation rate since the base year. [3]
- (c) Using the extract, identify the main type of inflation in the UK in 2022, and give a reason. [2]
- (d) Explain how a rise in interest rates can reduce inflation. [4]
- (e) Using the extract, explain **one** trade-off between macroeconomic objectives. [3]
- (f) Evaluate whether raising interest rates is the best policy to reduce inflation caused by higher energy prices. [9]

Model answers

(a) Inflation is a sustained rise in the general price level, measured by the change in a price index such as the CPI.

(b) Multiply each price index by its weight and divide by the total weight (100): $\frac{30\times115+20\times130+50\times104}{100} = \frac{3450+2600+5200}{100} = 112.5$. Prices have risen by 12.5% since the base year. Energy has the biggest price rise (30%) but only 20% of the weight.

(c) Cost-push inflation. Higher world prices of gas, oil and wheat raised firms' costs, so SRAS shifted left: prices rose while output did not.

(d) A higher interest rate makes borrowing dearer and saving more rewarding. Households with mortgages or loans have less to spend, and firms put off investment. Consumption and investment fall, so aggregate demand shifts left. With weaker demand, firms find it harder to raise prices, and inflation falls.

(e) Low inflation against low unemployment. Higher interest rates reduced demand and brought inflation down to 2% by May 2024, but lower demand means firms need fewer workers, so unemployment rose from under 4% to over 4%.

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(f) *For higher interest rates:* they work on demand, and lower demand stops firms passing on all their higher costs. They also stop people **expecting** high inflation, so workers ask for smaller pay rises. The UK raised rates to 5.25% and inflation fell to 2% by 2024. Interest rates can be changed quickly, and the central bank does not need a new law to do it.

Against higher interest rates: the cause was cost-push. Higher rates cannot lower the world price of gas, so inflation from energy may fall only when world prices fall, and much of the UK's fall in inflation came when energy prices dropped back. Higher rates hurt growth and raise unemployment (as the extract shows), so the economy pays twice: high prices and lost jobs. They take one to two years to have their full effect. Households with large mortgages are hit hardest.

Other policies: the government can cut the price of energy for households directly with subsidies or price caps (the UK capped household energy prices in 2022), but this costs a lot of public money. Supply-side policy, such as investment in renewable energy and insulation, lowers energy costs in the long run but does not help quickly.

Judgement: raising interest rates alone is not the best way to deal with inflation caused by energy prices, because it does not touch the cause and it costs jobs. But some rise is needed if high inflation starts to push up wages and expectations. The best answer is a mix: moderate rate rises to keep expectations under control, short-term help for poor households with energy bills, and supply-side investment so the economy depends less on imported gas.

What examiners reward: the CPI calculation laid out step by step, an AD/AS explanation (AD left for interest rates; SRAS left for cost-push), the extract's figures (11.1%, 5.25%, 2%), and a judgement that answers "best".

Checklist

- Growth: definition, GDP measurement and its limitations; the cycle's four stages and each stage's effects; growth's six impacts (2.1.1a).
- Inflation and deflation definitions; CPI from the weighted basket (109 → 9%); demand-pull vs cost-push; the interest-rate link; the nine impact groups incl. menu and shoe-leather costs (2.1.1b).
- Unemployment: ILO measure, five types, seven impact groups (2.1.1c).
- Current account: visibles and invisibles; deficit/surplus causes; the exchange-rate link; deficit impacts (2.1.1d).
- Environment: four pollution types; six intervention measures (2.1.1e).
- Redistribution: inequality and poverty definitions; three reasons and three instruments (2.1.1f).
- Fiscal (direct/indirect, deficit/surplus), monetary (interest-rate mechanism, QE), supply-side (seven measures), controls (four, with pros and cons) (2.1.2a–d).
- The four trade-offs between objectives (2.1.3a).

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Boundary notes: Paper 2 (macroeconomics, 80 marks, four 20-mark questions) rewards data-response calculation (the CPI arithmetic) and trade-off evaluation. All worked numbers are original.

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The global economy

Pearson Edexcel · International GCSE · Economics

Pearson Edexcel International GCSE in Economics (4EC1), specification Issue 3, February 2026. This topic covers spec sections 2.2.1–2.2.3 in full: globalisation (4 rows), international trade (6 rows) and exchange rates (4 rows). The tariff model reuses the shared curves ($Q_d = 140 - 2P$, $Q_s = 20 + 4P$); the exchange model sits at 5 domestic per foreign currency.

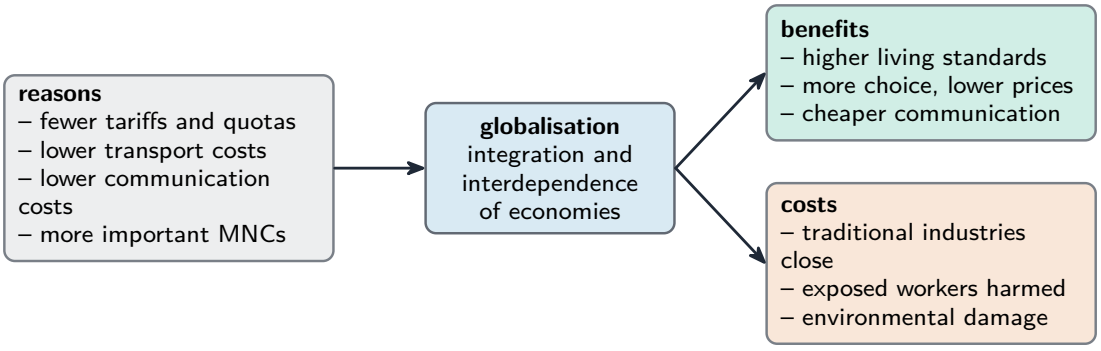
Must-know for this topic:

Family	Content
tariff (shared model)	world price 12 → imports 48; tariff 4 → price 16, imports 24, revenue 96, DWL 48
exchange model	demand meets supply at 5 domestic per foreign; import-demand rise → 6.5 (depreciation)
appreciation vs revaluation	market rise vs deliberate fixed-rate rise
MNC/FDI	jobs, infrastructure, skills, capital, tax against tax avoidance, damage, profit outflows

Globalisation

Globalisation 全球化 is the increased integration and interdependence of economies (2.2.1a). Reasons (2.2.1b): fewer tariffs and quotas, reduced transport costs, reduced communication costs, and the increased significance of MULTINATIONAL CORPORATIONS (MNCs). Impacts (2.2.1c): rising living standards, greater choice, lower prices and cheaper communication – against the closing of traditional industries, harm to workers in exposed industries, and environmental damage, affecting countries, governments, producers, consumers, workers and the environment. A **multinational corporation** 跨国公司 operates in more than one country; **foreign direct investment** 外国直接投资 (FDI) is building or buying productive assets abroad (2.2.1d). MNCs emerge to exploit economies of scale, access natural resources and cheap materials, cut transport and communication costs, and reach customers in different regions. Advantages of MNCs/FDI: creating jobs, investing in infrastructure, developing skills, developing capital, contributing taxes. Disadvantages: avoiding taxes, environmental damage, and moving profits abroad.

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Globalisation: why it happens, and who gains and loses



A container port: falling transport costs tie national economies together

International trade

Free trade's advantages (2.2.2a): lower prices and increased choice for consumers, lower input costs, and wider markets for businesses; its disadvantages: foreign competition harming domestic businesses and increasing unemployment in exposed industries. Reasons for protection (2.2.2b): prevent **dumping** 倾销 (exporting below normal value, usually the comparable home-market price), protect employment, protect infant industries, gain tariff revenue, protect consumers from unsafe products, reduce current-account deficits, and retaliation. Methods (2.2.2c): **tariffs** 关税 (import taxes), **quotas** 配额 (quantity limits), **subsidies** 补贴 to domestic producers – each with advantages (revenue, jobs saved, precise quantity control) and disadvantages (higher prices, retaliation, inefficiency). The tariff diagram on the shared model: at the world price 12 imports are $116-68=48$; a tariff of 4 raises the domestic price to 16

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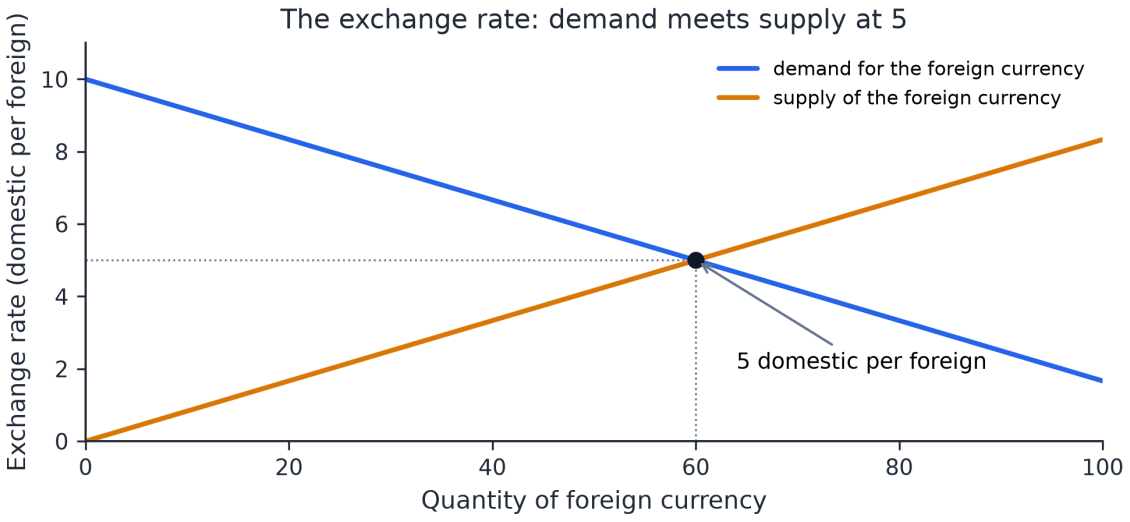
and imports fall to $108 - 84 = 24$, the government collects $4 \times 24 = 96$, and the deadweight loss is $32 + 16 = 48$. **Trading blocs** 贸易集团 (2.2.2d) such as the EU favour members (free internal trade, economies of scale) at non-members' expense (trade diversion). The WTO (2.2.2e) negotiates liberalisation, sets trade rules and settles disputes. Trade PATTERNS (2.2.2f): developing countries export primary products and low-cost manufactures; developed countries export services and high-technology goods.



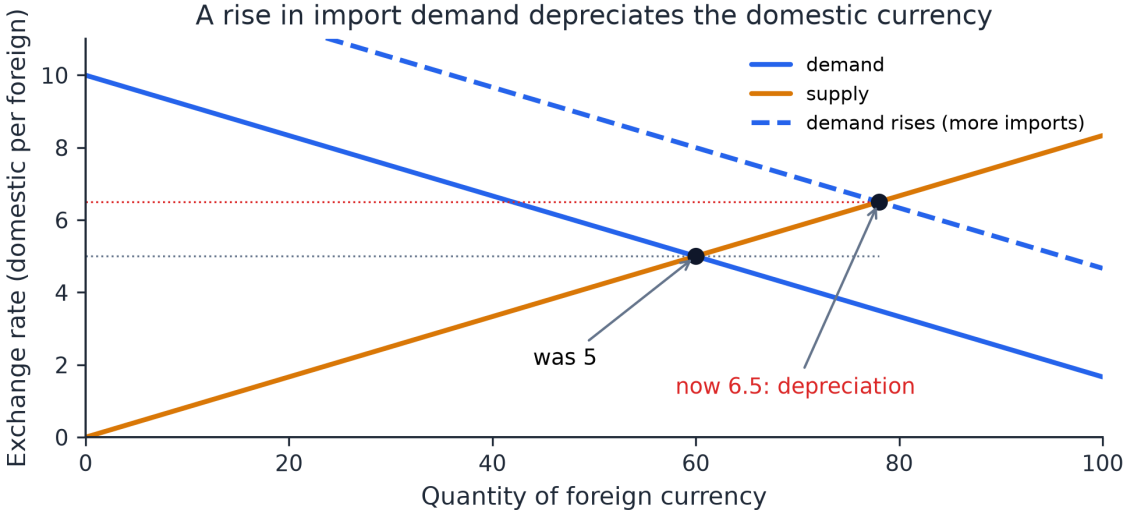
Original model: price 12 to 16, imports 48 to 24, revenue 96, deadweight loss 48.

Exchange rates

The **exchange rate** 汇率 is the price of one currency in another (2.2.3a). It is set by demand and supply of the currency (2.2.3b): interest rates (higher rates attract funds and raise the currency), currency speculators, and the imports and exports of goods and services – importers sell the domestic currency to buy foreign currency; foreign buyers of exports do the reverse. The diagram is the market for the foreign currency: demand meets supply at 5 domestic per foreign currency. **Appreciation** 升值 is a market-driven RISE in a floating exchange rate; a REVALUATION is a deliberate rise under a FIXED rate (2.2.3c). A **depreciation** 贬值 is a market-driven FALL; a **devaluation** 法定贬值 is a deliberate cut under a fixed rate (2.2.3d). Model: a rise in import demand shifts the demand for foreign currency right – one foreign unit now costs 6.5 domestic instead of 5, a DEPRECIATION of the domestic currency: import prices rise (dearer foreign goods), export prices abroad fall, so import demand falls and export demand rises – improving the current account if the elasticities allow, at the cost of imported inflation. An appreciation does the reverse: cheaper imports, dearer exports, current-account pressure.



Original model: the rate is 5 where demand meets supply.



Original model: import-demand growth moves the rate from 5 to 6.5 – the domestic currency depreciates.

Data-response practice

Extract. In early 2022 one US dollar bought about 115 Japanese yen. By mid-2024 it bought about 160 yen, the weakest the yen had been since 1986. A key reason was the gap in interest rates: the US central bank raised its rate above 5%, while the Bank of Japan kept its rate below zero until March 2024. Savers moved money out of yen to earn more in dollars. Japanese car makers reported record profits, and a record 36.9 million foreign tourists visited Japan in 2024. But Japan imports most of its energy and much of its food, and in 2022 it had a record trade deficit as import bills rose.

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Questions

- (a) Define *depreciation* of a currency. [2]
- (b) Using the extract, explain **one** reason why the yen depreciated. [3]
- (c) A Japanese car costs ¥3,000,000. Calculate its price in US dollars at 120 yen per dollar and at 150 yen per dollar. [2]
- (d) A barrel of oil costs $80. Calculate its cost in yen at 120 and at 150 yen per dollar, and the percentage change. [2]
- (e) Analyse how the depreciation affected Japan's tourism industry. [4]
- (f) Evaluate whether the weak yen was good for the Japanese economy. [9]

Model answers

(a) A depreciation is a fall in the value of a currency against other currencies in a floating exchange-rate system, caused by market forces (demand and supply of the currency).

(b) US interest rates rose above 5% while Japan's stayed below zero. Savers and investors could earn much more on dollar deposits and bonds, so they sold yen to buy dollars. The supply of yen on the currency market rose and demand for yen fell, so the yen's value fell.

(c) At 120: $3{,}000{,}000 \div 120 = 25{,}000$, so $25,000. At 150: $3{,}000{,}000 \div 150 = 20{,}000$, so $20,000. The same car is $5,000 (20%) cheaper for American buyers.

(d) At 120: $80 \times 120 = 9{,}600$, so ¥9,600. At 150: $80 \times 150 = 12{,}000$, so ¥12,000. The rise is $\frac{12{,}000-9{,}600}{9{,}600} \times 100 = 25\%$, with no change in the dollar price of oil.

(e) A weaker yen means each dollar, euro or yuan buys more yen, so hotels, meals and shopping in Japan become cheaper for foreign visitors. Demand for trips to Japan rises: the extract reports a record 36.9 million visitors in 2024. Tourism is an export of services, so spending by visitors adds to Japan's current account and to aggregate demand, creating jobs in hotels, transport and shops. Crowding at popular places is a cost of this success.

(f) *Benefits:* exports become cheaper abroad (the car falls from $25,000 to $20,000), so exporters sell more and earn more profit when they change dollars back into yen. Tourism booms. Higher exports raise aggregate demand, output and employment. Japan had very low inflation for many years, so some rise in prices was welcome.

Costs: imports become dearer. Energy and food are necessities with inelastic demand, so Japan keeps buying them and the import bill rises (oil up 25% in yen). This caused a record trade deficit in 2022 and cost-push inflation. Households' real incomes fall if wages rise more slowly than prices. Firms that import their materials face higher costs.

It depends on: how elastic the demand for Japan's exports is (if buyers do not respond much to lower prices, export revenue gains are small); how long the weak yen lasts (contracts take time to change, so the trade balance may get worse before it gets better); and who is affected. Exporters and tourism firms gain, while households and

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import-using firms lose.

Judgement: the weak yen helped large exporters and tourism, but it raised living costs for most households because Japan relies on imported energy and food. On balance it gave a short-term boost to demand, but it is not a lasting source of growth: that needs higher productivity, not a cheaper currency.

What examiners reward: correct currency calculations with units, a clear chain from the exchange rate to prices, to demand, to the current account, both winners and losers named, and a judgement.

Checklist

- Globalisation definition, four reasons, impacts on all groups; MNC/FDI definitions, four emergence reasons, five advantages and three disadvantages (2.2.1).
- Free trade both ways; seven protection motives; tariffs, quotas and subsidies with pros and cons and the diagram arithmetic (48 → 24, 96, 48); blocs and the WTO; trade patterns (2.2.2).
- Exchange-rate definition; the three demand/supply factors with the diagram at 5; appreciation vs revaluation, depreciation vs devaluation; both directions' impacts on import/export prices, demand and the current account (2.2.3).

Boundary notes: Paper 2's data questions use exchange-rate conversions and the tariff arithmetic above. Definitions of the four direction words (appreciation, revaluation, depreciation, devaluation) are one-mark material. All worked numbers are original on the shared models.

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