

Cambridge AS & A Level · Economics 9708 · Notes

Aggregate Demand and Aggregate Supply analysis

AS

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Read first: [Demand and supply curves](#), [National income statistics](#), [Introduction to the circular flow of income](#)

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What you need to know

By the end of this topic you should be able to:

1. **Define aggregate demand (AD):** how much households, firms, the government and foreign buyers together plan to spend on a country's output, at each possible price level.
2. **Name the four components of AD and say what each means:** $AD = C + I + G + (X - M)$, that is consumption, investment, government spending and net exports.
3. **Explain what determines AD:** the main things that change each component (income, confidence, interest rates, taxes, exchange rates, incomes abroad and so on). You don't need detail on each component beyond that.
4. **Explain why the AD curve slopes downwards.**
5. **Explain what shifts the AD curve** to the right or left.
6. **Define aggregate supply (AS):** how much real output a country's producers, taken together, plan to sell at each possible price level.
7. **Explain what determines AS:** costs of production in the short run, and the quantity and quality of the factors of production in the long run.
8. **Draw and explain the shape of AS:** short-run AS (SRAS) slopes upwards (a straight line or a sweeping curve); long-run AS (LRAS) is either a vertical line or has three sections (highly elastic, then upward sloping, then vertical).
9. **Explain what shifts SRAS and what shifts LRAS.**
10. **Tell a movement along AD or AS from a shift of the curve.**
11. **Show how AD and AS together set equilibrium** real output, the price level and employment.
12. **Show the effects of a shift in AD or in AS** on real output, the price level and employment.

The types of inflation in depth, the multiplier and the causes of economic growth belong to other topics; here you only need what an AD/AS diagram shows.

Understand it

The whole economy on one diagram

The demand and supply diagram shows **one** market: the price of one good against the quantity of that good. The AD/AS diagram does the same job for the **whole economy**:

- the vertical axis is the **price level** (the average of all prices, as measured by a price index), not "price";
- the horizontal axis is **real output** (real GDP, or real national income), not "quantity";
- the curves are **AD** and **AS**, not D and S.

Examiner reports in many sessions (for example November 2021, June 2022, March 2023 and June 2023) say that candidates lost marks for P/Q axes and D/S labels on a macroeconomic diagram, so learn these three labels.

Aggregate demand

Aggregate demand is everything that households, firms, the government and foreign buyers together plan to spend on the country's output, at each price level. It has four parts:

$$AD = C + I + G + (X - M)$$

- **Consumption (C)**: households' spending on goods and services. It is usually the largest part.
- **Investment (I)**: firms' spending on capital goods such as machinery, buildings and new technology.
- **Government spending (G)**: spending on goods and services such as schools, hospitals and roads (transfer payments such as pensions are not part of G ; when households spend them, that spending counts as C).
- **Net exports ($X - M$)**: foreigners' spending on this country's goods minus this country's spending on imports. Imports are subtracted because that spending goes to foreign firms.

Saving and taxation are **not** components of AD: they are income that is not spent.

Why the AD curve slopes downwards

AD is drawn against the price level. When the price level **falls** (with everything else held the same), the total quantity of real output demanded rises, for three reasons:

1. **Wealth effect.** A lower price level raises the real value (the purchasing power) of people's money and savings, so they feel better off and spend more.
2. **Interest rate effect.** With lower prices, people need less money for their purchases, so they have more to save or lend; interest rates tend to fall, which encourages borrowing for consumption and investment.
3. **International trade effect.** Domestic goods become cheaper compared with foreign goods, so exports rise and some spending switches from imports to domestic goods.

A rise in the price level works the other way. Note that this is **not** the same reason that a demand curve for one good slopes down (there, consumers switch to other goods; here, there is nothing outside the economy's output to switch to except imports).

What shifts AD

A change in the price level moves the economy **along** AD. Anything else that changes spending at every price level **shifts** AD. Trace every event to a component:

AD shifts right (increases) when...	Component
incomes, wealth or consumer confidence rise; income tax is cut; interest rates fall; the population grows	C
firms expect higher sales or profits; interest rates fall; new technology creates projects; corporation tax is cut	I
the government spends more (for example a larger budget deficit)	G
the exchange rate falls (depreciation); incomes abroad rise; domestic goods become more competitive; tariffs cut imports	$X - M$

The opposite changes shift AD **left**: more saving, higher taxes or interest rates, an appreciation, a recession abroad, or a larger current account deficit (more spending leaks out as imports).

Some changes affect **both** curves. Government spending on education shifts AD right straight away (building schools and paying teachers is spending); the better-skilled workers it produces raise LRAS much later. A growing population raises AD (more consumers, more housing and public services needed) and, as the labour force grows, raises LRAS too.

Aggregate supply

Aggregate supply is how much real output all the country's producers together plan to sell at each price level.

Short-run aggregate supply (SRAS) slopes **upwards** (drawn as a straight line or a gently sweeping curve). In the short run, many costs, such as wage rates agreed in contracts, stay fixed. When the price level rises, firms receive more for their output while those costs lag behind, so producing more becomes profitable. As output rises, firms also pay overtime and use less efficient machines, so their costs per unit rise, and they need higher prices to supply more.

SRAS shifts when firms' **costs of production** change at every level of output:

- **left (a decrease)**: higher wage rates, dearer raw materials or energy (for example a rise in the world price of oil), dearer imported materials after a depreciation, higher indirect taxes on firms, subsidies removed;
- **right (an increase)**: the opposite, such as cheaper energy, lower business taxes, new subsidies, or higher productivity lowering the cost of each unit.

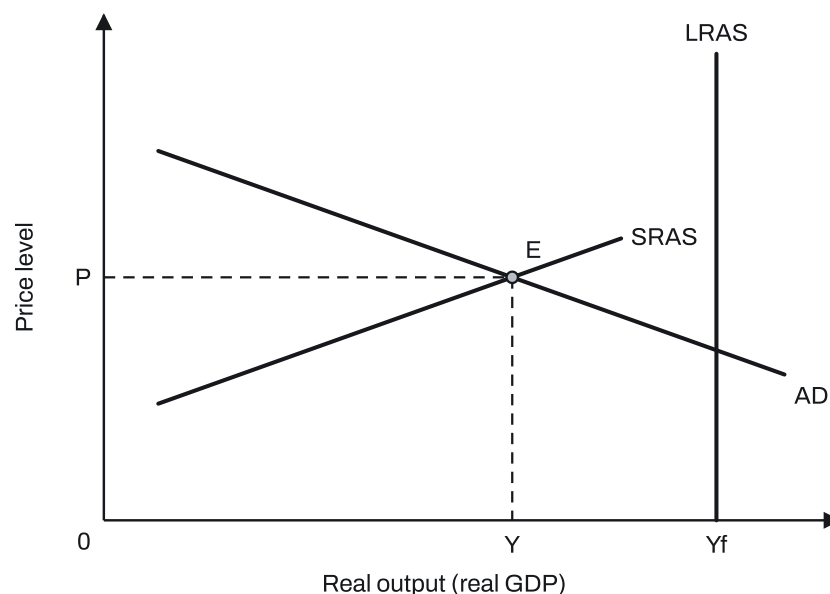
Long-run aggregate supply (LRAS) shows the economy's **productive capacity**, the most it can produce when all its resources are used. It is drawn in one of two ways, and the syllabus accepts both:

- **A vertical line** at full-capacity (full-employment) output, Y_f . In the long run, wages and prices adjust fully, so output is set by the quantity and quality of resources, not by the price level.
- **Three sections.** Highly elastic (horizontal) when there is lots of spare capacity, so firms can raise output without raising prices; upward sloping as bottlenecks appear (shortages of skilled labour and materials push up costs); vertical at Y_f , where no more output is possible.

LRAS can be vertical, upward sloping in part, or horizontal in part, but it can **never** slope downwards.

LRAS shifts right when the **quantity or quality of factors of production** rises: a larger labour force (net immigration, higher participation, a later retirement age), better education and training, more capital (investment in machinery and infrastructure), new technology, or anything else that raises productivity. It shifts **left** when capacity is lost, for example through emigration of workers or destruction of capital in a disaster. A change in factor **prices** (wages, energy costs) shifts SRAS; it does not move the vertical part of LRAS, which depends on how many resources there are and how good they are.

Equilibrium: price level, output and employment



The economy is in **equilibrium** where AD crosses AS: planned spending equals planned output, so there is no pressure for output or the price level to change. The diagram then shows three things:

- the **price level** (read across to the vertical axis);
- the level of **real output** (read down to the horizontal axis);
- **employment**, indirectly: labour is a derived demand, so more real output needs more workers. A rise in real output raises employment; a fall in real output raises unemployment.

If the price level were above equilibrium, planned output would be more than planned spending, stocks would pile up and firms would cut prices and output; below equilibrium, spending would exceed output and prices and output would rise.

An equilibrium can be to the left of Y_f (spare capacity and unemployment) or at Y_f (full employment). The diagram shows the first case. In the short-run numbers used in this note, AD is $P = 80 - 0.5Y$ and SRAS is $P = 20 + 0.5Y$: they cross at $Y = 60$ and a price level of 50, well below full-capacity output ($Y_f = 90$), so there is spare capacity.

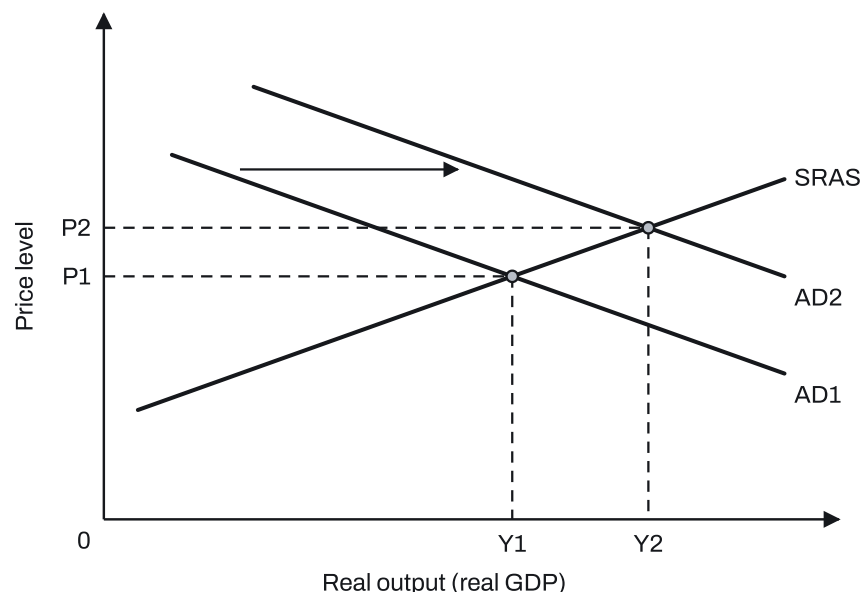
The same equilibrium can also be found from figures for the components: it is the output at which total planned spending, $C + I + G + (X - M)$, equals real output.

Movement along or shift?

- A **shift of AS** changes the price level, so the economy moves **along AD** to the new equilibrium.
- A **shift of AD** changes the price level, so the economy moves **along AS**.
- A curve itself shifts only when something **other than the price level** changes (a component of AD, or costs or capacity for AS).

For example, lower taxes on firms shift SRAS right; the price level falls and the economy slides down AD to a higher output. That slide is a movement along AD, not a shift of it.

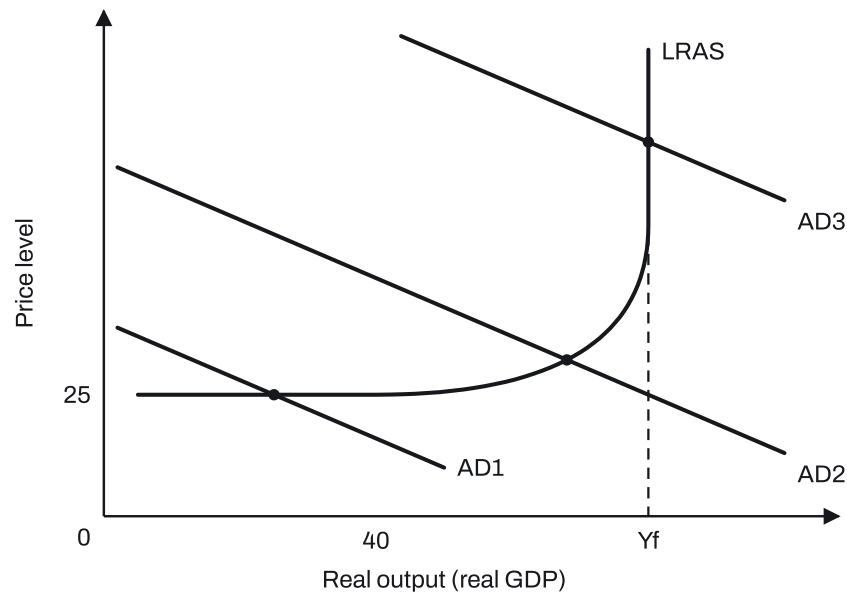
Effects of a shift in AD



When AD shifts right along an upward-sloping SRAS, real output, employment **and** the price level all rise. With the numbers above (short run, with spare capacity up to $Y_f = 90$), AD rising from $P = 80 - 0.5Y$ to $P = 100 - 0.5Y$ moves equilibrium from $(Y, P) = (60, 50)$ to $(80, 60)$: output rises by a third and the price level

by 20%. A rise in the price level caused by rising AD is **demand-pull inflation**. A fall in AD does the opposite: lower output, lower employment and a falling (or slower-rising) price level, which can become **deflation**, a sustained fall in the general price level.

How much of a rise in AD goes into output and how much into prices depends on **where the economy is on AS**:

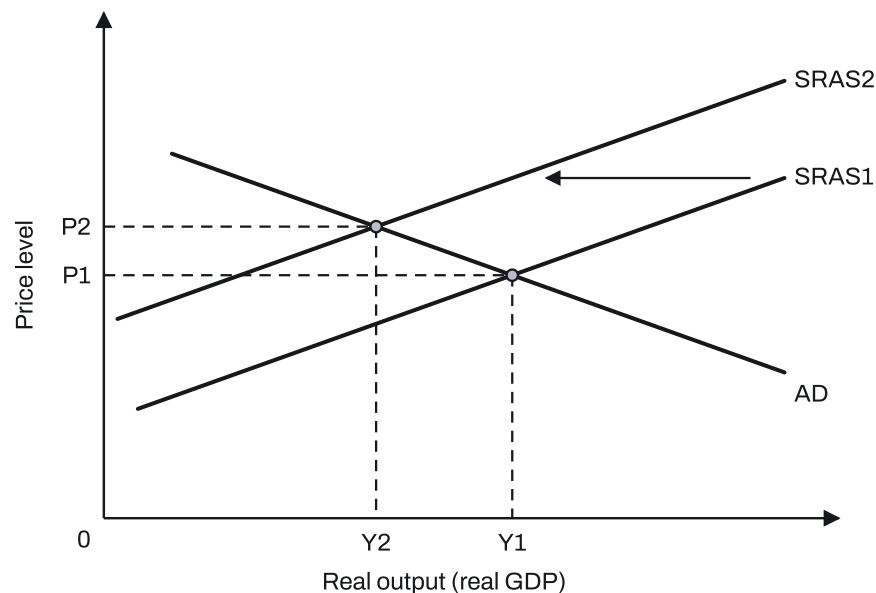


- **Horizontal section** (AD1, lots of spare capacity, high unemployment): a rise in AD raises real output and employment with **no** rise in the price level; a small fall in AD lowers output and employment with no fall in prices.
- **Upward-sloping section** (AD2): a rise in AD raises output, employment **and** the price level.
- **Vertical section** (AD3, full capacity): a rise in AD raises **only** the price level; real output and employment cannot rise. Nominal GDP rises (the same output at higher prices) but real GDP does not. Likewise a small fall in AD here lowers the price level with little effect on employment.

With a vertical LRAS the same is true in the long run: a change in AD changes only the price level, and employment ends up unchanged.

So a rise in AD does **not always** cause inflation. It is least likely to when there is spare capacity, or when the extra spending also raises capacity (for example investment in new machinery or government spending on infrastructure shifts LRAS right as well). To stop a rising AD from raising the price level, productive capacity must grow with it.

Effects of a shift in AS



- **SRAS shifts left** (higher costs): the price level rises while real output and employment **fall**. With the numbers above, SRAS moving from $P = 20 + 0.5Y$ to $P = 40 + 0.5Y$ moves equilibrium from (60, 50) to (40, 60). This is **cost-push inflation**, and it is especially harmful because it combines rising prices with falling output and jobs.
- **SRAS or LRAS shifts right** (lower costs, more capacity, higher productivity): real output and employment **rise** and the price level **falls** (or rises more slowly). A fall in the price level caused this way is sometimes called "good" or benign deflation, because output and jobs are growing.

Compare the two causes of deflation: a **fall in AD** lowers prices **and** output and employment (a recession), so it is damaging; a **rise in AS** lowers prices while output and employment rise, so it is usually beneficial.

Two shifts at once. When both curves move, one of the results is certain and the other depends on the sizes of the shifts. If AD shifts right and SRAS shifts left (for example more government spending while raw-material costs rise), the price level **certainly** rises, but output may rise, fall or stay the same. If AD and AS both shift right, output certainly rises but the price level is uncertain. If AD shifts left and AS shifts right, the price level certainly falls but output is uncertain.

Key facts and formulas

There is no formula list in the 9708 exam, so everything here is "Learn it".

Formula	Status
$AD = C + I + G + (X - M)$	Learn it

Formula	Status
Net exports = $X - M$ (negative when imports exceed exports)	Learn it
Equilibrium: $AD = AS$ (planned spending $C + I + G + X - M = \text{real output}$)	Learn it
As shares of GDP: $C\% + I\% + G\% + X\% - M\% = 100\%$	Learn it
Axes: price level (vertical), real output or real GDP (horizontal)	Learn it
AD right: output $\uparrow$, employment $\uparrow$, price level $\uparrow$ (or unchanged in the horizontal section, only price level $\uparrow$ in the vertical section)	Learn it
SRAS left: price level $\uparrow$, output $\downarrow$, employment $\downarrow$	Learn it
AS right: price level $\downarrow$ (or rises less), output $\uparrow$, employment $\uparrow$	Learn it

Key facts to learn:

- **AD slopes down** because of the wealth effect, the interest rate effect and the international trade effect.
- **SRAS shifts** with costs of production; **LRAS shifts** with the quantity and quality of factors of production.
- **LRAS** is vertical, or horizontal $\rightarrow$ upward sloping $\rightarrow$ vertical. Never downward sloping.

How to do it

In the questions we have tagged for this topic (71 questions, 2021–2026: 49 Paper 1 multiple choice and 22 Paper 2 data-response and essay questions), the types came up this often. A Paper 2 question is counted once for each type its parts on this topic cover, and 8 questions cover more than one type, so the counts add up to 82.

Question type	Questions
Identify or explain what shifts AD	17
Identify or explain causes of SRAS and LRAS shifts	14
Predict the effect of one shift on the price level, real output and employment	14
Explain inflation or deflation (demand-side and supply-side) with AD/AS diagrams	11
Predict the outcome of AD and AS shifting together	5
Explain why the AD curve slopes downwards	5
Define AD, label the axes, say what the model shows	5

Question type	Questions
Use AD/AS to analyse a policy's effect	4
Recognise AS and LRAS shapes and their sections	3
Calculate from $AD = C + I + G + (X - M)$	2
Distinguish a movement along a curve from a shift	2

1. Identify or explain what shifts AD (17 questions)

Multiple choice (11 questions):

1. Link the event to **one component** of $C + I + G + (X - M)$.
2. Decide whether that component rises or falls. Rise → AD right; fall → AD left.
3. Reject any option that is a change in the **price level**: that is a movement along AD, never a shift.

Variations you will meet:

- **Contractionary** (AD left): higher taxes or interest rates, lower government spending, more saving (for example a campaign to get households to save), an appreciation (exports dearer, imports cheaper), a larger current account deficit, more spending on imports.
- **Expansionary** (AD right): a depreciation, a larger budget deficit, lower interest rates, tax cuts, higher incomes abroad.
- **The trap with government spending on education** (9708/11/O/N/23 Q21): it shifts AD right because building schools is spending (a rise in G), not because workers become more skilled (that is LRAS, later).
- **Falling domestic demand but rising exports** (9708/12/M/J/22 Q19): the rise in X offsets the fall in C , so AD falls less.

Written parts (6 questions): "explain why two (or three) components of AD may increase", or "assess the likely impact of a change (population, a tax cut) on AD".

1. **One mark per component explained**: name the component and give a reason it rises (lower interest rates make borrowing cheaper, so C and I rise; a cut in income tax raises disposable income, so C rises; a depreciation makes exports cheaper abroad, so X rises).
2. **Draw** AD shifting right on an AD/AS diagram, with the old and new price level and real output marked.
3. For an **"assess the impact on AD"** part (6 marks: up to 3 marks for each side, 4 in total, then 2 for evaluation with 1 kept for a conclusion), take each component the question allows. For a growing population: more consumers (C up), more housing and infrastructure needed (I up), more spending on schools and health care (G up). Other side: if jobs do not keep up, incomes and spending stay low; uncertain households save more; rising prices cut the real value of incomes; a stretched government budget limits G . Then weigh them in context and conclude.

2. Identify or explain causes of SRAS and LRAS shifts (14 questions)

1. **SRAS:** look for a change in costs per unit: wages, raw materials, energy, import prices, indirect taxes, subsidies.
2. **LRAS:** look for a change in the quantity or quality of factors: labour force size, skills and education, capital stock, technology, productivity.
3. **Direction:** higher costs or lost capacity shift the curve left (upwards); lower costs or more capacity shift it right (downwards).

Variations you will meet:

- **Factor prices are not capacity (9708/12/F/M/26 Q19):** a fall in factor prices shifts SRAS, so it does not shift the vertical part of LRAS; immigration of skilled labour, training and new technology do.
- **Higher productivity** lowers costs per unit, so AS shifts "downwards to the right", lowering the price level and raising output.
- **Indirect taxes and subsidies:** higher indirect taxes and lower subsidies both raise firms' costs, so SRAS shifts left.
- **Written parts (4 to 12 marks):** explain what AS is (and how short run differs from long run), then give one reason for SRAS to shift out (such as a fall in energy prices lowering firms' costs) and one for LRAS (such as better training raising labour productivity), each explained in a chain: cause → costs or capacity → curve shifts right → lower price level, more output.
- **How fiscal policy can raise AS, and whether it works (12 marks, 9708/22/F/M/22 Q3):** government spending on training and infrastructure, and tax incentives for investment (or cuts in income and business taxes that encourage work and enterprise), raise the quantity or quality of resources, so LRAS shifts right. Weigh time lags (skills and infrastructure take years), the opportunity cost of the spending and a possible budget deficit, and whether people and firms respond to the incentives. Keep the answer on AS, not AD.
- **Higher productivity and one firm's prices, with a diagram (4 marks, 9708/24/O/N/25 Q1):** this one is about firms' **products**, so the mark scheme expects a market **supply** diagram (price and quantity of the product), not AD/AS. Productivity up → cost per unit down → supply shifts right → the product's price falls (mark the lower price). Consider: firms may keep the cost saving as extra profit rather than cut prices, or other costs may rise at the same time.

3. Predict the effect of one shift on the price level, real output and employment (14 questions)

Multiple choice (8 questions), usually with a diagram:

1. **Turn the event into a shift.** Ask: is it spending (AD), costs (SRAS) or capacity (LRAS)? Which way?
2. **Sketch it** in the margin, starting from the equilibrium shown.
3. **Read off** the new price level and real output. Employment moves with real output.
4. **Check the section of AS** if the diagram has a three-section curve: horizontal means output changes but prices don't; vertical means prices change but output and employment don't.

Variations you will meet:

- **Commodity exporters:** when the world price of a country's main export rises, export revenue rises, so AD shifts right (output and price level both up).
- **A recession abroad** cuts demand for exports: AD shifts left. At full employment this lowers inflation and raises unemployment.
- **What prevents a rising AD from raising prices?** More productive capacity (AS shifting right as fast as AD).
- **Where will a public project raise prices most?** When it uses a lot of imported materials **and** unemployment is low (the economy is near the vertical part of AS, and costs rise).
- **AD rises with a vertical LRAS:** the price level rises, real output does not, so nominal GDP rises but real GDP stays the same.
- **Reverse form:** given the move from one equilibrium to another, pick the cause. Price level up with output down means SRAS left; both up means AD right; both down means AD left; price level down with output up means AS right.

Written parts (6 questions): "With the help of an AD/AS diagram, explain why AD may increase and consider whether it will always lead to inflation" (or "when it may become a problem"). These are **8 marks, point-marked**: up to **3 for knowledge (AO1)**, **3 for analysis (AO2)** and **2 for evaluation (AO3)**, with 1 evaluation mark kept for a justified conclusion.

1. **Knowledge (3 points):** what AD is, with its components; an accurately labelled diagram (price level and real GDP on the axes, the starting equilibrium); the shift to the right with the new, higher price level and real output marked. Where the question asks for reasons, a brief reason for each component rising.
2. **Analysis (3 points):** the rise in AD can cause demand-pull inflation; how much depends on where AD meets AS (spare capacity: mostly more output; near full capacity: mostly higher prices); some spending (investment, infrastructure, subsidies, education) also raises LRAS, which eases the pressure on prices.
3. **Evaluation (2 points):** weigh the conditions, then a one-sentence conclusion, for example "a rise in AD causes significant inflation only when the economy is close to full capacity, so it will not always cause inflation".

A **12-mark (b) part** may ask whether a rise in AD is of overall benefit, or the best way to cut unemployment: benefits (growth, jobs, higher tax revenue) against problems (inflation near full capacity, a current account deficit as imports rise, no effect on structural unemployment), compared with raising AS, then a justified conclusion.

4. Explain inflation or deflation with AD/AS diagrams (11 questions)

Usually 8-mark essay (a) parts, point-marked 3 + 3 + 2 as in type 3; some are shorter data-response parts.

1. **Define** the term: inflation is a sustained rise in the general price level; deflation a sustained fall.
2. **Draw one diagram for each cause**, each with its own labels:
 - demand-pull inflation: AD shifts right, price level rises, output rises;
 - cost-push inflation: SRAS shifts left, price level rises, output falls (a movement up along AD);

- demand-side deflation: AD shifts left, price level falls, output and employment fall;
- supply-side deflation: AS shifts right, price level falls, output and employment rise.

3. **Analyse causes and results:** say what triggers each (wage rises, dearer imports after a depreciation, a rise in energy prices; a rise in consumer confidence, a tax cut; a collapse in confidence; new technology) and what follows for output and employment (a fall in AD brings recession and rising unemployment; a rise in AS brings growth, more jobs and less inflationary pressure).
4. **Evaluate:** which is more damaging, and why. Demand-side deflation is usually more damaging than supply-side deflation, which comes with growth; cost-push inflation is usually more damaging than demand-pull because output falls as prices rise. Finish with a justified conclusion.

Variations you will meet:

- **Applying the type of inflation to your own economy (9708/23/O/N/24 Q4):** evaluation marks need a **named** economy and a view on whether cost-push or demand-pull factors mattered more there.
- **Short data part: the main type of inflation, with a diagram (2 marks, 9708/22/M/J/24 Q1):** name the one type the extract points to (there, rising energy costs: cost-push) and draw only that shift. Answers showing both types got no marks.
- **A labour shortage** pushes up wage rates, so it is cost-push (SRAS left), not demand-pull.
- **Wage rises causing both types** in a longer part: higher wages raise firms' costs (SRAS left: cost-push) and households' incomes (AD right: demand-pull).

5. Predict the outcome of AD and AS shifting together (5 questions)

All multiple choice.

1. Turn **each** event into its own shift (for example more government spending: AD right; higher raw-material costs: SRAS left).
2. For each of the price level and real output, ask whether the two shifts push it the **same way** (certain) or **opposite ways** (uncertain: it depends on the sizes).
3. Pick the option where the certain result is stated and the other is "uncertain".

Variations you will meet:

- AD right + SRAS left: price level certainly up, output uncertain (9708/12/F/M/22 Q22).
- "Which combination will **definitely** raise the price level **and** cut output?": only SRAS falling with AD unchanged; if AD also changes, one result becomes uncertain.
- Workers leaving the country (LRAS left) with an appreciation (exports dearer, AD left): output certainly falls.

6. Explain why the AD curve slopes downwards (5 questions)

All multiple choice. The correct option is one of the three effects: a fall in the price level **raises the real value of money and assets** (wealth effect), **lowers interest rates**, or **makes domestic goods cheaper than foreign ones**. Reject options that reverse these (interest rates rising, the real value of money falling, imports

becoming more competitive), that describe AS (productivity lowering costs), or that rely on expectations of further price falls.

7. Define AD, label the axes, say what the model shows (5 questions)

All multiple choice.

- AD is **total planned spending on the economy's output at each price level** $= C + I + G + (X - M)$. It is **not** the sum of all the market demand curves, and it does not include saving or taxation.
- Axes: price level (vertical), real output or real GDP (horizontal). SRAS has a **positive** gradient.
- The AD/AS model shows the **price level** and **real output** directly; not nominal income, unemployment or wages (employment only indirectly, through output).

8. Use AD/AS to analyse a policy's effect (4 questions)

Paper 2 parts: two are 8-mark point-marked essay (a) parts (marked 3 + 3 + 2 as in type 3), and two are 6-mark data parts (9708/22/M/J/22 Q1 (c), a move to a budget surplus and inflation; 9708/21/O/N/21 Q1 (d), monetary policy for high investment and low inflation). Explain the policy, show its effect on AD (and AS) with a diagram, then consider whether it always works. In the 6-mark data parts, analysis of the two sides (for example the effect through AD, then the effect through AS) earns up to 5 marks, about 3 for one side and 2 or 3 for the other, and 1 mark is kept for a conclusion.

1. **Knowledge**: say what the policy is (expansionary fiscal policy: more government spending and/or lower tax rates) and what AD is; draw an accurate AD/AS diagram.
2. **Analysis, one link at a time**: policy → households' or firms' decision (a tax cut raises disposable income; a lower interest rate makes borrowing cheaper and saving less rewarding) → a component rises (C, I) → AD shifts right → real GDP rises.
3. **Evaluation**: whether it always works, and a conclusion.

Variations you will meet:

- **Whether expansionary fiscal policy always raises AD** (9708/22/F/M/25 Q5): it may not if the tax cut is saved rather than spent (low confidence, job insecurity), if many people pay no income tax and so gain nothing from the cut, if much of the extra spending goes on imports, or if higher government borrowing raises interest rates and cuts investment.
- **Whether the resulting growth always brings inflation**: only if the economy nears full capacity; investment can raise LRAS as well as AD.

9. Recognise AS and LRAS shapes and their sections (3 questions)

All multiple choice. LRAS can be **vertical** or have **three sections** (horizontal, upward sloping, vertical). It can **never slope downwards**. A fall in AD leaves employment unchanged for certain only when LRAS is **vertical** (only the price level falls). If a rise in AD raised output with **no** change in the price level, AD must have started on the **horizontal** section.

10. Calculate from $AD = C + I + G + (X - M)$ (2 questions)

1. **Equilibrium from figures:** add $C + I + G + X - M$ for each level of output and pick the one where the total equals real output.
2. **A missing share:** the shares of C , I , G and X in total demand, minus the share of M , add up to 100%. Rearrange for the missing one, for example $M\% = C\% + I\% + G\% + X\% - 100\%$.

11. Distinguish a movement along a curve from a shift (2 questions)

All multiple choice. A **movement along AD** is caused by a change in the price level, which comes from a **shift in AS** (such as lower taxes on firms raising SRAS). A **movement along AS** comes from a **shift in AD** (such as a rise in export demand). Changes in costs, productivity or taxes on goods shift AS; they do not move the economy along it. A change in the price level can never shift AD.

Worked examples

Example 1

In an economy, firms' energy costs fall sharply. At the same time the government raises the rate of income tax. What is the certain effect on the economy?

- **A** The price level falls.
- **B** The price level rises.
- **C** Real output falls.
- **D** Real output rises.

[1]

Cheaper energy lowers firms' costs, so SRAS shifts right. The higher income tax cuts disposable income and consumption, so AD shifts left. Both shifts push the price level down, so a fall in the price level is certain. They push real output in opposite directions (more from SRAS, less from AD), so output could rise, fall or stay the same. The answer is **A**. (1)

Example 2

In one year, an economy's spending (in \$ billions) was: consumption 640, investment 180, government spending 220, exports 260 and imports 300.

(a) Calculate aggregate demand and the value of net exports. [2]

(b) The next year exports fall by \$40bn and imports fall by \$10bn, with the other components unchanged. Calculate the percentage change in aggregate demand. [2]

(a) $AD = 640 + 180 + 220 + (260 - 300) = 1000$, so AD is \$1000bn (1). Net exports are $260 - 300 = -40$, a deficit of \$40bn (1).

(b) New net exports are $(260 - 40) - (300 - 10) = 220 - 290 = -70$, so new AD is $640 + 180 + 220 - 70 = 970$ (1). The change is $\frac{970 - 1000}{1000} \times 100 = -3\%$: AD falls by 3% (1).

Example 3

With the help of an AD/AS diagram, explain why an increase in consumer confidence may increase aggregate demand and consider whether it will always increase employment. [8]

How the marks work: this is marked like the 8-mark (a) parts in the mark schemes. The knowledge marks are for what AD is, a diagram with its starting equilibrium, and the shift with the new price level and real GDP marked (as in **9708/23/M/J/24 Q4**). Each **link in the chain** from the cause to spending, to AD and to real GDP is an analysis mark (as in **9708/22/F/M/24 Q5**, where the chain runs from interest rates to borrowing, to spending, to real GDP). Evaluation needs the condition (where AD meets AS) and a conclusion.

Diagram: the "increase in aggregate demand" diagram in "Understand it": price level and real GDP on the axes, SRAS, AD1 shifting right to AD2, with $P1 \rightarrow P2$ and $Y1 \rightarrow Y2$ marked.

Aggregate demand is the total that households, firms, the government and foreign buyers plan to spend on the country's output at each price level, made up of $C + I + G + (X - M)$ (**1, AO1**). On the diagram, AD1 crosses SRAS at the starting equilibrium, price level $P1$ and real GDP $Y1$ (**1, AO1**). AD then shifts right to AD2, and the new equilibrium has a higher price level $P2$ and higher real GDP $Y2$ (**1, AO1**).

When households feel more confident about their jobs and future incomes, they save a smaller share of their income and are more willing to borrow (**1, AO2: the cause changes saving and borrowing**). So consumption rises at every price level, and since consumption is a component of AD, AD shifts right from AD1 to AD2 (**1, AO2: the spending change shifts AD**). Firms meet the extra sales by raising real output from $Y1$ to $Y2$; because labour is a derived demand, they hire more workers, so employment rises (**1, AO2: AD raises real GDP, and with it employment**).

The effect on employment depends on where AD meets AS. If the economy is already at full capacity, on the vertical part of AS, firms cannot find more workers, so the extra spending only raises the price level (**1, AO3**). So higher consumer confidence increases employment when there is spare capacity, but close to full employment it mainly causes demand-pull inflation and employment hardly changes (**1, AO3: justified conclusion**).

(Knowledge 3, analysis 3, evaluation 2: **8/8**.)

Example 4

Assess whether an increase in aggregate supply is always better for an economy than an increase in aggregate demand. [12]

Model answer (one paragraph per step). The brackets say which level each part reaches. Knowledge and analysis are marked together out of 8 (Table A: Level 1 is 1–2, Level 2 is 3–5, Level 3 is 6–8), and these (b) mark schemes and the examiner reports add that a one-sided answer goes no higher than mid-Level 2, while Level 3 needs a balanced answer. Evaluation is marked out of 4 (Table B: Level 1, 1–2, for simple, undeveloped comments and a vague conclusion; Level 2, 3–4, for developed, well-supported evaluative comments **and** a justified conclusion that answers the exact question).

1. **Definitions and diagrams.** AD is the total planned spending on the economy's output at each price level, $C + I + G + (X - M)$; AS is the total real output producers plan to sell at each price level. Draw one diagram with AD shifting right (price level and output both rise) and one with AS shifting right (output rises, price level falls). (*Table A: a few relevant knowledge points and accurate diagrams, but no analysis yet. On its own this is Level 1.*)
2. **Why an increase in AS is better.** A rise in LRAS, from better education or new technology, increases productive capacity. Real output and employment rise **and** the price level falls or rises more slowly, so growth comes without inflation. Lower prices also make exports more competitive. It raises the maximum the economy can produce, so growth can last. The AS diagram shows this: as AS shifts right along an unchanged AD, the equilibrium moves down AD, so the price level falls from P1 to P2 while real output rises from Y1 to Y2. (*Table A: one side as a developed, accurate chain: cause → capacity → output, jobs and prices, with its diagram explained. With paragraph 1 this is mid-Level 2 (4), because a one-sided answer goes no higher.*)
3. **Why an increase in AD may be better, or needed.** When there is a lot of spare capacity (a recession), raising AS adds capacity that is not used: output is limited by spending, not by capacity, so only a rise in AD will raise output and employment quickly. Supply-side changes take years (training, building infrastructure), while a cut in interest rates or taxes works within months. An increase in AS can also lower the price level at a time when deflation is already a problem. The AD diagram shows the difference: as AD shifts right along SRAS, real output rises from Y1 to Y2 and employment with it, while the price level rises only a little, from P1 to P2, because there is spare capacity. (*Table A: the other side, explained and accurate, with both diagrams now read and explained. The answer is now balanced: Level 3, 8 of the 8.*)
4. **Evaluation.** Which is better depends on where the economy is on AS. Near full capacity, a rise in AD mostly causes demand-pull inflation, and a rise in AS is clearly better. With high unemployment, a rise in AD is needed first. It also depends on the time scale: AD works fast, AS lasts longer. Often the best outcome is both together, such as spending on infrastructure, which raises AD now and LRAS later. (*Table B: developed, reasoned evaluative comments that weigh both sides against the conditions. That meets one of the two Level 2 descriptors, but there is no conclusion yet, so on its own it only just reaches Level 2: 3 of the 4.*)
5. **Conclusion.** An increase in AS is **not always** better: it is better in the long run and near full capacity, but in a recession an increase in AD does more for output and jobs. (*Table B: a justified conclusion that answers "always". With paragraph 4, both Level 2 descriptors are now fully met: 4 of the 4, so $8 + 4 = 12/12$.*)

Common mistakes

- **Wrong axes and labels.** Examiner reports from November 2021, June 2022, March 2023 and June 2023 describe candidates labelling the axes "price" and "quantity" (or P and Q), or the curves "D" and "S". On an AD/AS diagram write **price level** and **real output** (or real GDP), and **AD, SRAS, LRAS**. (A question about one product's price, such as [9708/24/O/N/25 Q1](#), wants a market supply and demand diagram instead.)
- **No diagram, or an unexplained one.** When a question says "with the help of a diagram", a missing diagram loses a knowledge mark, and a diagram that is never referred to in the text earns little. Mark the old and new price levels and outputs, and explain the shift in words.
- **Asserting inflation from a diagram.** Reading a higher price level off an AD/AS diagram and writing "so there will be inflation" is not analysis. Explain why prices rise (spare capacity running out, costs rising) and how much depends on the shape of AS.
- **Forgetting that AS can shift at the same time.** Investment and some government spending raise LRAS as well as AD, so the rise in AD may not be inflationary; mark schemes credit this point.
- **Mixing up the type of inflation.** A shortage of labour pushes up wage costs (cost-push, SRAS left); it is not a rise in demand. When a question asks for the main cause, name one type and draw only that shift.
- **Writing about AD when the question is about aggregate supply or long-run capacity.** If the question is how to raise aggregate supply or long-run growth, write about costs, productivity and capacity (LRAS). In March 2022 many answers to a question on fiscal policy and AS ([9708/22/F/M/22 Q3](#)) wrote about AD and then claimed AS would simply rise with it, which gained little; in June 2023, answers built on rising AD rarely got beyond the middle of Level 2.
- **Confusing the rate of inflation with the price level.** A falling but positive inflation rate means prices are still rising, only more slowly. Only deflation means prices fall.
- **Shifting AD for a price-level change.** A change in the price level moves the economy along AD; it never shifts AD.
- **One-sided evaluation.** "Consider" and "assess" questions need both sides; a one-sided answer gets no evaluation marks.

How to get the marks

- **Diagrams earn marks on their own.** An accurately labelled AD/AS diagram (axes, curves, the shift, the old and new equilibrium price level and output) is usually worth 1 knowledge mark in an 8-mark part. When a question asks for two causes (demand-side and supply-side), draw a separate diagram for each: each correct diagram can earn its own mark.
- **8-mark (a) parts are point-marked:** up to 3 for knowledge, 3 for analysis and 2 for evaluation. Define the key terms (AD, AS, inflation, deflation) because definitions earn knowledge marks quickly.
- **Analysis is a chain:** cause → component or cost → curve shifts → price level, output, employment. Each correct link can be a mark, so write every link.
- **"Consider", "to what extent", "assess":** give a judgement with a reason that depends on the situation (spare capacity, the shape of AS, the time scale, the size of the shifts), then a one-sentence conclusion that answers the question. One evaluation mark is kept for this conclusion.

- **Context.** In data-response parts, and when a question names "your own economy" or a type of country, evaluation must use that economy's situation to earn marks.
- **12-mark (b) parts** are levels-marked: 8 for knowledge and analysis (Level 3, 6–8, needs accurate, explained, balanced analysis with any diagram fully explained; a one-sided answer goes no higher than mid-Level 2) and 4 for evaluation (the top level, 3–4, needs developed evaluative comments **and** a justified conclusion). A one-sided answer gets no evaluation marks. "Always" in a question is an invitation to argue "not always, because ...".
- **6-mark data parts:** up to 3 marks for each side (4 in total), then 2 for evaluation.
- **Multiple choice:** draw the diagram in the margin every time, shift the curve the event affects, and read off both the price level and output before looking at the options.

Quick check

1. For each event, say whether it shifts AD, SRAS or LRAS (or causes a movement along a curve), and in which direction: (a) a national rise in wage rates; (b) a cut in income tax; (c) more skilled workers arriving through immigration; (d) a rise in the general price level.
2. An economy's aggregate demand is \$800bn. Consumption is \$500bn, investment \$120bn, exports \$210bn and imports \$230bn. Calculate government spending.
3. An economy is operating on the vertical section of its LRAS. Aggregate demand rises. What happens to real output, the price level and employment?
4. Give two reasons why the AD curve slopes downwards.
5. Explain the difference between a movement along the AD curve and a shift of the AD curve. **[2]**

Answers

1. (a) SRAS shifts left (higher costs of production). (b) AD shifts right (disposable income and consumption rise). (c) LRAS shifts right (more factors of production); AD also shifts right, as the new workers spend. (d) A movement along AD (and along AS), not a shift.
2. $800 = 500 + 120 + G + (210 - 230)$, so $G = 800 - 500 - 120 + 20 = 200$: government spending is \$200bn.
3. Real output and employment stay the same (the economy is at full capacity); the price level rises. Nominal GDP rises but real GDP does not.
4. Any two: a lower price level raises the real value of money and assets, so people spend more (wealth effect); it tends to lower interest rates, encouraging borrowing to spend (interest rate effect); it makes domestic goods more competitive, so exports rise and imports fall (international trade effect).
5. A movement along AD is caused by a change in the price level (1). A shift is caused by a change in anything else that affects a component of AD at every price level, such as income tax or the exchange rate (1).

Past questions to try

- 9708/12/O/N/25 Q16: the effect of a cut in government spending on a three-section AS.
- 9708/13/M/J/25 Q18: two shifts at once, rising costs and more government spending.
- 9708/11/M/J/24 Q15: the equilibrium level of real output from a table of components.
- 9708/23/O/N/24 Q4: cost-push inflation with a diagram, and the costs and benefits of inflation.