Surname	StemUp Model Solution	Centre Number	Candidate Number
First name(s)			2

GCE AS/A LEVEL

S23-2520U10-1

2520U10-1

MONDAY, 15 MAY 2023 – MORNING

ECONOMICS – AS unit 1
Introduction to Economic Principles

1 hour 15 minutes

For Examiner's use only		
Question	**Maximum Mark**	**Mark Awarded**
1–15	**15**	
16	**7**	
17	**7**	
18	**10**	
19	**16**	
Total	**55**	

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01

ADDITIONAL MATERIALS

A calculator.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use gel pen or correction fluid.

You may use a pencil for graphs and diagrams only.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. If you run out of space, use the additional page(s) at the back of the booklet, taking care to number the question(s) correctly.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part-question.

You are reminded of the need for clear and accurate written communication.

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SECTION A

For each question in Section A, write the letter (**A**, **B**, **C**, **D** or **E**) that corresponds to your answer in the box provided.

You are advised to spend approximately **30 minutes** on this section.

1. Rational consumers seek to maximise their: [1]

A Profit

B Marginal private benefits

C Utility

D Marginal social benefits

E Revenue

C

2. Which one of the following is an injection into the circular flow of income? [1]

A Consumption

B Taxation

C Income

D Exports

E Saving

D

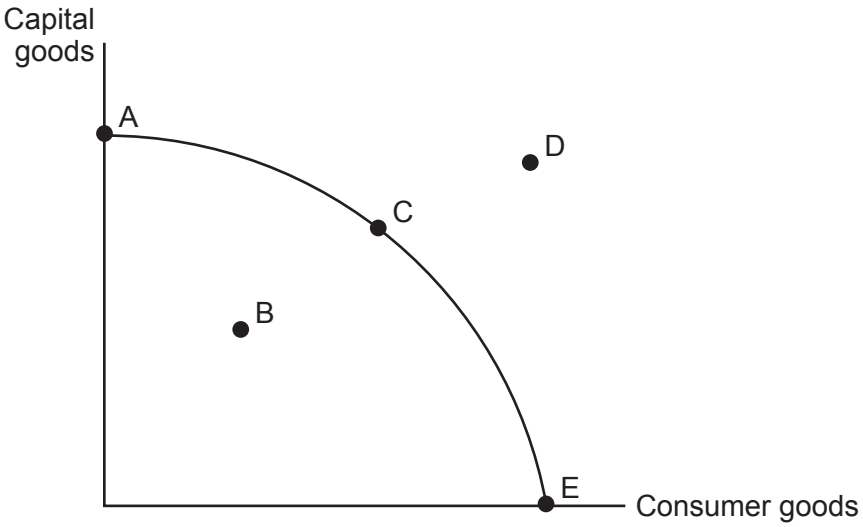
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Questions 3 and 4 refer to the diagram below.

The diagram below shows a production possibility frontier (PPF) for an economy.



3. Which one of the following correctly describes the relevant point labelled on the diagram? [1]

A	Efficient	Attainable
B	Inefficient	Unattainable
C	Inefficient	Unattainable
D	Efficient	Attainable
E	Efficient	Unattainable

A

4. Which one of the following can be concluded from the diagram? [1]

A The opportunity cost of increasing production of consumer goods is constant

B The rate of future economic growth will be the highest at point E

C The factors of production in this economy are perfectly substitutable

D The rate of future economic growth will be the highest at point B

E The opportunity cost of moving from point B to point C is zero

E

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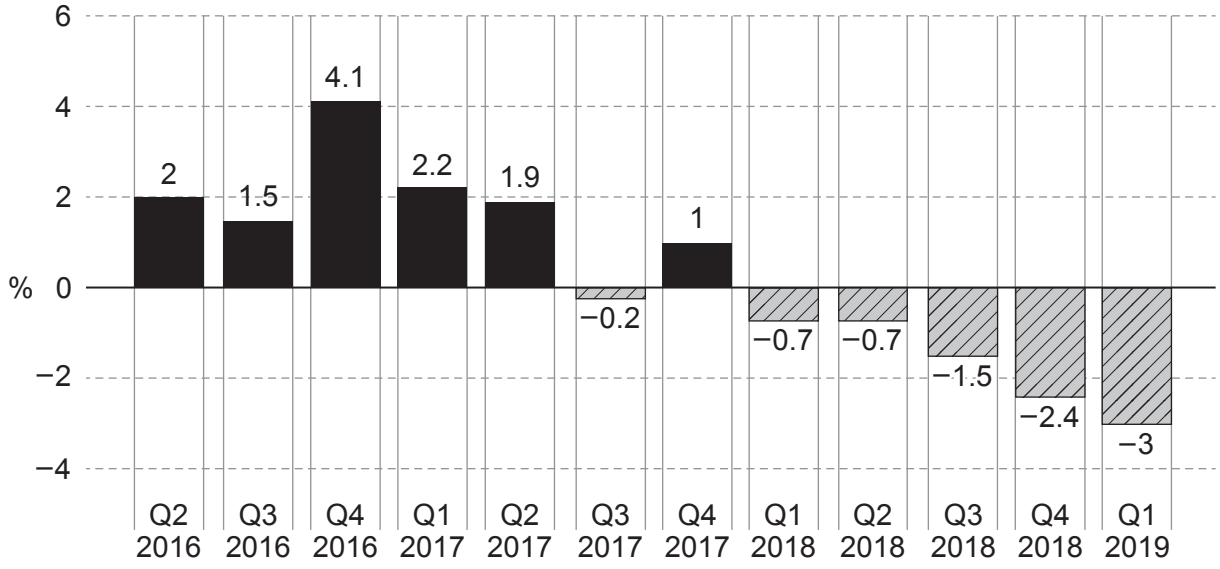
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5. The chart below gives information on the quarterly percentage change in average house prices in Australia from mid-2016 (Q2) to the beginning of 2019 (Q1).

Quarterly percentage change in average house prices in Australia



Source: TradingEconomics.com

From the chart it can be concluded that, over the period shown, average house prices in Australia: [1]

A Fell in Q1 2017

B Were at their highest in Q4 2016

C Were unchanged in Q2 2018 from Q1 2018

D Were at their highest in Q4 2017

E Were 3% lower in Q1 2019 than in Q2 2016

D

6. Across Europe, milk prices rose by 50% in 2021. What was most likely to have caused this price rise? [1]

A Increased demand for non-dairy milk substitutes

B Decreased tariffs on fuel used by dairy farmers

C Increased costs of fertiliser and animal feed

D Decreased wage rates for dairy farm workers

E Increased surpluses of milk around the world

C

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7. The government reduces the amount of welfare payments (Jobseeker's Allowance) that is paid to its unemployed citizens. As a result, businesses see more people applying for their job vacancies.

This is an example of which economic concept? [1]

A Workplace benefits

B The National Living Wage

C Demand-side fiscal policy

D The Laffer curve

E Incentive to work

E

8. A government report found that expenditure on food would increase by $0.54 in Tanzania and by $0.02 in the USA if household incomes rose by $1 in each country.

Which one of the following can be concluded from the data? [1]

A Food is an inferior good in the USA

B Demand for food is more income inelastic in the USA than in Tanzania

C Food is a substitute good in the USA

D Demand for food is more price elastic in Tanzania than in the USA

E Food is an inferior good in Tanzania

B

9. Which one of the following would be most likely to cause an increase in an economy's level of aggregate demand? [1]

A An increase in the value of the economy's trade deficit

B An increase in the economy's base interest rate

C An increase in the economy's unemployment rate

D An increase in the value of the economy's budget deficit

E An increase in the economy's rate of corporation tax

D

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10. The table below shows the annual percentage increase in the UK National Living Wage (NLW) rate for workers aged 25 and over. It also shows the annual inflation rate, from April 2019 to April 2021.

Date	Percentage increase in the UK NLW (aged 25 and over)	Annual inflation rate
April 2019	4.9%	2.1%
April 2020	6.2%	0.8%
April 2021	2.2%	1.5%

Over the period shown, for workers earning the UK National Living Wage: [1]

A Real incomes rose most in April 2020

B Money incomes rose by 2.8% in April 2019

C Average prices fell in April 2020

D Average prices were at their highest in April 2019

E Real incomes rose by 3.7% in April 2021

A

11. In 2019, almost 38% of all US cinema ticket sales were to see Disney movies. When Disney negotiated the rights to show *Star Wars: The Last Jedi* with cinemas, it insisted the cinemas give them 65% of ticket revenue from the film, a new high for the industry. At the same time, some commentators complained that the quantity and quality of movies made by Disney had fallen.

This may be an example of market failure caused by: [1]

A Monopoly power

B Income inequality

C Volatile prices

D Demerit goods

E Public goods

A

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12. Which one of the following policies would be expected to reduce the level of unemployment in the long run?

[1]

A An increase in sales taxes

B Increasing labour market flexibility

C Reduction in import tariffs

D Increasing interest rates

E Raising National Insurance contributions

B

13. If there was a significant outflow of the Pound Sterling from the UK, which one of the following would be most likely to occur? [1]

A The price of UK exports would rise

B There would be an appreciation of the Pound Sterling

C There would be a fall in the value of the exchange rate of the Pound Sterling

D Interest rates would fall

E The UK government's budget deficit would worsen

C

14. In November 2021, the price of coal rose to its highest level since 2009. This was a result of increased demand from electricity producers, who switched to using coal from natural gas, after the price of natural gas doubled. A coal industry analyst said that coal production could not respond quickly enough to the increased price, as underinvestment in recent years had reduced the ability of coal producers to quickly increase their output. [1]

This implies that:

A The supply of natural gas is relatively price elastic

B Coal and natural gas have a negative cross elasticity of demand

C The demand for natural gas is perfectly price inelastic

D The demand for coal is relatively price elastic

E The supply of coal is relatively price inelastic

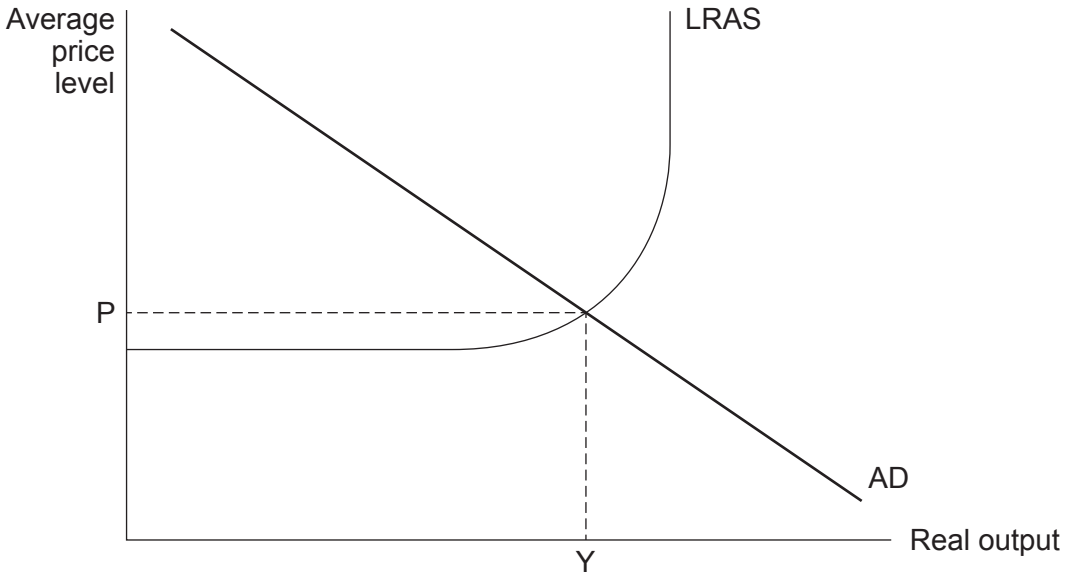
E

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15. The aggregate demand and aggregate supply diagram below represents an economy in equilibrium. [1]



All other things being equal, improvements in technology throughout the economy will most likely lead to:

	Equilibrium level of real output	Equilibrium level of average prices
A	Increase	Decrease
B	Decrease	Decrease
C	No change	Increase
D	Decrease	Increase
E	No change	No change

A

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SECTION B

Answer **all** the questions in the spaces provided.

16. The table below shows the price that a student is **willing** to pay to make repeated visits to an indoor go-karting centre in Cardiff over her summer holiday:

Visits to the go-karting centre	Price the student is willing to pay (£)
1st	20
2nd	18
3rd	14
4th	9
5th	3

(a) With reference to the data, outline what is meant by the term 'diminishing marginal utility'. [2]

Diminishing marginal utility means that each additional unit consumed gives less extra satisfaction (utility) than the one before. The student is willing to pay £20 for her 1st visit but only £18 for the 2nd and just £3 for the 5th, so the marginal benefit of each extra visit falls.

The actual price of a visit to the indoor go-karting centre is £10 per person.

(b) Calculate the student's total consumer surplus from her visits to the centre over her summer holiday. [2]

At £10 she makes 3 visits (the 4th is only worth £9 < £10).

CS = (£20 - £10) + (£18 - £10) + (£14 - £10) = £10 + £8 + £4 = £22

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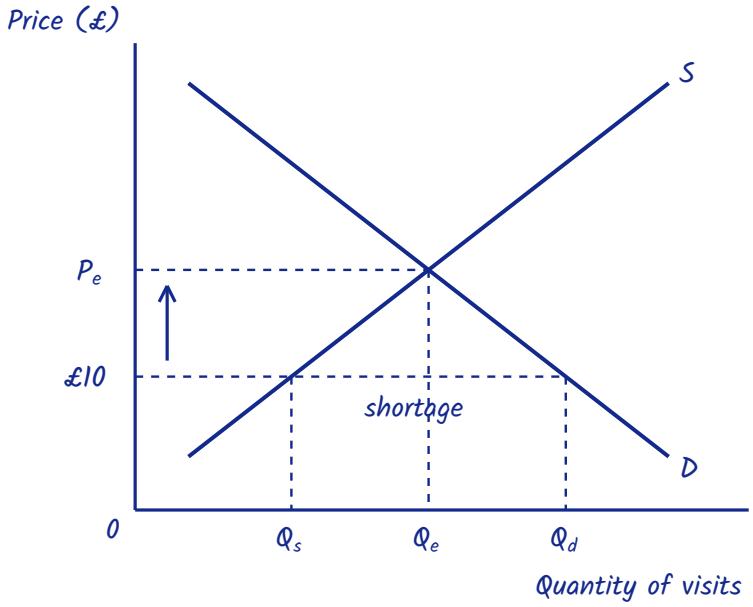
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The go-karting centre finds that at a price of £10 per person, they are always fully booked and must turn customers away.

(c) Explain how the price of a visit to the go-karting centre should change to allocate resources more efficiently. [3]

The price should rise above £10. At £10 there is excess demand (a shortage): quantity demanded exceeds the places available, so customers are turned away. A higher price rations the scarce places: quantity demanded contracts and places go to the consumers who value them most (rationing function of the price mechanism). The higher price also acts as a signal and incentive: the profit motive encourages the centre to extend quantity supplied, e.g. longer opening hours. Price rises until the shortage is eliminated at equilibrium P_e, Q_e, as the diagram shows, which is allocatively efficient.

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17. The southern Andalusia region of Spain is home to the world's largest olive oil industry, accounting for about half of global output. The price of olive oil fell by 44% from autumn 2018 to autumn 2019 after a record harvest.

Additionally, in September 2019, the USA imposed 25% import tariffs on several European agricultural products, including Spanish olive oil. At this time, only 5% of the olive oil consumed in the USA was produced in the USA.

(a) With reference to the data, outline why the prices of agricultural goods, such as olive oil, tend to be volatile. [4]

Agricultural prices are volatile because both demand and supply are price inelastic, so any shift in supply causes a proportionately large change in price. Demand is inelastic because olive oil is a staple ingredient with few close substitutes and takes a small share of income. Supply is inelastic in the short run because olive trees take years to grow and the harvest is fixed once picked, so farmers cannot quickly adjust output to price. Supply is also variable because it depends on weather, drought and crop disease, which shift supply unpredictably. For example, a record harvest in Andalusia, which produces about half of global output, shifted supply right, and because demand is inelastic the price had to fall by 44% from autumn 2018 to autumn 2019 to clear the extra olive oil.

(b) Explain **one** likely benefit to the USA of imposing a tariff on Spanish olive oil. [3]

One benefit is that the tariff raises tax revenue for the US government. Since only 5% of the olive oil consumed in the USA was produced there, around 95% is imported, so a 25% tariff applies to a very large volume of Spanish imports. Because US demand for olive oil is fairly price inelastic, imports will fall only slightly, so the tariff revenue will be substantial and could be spent on public services or used to reduce the budget deficit.

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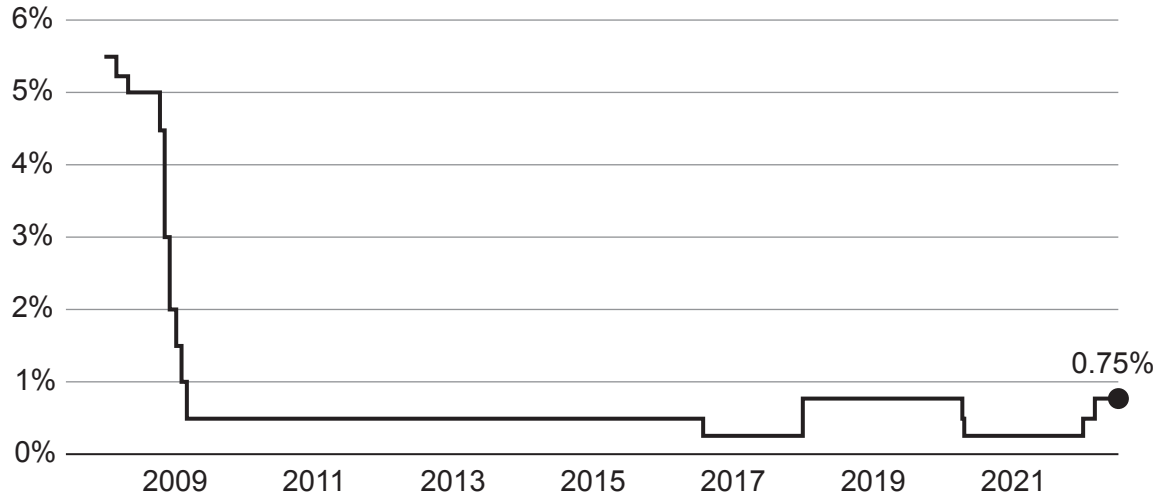
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18. The chart below shows the base interest rate set by the Bank of England's Monetary Policy Committee (MPC) between January 2008 and March 2022.



Source: Bank of England

In March 2022, the MPC raised the base interest rate to 0.75%. They stated that policymakers would have to balance further rises in the base rate to control inflation against cutting the base rate to support growth.

(a) **Apart from conducting monetary policy**, explain **one** role of the Bank of England. [2]

The Bank of England acts as lender of last resort to the banking system. It lends to commercial banks facing a liquidity crisis or near collapse, to prevent bank runs and maintain financial stability, as it did in 2008.

(b) Explain **two** factors the MPC is likely to take into account when setting the base interest rate and evaluate how useful each factor may be to the MPC. [8]

1. Wage growth. Rising average earnings raise firms' costs of production, which shifts SRAS left and causes cost-push inflation. Higher wages also raise consumption, increasing AD and causing demand-pull inflation. If wage growth is rapid, the MPC is likely to raise the base rate (as in March 2022, to 0.75%) to keep inflation near the 2% target.

However, the usefulness of wage data is limited. Average figures hide large regional and sectoral variation, and wages may be rising because productivity is rising, which is not

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inflationary. Also, because of the 18 to 24 month time lag of monetary policy, the MPC needs to forecast future wage growth, and current data can be quickly out of date or later revised.

2. GDP growth and spare capacity. If real GDP is growing faster than trend and the output gap is closing, a rise in AD will mainly raise the price level rather than output, so the MPC would raise rates. If there is lots of spare capacity, as after 2008 and 2020 when rates were cut to 0.5% and 0.1%, a rate cut boosts output with little inflation.

This is very useful as it shows the trade-off between controlling inflation and supporting growth. However, GDP data are published with a lag and are often revised, and spare capacity cannot be measured directly, so estimates of the output gap may be inaccurate. Consumers and firms also do not always behave rationally, so a rate change may not affect spending as predicted.

Overall, no single factor is enough: the MPC prioritises its inflation forecast and weighs a range of indicators together, so each factor is useful but only alongside others.

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19. In 2020–21, median household disposable income in the UK was £31 385, and mean household disposable income was £37 622 (Source: ONS).

(a) With reference to the data, outline why there was a difference between the median value of household disposable income and the mean value of household disposable income. [3]

The mean is the total of all household incomes divided by the number of households, while the median is the middle value when incomes are ranked in ascending order. The mean (£37 622) is £6237 higher than the median (£31 385) because income is positively skewed: a relatively small number of households with very high incomes pull the mean up, but do not affect the middle value.

The table below shows average household income before direct taxation and average household income after direct taxation by quintile group for the UK in 2020–21.

Quintile	Average household income before direct taxation (£)	Average household income after direct taxation (£)
Bottom	15 463	14 196
2nd	27 201	23 378
3rd	38 148	31 503
4th	52 673	41 901
Top	110 132	78 131

(b) With reference to the data, describe what is meant by 'progressive taxation'. [3]

A progressive tax is one where higher income earners pay a higher proportion (percentage) of their income in tax. The bottom quintile pays £15 463 - £14 196 = £1267 in direct tax, which is 8.2% of income, while the top quintile pays £110 132 - £78 131 = £32 001, which is 29.1% of income.

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(c) **Apart from progressive taxation**, discuss policies the UK Government could use to reduce income inequality within the economy. [10]

Income inequality is the degree to which income is unequally distributed between households in an economy, shown by the gap between top and bottom quintiles.

One policy is raising the National Minimum Wage. A higher minimum wage directly increases the income of the lowest paid workers, narrowing the gap with high earners, and also increases their incentive to work. However, if set above the equilibrium wage it creates excess supply of labour, so firms may cut jobs or hours, especially small firms in low-wage regions. Those made unemployed lose income, so the policy could increase inequality, a form of government failure. Its success depends on how large the rise is and how wage elastic the demand for labour is. A regional minimum wage could reflect higher living costs in London and the south east.

A second policy is more generous, means-tested benefits, such as raising Universal Credit. This transfers income directly to the poorest households and works quickly. However, it has an opportunity cost, since the money could be spent on the NHS or education, or requires higher taxes or borrowing. Generous benefits may also reduce the incentive to work, creating a poverty or unemployment trap, which could reduce long-run incomes.

A third policy is investment in education and training, for example expanding subsidised childcare or restoring maintenance grants for students from low-income families. This raises the skills, productivity and employability of low earners, so they can earn higher wages, tackling a root cause of inequality. It is a supply-side policy that also increases LRAS. However, there is a long time lag before benefits appear and it is costly, and some may not take up the opportunities.

Overall, the most effective approach is likely a combination: benefits and minimum wage rises reduce inequality in the short run, while education and training provide a long-run solution without damaging incentives. Prioritisation depends on the government's budget, the state of the labour market and how quickly it wants results.

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