

Surname <i>StemUp Model Solution</i>	Centre Number	Candidate Number
First name(s)		2



GCE A LEVEL

A520U10-1



MONDAY, 5 OCTOBER 2020 – MORNING

ECONOMICS – A level component 1

Economic Principles

1 hour 30 minutes

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1-20	20	
21	8	
22	8	
23	8	
24	8	
25	8	
Total	60	

A520U101
01

ADDITIONAL MATERIALS

A calculator.

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen.

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 continuation pages 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.

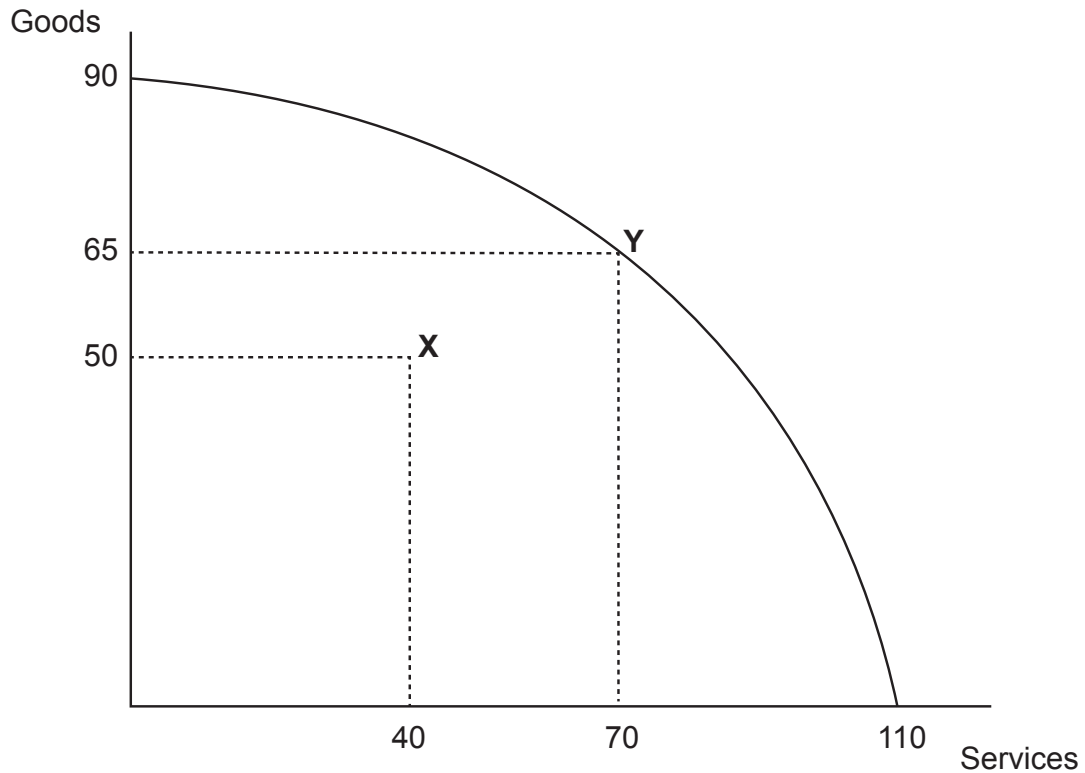
You are reminded of the necessity for good English and orderly presentation in your answers.

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. The diagram below shows the production possibility frontier for an economy:



The opportunity cost for an economy of moving from point X to point Y is:

[1]

- A** Zero
- B** 15 goods and 30 services
- C** 25 goods and 40 services
- D** 40 goods and 70 services
- E** 50 goods and 40 services

A

2. Study the table below:

Output	Short run total cost	Long run total cost
5	£170	£150
6	£180	£174
7	£196	£196
8	£240	£216
9	£288	£234
10	£340	£250

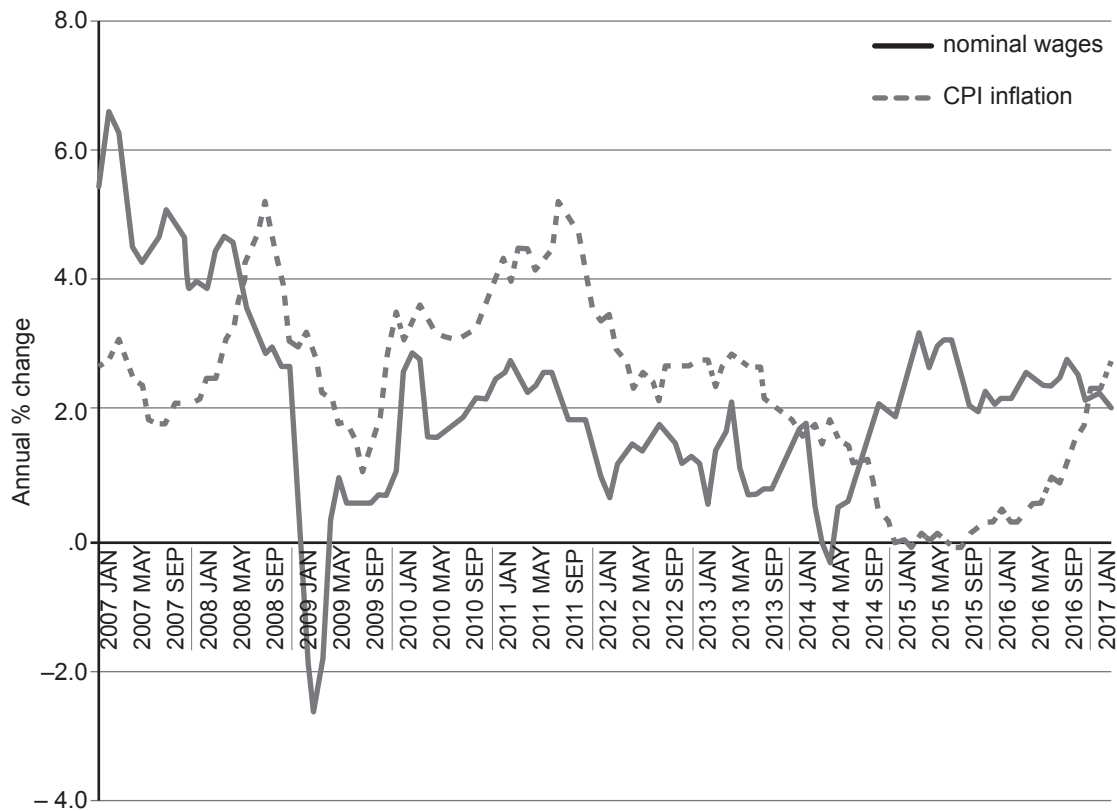
Over the output range shown in the table, which of the following is true as output increases?

[1]

	Short run	Long run
A	Diminishing returns to the variable factor	Diseconomies of scale
B	Diminishing returns to the variable factor	Economies of scale
C	Increasing returns to the variable factor	Economies and then diseconomies of scale
D	Increasing returns to the variable factor	Diseconomies of scale
E	Increasing returns to the variable factor	Economies of scale

B

3. The chart below gives information on UK nominal wage growth and inflation:



www.economicshelp.org/Source ONS KAC3 and CPI – D7G7

From the chart, it can be concluded that:

[1]

- A Between January 2012 and January 2015 prices were falling
- B Nominal wages rose throughout the period
- C Nominal wages were lower in September 2014 than in May 2008
- D Real wages were rising between January 2007 and May 2008
- E Real wages were falling between September 2014 and January 2017

D

4. Over a 6-month period the exchange rate between the pound sterling (£) and the Singapore dollar (S\$) changed from £1=S\$1.75 to £1=S\$1.85.

The fee for an overseas student taking a course at the LSE (the London School of Economics) was around £17 000 per year. The effect of the change in exchange rate would be to: [1]

- A Reduce amount received by the LSE from £17 000 to £16 081 per year
- B Increase the amount received by the LSE from £17 000 to £17 971
- C Increase the amount paid by a Singaporean student by S\$1 700
- D Reduce the amount paid by a Singaporean student by S\$1 700
- E Reduce the fee received by the LSE per student in pounds sterling (£) but increase the amount of Singapore dollars (S\$) paid by the student

C

5. The table below contains information on the HDI (Human Development Index) in Senegal and Ivory Coast:

	HDI
Ivory Coast	0.492
Senegal	0.505

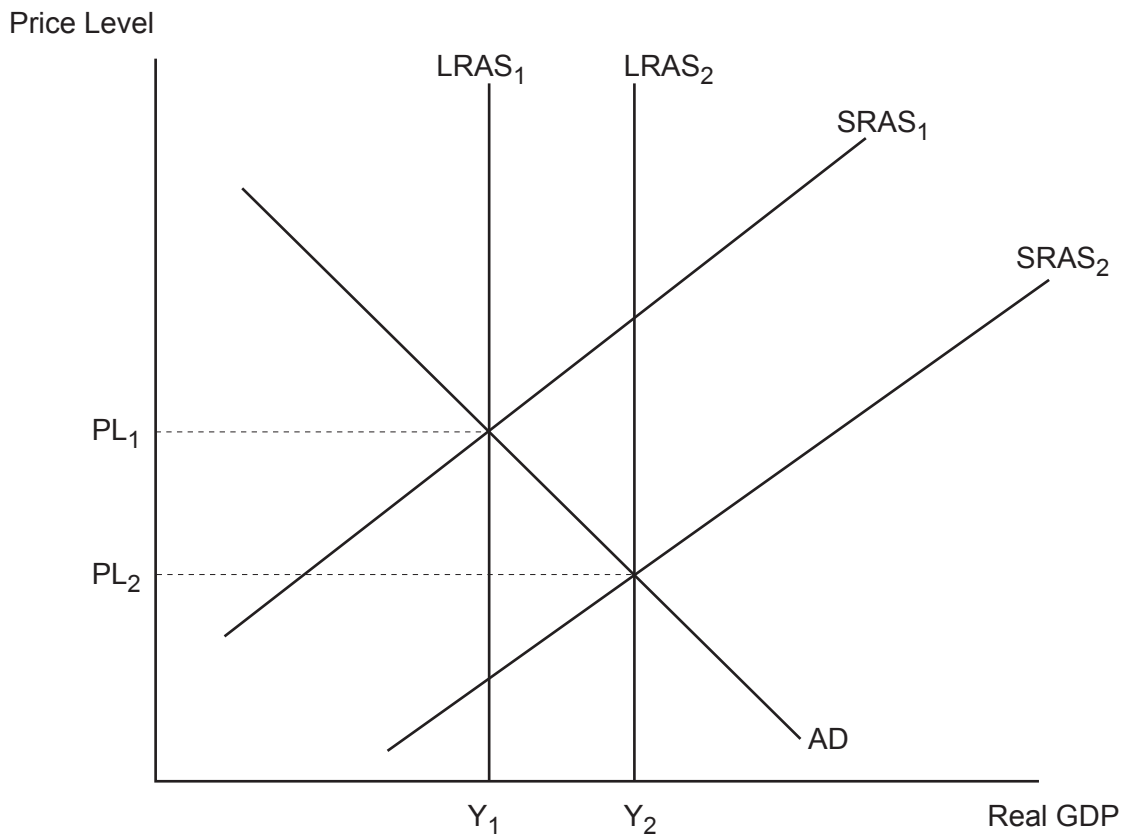
Which of the following can be safely concluded from this information?

[1]

- A GNI per capita at PPP is higher in Senegal than in Ivory Coast
- B GDP per capita is higher in Senegal than in Ivory Coast
- C Adult literacy is higher in Senegal than in Ivory Coast
- D Child mortality is lower in Senegal than in Ivory Coast
- E None of the above

E

6. Study the AD/AS diagram below:



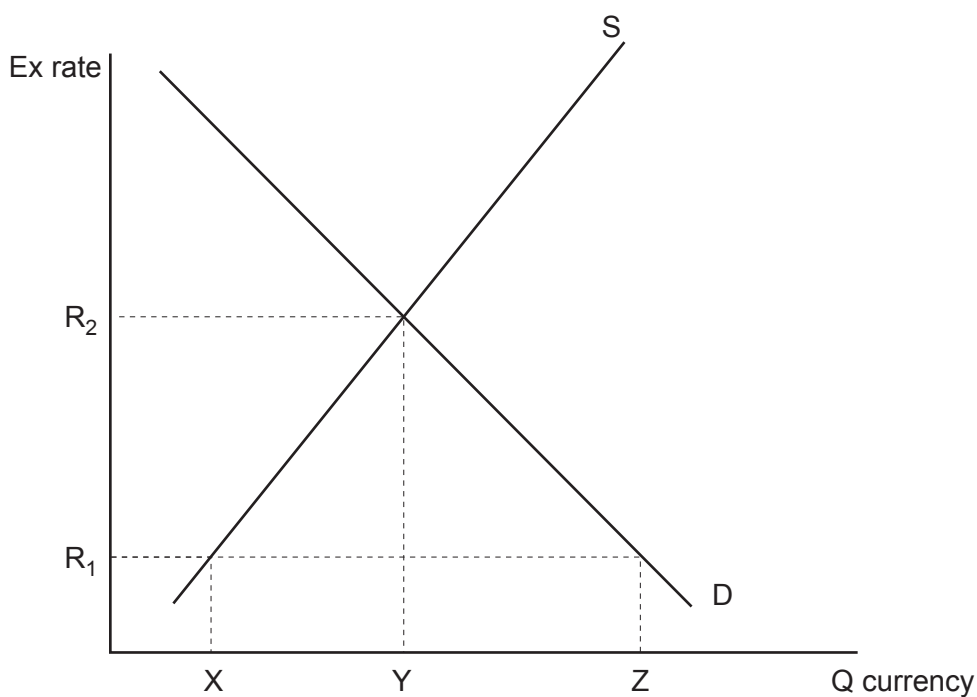
The most likely explanation for the changes shown in the diagram is:

[1]

- A** Falling oil prices and higher labour productivity
- B** Rising consumer confidence and higher labour productivity
- C** Rising investment and a rise in the minimum wage
- D** Falling oil prices and rising consumer confidence
- E** A higher minimum wage and higher labour productivity

A

7. Study the exchange rate diagram below:



If the central bank wanted to maintain the exchange rate at R_1 , it would need to:

[1]

- A Buy XZ of its own currency
- B Buy XY of its own currency
- C Buy YZ of its own currency
- D Sell XZ of its own currency
- E Sell YZ of its own currency

D

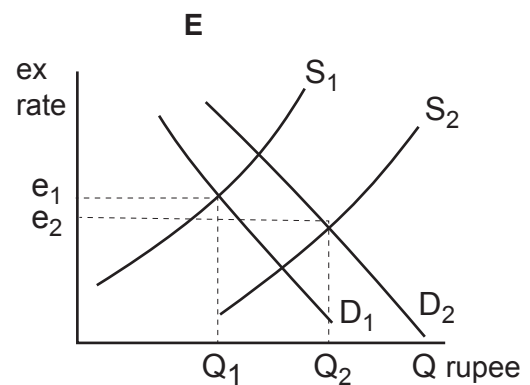
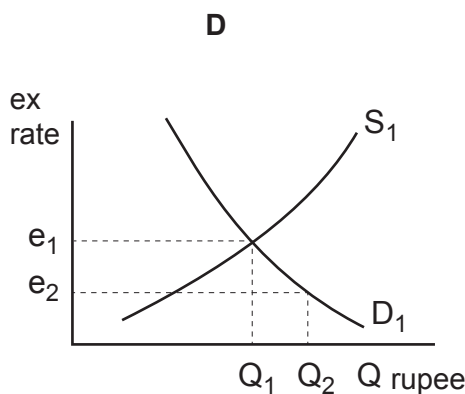
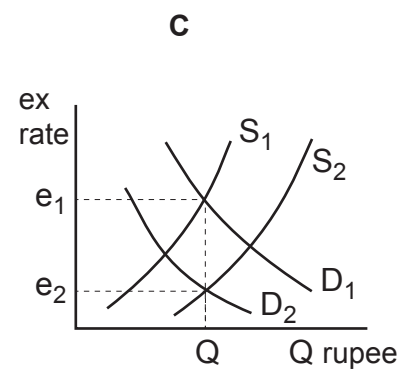
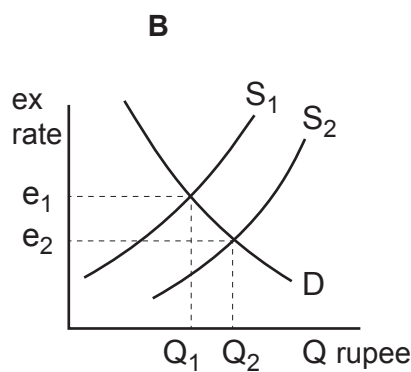
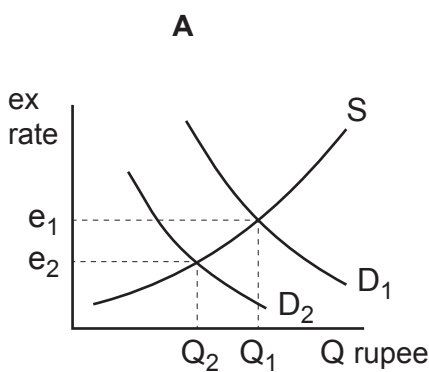
8. Which of the following could best be described as an external diseconomy of scale? [1]

- A** Inefficiencies resulting from a merger between a firm and its supplier
- B** Communication problems arising from a merger between two firms in the same sector
- C** Higher labour costs due to new firms entering the industry and competing for workers
- D** A rise in interest rates leading to an increase in the repayments on the firm's existing loans
- E** Coordination problems arising from a firm's decision to open a subsidiary in another country

C

9. The Indian rupee (the Indian currency) depreciated to a record low after the country's trade deficit widened to a five-year high because petroleum imports rose sharply.

Which one of the possible exchange rate diagrams below best reflects the situation described? [1]



B

10. Study the table on elasticities below:

	PED	XED between X and Y	YED
Good X	-0.7	+1.1	-0.3
Good Y	-0.9	+1.1	+0.5

It can be concluded that:

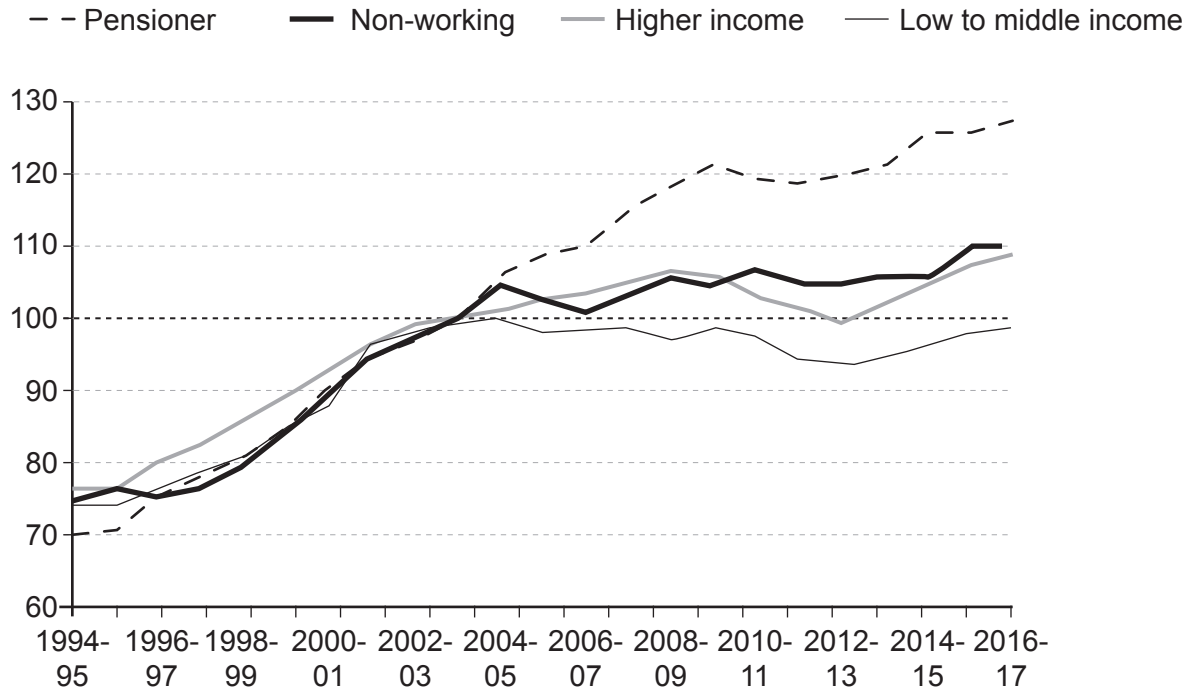
[1]

- A Goods X and Y are substitutes and are both normal goods
- B Goods X and Y are substitutes and both have price inelastic demand
- C Goods X and Y are complements and good X is normal, but good Y is inferior
- D Goods X and Y are complements and have price inelastic demand
- E Good X is inferior, good Y is normal and both goods have price elastic demand

B

11. The chart below gives information on changes in household disposable income for different household groups in the UK:

Changes in household disposable income since 1994-95



Note: Index of real median household disposable income 2003-4 = 100

Source: BBC

Which of the following can be safely concluded?

[1]

- A** In 2016-17 the real median household disposable income of pensioner households was approximately 30% higher than that of low to middle income households
- B** The real median household disposable income of pensioner households in (2016-17) was about 27% higher than in 1994-95
- C** The real median household disposable income of low to middle income households was lower in 2012-13 than in (2003-04)
- D** The real median household disposable income of pensioner households rose throughout the period
- E** The real median household disposable income of the four groups shown were equal in 2003/04

C

12. Assuming that the Marshall-Lerner condition holds, a depreciation in the exchange rate would be most likely to have which of the following effects? [1]

	Terms of Trade	Current account balance
A	No effect	Improve
B	Improve	Improve
C	Improve	Worsen
D	Worsen	Worsen
E	Worsen	Improve

E

13. The table below gives a set of different economic indicators for an economy in £billions.

	National income	Exports	Government spending	Investment	Imports	Tax	Saving
A	800	200	250	150	225	275	200
B	900	200	250	150	250	175	200
C	1 000	200	250	150	125	175	200
D	1 100	200	250	150	250	300	100
E	1 200	200	250	150	200	200	200

In which situation (**A**, **B**, **C**, **D** or **E**) would national income be expected to rise?

[1]

C

14. The table below gives index numbers of unit labour costs in selected economic areas:

Index of unit labour costs, selected economic areas (2010=100)

	2010	2014	2015	2016	2017	2018	2019
Brazil	100	95.1	77.3	80.6	91.2	86.0	87.4
China	100	123.8	137.6	133.3	130.9	137.7	139.7
Euro area	100	96.5	91.0	93.4	92.9	96.0	94.8
United Kingdom	100	102.4	109.6	99.4	94.0	97.9	97.9
United States	100	100.7	114.3	118.9	117.5	112.6	112.6

It can be concluded that:

[1]

- A** Unit labour costs were lower in Brazil, the euro area and the UK in 2019 than they were in 2014
- B** Brazil had the lowest unit labour costs of the economic areas shown in 2019
- C** Unit labour costs rose by 15.9% in China between 2014 and 2019
- D** Unit labour costs in the euro area fell in every year over the period shown
- E** The UK's labour force has become less competitive against the USA's labour force over the period shown

A

15. According to neo-classical economists, an increase in the level of aggregate demand will have which of the following effects in the short run (SR) and long run (LR)? [1]

	Short run (SR)		Long run (LR)	
	Price level (SR)	Output (SR)	Price level (LR)	Output (LR)
A	Rise	No change	Rise	Rise
B	No change	No change	Rise	Rise
C	Rise	Rise	No change	Rise
D	No change	Rise	Rise	No change
E	Rise	Rise	Rise	No change

E

16. Firms X and Y compete in the same market. Currently Firm X is seen as having both higher quality and being better value for money than Firm Y. Each firm is considering possible future strategies – to cut price to improve value for money or to advertise to improve consumers' views of quality.

The grid below shows the forecast outcomes for different combinations of decisions:

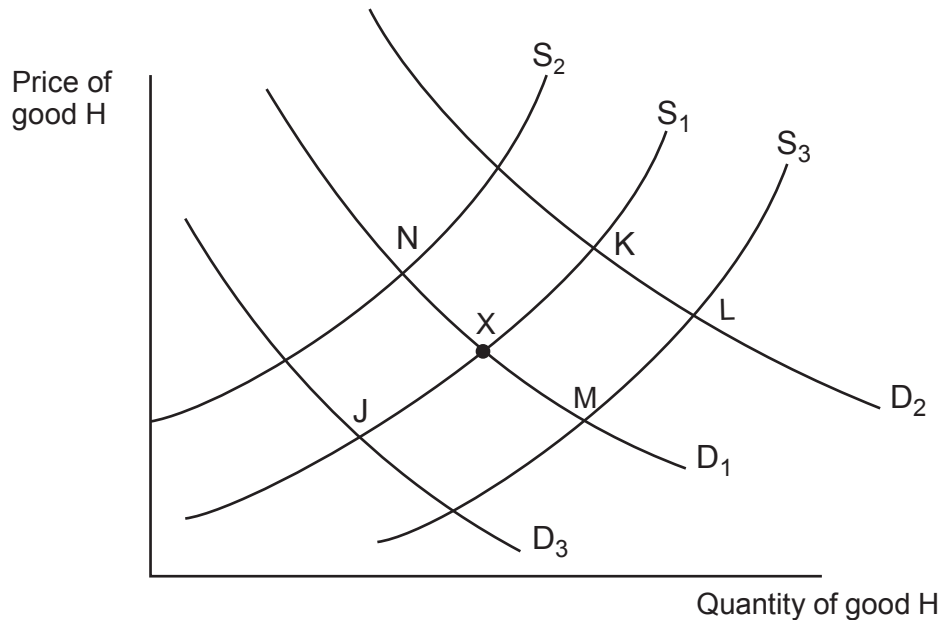
		Firm Y	
		Cut price	Advertise
<i>Firm X</i>	<i>Cut price</i>	£20m, £15m	£15m, £20m
	<i>Advertise</i>	£10m, £20m	£20m, £15m

Which combination of strategies, if any, will lead to a Nash equilibrium in this case? [1]

	Firm X's strategy	Firm Y's strategy
A	Cut price	Cut price
B	Cut price	Advertise
C	Advertise	Cut price
D	Advertise	Advertise
E	No Nash equilibrium in this case	

E

17. Cross-price elasticity of demand between good G and good H is negative. Assuming that the market for good H is initially in equilibrium at point X, which point would show the new equilibrium in the market for good H following a cut in VAT on good G? [1]



- A Point J
- B Point K
- C Point L
- D Point M
- E Point N

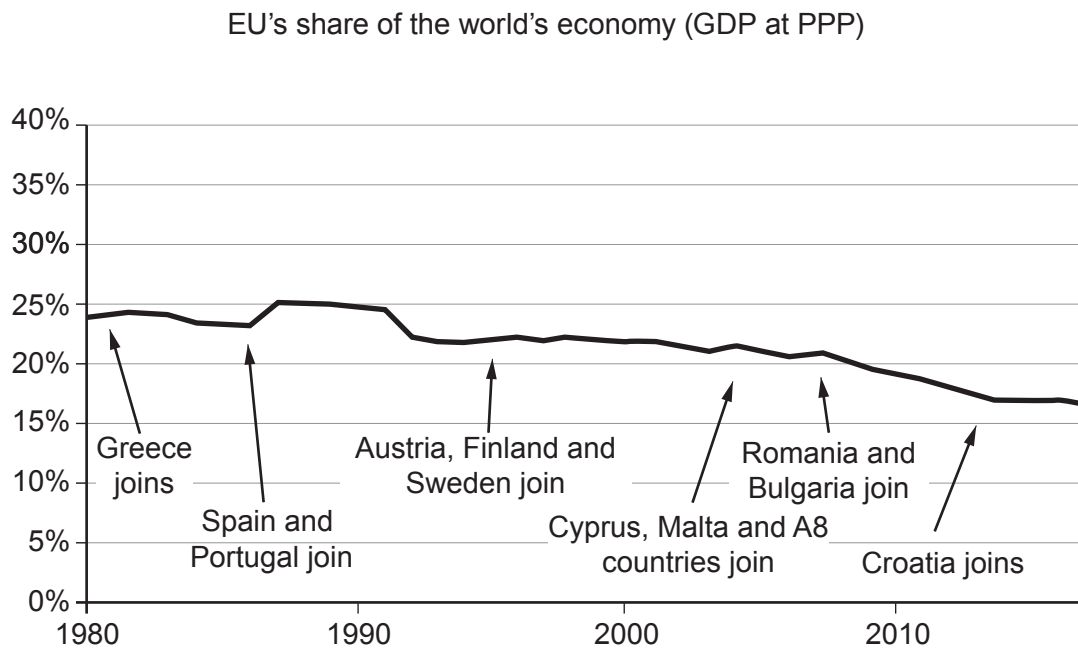
B

18. A decision to reverse QE (quantitative easing) would be most likely to reduce: [1]

- A Bond prices
- B Unemployment
- C The exchange rate
- D Market interest rates
- E The level of domestic saving

A

19. Study the chart below:



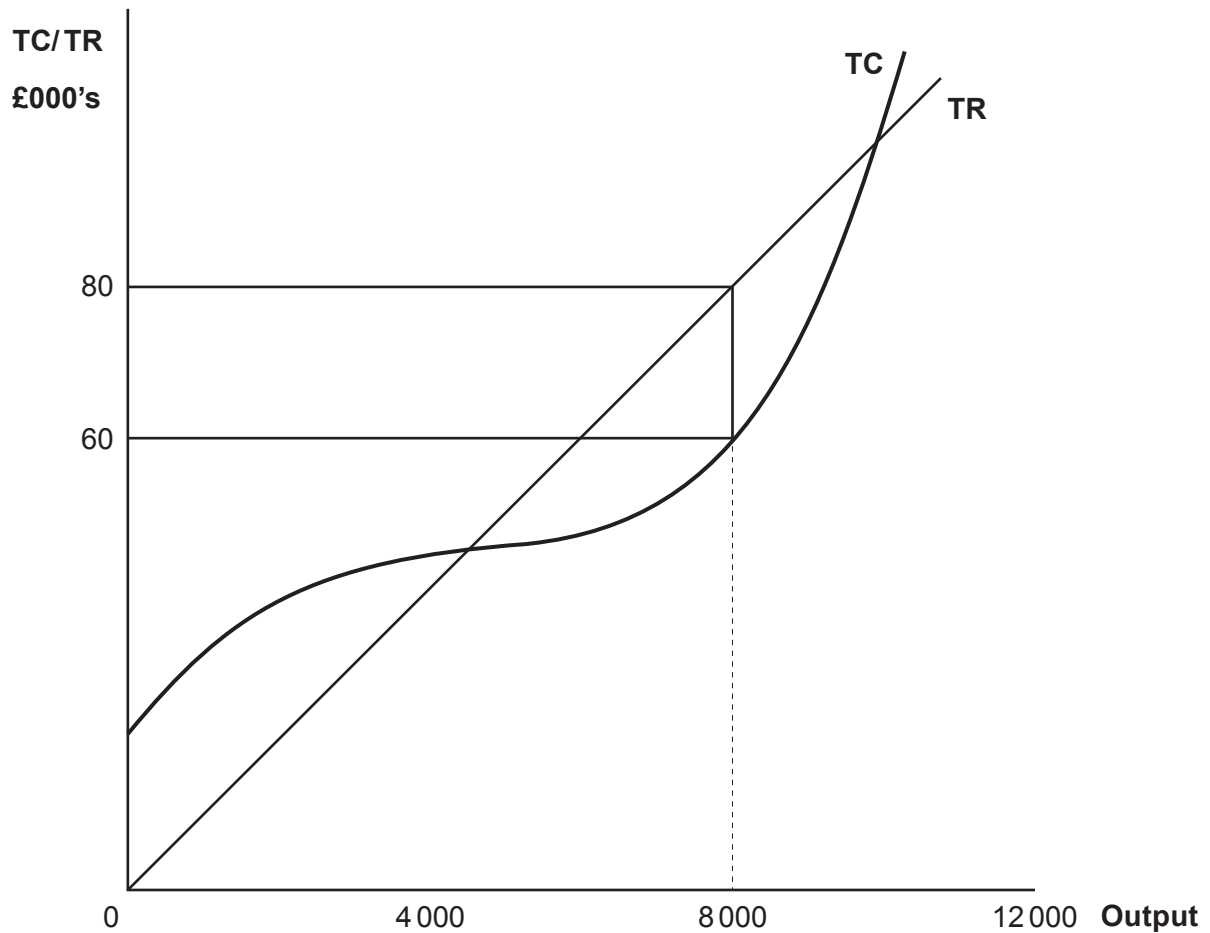
Which of the following can be concluded from the chart over the period shown?

[1]

- A Global GDP fell over the period
- B New countries joining the EU reduced the EU's GDP
- C The EU's GDP fell over the period shown
- D The rest of the world's economies grew relatively faster than the EU
- E Smaller trade blocs have more impact on the global economy

D

20. The diagram below shows the total revenue and total costs of a profit maximising firm which is producing an output of 8 000 units.



This diagram is a representation of:

[1]

- A Perfect competition in the short run
- B Monopolistic competition in the long run
- C Perfect competition in the long run
- D Monopolistic competition in the short run
- E Monopoly

A

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SECTION B

Answer all the questions in the spaces provided.

21. Fears over Brexit driving growth but not profit for the UK's food and drink industry

September 28, 2018 | PRESS RELEASE

- The weak pound saw international exports for UK food and drink producers increase by 14%
- However, inflation in raw material prices caused by a depreciation in sterling reduced producers' profits
- Wage cost per employee has continued to rise
- This has meant that even though revenue from overseas sales has increased, overall profits have fallen

Adapting the diagram opposite, analyse the impact of the factors above on the profits of the UK food and drink sector. [8]

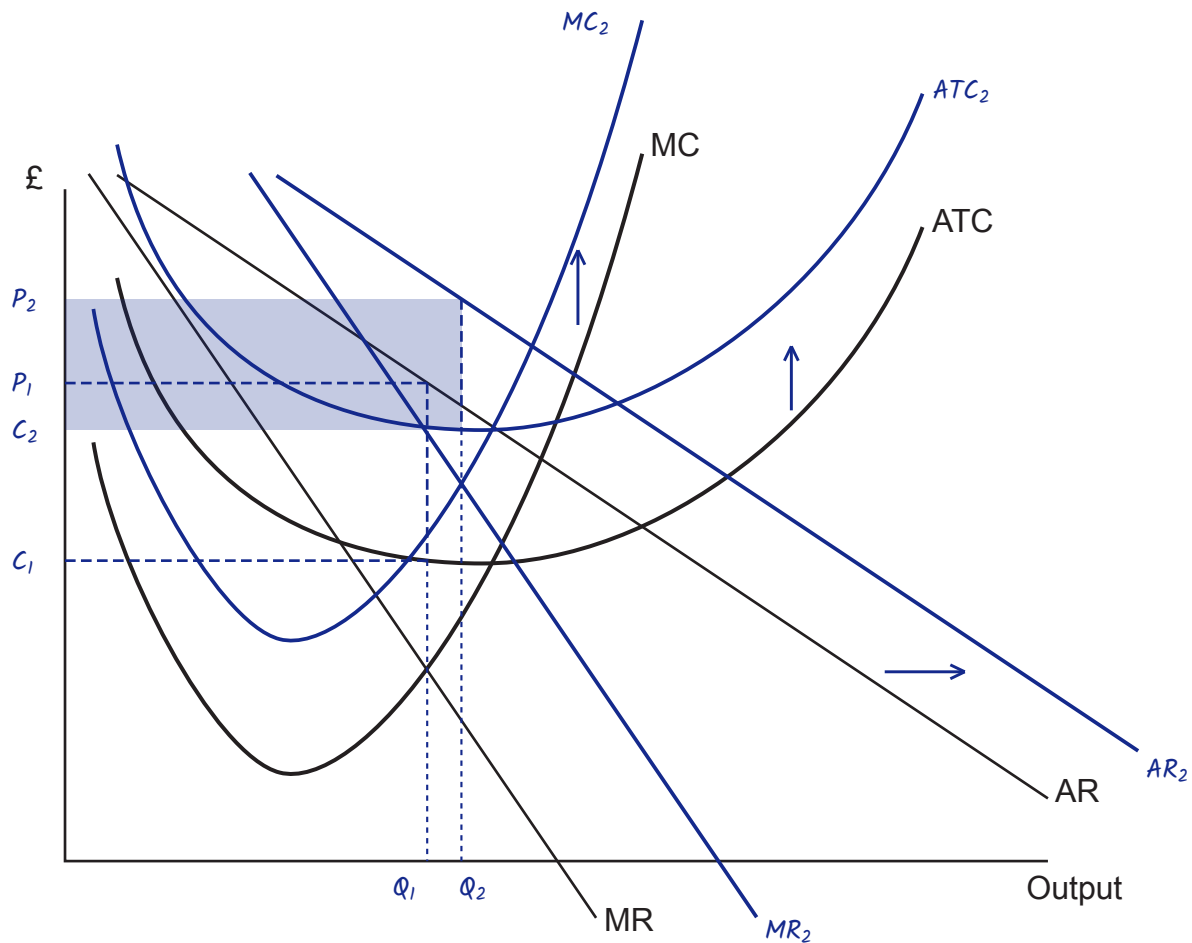
Before the depreciation the firm maximises profit where $MC = MR$, at output Q_1 , price P_1 and average cost C_1 , so supernormal profit is the area P_1C_1 (dashed box).

The weak pound makes UK food and drink cheaper in foreign currency terms, so exports rose by 14%. AR and MR shift right to AR_2 and MR_2 , raising revenue at every output.

However, the depreciation reduces the external purchasing power of sterling, so producers pay more pounds for the same imported raw materials, and wage cost per employee is also rising. Both raise costs at every output, so MC and ATC shift up to MC_2 and ATC_2 .

The new profit maximising point is $MC_2 = MR_2$, at the higher output Q_2 and price P_2 , so there is 'growth'. But unit costs rise by more (C_1 to C_2) than price (P_1 to P_2), so the margin per unit falls and supernormal profit falls to the smaller shaded area P_2C_2 , even though output is higher.

So costs have risen by more than the revenue gained from overseas sales and overall profits have fallen. Firms using imported inputs but selling only in the UK are hit hardest.



■ new (lower) supernormal profit P_2C_2 at Q_2

□ original supernormal profit P_1C_1 at Q_1

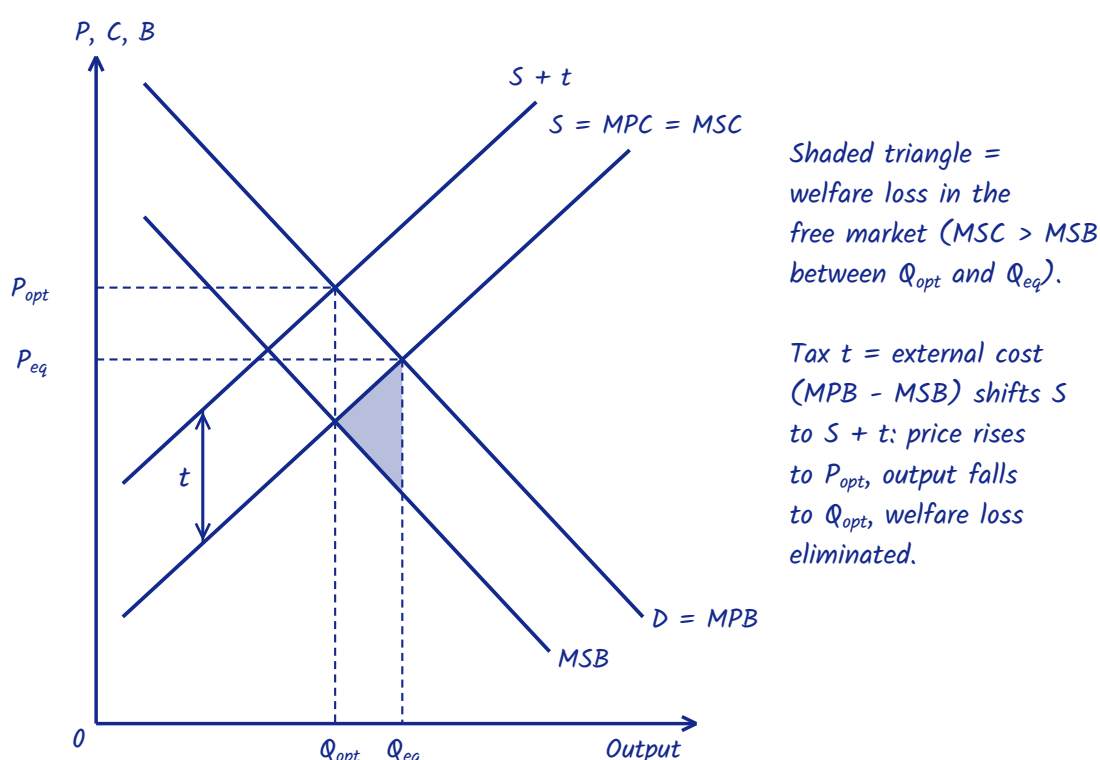
AR, MR shift right (exports up 14%); MC, ATC shift up (import and wage costs).

22. 'Sugar tax' cuts sales of fizzy drinks at Jamie Oliver's restaurants

An increase in the price of sugary fizzy drinks in Jamie Oliver's restaurants has had a significant effect on sales, according to a recent study. An in-house 'tax' of just 10p (about 3.5%) resulted in an 11% drop in sales of these 'unhealthy' drinks. At the same time fruit juice sales in the same restaurants (for which price remained the same) rose by 22%. Sugary drinks are believed to be responsible for as much as half of the excess calories consumed per day by children, contributing to the UK's obesity problem.

Source: Daily Telegraph 17th October 2017 (adapted)

Using a diagram and with reference to the context, discuss the extent to which taxes on sugary fizzy drinks are likely to be effective in correcting market failure. [8]



Sugary fizzy drinks are demerit goods with negative consumption externalities.

Consumers decide on private benefit (MPB), but over-consumption causes obesity and diabetes, imposing external costs on third parties: extra demand on the NHS, crowding out other patients, and higher sickness absence for employers. So MSB lies below MPB and the free market produces Q_{eq} at P_{eq} , above the optimum Q_{opt} where $MSB = MSC$.

The shaded triangle is the welfare loss from over-consumption.

As my diagram shows, a tax equal to the external cost (t) shifts supply from $S = MPC = MSC$ to $S + t$. Price rises to P_{opt} and quantity falls to Q_{opt} ; the externality is

internalised, over-consumption is removed and the welfare loss eliminated. Revenue can fund healthcare.

The context supports this: a 'tax' of just 10p (about 3.5%) cut sales by 11%, implying PED of about -3.1 ($11 \div 3.5$), so demand was price elastic and a modest tax had a significant effect. As sugary drinks cause up to half of children's excess daily calories, this could do a lot to reduce obesity.

However, restaurant diners have close substitutes on the menu; demand for sugary drinks in general, especially by habitual consumers, is likely to be price inelastic, so a

23. Study the data on incomes and human development below:

Country	GNI per capita at PPP (\$)	HDI
Brazil	14 145	0.754
Chile	21 665	0.847
Cuba	7 455	0.775
Equatorial Guinea	21 597	0.592
Ethiopia	1 523	0.488
France	38 085	0.897
New Zealand	32 870	0.915
Nigeria	5 443	0.527
Tonga	5 284	0.721

Using the data, discuss the extent to which increases in national income are likely to cause increases in economic development. [8]

Economic development is broader than income: improvements in living standards, health, education and freedom of choice, measured by the HDI.

The data show a strong positive correlation. France (\$38,085, HDI 0.897) and New Zealand (\$32,870, 0.915) are at the top of both, while Ethiopia (\$1,523, 0.488) and Nigeria (\$5,443, 0.527) are at the bottom.

Rising national income widens the tax base, so the government can provide more merit and public goods such as schools, hospitals and clean water, raising life expectancy and years of schooling, the non-income parts of the HDI. Households have more disposable income for basic needs such as food and housing, and can afford better healthcare and education. More profitable firms can offer better working conditions, higher pay and shorter hours, and demand shifts towards service sector jobs.

However, there are anomalies. Equatorial Guinea has almost the same GNI per capita as Chile (\$21,597 against \$21,665), yet its HDI is only 0.592 against 0.847: its oil income goes largely to an elite, so high inequality means little reaches citizens. Tonga has a lower GNI per capita than Nigeria (\$5,284 against \$5,443) but a much higher HDI (0.721 against 0.527), and Cuba, on \$7,455, beats Brazil's HDI (0.775 against

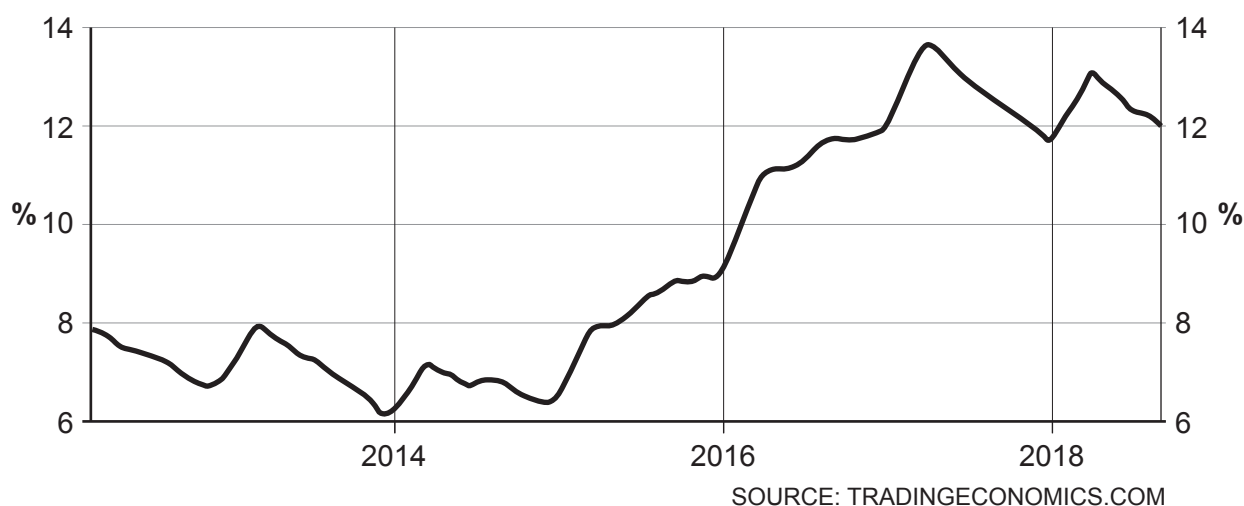
0.754) on almost half its income, because more equal distribution and state health and education raise development.

Also, a rise in GNI is not a rise in GNI per capita if population grows rapidly.

Measurement matters too: large informal sectors understate income in poor countries,

24. The charts below show Brazil's unemployment and inflation rates between 2013 and 2018:

BRAZIL UNEMPLOYMENT RATE



BRAZIL INFLATION RATE



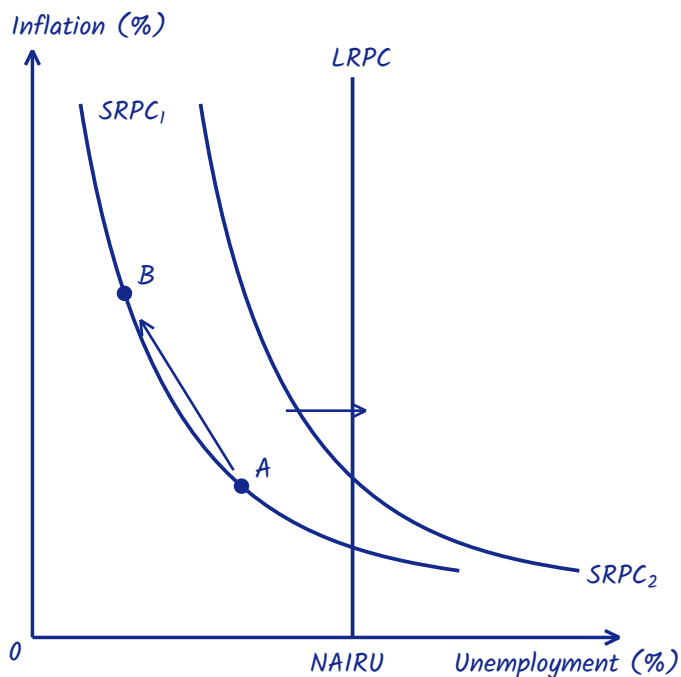
With reference to the data and the concept of the Phillips curve, discuss how changes in the unemployment rate may affect the inflation rate. [8]

The short-run Phillips curve shows an inverse relationship between unemployment and inflation (see my diagram below). Falling unemployment means rising AD and a tighter labour market: workers have more bargaining power and firms compete for scarce labour, so wages rise; firms facing strong demand and higher costs raise prices, so inflation rises (A to B). Rising unemployment does the reverse: with weak AD firms

resist price rises because of stronger competition, and workers fear long-term unemployment, so wage growth and inflation slow.

The data support this from 2016 to 2018: unemployment rose from about 9% to a peak of about 13.7% while inflation fell from about 11% to under 3%. During 2013 unemployment fell from about 8% to about 6% while inflation edged up to around 6 to 7%.

However, the relationship does not always hold. In 2015 unemployment rose from about 6.5% to 9% while inflation also rose from about 7% to almost 11%: stagflation. This reflects cost-push pressure, such as a sharp depreciation of the real and higher administered prices and wage claims, which shifts the curve out to $SRPC_2$. There are time lags: inflation only peaked in early 2016, a year after unemployment began to rise. Small changes in unemployment, as in 2014, make little difference. Late 2018 shows inflation rising to 4.5% while unemployment stayed near 12%. Supply-side



A to B: unemployment falls, labour market tightens, inflation rises (2016 to 2018 in reverse).

Cost-push shocks (2015) shift $SRPC_1$ out to $SRPC_2$; both rise.

LRPC vertical at the NAIRU.

25. A firm faces the following cost situation for one of its products:

Output per day	Unit cost (average total cost)
1-100	£9
101-200	£8
201-300	£7.50
301-400	£7
401-500	£7.50
501+	£8

Currently the firm sells 350 units per day at a price of £10.
Price elasticity of demand is estimated to be -2.

Using calculations, discuss whether a cut in price to £9 would be beneficial for the firm. [8]

Current: $TR = 350 \times £10 = £3,500$; $TC = 350 \times £7 = £2,450$; profit = $£3,500 - £2,450 = £1,050$.

Price cut: % change in price = $(9 - 10) \div 10 \times 100 = -10\%$. $PED = -2$, so % change in $Q_d = -2 \times -10\% = +20\%$. New sales = $350 \times 1.2 = 420$ units per day.

New $TR = 420 \times £9 = £3,780$, up £280, as demand is price elastic. But at 420 units ATC rises to £7.50: $TC = 420 \times £7.50 = £3,150$, up £700. New profit = $£3,780 - £3,150 = £630$ ($420 \times £1.50$).

So profit is forecast to fall by £420 (40%), from £1,050 to £630. Output moves beyond the lowest-cost range (301 to 400 units), so the firm suffers diminishing returns (short run) or diseconomies of scale (long run). The rise in unit costs and the smaller margin (£1.50 instead of £3) wipe out the extra revenue, so on profit grounds the cut is not beneficial.

However, it may still benefit the firm if short-run profit is not its objective. In a price war, or to drive a rival out and secure higher long-run profits, a 20% rise in volume and market share matters more. Managers may aim to maximise revenue or sales. In the long run it may bring unit costs back down to £7, and extra customers may buy its other products (complements), so it depends on the rest of its portfolio.

END OF PAPER

For continuation only.

22. national tax may raise revenue but cut consumption far less. Fruit juice sales rose by 22%, yet juice is also high in sugar, so consumers may simply switch to untaxed drinks, defeating the object. Drinks are only part of the problem, as sweets and fast food are untaxed. The failure also stems from information asymmetry, better tackled by education and labelling. Setting t equal to the external cost is difficult, and the tax is regressive.

Overall, a sugar tax can only partly correct the market failure: it is effective if set high enough and combined with wider measures on sugar and better information.

23. while 'economic bads' such as pollution raise GNI without improving lives.

Overall, higher national income is likely to increase development, as it provides the resources, but the extent depends on how equally it is distributed, how the government spends it and population growth.

24. improvements can lower the NAIRU, letting unemployment fall without inflation, and monetarists argue the long-run Phillips curve is vertical at the natural rate, so any trade-off is temporary as expectations adjust.

Overall, changes in unemployment do affect inflation through demand and wages, as 2016 to 2018 shows, but supply shocks, expectations and time lags make the relationship weak and unstable.

25. Also the figures are only forecasts: PED of -2 is an estimate and rivals may match the cut, so sales could rise by far less than 20%, cutting profit even more.

Overall, the price cut is not beneficial on these numbers unless the firm has longer-term strategic aims.

[illegible]