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

GCE A LEVEL

S25-1520U30-1

1520U30-1

FRIDAY, 23 MAY 2025 – AFTERNOON

ECONOMICS – A2 unit 3
Exploring Economic Behaviour

2 hours

	For Examiner's use only		
	Question	**Maximum Mark**	**Mark Awarded**
Section A	**1.**	**9**	
	2.	**11**	
	3.	**9**	
	4.	**6**	
	5.	**5**	
Section B	**6.**	**8**	
	7.	**4**	
	8.	**10**	
	9.	**8**	
	10.	**10**	
	Total	**80**	

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ADDITIONAL MATERIALS

In addition to this paper you may require a calculator and a ruler.

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 necessity for good English and orderly presentation in your answers.

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SECTION A

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

1. The table below provides a firm's costs and revenues at different levels of daily output.

Daily output	Average Revenue (AR)	Average Cost (AC)	Marginal Cost (MC)
1	£80	£50	£50
2	£74	£35	£20
3	£68	£28	£14
4	£62	£22	£4
5	£56	£20	£12
6	£50	£20	£20
7	£44	£22	£34
8	£38	£24	£38
9	£32	£26	£42

(a) State the level of daily output at which the firm is:

(i) Allocatively efficient [1]

Output 8 (where P = AR = MC = £38).

(ii) Productively efficient [1]

Output 5 to 6 (5.5), where AC is at its lowest point of £20.

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(b) Calculate the firm's total daily profit when producing a daily output of 6 units. You are advised to show your working. [2]

TR = AR × Q = £50 × 6 = £300

TC = AC × Q = £20 × 6 = £120

Total daily profit = £300 − £120 = £180

(c) The firm targets a daily output of 9 to maximise revenue. Explain, using relevant calculations, whether this is the correct level of output for this objective. [3]

TR at output 9 = £32 × 9 = £288. TR at output 8 = £38 × 8 = £304, so the MR of the 9th unit = £288 − £304 = −£16.

TR at output 7 = £44 × 7 = £308 (TR at 6 = £300), so MR of the 7th unit is +£8 but MR of the 8th unit is −£4.

Revenue is maximised where MR = 0, at output 7 (TR = £308). So output 9 is not correct: the 8th and 9th units have negative MR and cut TR by £20 to £288. The firm should reduce output to 7.

(d) Outline the difference between accounting profit and economic profit. [2]

Accounting profit = total revenue − explicit costs actually paid (wages, rent, materials), as shown in the financial statements. Economic profit also deducts implicit (opportunity) costs, e.g. the owner's forgone salary or interest the capital could earn elsewhere.

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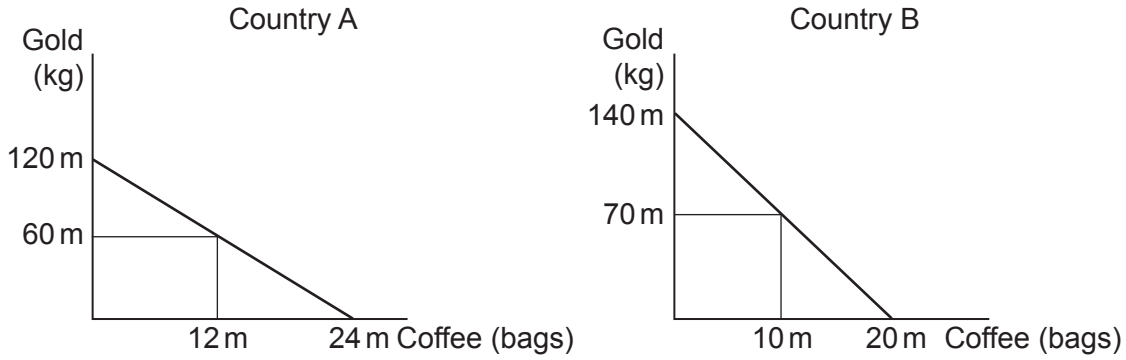
2. The data below provides information on two countries, country A and country B.

Country A is one of the world's largest coffee producers and produces approximately 12 million coffee bags per year. Country B is also a coffee producing country and produces approximately 10 million coffee bags per year. Each coffee bag contains 60 kg of coffee beans.

Country A is a gold producing country and produces approximately 60 million kilograms (kg) of gold per year. Country B is one of the world's largest producers of gold. Country B produces approximately 70 million kg of gold per year.

David Ricardo introduced the theory of comparative advantage which justified international trade based upon the relative opportunity costs of production. According to his theory, country A should only produce coffee, while country B should focus its production on gold alone. Once specialised, both countries should trade these two goods with one another.

The production possibility frontier diagrams below represent production possibilities of gold and coffee for country A and country B.



Diagrams are not drawn to scale

(a) Using the production possibility frontier diagrams, complete the following opportunity cost ratios.

(i) For country A

1 m coffee bags : ..... 5 ..... m gold (kg). [1]

(ii) For country B

1 m coffee bags : ..... 7 ..... m gold (kg). [1]

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(b) Using your answers to part (a), suggest a suitable quantity of gold country B could exchange for 1 million bags of coffee from country A, describing how both countries gain from this trade. [3]

Terms of trade: 1m coffee bags : 6m kg of gold (between A's 1 : 5 and B's 1 : 7).

Country A gains: producing 1m fewer bags of coffee itself would give only 5m kg of gold. By specialising in coffee and trading at 1 : 6, A gets 6m kg of gold for the same 1m bags, a gain of 1m kg of gold.

Country B gains: making 1m bags of coffee itself would cost 7m kg of gold. By trading it gives up only 6m kg, saving 1m kg of gold, so both consume beyond their own PPF.

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(c) Discuss the view that the theory of comparative advantage is relevant in determining whether countries should specialise and trade. [6]

The theory is relevant because if each country specialises where its opportunity cost is lowest, world output rises. A gives up 5m kg of gold per 1m bags of coffee but B gives up 7m kg, so A should specialise in coffee (24m bags) and B in gold (140m kg); trading at 1 : 6 lets both consume outside their PPFs. Specialisation also raises productivity and gives economies of scale, lowering costs and prices and raising output, incomes and tax revenue through the multiplier effect.

However, the theory ignores transport costs, tariffs, quotas and exchange rate changes, which could wipe out the 1m kg gain. Factors are not perfectly mobile, so specialising causes structural unemployment in contracting industries, and dependence on one primary product such as coffee brings volatile prices and worsening terms of trade (Prebisch-Singer). Much trade is also intra-industry, based on product differentiation and tastes rather than opportunity cost.

Overall, it is a useful starting point, but specialisation also depends on trade barriers, transport costs and the risks of interdependence.

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3. The Eurotunnel is a train service between Folkestone (UK) and Calais (France). The operator, Getlink, charges different ticket prices depending on the day and time of travel. Prices for tickets on the same train vary depending on whether tickets are bought in advance or on the day of travel.

The table below shows ticket prices bought in advance for travelling from Folkestone to Calais during August 2024:

	Between 00.00 and 05.59	**Between 06.00 and 11.59**	**Between 12.00 and 17.59**	**Between 18.00 and 21.59**	**Between 22.00 and 23.59**
Saturday 3rd August 2024	£129	**(a) (i)**	£129	£116	£107
Sunday 4th August 2024	£98	£107	£98	£98	£84

(a) (i) On Saturday 3rd August 2024 between 06.00 and 11.59 the ticket price was 14% higher than the price between 00.00 and 05.59 on the same day. To the nearest whole number calculate the price of this ticket. [2]

14% of £129 = 0.14 × £129 = £18.06

Price = £129 + £18.06 = £147.06 (or £129 × 1.14 = £147.06)

= £147 to the nearest whole number

(ii) Outline how Getlink might be using price discrimination. [2]

Price discrimination is charging different customers different prices for the same service, not due to cost differences. Getlink charges £129 on Saturday night but £84 to £98 on Sunday, more at peak times and on the day of travel than in advance, as peak demand is more price inelastic.

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(b) Discuss whether it is only producers that benefit from price discrimination. [5]

Producers benefit: charging higher prices to customers with price inelastic demand (£147 on a Saturday morning) and lower prices to price elastic groups lets Getlink convert consumer surplus into extra revenue and profit, as long as MR > MC on each extra passenger. Cheap off-peak fares also fill spare capacity and spread demand.

However, consumers can benefit too. Price elastic, often lower-income travellers can afford cheap advance or off-peak tickets (£84 on Sunday night) so output rises. Peak travellers face less crowding, higher profits can fund investment (dynamic efficiency) and staff numbers can be matched to advance bookings. So producers are not the only gainers, though peak travellers lose consumer surplus.

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4. The charts below provide data relating to the UK economy between January 2021 and November 2023.

Chart 1: UK base interest rate (%) set by the Bank of England

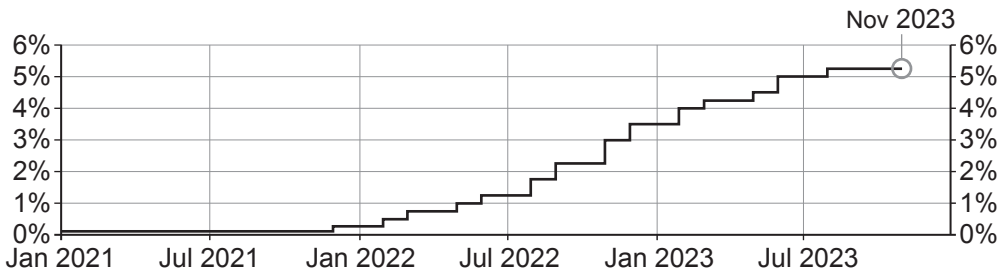
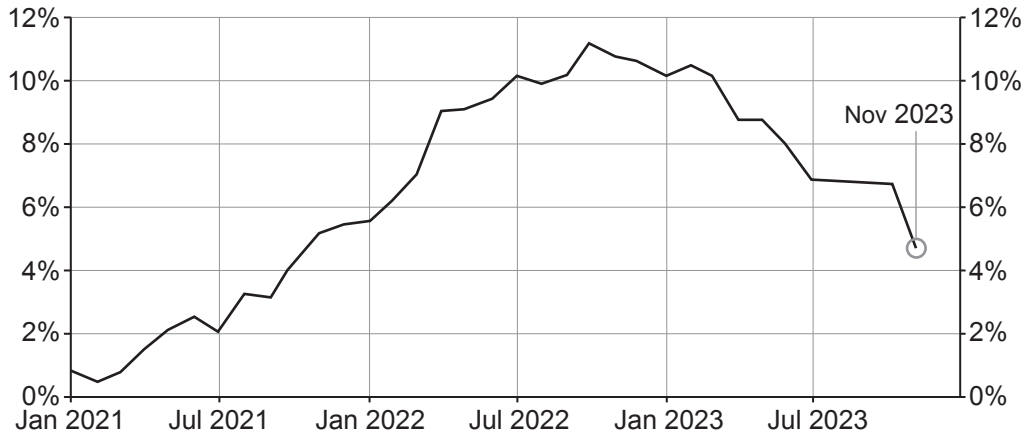


Chart 2: Annual UK inflation rate (CPI) (%)



With reference to the data, discuss the extent to which the changes to the UK's base interest rate have been effective in controlling the UK's inflation rate over the period shown. [6]

Chart 1 shows the base rate rose from 0.1% in 2021 to about 5.25% by Nov 2023, while Chart 2 shows CPI rose from under 1% in Jan 2021 to a peak of about 11% in late 2022, then fell to about 4.6% by Nov 2023.

Higher interest rates raise the cost of borrowing and mortgage repayments and increase the reward for saving, so consumption and investment fall. With fewer injections into the circular flow, AD shifts left, reducing demand-pull inflation. Higher rates also strengthen the pound, making imports cheaper, and reduce inflation expectations. The fall in inflation during 2023, once rates were 4% to 5%, suggests the policy worked.

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However, in 2021 and 2022 inflation rose rapidly even though rates were rising, so the policy was not effective then. Inflation was mainly cost-push, from soaring energy and food prices after the Russia-Ukraine war and post-Covid supply problems; interest rates work on AD, not SRAS. Early rises were small (0.15 to 0.25 points) and the Bank arguably acted too late. With time lags of 18 to 24 months, the 2023 fall may partly reflect falling energy prices rather than rates.

Overall, rate rises were ineffective in the short run but more effective from 2023, though inflation was still above the 2% target.

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5. Halifax, a UK high street bank reported in July 2023 that UK house prices fell at their fastest rate in 12 years, while mortgage costs continued to rise due to rising interest rates. The report stated that the annual fall of 2.6% was equivalent to a £7 500 reduction in the average UK house price compared to the previous year.

According to property website Zoopla, 60% of all house purchases are made using a mortgage.

With reference to the housing market, describe one cause and one consequence of asset bubbles. [5]

An asset bubble is when the price of an asset, such as housing, rises far above its underlying value due to speculation, then falls sharply when it bursts.

Cause: cheap, easy credit. Interest rates were very low (0.1% in 2021) and 60% of house purchases use a mortgage, so low mortgage rates raised how much buyers could borrow. Demand for houses rose faster than the price inelastic supply, pushing prices up, and herd behaviour and expectations of further rises led more people to buy houses as an investment, inflating the bubble.

Consequence: as rates rose, mortgage costs increased and demand fell, so prices fell 2.6% in a year, a £7,500 fall in the average house price, the fastest fall in 12 years. Falling prices can leave homeowners in negative equity, causing defaults and repossessions. Lower household wealth reduces confidence and consumption (negative wealth effect), and banks with lower-value collateral cut lending, reducing AD and growth, as in the 2008 financial crisis.

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SECTION B

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

The changing Welsh economy

The economy of Wales has evolved over time, from originally specialising in agriculture and mining to a current focus on manufacturing and service-based industries.

Extract 1: Wales and its international trade in goods

The manufacturing sector in Wales employs around 140 000 people, with many thousands more employed in roles linked to this sector. Manufacturing contributes over 16% to Wales' national economic output, which is significantly higher than the UK average contribution of around 9%.

Figure 1: Wales' international trade in goods

	2021 (£ billions)	2022 (£ billions)
Exports of goods	15.2	20.5
Imports of goods	16.1	24.1

Extract 2: Tata Steel warns future of its UK business is in doubt

Tata Steel employed around 8 000 people in the UK. Its plant at Port Talbot in South Wales employed around 4 000 people. Iron and Steel was Wales' 4th most valuable exported good in 2022, contributing £1.3 bn to the Welsh economy.

However, in its March 2023 financial report, Tata Steel warned of an "uncertainty" over the future of its UK steel manufacturing business. Tata cited tough trading conditions and a lack of clarity over government support to help it move to greener forms of steelmaking.

The report showed that pre-tax profits at Tata Steel Europe, fell 60% to £477 m between March 2022 and March 2023. Tata cited factors such as higher inflation, energy costs and interest rates.

The industry is struggling given the challenge to meet tough climate targets and the warnings raised concern among the company's workforce. The chair of Tata Group warned it might have to close its UK operations if it didn't receive government financial support to help reduce its emissions.

In September 2023, the BBC reported that the UK government would be giving Tata's Port Talbot steelworks a support package of £500 m. This was done in a bid to keep the plant open and help fund investment in 'green' steel production technology. This government support will help fund the installation of new electric furnaces for steelmaking at Port Talbot which will cost £1.25 bn in total.

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However, Tata originally stated that it required a £1.5 bn government support package to save the Port Talbot site from closure. The UK government's financial support package is also lower than the billions offered by governments abroad to Tata's European rivals.

On the announcement of the £500 m government financial support package, the trade union for steel workers at Tata raised concerns over the new electric furnaces as they would require thousands fewer workers to operate them.

Extract 3: Freeports for Port Talbot – Milford Haven and Anglesey

> At the moment, importers of some goods and raw materials that enter the UK have to pay import taxes (tariffs). Generally, a freeport means that companies importing products into the freeport do not have to pay any import taxes when they bring them in. If they use those products to make something else and then export it, they do not have to pay any import taxes. They will only have to pay import taxes if the product leaves the freeport and enters the UK. A freeport is effectively outside a country's customs borders.

Two Welsh freeports are to be created which aim to bring 20 000 jobs by 2030 and investment worth £5 bn. A Port Talbot – Milford Haven joint freeport and a freeport in Anglesey were intended to be operational by the end of 2023. Up to £26 m of non-repayable funding was agreed for each freeport by the UK Government.

The freeports were chosen to exploit renewable energy opportunities and will be expected to contribute to the UK net-zero ambitions.

In England, businesses within freeports pay lower business rates and a lower rate of national insurance for new staff. For the two new Welsh freeports it would be up to the Welsh government as to whether it adopts these two policies.

The argument in favour of freeports is that they create new jobs and attract investment. But critics argue they do not create new jobs but simply encourage businesses to move from one location to another.

Tata Steel said it was delighted with the news of the Port Talbot – Milford Haven freeport. Council leaders in the locations of these new freeports said that the freeports would "unleash green industrial potential" and was "an absolute game changer" for the counties and Wales. "Too many of our young people have had to leave their communities to find decent jobs and a secure future. We want that to change, and freeports can help."

Extract 4: The growing financial sector in the UK

New research shows that outside of London, Wales has the UK's biggest output growth in financial services.

Finance and insurance firms employ 33 000 people in Wales, with another 22 000 being employed in related professional services. Over half of these jobs are based in Cardiff and Swansea.

These 55 000 jobs represent 4.4% of total Welsh employment. They contribute £4.7bn to the Welsh economy, which is equivalent to 7% of total Welsh economic output.

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Figure 2: Annual percentage change in jobs by sector in Wales, April 2022 – April 2023

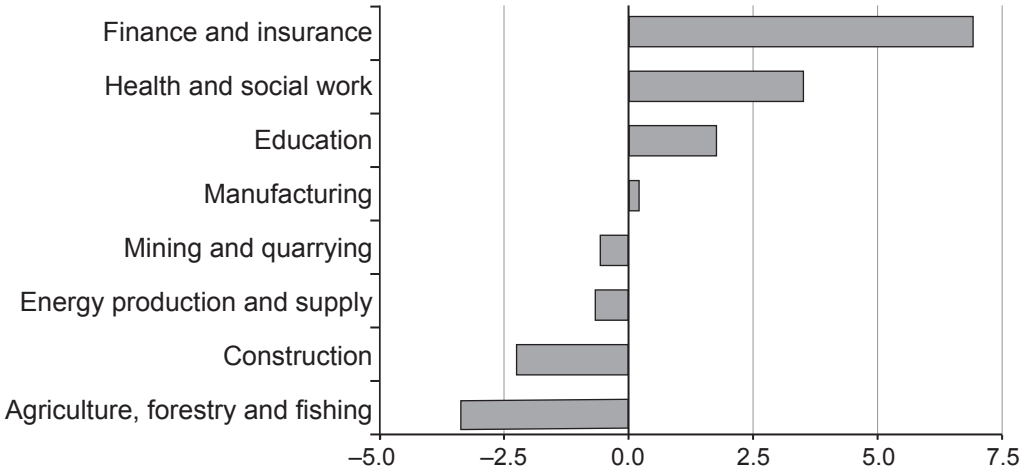
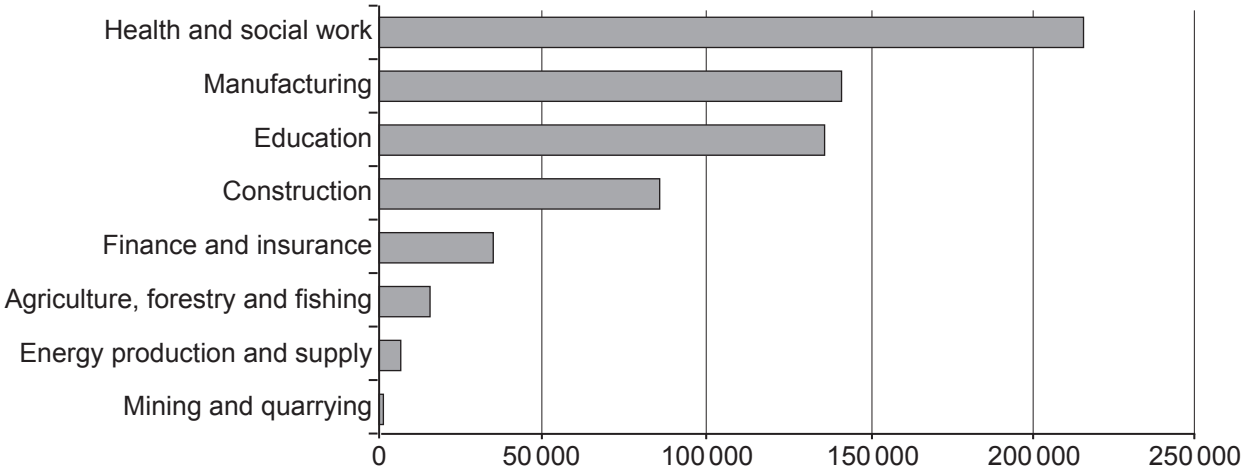


Figure 3: Total number of jobs by sector in Wales, March 2023



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6. (a) Using **Figure 1**, calculate and interpret the percentage change in the trade in goods balance for Wales between 2021 and 2022. [2]

2021: £15.2bn − £16.1bn = −£0.9bn; 2022: £20.5bn − £24.1bn = −£3.6bn

% change = (−3.6 − (−0.9)) ÷ 0.9 × 100 = −2.7 ÷ 0.9 × 100 = −300%

The trade in goods deficit has worsened by 300% (four times larger).

(b) Explain **two** possible reasons for Wales' worsening trade in goods balance in recent years. [6]

1. Rising costs and loss of competitiveness: Tata cited higher inflation, energy costs and interest rates (lines 17 to 19). Higher production costs raise the price of Welsh goods such as iron and steel, Wales' 4th most valuable export (£1.3bn), so foreign demand falls and exports (X) fall, worsening the goods balance (X − M). Higher UK inflation than in trading partners also makes imports relatively cheaper.

2. Changing industrial structure: Wales has moved from agriculture and mining to services. Figure 2 shows jobs falling in agriculture (about −3%), construction, energy and mining, while growth is in finance (about +7%), which earns service, not goods, revenue. With less domestic production of goods, Wales imports more: imports rose 50% (£16.1bn to £24.1bn) but exports only 35%, widening the deficit.

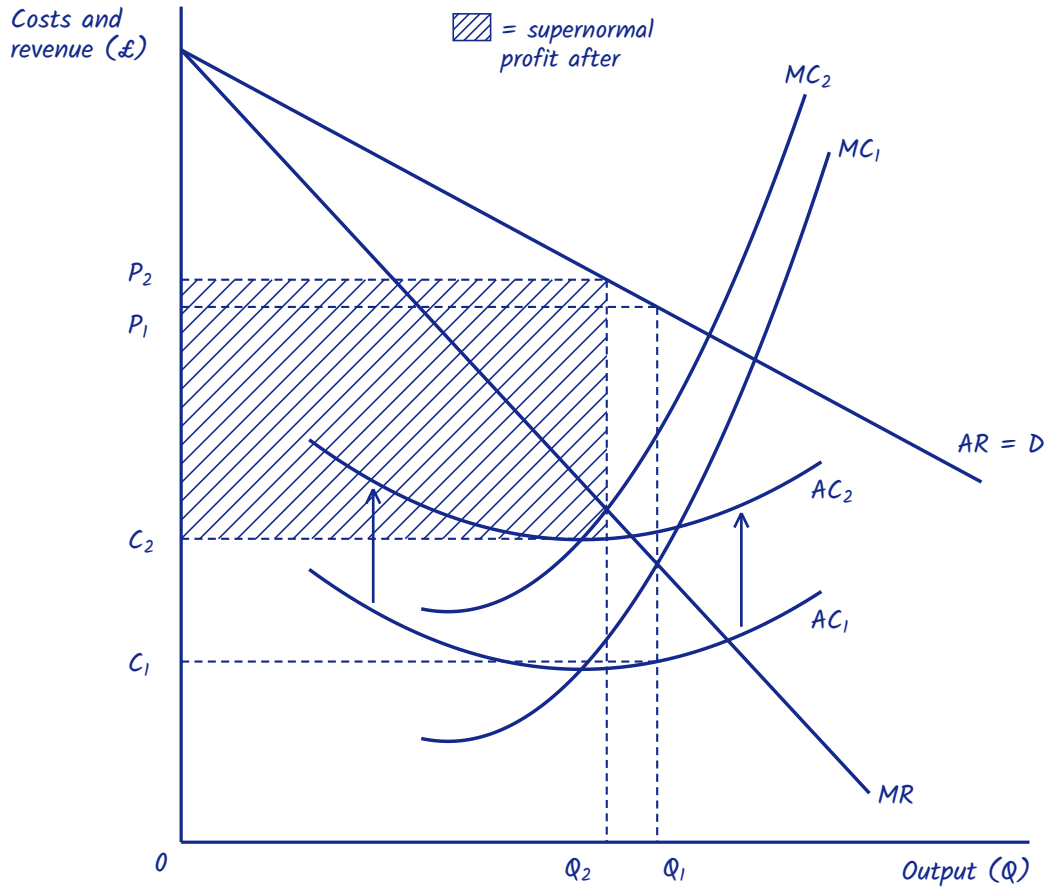
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7. With reference to lines 17–19 and the use of an appropriate cost and revenue diagram, describe why Tata Steel experienced a fall in profits between March 2022 and March 2023. [4]



Higher inflation raised raw material prices and higher energy costs raised the cost of each unit of steel, so variable costs rose and both MC and AC shifted up ($MC_1 \rightarrow MC_2$, $AC_1 \rightarrow AC_2$); higher interest rates also raised loan repayments, adding to fixed costs and AC. At MC = MR output falls to Q_2 and price rises to P_2, but AR – AC narrows, so supernormal profit shrinks from $P_1C_1 \times Q_1$ to the shaded $P_2C_2 \times Q_2$, as Tata's profits fell 60% to £477m.

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8. Discuss whether the government financial support for 'green' technology will lead to a positive impact on economic development in Wales. [10]

Economic development is an improvement in living standards and quality of life, measured by GNI per capita and wider indicators such as the HDI (income, health and education).

The £500m support (line 25) helps fund £1.25bn of electric furnaces at Port Talbot, which employs about 4,000 people. Without it, Tata warned it might close its UK operations, causing mass structural unemployment in South Wales where steelworkers' skills are not easily transferred. Saving the plant protects incomes and, through the multiplier, spending in local shops and suppliers, and keeps tax revenue to fund health and education, raising HDI. Iron and steel was Wales' 4th most valuable export (£1.3bn), so green steel could improve competitiveness and help reduce the £3.6bn goods deficit, raising GDP. Figure 3 shows manufacturing is Wales' 2nd largest employer (about 140,000 jobs), so many linked firms benefit. Cleaner furnaces also cut emissions, improving air quality and health around Port Talbot, a non-income development gain, and alongside the green freeports could create new industries so young people need not leave Wales.

However, the union warned the electric furnaces need thousands fewer workers (lines 32 to 34), so the support itself may cause structural unemployment in a town dependent on one employer, lowering incomes and well-being. £500m is only a third of the £1.5bn Tata said it needed and less than the billions given to European rivals, so it may not secure the plant's long-term future. There is also an opportunity cost: the £500m could have been spent on health, education or infrastructure, which might raise HDI more directly. Figure 2 shows manufacturing jobs grew only about 0.2% while finance grew about 7%, so future development may come from services instead.

On balance, the support is likely to have a positive impact on development compared with closure, which would have cost far more jobs and income. However, the size of the

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9. Using **Extract 3**, discuss the factors that may determine whether the introduction of freeports will be beneficial for the Welsh economy. [8]

Whether freeports benefit Wales depends on several factors. First, whether jobs are genuinely new. The aim is 20,000 jobs and £5bn of investment by 2030; if tariff savings let firms expand output and exports, there is a positive multiplier effect, higher incomes and tax revenue, and young people need not leave their communities (lines 58 to 59). But critics argue firms simply relocate (lines 52 to 54), so jobs are displaced, with no net gain for Wales.

Second, the size of the import tax savings and the type of good. Firms only gain if their imported inputs face tariffs, and not all do, so cost savings and the boost to international competitiveness may be small for many firms.

Third, Welsh government policy. Adopting England's lower business rates and national insurance would attract more investment but cut tax revenue, especially if firms only relocate. The £26m per freeport may need topping up, with an opportunity cost for other spending.

Fourth, whether green industries and anchor firms like Tata Steel locate and stay, since the freeports were chosen to exploit renewable energy. Fifth, how widely benefits spread: Anglesey and Port Talbot-Milford Haven are in north and south Wales, but gains may stay local. Future UK trade deals could also change tariffs.

Overall, the key factor is whether jobs are new rather than displaced, and gains are more likely in the long run once investment has taken place.

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10. With reference to **Figures 2** and **3**, and other relevant information, to what extent does the growing UK financial sector benefit the Welsh economy? [10]

Figure 2 shows finance and insurance had the fastest job growth of any sector in Wales, about 7% between April 2022 and April 2023, and outside London Wales has the UK's biggest output growth in financial services. Finance and related services employ 55,000 people (4.4% of employment) and contribute £4.7bn, 7% of Welsh output. These jobs are high-skilled and well paid, so rising employment raises incomes and consumer spending and, through the multiplier, demand for other Welsh firms such as retail and hospitality. Higher incomes raise income tax and VAT revenue, which can be redistributed to fund health and education across Wales. Growth in finance also diversifies Wales away from declining sectors such as agriculture (about −3%) and construction (about −2%), and earns service exports that offset the £3.6bn goods deficit.

However, the benefit is limited in scale. Figure 3 shows finance and insurance employs only about 35,000 people, far fewer than health and social work (over 200,000) or manufacturing (around 140,000), so even 7% growth adds only about 2,400 jobs. The 4,000 jobs at Port Talbot, or the 20,000 promised by the freeports, are large in comparison. Over half the finance jobs are in Cardiff and Swansea (lines 64 to 65), so benefits are geographically concentrated and may widen regional inequality with rural and former industrial areas. The jobs may be filled by workers from outside Wales rather than unemployed steel or farm workers, whose skills are not transferable (occupational immobility). Finance is also cyclical and vulnerable to financial crises, as in 2008.

Overall, the growing financial sector benefits the Welsh economy to a moderate extent: it is the fastest-growing sector and produces 7% of output with only 4.4% of jobs, showing high productivity. However, its current small size and concentration in Cardiff and Swansea mean the benefit is uneven. The extent depends on whether growth continues and spreads to other parts of Wales and whether the Welsh government

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END OF PAPER

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Question number	Additional page, if required. Write the question number(s) in the left-hand margin.
8	benefit depends on whether £500m is enough to keep Tata competitive, how many workers are retrained and re-employed, and whether green steel attracts further investment in the long run; in the short run job losses limit the gains.
10	redistributes the extra tax revenue; in the long run its importance should increase as the gap with other sectors narrows.

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