Write your name here

Surname: StemUp Model Solution

Other names:

Pearson Edexcel Level 3 GCE

Centre Number

Candidate Number

Economics A

Advanced
Paper 3: Microeconomics and Macroeconomics

Monday 19 June 2017 – Afternoon
Time: 2 hours

Paper Reference
9EC0/03

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- There are two sections in this question paper.
- In Section A, answer **all** questions 1(a) to 1(c) and **one** question from 1(d) or 1(e).
- In Section B, answer **all** questions 2(a) to 2(c) and **one** question from 2(d) or 2(e).
- Answer the questions in the spaces provided
  – *there may be more space than you need.*

Information

- The total mark for this paper is 100.
- The marks for **each** question are shown in brackets
  – *use this as a guide as to how much time to spend on each question.*
- Calculators may be used.

Advice

- Read each question carefully before you start to answer it.
- Check your answers if you have time at the end.

Turn over ▶

P51921RA

©2017 Pearson Education Ltd.

1/1/1/1/1/1/1/1/1/1

P 5 1 9 2 1 R A 0 1 3 2

Pearson

stemup.co.uk

SECTION A

Read Figures 1 to 3 and the following extracts (A and B) before answering Question 1.

Answer ALL questions 1(a) to 1(c), and EITHER Question 1(d) or 1(e).

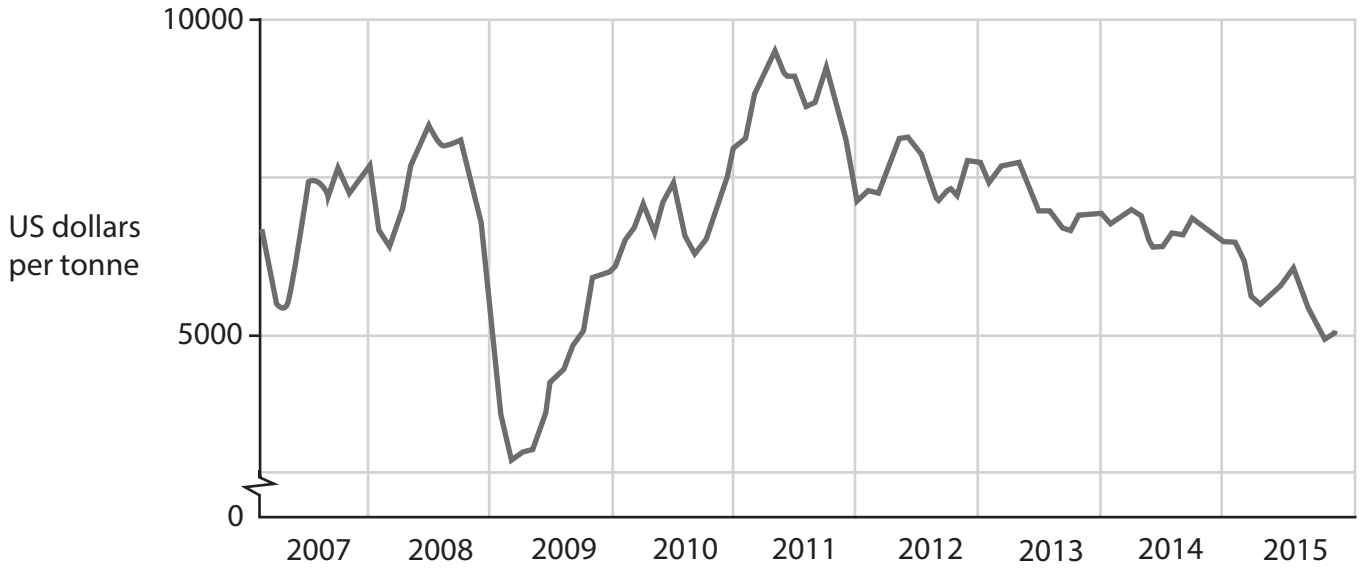
Write your answers in the spaces provided.

You are advised to spend 1 hour on this section.

Question 1

Chile

Figure 1: Copper prices, US dollars per tonne, 2007–2015



(Source: adapted from http://www.indexmundi.com/commodities/?commodity=copper&months=120)

Figure 2: US dollar per 100 Chile pesos exchange rate, 2007–2015

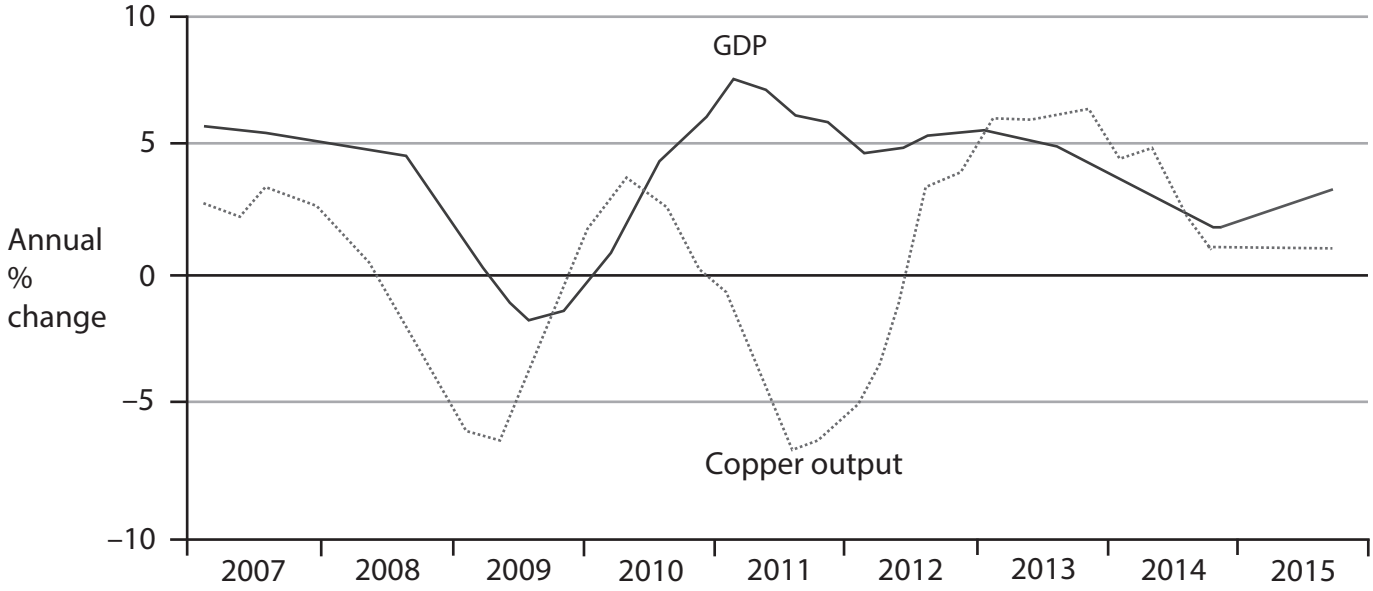


(Source: https://www.google.co.uk/finance?q=CLPUSD&ei=OGEvVun-AouIU6awjugF)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

stemup.co.uk

Figure 3: Chile: copper output and real GDP growth, 2007–2015



(Source: adapted from FT.com sources below)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

Extract A

Chile's economic outlook brightens

Chile has been hit hard by a worldwide fall in commodity prices since 2011. Copper accounts for 20% of Chile's GDP and 60% of its exports; one third of the world's copper is produced by Chile. China purchased 40% of the world's copper, so a slowdown in China combined with increased global over-supply has meant copper prices have collapsed (see Figure 1). Chilean government income from copper exports had reached $11.5 billion a year before copper prices fell, but now tax revenues from this source have fallen drastically. Growing numbers of copper mines struggle to break even at current prices.

Chile's GDP is now growing, helped by a weak currency that has boosted export industries outside the mining sector, such as its successful wine and salmon industries. There are strengths in tourism and high-tech products. Public services are good in Chile, and poverty rates have been falling fast. On top of this, a large and diversified financial sector with high domestic savings provides a useful safety net, given high levels of corporate debt and the government's need to finance a fiscal deficit of 3% of GDP.

Chile's economy is often regarded as the best run in the region. This is attributed to the credibility of its financial institutions, relatively low levels of national debt (about 15% of GDP) and its free-trade model, which is unrestricted by government interventionism that has distorted the economies of countries such as Argentina and Venezuela. "Chile is an example of how credible institutions can smooth the economic cycle and make adjustments less traumatic," said Mr Valdés, the minister of finance in Chile, pointing to its widely respected and independent central bank and a well-established fiscal rule that give officials the freedom to implement counter-cyclical policies.

However, there are worries that without enough spare capacity in the economy, expansionary fiscal and monetary policies could end up increasing inflation rather than economic growth. Meanwhile monetary policy is restricted by inflation that has reached 5%, well outside the central bank's 2–4% target range, fuelled by a weaker exchange rate. Crucially, investment remains low because of uncertainty over the outcome of the Prime Minister's reforms, which are aimed at reducing inequality. A recent rise in corporation tax from 20% to 25% and labour market reforms that strengthen the power of trade unions may have a negative effect on business confidence.

Despite a "mildly contractionary" budget, Valdés insisted that the government would continue with costly reforms. Increased taxes on those on higher incomes are considered by the government to be necessary to sustain economic development in Chile. "We do want to change society, while recognising all the good things that have been done in the past 25 years," said Mr Valdés, referring to an average growth rate of 5.3% over the past three decades, but under 2% in 2015. There is broad consensus that investment in education is the key to unlocking Chile's growth potential.

(Sources: adapted from http://www.ft.com/cms/s/0/89926ce8-df96-11e4-a6c400144feab7de html#axzz3pCnzT3PC FT 20 April 2015 and http://www.ft.com/cms/s/0/d60ac2b2-7453-11e5-a129-3fcc4f641d98.html?siteedition=uk#axzz3pCnzT3PC FT 19 October 2015 and http://www.ft.com/cms/s/0/d60ac2b2-7453-11e5-a129-3fcc4f641d98.html?siteedition=uk#axzz3pCnzT3PC FT 19 October 2015 all by Benedict Mander)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

stemup.co.uk

Extract B

Chile's copper mining on a downward track

There was a time when investing in Chilean mining meant guaranteed success. After 1990, when military rule was replaced by an elected government, market reforms and restored relations with the US and UK meant foreign companies were keen to exploit vast copper reserves. The existence of large copper reserves in a stable country with a business-friendly government is rare, making Chile much more attractive to investors than countries such as Zambia.

By mid-2015, however, the copper price hit a six-year low. Chilean mines are becoming less productive. After 20 years of heavy digging, the ore is lower grade, and much further down. The deeper pits take longer to mine, and use more fuel. Wages are high, and trade unions are powerful. A mining truck driver earns $70 000 a year, $10 000 more than the US equivalent. Many mining projects that were planned are being postponed, and investors are looking to Peru; even the US copper mining industry is becoming more competitive.

Energy supply is also a worry as Chile produces virtually no fossil fuels and relies on imported coal and liquid natural gas to power its mines. Energy costs account for 18% of the cost of copper production.

Water supply is also becoming a major problem. Farmers and communities accuse mining companies of causing water shortages to keep their operations running. A prolonged drought has not helped. Mining firms are turning to desalination plants or using untreated seawater. However pumping water 200 kilometres from the Pacific Ocean to the copper mines is costly.

Chile's environmentalist movement has forced the government to tighten regulations. In 2001, it took 236 days to get an environmental impact assessment of a new mine approved. By 2013, this had increased to 506 days.

(Source: adapted from http://www.ft.com/cms/s/0/ea060ef4-6ae2-11e5-8171-ba1968cf791a.html#axzz3p20if45k Gideon Long September 27, 2015)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

1 (a) With reference to Figure 2, explain **one** likely reason for the change in the Chile peso exchange rate between 2013 and 2015.

(5)

(b) Examine the likely impact of externalities of copper mining on firms and communities within Chile.

(8)

(c) Apart from externalities, discuss the problems that Chile faces as a result of dependency on copper mining.

(12)

EITHER

(d) With reference to the information provided and your own knowledge, evaluate the microeconomic and macroeconomic effects of policies that could be used to stimulate economic growth and development in Chile.

(25)

OR

(e) With reference to the information provided and your own knowledge, evaluate the microeconomic and macroeconomic impact on Chile's economy of changes in the level of investment.

(25)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

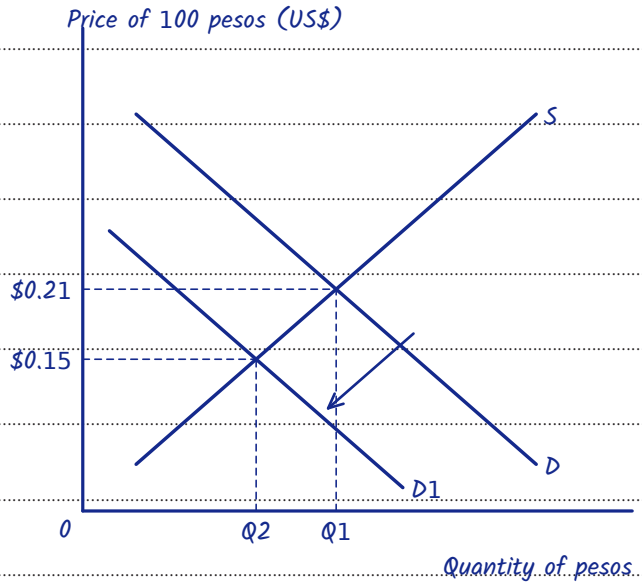
stemup.co.uk

(a) With reference to Figure 2, explain **one** likely reason for the change in the Chile peso exchange rate between 2013 and 2015.

(5)

One likely reason is the fall in the world price of copper, which reduced the demand for pesos. Figure 2 shows the peso falling from about $0.21 per 100 pesos in early 2013 to about $0.15 by late 2015, a depreciation of roughly 30%. Over the same period Figure 1 shows copper prices falling from about $8,000 to about $5,000 per tonne, a fall of over 35%.

Copper accounts for 60% of Chile's exports (Extract A). Because demand for copper is price inelastic in the short run, the fall in its price causes the value of copper exports to fall, so foreign buyers need fewer pesos to pay for them. In addition, foreign direct investment in Chilean mining is falling as projects are postponed and investors look to Peru (Extract B), which further reduces the demand for pesos. As shown in the diagram, the demand curve for pesos shifts left from D to D1, so the exchange rate falls from $0.21 to $0.15 per 100 pesos.



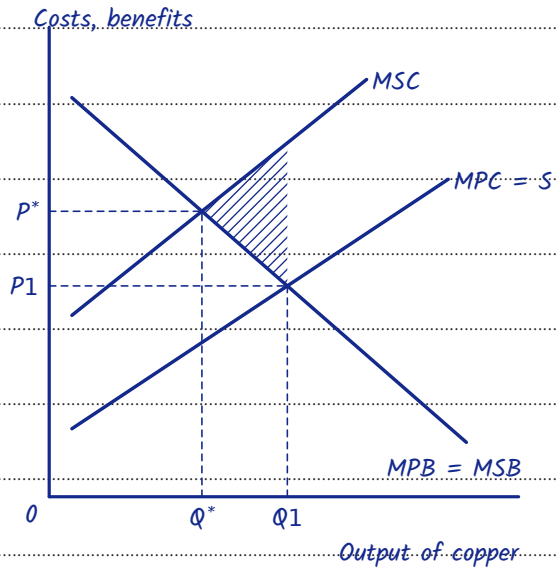
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

(b) Examine the likely impact of externalities of copper mining on firms and communities within Chile.

(8)

Externalities are costs or benefits that fall on third parties outside the market transaction, so the social cost of copper mining (private cost plus external cost) exceeds the private cost paid by mining firms.

Firms in other industries are affected. Farmers accuse mining companies of causing water shortages to keep their operations running (Extract B), so farms face lower yields or must pay more for water, raising their costs and reducing output and profits, a problem made worse by the prolonged drought. Mines also have a huge demand for energy, relying on imported coal and liquid natural gas, which pushes up energy costs for other firms. Competition for labour with highly paid miners (a truck driver earns $70,000) raises wages that other firms must pay.



Communities suffer too. Households face problems of water access, while deeper pits use more fuel and water must be pumped 200 kilometres from the Pacific, causing noise, air pollution and carbon emissions that reduce the welfare of local people. In the diagram the MSC lies above MPC, so the market produces Q1 rather than the socially optimal Q^*, creating the shaded welfare loss.

However, there are also positive externalities: mining creates a local multiplier effect and better infrastructure, and copper tax revenue of $11.5 billion a year helped fund public services and falling poverty, so the net impact may be positive. The size of the external costs is hard to measure, and some water shortages are due to drought rather than mining. Tighter regulation, with environmental assessments rising from 236 to 506 days, should also reduce the impact over time, though at a cost to new mining investment.

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

stemup.co.uk

(c) Apart from externalities, discuss the problems that Chile faces as a result of dependency on copper mining.

(12)

Copper accounts for 20% of Chile's GDP and 60% of its exports, so the economy is highly exposed to changes in the world copper price. Figure 1 shows the price falling from about $9,500 per tonne in early 2011 to about $5,000 in 2015, a fall of almost 50%. As export earnings fall, incomes in mining regions fall and, through the negative multiplier, so does spending across the wider economy: growth fell from an average of 5.3% over three decades to under 2% in 2015.

Dependency also damages government finances. Revenue from copper, through corporation tax on mining profits and the profits of the state-owned producer, had reached $11.5 billion a year but has now fallen drastically, contributing to a fiscal deficit of 3% of GDP. This limits spending on education and public services, or forces higher taxes on other sectors.

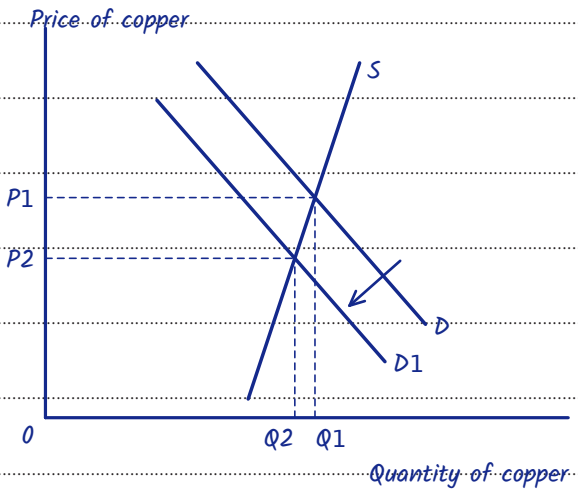
A further problem is price volatility. Both demand for and supply of copper are price inelastic, as shown in the diagram, so a small fall in demand caused by the slowdown in China, which buys 40% of the world's copper, causes a large fall in price from P1 to P2. Volatile prices create uncertainty, discouraging investment and FDI: mining projects are being postponed and investors are looking to Peru (Extract B). Growing numbers of mines struggle to break even, and if price falls below average variable cost they will shut down, causing structural unemployment in mining areas.

When copper prices were high, export revenues pushed the peso up (to about $0.22 per 100 pesos in 2011), a form of 'Dutch disease' that made wine, salmon and manufactured exports less competitive and held back diversification. Now that demand for copper has fallen, the peso has depreciated, raising the price of imported coal and gas and causing cost-push inflation of 5%, above the 2 to 4% target. In the long run, the Prebisch-Singer hypothesis suggests primary product exporters face declining terms of trade, because the income elasticity of demand for commodities is low.

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

However, dependency on copper has brought advantages. When prices were high for a prolonged period, from 2009 to 2011, the revenue helped Chile build a strong financial sector, cut poverty and keep national debt at only about 15% of GDP. Other industries such as wine, salmon, tourism and high-tech products are thriving, helped by the weaker peso, so the depreciation partly corrects the over-dependency. Chile is regarded as the best run economy in the region, with a credible independent central bank and a fiscal rule that allow counter-cyclical policy, so it is better placed than Venezuela to absorb the shock. Copper prices have also been far less volatile since 2011 than in 2007 to 2009.

Overall, dependency on copper is a serious problem because it makes incomes, tax revenue and investment vulnerable to world prices outside Chile's control, but its strong institutions and growing non-mining exports mean the impact is likely to be a slowdown rather than a crisis.



DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

stemup.co.uk

EITHER

(d) With reference to the information provided and your own knowledge, evaluate the microeconomic and macroeconomic effects of policies that could be used to stimulate economic growth and development in Chile.

(25)

OR

(e) With reference to the information provided and your own knowledge, evaluate the microeconomic and macroeconomic impact on Chile's economy of changes in the level of investment.

(25)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

Indicate which question you are answering by marking a cross in the box ☒. If you change your mind, put a line through the box ☒ and then indicate your new question with a cross ☒.

Chosen question number: **Question 1(d)** ☒ **Question 1(e)** ☒

Write your answer here:

Question 1(d)

Economic growth is an increase in real GDP or in the productive potential of the economy, while economic development is an improvement in living standards and welfare, measured for example by the HDI (income, health and education) and by reductions in poverty and inequality. Chile's growth has fallen from an average of 5.3% to under 2% in 2015, so policies to stimulate both are needed.

Expansionary monetary policy, cutting interest rates, reduces the cost of borrowing for households and firms. At a micro level, mortgage payments fall, raising disposable income, and firms find more investment projects profitable. At a macro level consumption and investment rise, shifting AD right with a multiplier effect, raising real GDP and employment. Lower rates also cause hot money outflows, so the peso depreciates further, making wine and salmon exports more price competitive and improving the current account.

However, inflation is already 5%, well outside the 2 to 4% target and fuelled by the weak peso, so the independent central bank is unlikely to cut rates. As the diagram shows, if there is little spare capacity, an increase in AD from AD1 to AD2 mainly raises the price level from P1 to P2, with only a small rise in output from Y1 to Y2. Investment is also held back by uncertainty over reforms rather than by the cost of borrowing, so it may be interest inelastic.

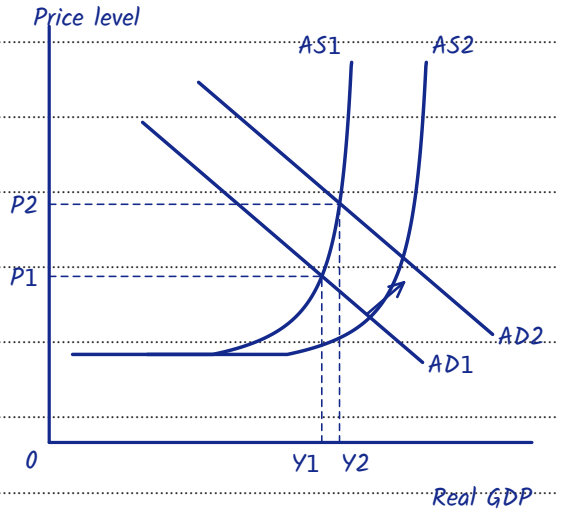
Expansionary fiscal policy could raise government spending on infrastructure, health and education, or cut income tax. Cutting income tax raises real disposable incomes and strengthens incentives to work, while extra spending is an injection with a multiplier effect on AD. Chile is well placed to do this: national debt is only about 15% of GDP, the fiscal rule is credible and high domestic savings make it easy to finance borrowing. Yet the fiscal deficit is already 3% of GDP and copper revenue has collapsed, which is why the budget is 'mildly contractionary', and crowding out or inflation could

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

result.

Supply-side policies are likely to be more sustainable.

Extract A says investment in education is the key to unlocking Chile's growth potential. Better education and training raise human capital and labour productivity, shifting LRAS to the right (AS1 to AS2 in the diagram), so growth occurs without inflation. At a micro level, workers gain skills, higher wages and better employment



prospects, especially the poor, so inequality and poverty fall, which is economic development: higher incomes allow better nutrition, health care and longer life expectancy. Investment in renewable energy, such as solar power, would cut reliance on imported coal and gas, which make up 18% of copper production costs, lowering costs for firms and reducing pollution and water problems.

Policies that diversify the economy are also important. Maintaining free trade, deregulation and competition makes markets more efficient and encourages growth of wine, salmon, tourism and high-tech exports, reducing dependency on copper and improving international competitiveness. Faster environmental approvals (now 506 days compared with 236 in 2001) would encourage mining investment.

Development could also be promoted directly through targeted welfare spending, such as cash transfers to poor families that keep children in school, and investment in health care and housing. These raise life expectancy and literacy, improving the HDI even if GDP growth is slow, and spending by low-income households, who have a high MPC, has a large multiplier effect that also supports growth. Price controls, such as maximum prices for water, could protect households from shortages but would discourage investment and cause excess demand.

These policies involve conflicts. Faster approvals would raise output but worsen water shortages and pollution, harming development. The government's redistribution, with higher taxes on higher incomes, corporation tax up from 20% to 25% and stronger trade unions, should reduce inequality and fund

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

education, but it may reduce business confidence and investment, slowing growth, while wages are already high ($70,000 for a truck driver). Education has long time lags and its quality is hard to measure, so it will not raise growth quickly. Objectives may also conflict: the short-run Phillips curve suggests that reducing unemployment through expansionary policy raises inflation, and a further depreciation would raise import prices, reducing the real incomes of the poor and harming development.

In conclusion, demand-side policies offer limited help because inflation is already above target and spare capacity is limited. The best approach is supply-side: investment in education and energy alongside free trade, which raises both growth and development in the long run. Chile's credible institutions and low debt mean it can afford this, but success depends on balancing redistribution with business confidence.

Question 1(e)

Investment is spending on capital goods, such as machinery, mines and infrastructure, and on human capital through education. It is a component of AD (C + I + G + X − M) and also adds to productive capacity. Chile's investment 'remains low' because of uncertainty over reforms, and mining projects are being postponed as investors look to Peru, so the level of investment is falling.

At a micro level, a fall in investment reduces demand for firms producing capital goods, such as mining equipment and construction, so their revenue, profits and employment fall. Workers in mining regions face fewer jobs and lower incomes. Without new capital, labour productivity stagnates and unit costs rise: Chilean mines are already becoming less productive as ore is lower grade and deeper.

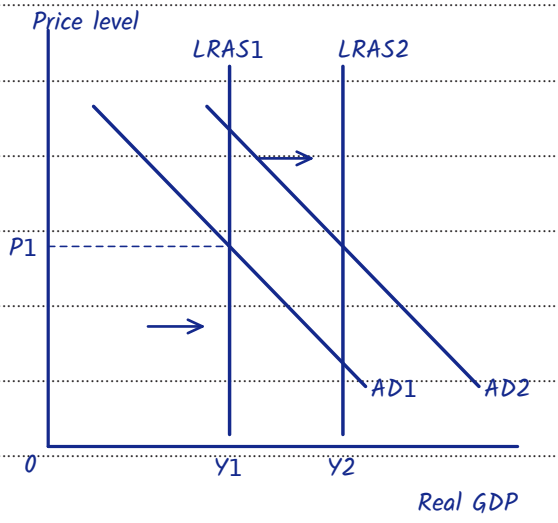
Conversely, an increase in investment, for example in desalination plants or renewable energy, would cut firms' water and energy costs, raise productivity and wages, and, through research and

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

stemup.co.uk

development, create new high-tech products that improve quality of life. A fall in investment also damages confidence: as firms postpone projects, households fear job losses and save more, reducing demand for other firms' products. Figure 3 shows copper output growth falling from about 6% in 2013 to about 1% in 2015 as mining investment slowed.

At a macro level, a fall in investment shifts AD to the left, and through the multiplier and accelerator effects real GDP falls by more than the initial fall in investment, raising unemployment; this helps explain growth falling below 2% in 2015. An increase in investment does the opposite and, as the diagram shows, also shifts LRAS to the right from LRAS1 to LRAS2 as capacity grows, so real GDP rises from Y1 to Y2 without raising the price level. Investment in education is crucial to this (Extract A): it raises the skills and incomes of the poor, supporting the government's aim of reducing inequality, so investment affects development as well as growth. The accelerator theory suggests investment depends on the rate of change of output, so slowing growth reduces investment further, a vicious circle.



Investment also affects inflation and the balance of payments. If investment rises when there is little spare capacity, the increase in AD causes demand-pull inflation, which is a concern with inflation already 5%. Inward FDI creates a capital inflow on the financial account and increases demand for pesos; the fall in FDI in mining has helped weaken the peso since 2013 (Figure 2). In the long run FDI raises export capacity, improving the current account, although repatriated profits are an outflow.

However, the effects depend on the economic view taken. Keynesians argue that where there is a demand deficiency, a rise in investment raises output and jobs through the multiplier, whereas Classical economists stress the supply-side effect on LRAS, with demand effects only causing inflation at full employment. Chile is a very open economy, so much capital equipment is imported,

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

which reduces the multiplier and worsens the current account in the short run.

Investment in capital may also replace labour, for example automated mining trucks, reducing employment. Investment in human capital is hard to measure and has long time lags. The effects depend on whether investment is domestic, financed by Chile's high domestic savings, or FDI, whose profits may leave the country. Investment is volatile, depending on business confidence and the copper price, which the government cannot control, so other injections such as government spending may be more reliable and sustainable.

The data also point both ways: although mining investment is falling, investment in wine, salmon, tourism and high-tech industries is growing, helped by the weaker peso, so the overall change in investment may be smaller than Extract B suggests. On the other hand, the rise in corporation tax from 20% to 25% and stronger trade unions may reduce investment further.

In conclusion, changes in investment have large effects on Chile, reducing growth and jobs in the short run and productivity in the long run when investment falls. An increase would be very beneficial provided it is in diversified sectors and education rather than only copper, and that inflation is kept under control.

(Total for Question 1 = 50 marks)

TOTAL FOR SECTION A = 50 MARKS

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

stemup.co.uk

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

BLANK PAGE

QUESTION 2 BEGINS ON THE NEXT PAGE.

SECTION B

Read Figures 4 to 6 and the following extracts (C and D) before answering Question 2.

Answer ALL Questions 2(a) to 2(c), and EITHER Question 2(d) or 2(e).

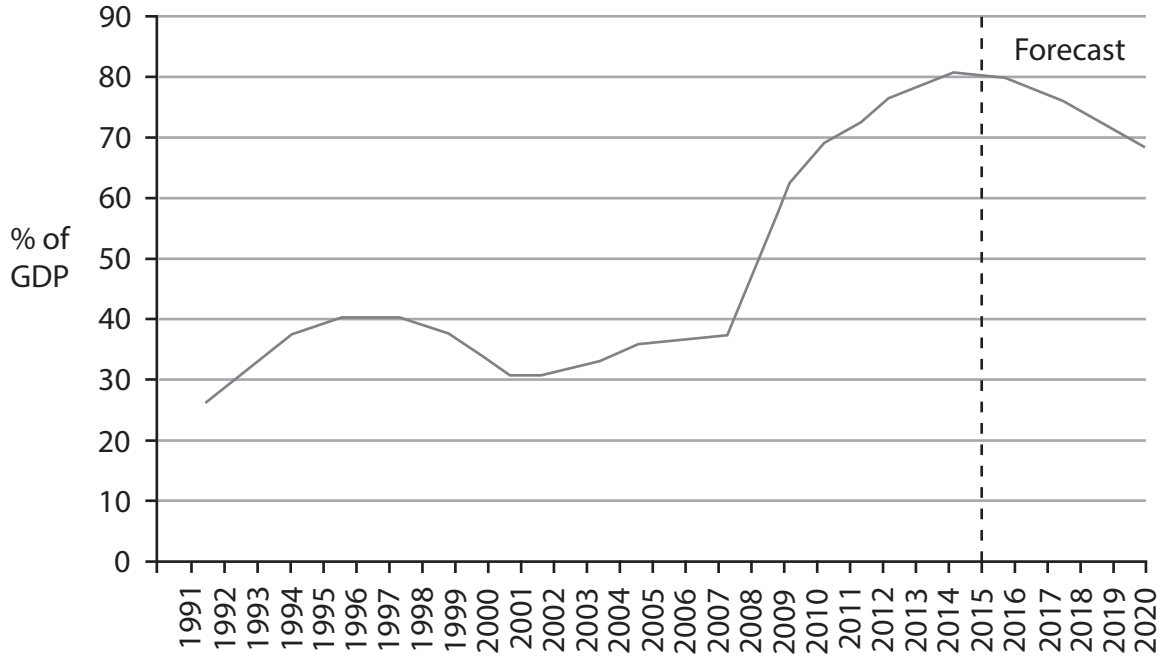
Write your answers in the spaces provided.

You are advised to spend 1 hour on this section.

Question 2

The UK economy

Figure 4: UK national debt as a percentage of GDP

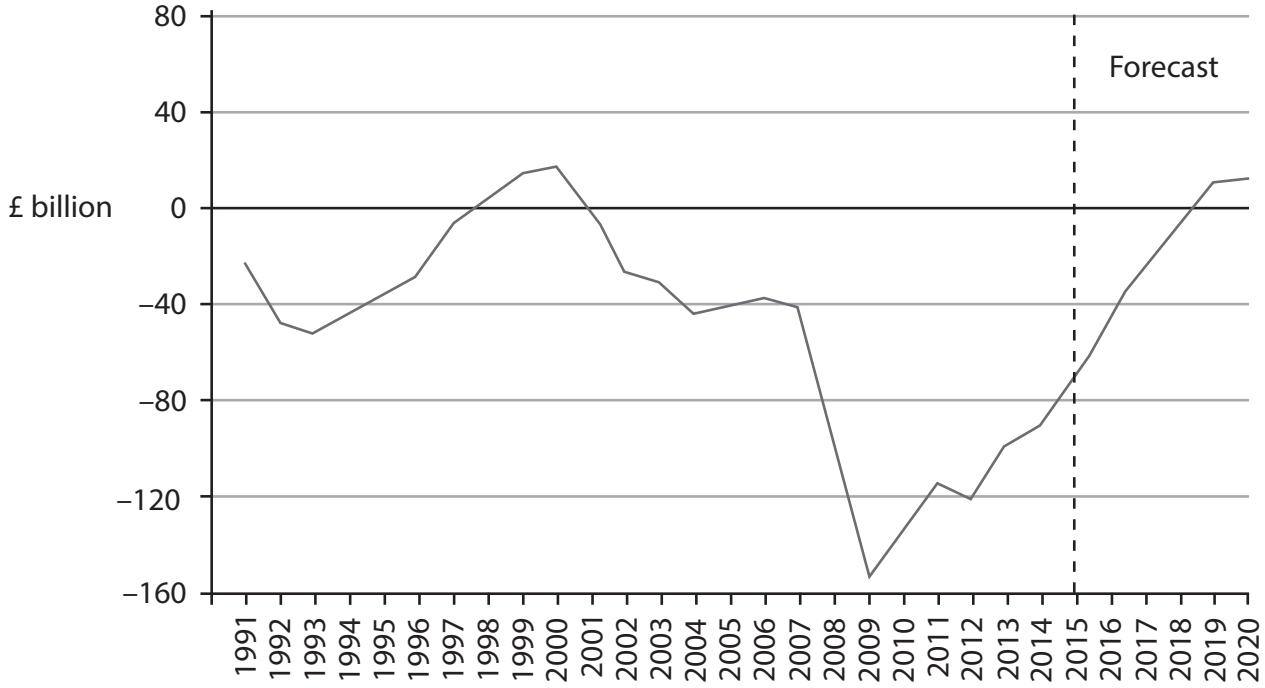


(Source: http://budgetresponsibility.org.uk/docs/dlm_uploads/BriefGuide_020511.pdf)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

stemup.co.uk

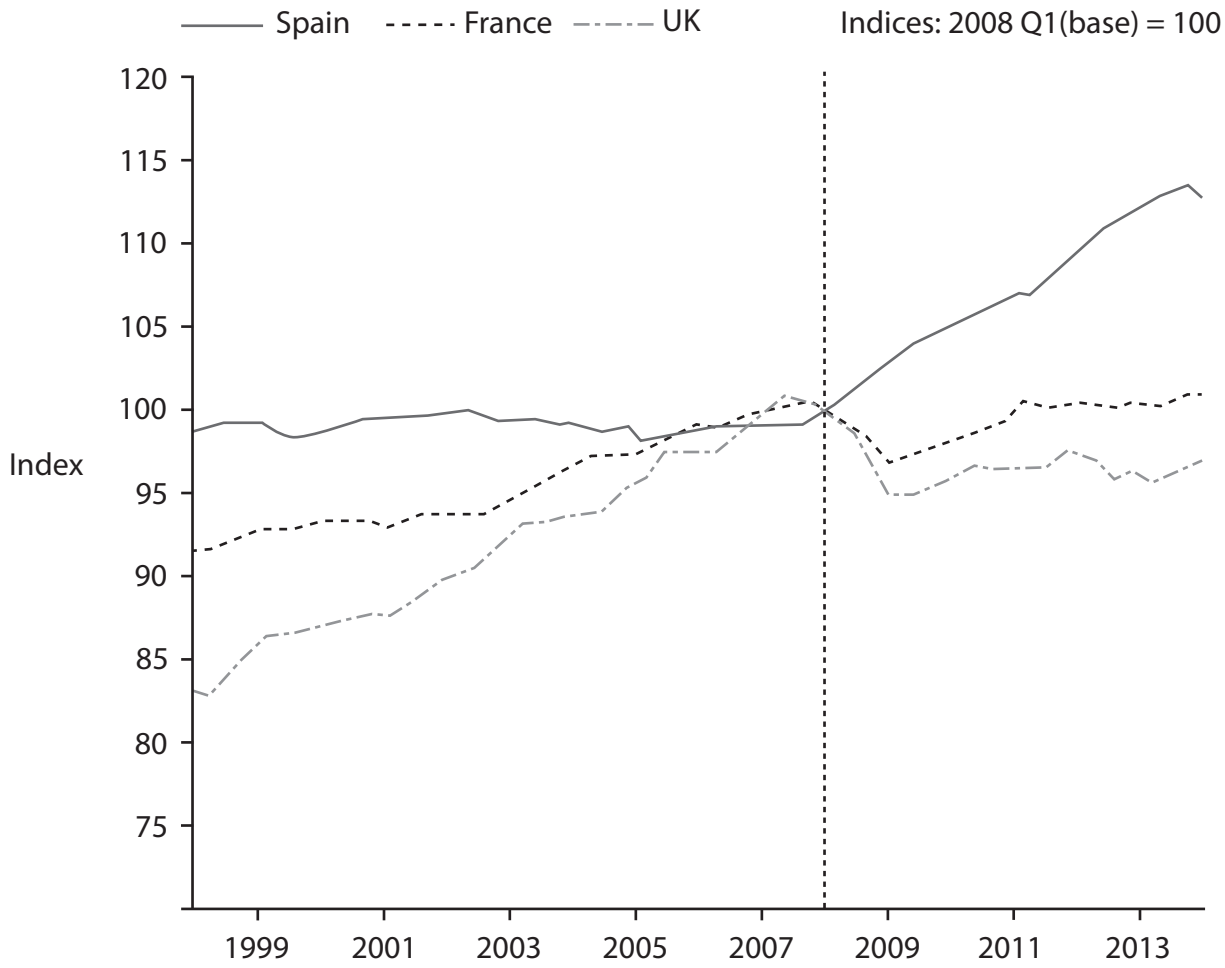
Figure 5: UK fiscal deficit, public sector net borrowing (PSNB)



(Source: http://budgetresponsibility.org.uk/docs/dlm_uploads/BriefGuide_020511.pdf)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

Figure 6: Labour productivity per head, selected countries



(Source: http://www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2014/qb14q201.pdf)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

Extract C

The National Living Wage (NLW)

The Government has announced that from 2016 it will introduce a Living Wage Premium that will apply on top of the National Minimum Wage (NMW) for employees aged 25 and over to deliver a National Living Wage (NLW) for those people. The main NMW will continue to be set for all employees aged 21 and over, so that those aged 21 to 24 will continue to be subject only to that rate.

The effective minimum wage for the 25+ age group will therefore be over 13% higher in 2020 than would otherwise have been the case, and result in a 0.3% increase in wage costs overall. Further impacts on real GDP are estimated to be higher productivity (+0.3%) but lower average hours worked (-0.2%) and higher unemployment. Overall real GDP is forecast to fall by 0.1% as a result of the NLW. However these forecasts depend on estimates of the likely elasticity of demand for labour.

Academic evidence suggests that changes to the NMW since 1999 have led to only limited effects on demand for labour in the UK. The types of work that will be affected are relatively labour intensive, which may limit the scope for firms to substitute towards using capital. Firms may also be expected to shift demand in favour of the under-25s given that they will not be subject to the NLW, which all else being equal would lead to a smaller reduction in overall labour demand. Some of the reduction in employees could also be partially offset by a rise in self-employment. But increasing the NLW to a higher proportion of median earnings may lead to bigger effects than have been experienced in the past.

(Sources: adapted from http://cdn.budgetresponsibility.independent.gov.uk/July-2015-EFO-234224.pdf and http://budgetresponsibility.independent.gov.uk/)

Extract D

The productivity puzzle in the UK

Since the onset of the 2007–2008 financial crisis, labour productivity growth in the UK has been exceptionally weak. Despite some modest improvements in 2013, whole-economy output per hour remains around 16% below the level implied by its pre-crisis trend. Even taking into account possible measurement issues and changes in the size of the service sector, this shortfall is large and is often referred to as the 'productivity puzzle'.

Measures of productivity can be used to inform estimates of an economy's ability to grow without generating excessive inflationary pressure, which makes understanding recent movements important for the conduct of monetary policy. During the initial phases of the recession, companies appear to have acted flexibly by holding on to labour and lowering levels of capacity utilisation in response to weak demand conditions. But the protracted weakness in productivity and the strength in employment growth over the past two years suggest that other factors are likely to be having a more persistent impact on the level of productivity. These factors are reduced investment in both physical and intangible capital, such as innovation and training, and failings in the labour market such as immobility of labour and under-employment of skilled workers. Some economists explain this by using the concept of an output gap.

(Source: adapted from http://www.bankofengland.co.uk/publications/Documents/quarterlybulletin/2014/qb14q201.pdf)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

2 (a) With reference to Extract D (line 18), explain the meaning of the term 'output gap'. Use an aggregate demand and aggregate supply diagram in your answer.

(5)

(b) With reference to Figures 4 and 5 and your own knowledge, examine the relationship between the national debt as a proportion of GDP and the fiscal deficit.

(8)

(c) Discuss the likely impact of the National Living Wage on the profitability of firms. Use a cost and revenue diagram in your answer.

(12)

EITHER

(d) With reference to the information provided and your own knowledge, evaluate the likely microeconomic and macroeconomic influences on the UK's international competitiveness.

(25)

OR

(e) With reference to the information provided and your own knowledge, evaluate the microeconomic and macroeconomic effects of a government policy of cutting public expenditure rather than raising taxes as a means of reducing a fiscal deficit.

(25)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

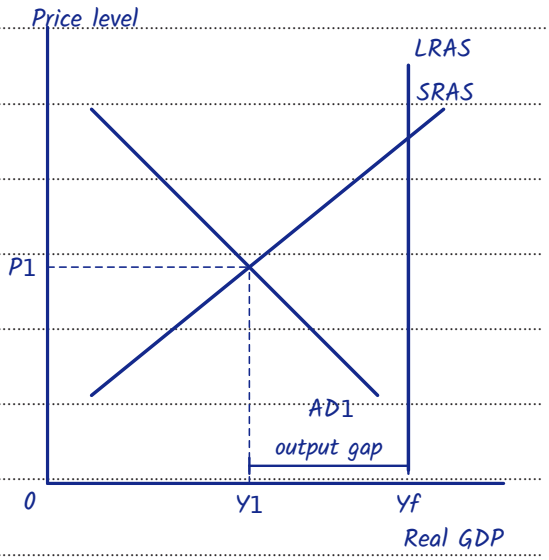
stemup.co.uk

(a) With reference to Extract D (line 18), explain the meaning of the term 'output gap'. Use an aggregate demand and aggregate supply diagram in your answer.

(5)

An output gap is the difference between an economy's actual level of output (real GDP) and its potential or trend level of output. A negative output gap exists when actual output is below potential, so the economy has spare capacity and resources such as labour are under-used.

In the diagram, AD1 intersects SRAS at Y1, below the full capacity output Yf where LRAS is, so the gap Y1 to Yf is a negative output gap. Extract D refers to 'weak demand conditions' and the under-employment of skilled workers, with firms holding on to labour and lowering capacity utilisation. UK output per hour is around 16% below its pre-crisis trend, and Figure 6 shows UK labour productivity falling from 100 in 2008 to about 95 in 2009 and only about 97 by 2013. This means less is being produced than could be produced, which is inefficient, but it also means output can grow without excessive inflationary pressure until the gap is closed.



DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

(b) With reference to Figures 4 and 5 and your own knowledge, examine the relationship between the national debt as a proportion of GDP and the fiscal deficit.

(8)

A fiscal deficit is the amount by which government spending exceeds government revenue in a year (G > T), financed by public sector net borrowing. The national debt is the accumulated stock of all past borrowing, here measured as a percentage of GDP.

The two are directly related because the deficit is a flow that adds to the stock of debt each year. Figure 5 shows the deficit rising from about £40 billion in 2007 to about £150 billion in 2009, and Figure 4 shows national debt rising from under 40% of GDP in 2007 to about 80% by 2014. Similarly, the small surpluses of 1998 to 2001 coincided with debt falling to about 30% of GDP.

However, they can move in different directions. After 2015 the debt ratio is forecast to fall to about 68% of GDP by 2020, even though the deficit persists until about 2018 (around £60 billion in 2015). This is because nominal GDP is expected to grow faster than the debt, so the denominator rises more quickly. A large debt can also increase the deficit, as debt interest payments are part of government spending.

The relationship is therefore usually direct but becomes inverse after 2015. However, the fall in the debt ratio depends not on austerity alone but on the expectation of rising GDP, and these are only OBR forecasts: slower growth, for example due to Brexit or weak productivity (Figure 6), or a rise in interest rates would increase the deficit and the debt ratio. One-off factors such as privatisation receipts or QE can also affect the figures, and there is a time lag before deficit reduction reduces the debt ratio.

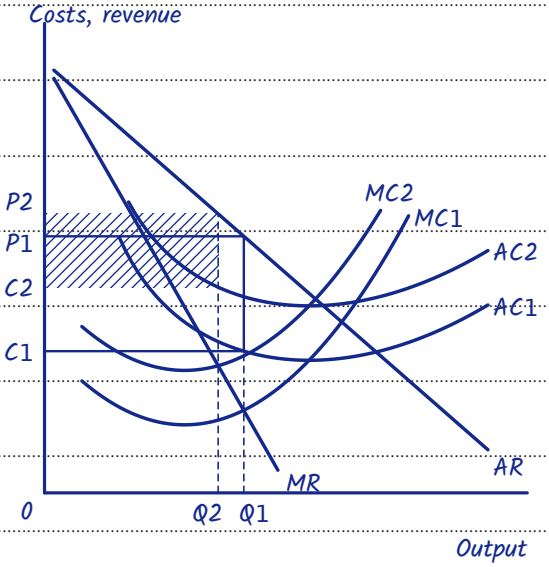
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

stemup.co.uk

(c) Discuss the likely impact of the National Living Wage on the profitability of firms. Use a cost and revenue diagram in your answer.

(12)

The National Living Wage (NLW) is a legal minimum wage for employees aged 25 and over, set above the market wage. Extract C says it makes the effective minimum wage for this group over 13% higher by 2020, raising overall wage costs by 0.3%.



Wages of hourly paid workers are a variable cost, so the NLW raises the marginal cost and average cost of production. In the diagram, MC1 and AC1 shift up to MC2 and AC2. A profit-maximising firm produces where MC = MR, so output falls from Q1 to Q2 and price rises from P1 to P2. Supernormal profit falls from the outlined area P1 to C1 to the smaller hatched area P2 to C2, so profitability falls. The impact is largest in labour-intensive sectors such as retail, hospitality and social care, where low-paid labour is a high proportion of total costs, and where Extract C notes there is little scope to substitute capital for labour. If the extra cost is treated as a fixed cost, for example salaried staff, only AC shifts up, so output and price are unchanged but profit still falls.

However, there may be offsetting effects on revenue. Low-paid workers have a high marginal propensity to consume, so their higher incomes increase demand for normal goods, shifting AR and MR to the right and raising revenue for firms such as supermarkets and restaurants. Higher wages may also raise productivity (Extract C estimates +0.3%) by motivating workers and reducing staff turnover and recruitment costs, so unit labour costs may rise by less than wages, as efficiency wage theory suggests.

The overall impact on profitability depends on several factors. First, the proportion of costs made up by low-skilled labour: for a supermarket it is large, for an oil refinery small. Second, the price elasticity of demand for the firm's product: if demand is price inelastic, firms can pass on the

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

increased costs to consumers and protect their margins, but in competitive markets they must absorb them. Third, the elasticity of demand for labour: firms can substitute towards workers under 25, who are not covered by the NLW, or use more self-employed workers, so the rise in costs is smaller. Academic evidence suggests past increases in the NMW had only limited effects, but the NLW is a higher proportion of median earnings, so the effect may be bigger. Real rather than nominal wage changes matter too, as inflation erodes the increase.

Overall, the NLW is likely to reduce profitability, especially for small, labour-intensive firms in competitive markets, but for most firms the effect will be modest because labour costs rise by only 0.3% overall and higher demand and productivity partly offset the cost increase.

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

stemup.co.uk

EITHER

(d) With reference to the information provided and your own knowledge, evaluate the likely microeconomic and macroeconomic influences on the UK's international competitiveness.

(25)

OR

(e) With reference to the information provided and your own knowledge, evaluate the microeconomic and macroeconomic effects of a government policy of cutting public expenditure rather than raising taxes as a means of reducing a fiscal deficit.

(25)

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

Indicate which question you are answering by marking a cross in the box ☒. If you change your mind, put a line through the box ☒ and then indicate your new question with a cross ☒.

Chosen question number: **Question 2(d)** ☒ **Question 2(e)** ☒

Write your answer here:

Question 2(d)

International competitiveness is the ability of a country's firms to sell goods and services in world markets on the basis of price and quality. It is often measured by relative unit labour costs, relative export prices or the real exchange rate.

The most important microeconomic influence is labour productivity. Figure 6 shows UK productivity per head falling from 100 in 2008 to about 95 in 2009 and recovering only to about 97 by 2013, while Spain's rose to about 113 and France's to about 101. Extract D says UK output per hour is around 16% below its pre-crisis trend, the 'productivity puzzle'. Lower productivity raises unit labour costs relative to competitors, worsening price competitiveness. Extract D explains this by reduced investment in physical and intangible capital such as innovation and training, and by failings in the labour market such as immobility of labour and under-employment of skilled workers.

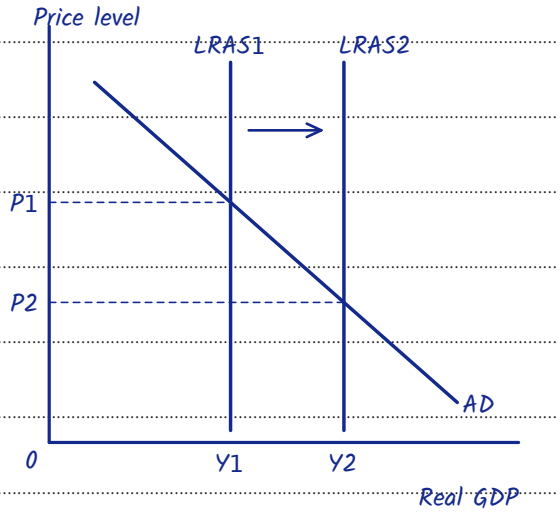
Wage costs also matter. The National Living Wage raises the minimum wage for over-25s by over 13% by 2020 (Extract C), so unless productivity rises by more, unit labour costs rise. Other labour market factors include the strength of trade unions and regulation; the UK's flexible labour market is a strength. Market structure matters too: competitive markets, enforced by competition policy, force firms to cut costs and innovate, whereas monopolies may be X-inefficient. Non-price factors such as quality, design, reliability and brand image are vital in sectors like cars, pharmaceuticals and financial services, while regulation and green taxes raise firms' costs. Occupational and geographical immobility of labour, for example high housing costs in London and skills mismatches, leaves skilled workers under-employed, so training, apprenticeships and housing supply would raise productivity.

Macroeconomic influences include the real exchange rate: a depreciation of sterling, as after the 2016 referendum, makes exports cheaper and imports dearer, improving price competitiveness, while relatively

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

stemup.co.uk

high inflation worsens it. Investment in infrastructure and education raises productive capacity and shifts LRAS to the right, as in the diagram, lowering the price level from P1 to P2 relative to trading partners. Fiscal policy matters: with debt around 80% of GDP (Figure 4) and a large deficit (Figure 5), austerity has cut public investment in infrastructure and training, while lower corporation tax attracts FDI. Membership of trading blocs such as the EU single market, the level of protectionism and comparative advantage in services also influence how competitive UK firms are abroad.



However, the importance of each influence depends on the sector. Unit labour costs are more significant in countries with a strong manufacturing base, but around 80% of UK output is services, where quality and reputation matter more than price, and many services are non-tradable. Germany has high wages yet is very competitive because of high productivity and quality, so wages alone do not decide competitiveness.

The data must also be treated with caution. Spain's productivity rose largely because employment fell sharply in its recession, whereas UK firms held on to labour, so the UK's weak productivity partly reflects high employment, which is not entirely negative. Productivity is also hard to measure, especially in services, so part of the puzzle may be measurement error. A depreciation improves competitiveness only in the short run if it raises import costs and inflation, and the Marshall-Lerner condition must hold for the current account to improve. If firms held on to labour during the recession (Extract D), productivity should rise as demand recovers and the output gap closes, so part of the problem may be cyclical rather than structural. Price competitiveness indices also ignore quality: UK strengths in finance, higher education and creative industries depend on skills and reputation rather than cost.

In conclusion, productivity is the most significant long-run influence on UK competitiveness, and it

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

depends on both micro factors (firms' investment, training and competition) and macro factors (infrastructure, education and fiscal policy), whereas exchange rate changes give only a temporary advantage. Raising investment is therefore the key priority.

Question 2(e)

A fiscal deficit occurs when government spending (G) exceeds tax revenue (T). Figure 5 shows UK borrowing peaking at about £150 billion in 2009 and still about £90 billion in 2014, with debt near 80% of GDP (Figure 4). Since 2010 the UK has reduced the deficit mainly by cutting G rather than raising T.

At a micro level, cutting G means reduced benefits for non-working recipients and reduced work-related benefits such as working tax credits, so poorer households lose disposable income. However, this increases incentives to work, raising the supply of labour, which helps firms recruit and restrains wage costs. Public sector pay freezes and job cuts affect workers directly, and services such as schools, policing and the NHS may decline in quality. Firms that supply the government, such as construction companies, lose contracts. By contrast, raising taxes changes marginal tax rates: higher

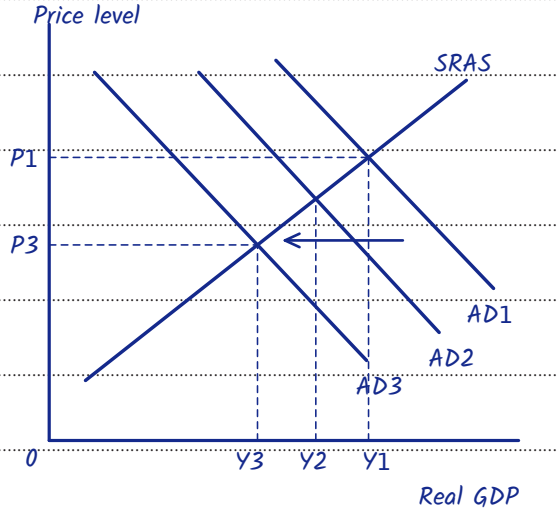
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

stemup.co.uk

income tax may reduce the incentive to work longer hours, and higher corporation tax reduces firms' incentive to invest, while higher VAT raises prices and is regressive.

At a macro level, both policies reduce AD, but cutting G has a larger effect. Government spending is a direct injection into the circular flow, whereas part of any tax rise is paid out of saving because the MPC is less than one, so the tax multiplier is smaller. In the diagram, cutting G shifts AD1 to AD3, reducing real GDP to Y3 and raising unemployment, while raising taxes by the same amount shifts AD only to AD2. Lower AD reduces inflationary pressure and lowers nominal GDP. On the other hand, less government borrowing reduces crowding out, as lower bond yields and interest rates encourage private investment.

Spending cuts are likely to increase income inequality, because the poor rely more on benefits and public services, while progressive tax rises would reduce it. Cuts to education, training and infrastructure may reduce productivity, already weak (Figure 6), creating cost-push pressure and lower long-run growth. However, the Laffer curve suggests raising tax rates may bring in less revenue than expected because of tax avoidance and evasion, so spending cuts are a more certain way to reduce the deficit. Lower incomes also reduce spending on imports, improving the current account, and a VAT rise would directly raise the price level, whereas spending cuts only reduce demand-pull inflation.



Classical economists argue that a smaller state allows lower taxes in future, improving incentives and efficiency, because the private sector uses resources more efficiently. Keynesians stress that austerity reduces GDP and therefore tax revenue and raises benefit spending, so cutting G can be partly self-defeating. Tax rises also involve time lags, as changes are announced in the Budget and collected over the following year, while spending cuts can face delays in implementation.

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA

The effects depend on which spending is cut and which taxes are raised: cutting capital spending harms long-run growth more than cutting wasteful current spending, and raising VAT has different effects from raising income tax. The size of the multiplier differs between groups: cutting benefits to poor households with a high MPC has a larger effect than taxing the rich. Timing matters: in a recession with interest rates near zero, the multiplier is larger and austerity may slow growth so much that the debt ratio falls more slowly.

It is also questionable whether the deficit needs cutting quickly at all. Figure 4 shows national debt as a share of GDP forecast to fall after 2015 even with a continuing deficit, because GDP grows. However, delaying risks a loss of credibility and higher borrowing costs. Cuts can also cause government failure, such as social care cuts raising NHS costs, and the right size of the public sector is a value judgement.

In conclusion, cutting G reduces the deficit more reliably and reduces crowding out, but it has larger short-run effects on AD, unemployment and inequality than raising taxes. The best policy is probably a balance, protecting investment spending and phasing cuts as the economy grows.

(Total for Question 2 = 50 marks)

TOTAL FOR SECTION B = 50 MARKS
TOTAL FOR PAPER = 100 MARKS

Every effort has been made to contact copyright holders to obtain their permission for the use of copyright material. Pearson Education Ltd. will, if notified, be happy to rectify any errors or omissions and include any such rectifications in future editions.

DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA
DO NOT WRITE IN THIS AREA