



GCE AS

B520U20-1



O20-B520U20-1



FRIDAY, 9 OCTOBER 2020 – AFTERNOON

ECONOMICS – AS component 2
Exploring Economic Issues

2 hours

B520U201
01

ADDITIONAL MATERIALS

In addition to this examination paper, you will need a calculator and a WJEC pink 16-page answer booklet.

INSTRUCTIONS TO CANDIDATES

Answer **all** questions.

Use black ink or black ball-point pen.

INFORMATION FOR CANDIDATES

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

Answer all questions.

1. **Zambian economy boosted by rising copper prices**

Zambia expected to produce more than one million tonnes of copper in 2018. Increased production combined with rising copper prices were expected to boost firms' profitability, contribute to rising wages in the sector and increase Zambia's rate of economic growth. This was in turn expected to help cut Zambia's budget/fiscal deficit. Copper is Zambia's largest export and the rising price is also expected to increase the value of the kwacha (Zambia's currency) against the dollar. The kwacha had depreciated by 50 % against the dollar between 2014 and 2016, partly caused by falling copper prices.

The price of copper is rising, partly because of the increasing number of electric cars coming onto the market (copper is a major component in batteries). At the same time copper is running out elsewhere in the world, with global production falling by about 500 000 tonnes per year.

Figure 1: World price of copper (\$US per tonne)

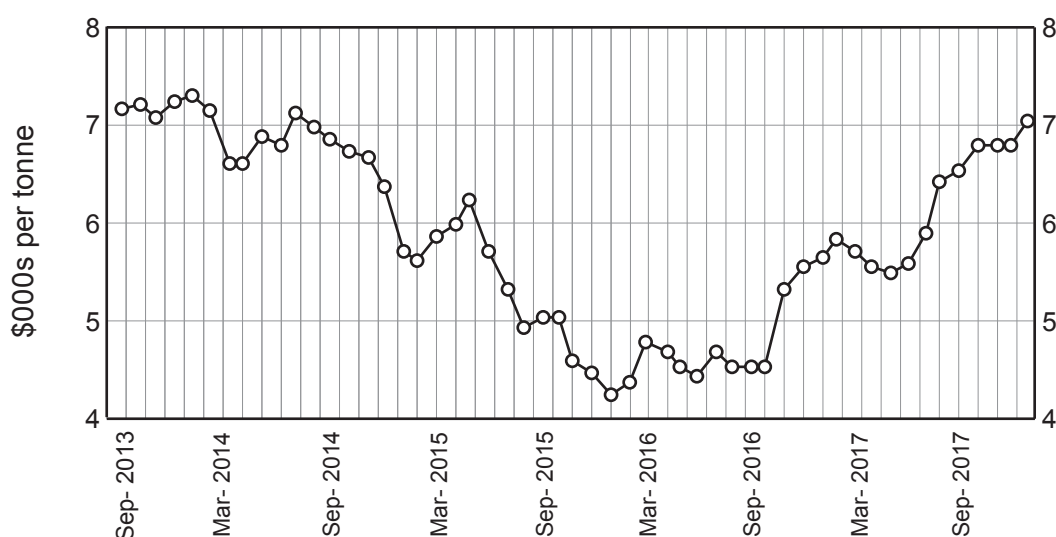


Figure 2: Zambia exchange rate – US dollars per Zambian Kwacha

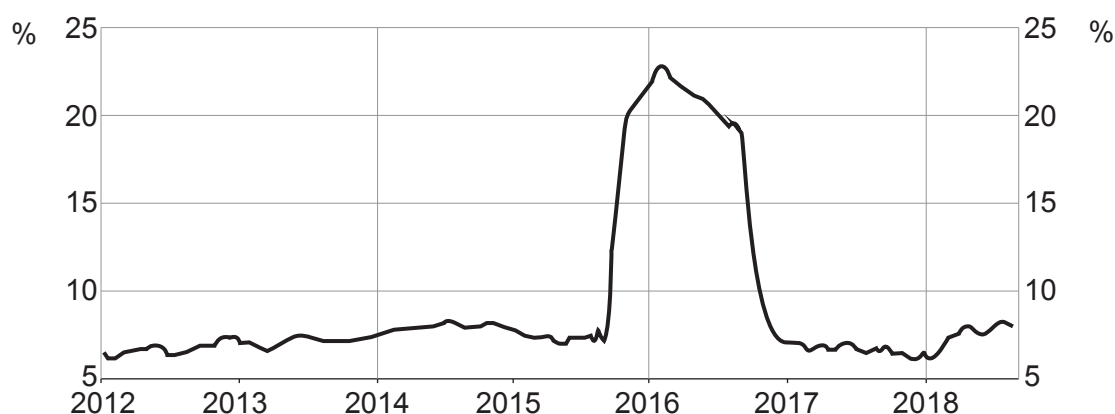


Part of the problem for Zambia's government is that the unstable price of copper makes the economy as a whole unstable too, making macroeconomic policy difficult to implement.

Although the copper industry employs a large number of workers, these workers are often very poorly paid. Low wages are an issue facing both the copper industry and the wider Zambian economy. The government doubled the minimum wage for unskilled workers in late 2018, the first increase since 2012. Whilst many claim that this increase is long overdue as a result of significant inflation, others worry that it will be bad for the economy at both a micro and macro-economic level.

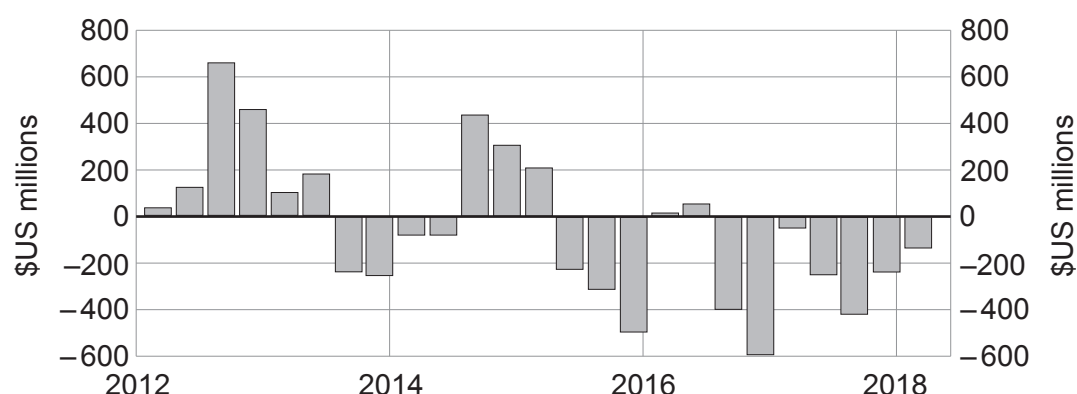
Copper production also has negative environmental effects. Water in the areas around mines can be contaminated as a result of chemical spills. Air pollution is also a problem, as is the impact on the landscape of waste rock and mine workings. Outside observers argue that as a result, more environmental regulation needs to be introduced, although those inside the country say that actually enforcing the current regulations would make more difference.

Figure 3: Zambia annual inflation rate

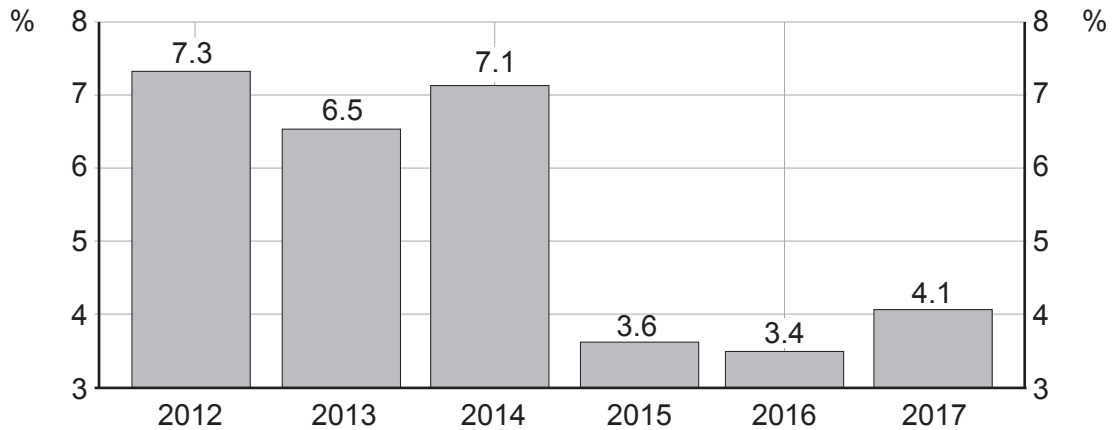


Source: *tradingeconomics.com* | Central Statistical Office of Zambia

Figure 4: Zambia balance of payments on current account



Source: *tradingeconomics.com* | Bank of Zambia

Figure 5: Zambia real annual economic growth rate

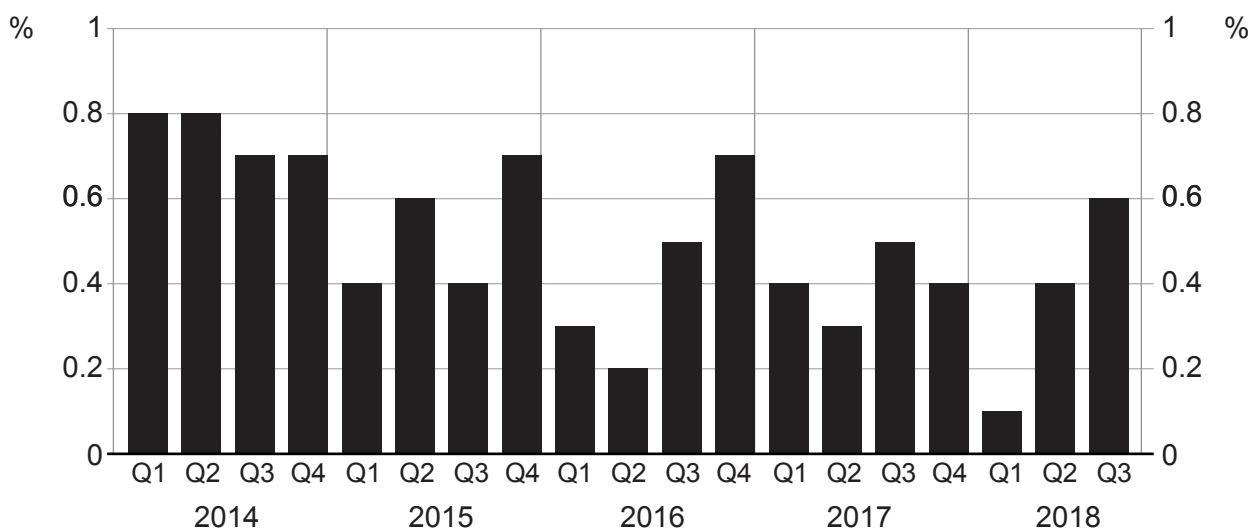
Source: *tradingeconomics.com* | Bank of Zambia

- (a) With reference to the data and using a supply and demand diagram, explain why the price of copper is rising. [6]
- (b) Using an exchange rate diagram and **Figures 1 and 2**, evaluate the link between the world price of copper and Zambia's exchange rate. [8]
- (c) Explain why Zambia's budget/fiscal deficit was expected to fall. [6]
- (d) Using appropriate economic analysis, discuss whether introducing more environmental regulations would be a good way of correcting the market failures described in the copper industry. [8]
- (e) Using a minimum wage diagram and an AD/AS diagram, consider whether the minimum wage increases described in the data would be "bad for the economy at both a micro and macroeconomic level". [12]

2. UK growth helped by World Cup and warm weather

The UK economy grew more strongly than expected in July 2018. The Office for National Statistics (ONS) said the economy grew by 0.6% over the three months to July – the fastest pace in almost a year.

Figure 1: Percentage change in real GDP on previous quarter



Source: tradingeconomics.com | Office for National Statistics

“Services grew particularly strongly, with retail sales performing well, boosted by warm weather and the World Cup,” said Rob Kent-Smith from the ONS. “The construction sector expanded but industrial output contracted.” The 0.6% growth rate for the three months to July was the fastest since August 2017 and marks an improvement from the 0.4% rate seen in the three months to June.

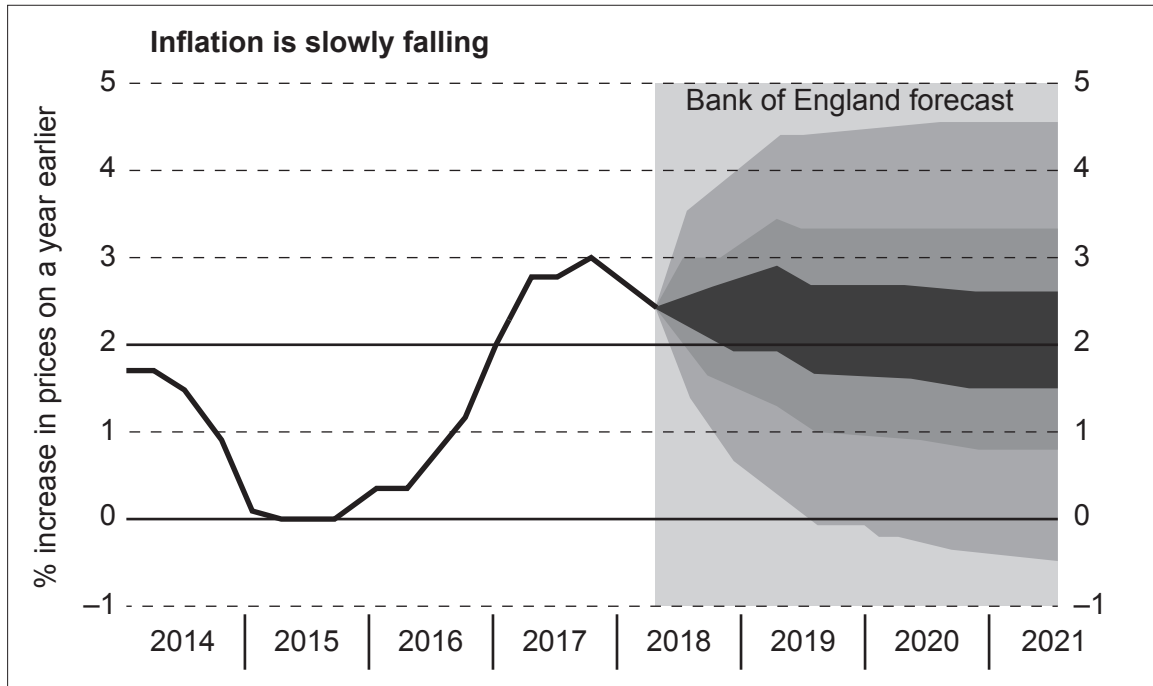
This growth data comes soon after the Bank of England's Monetary Policy Committee raised interest rates, for only the second time in a decade, to 0.75% from 0.5%. The Governor of the Bank of England, Mark Carney, said the rise signalled the start of three years of rising borrowing costs. He said: “Today employment is at a record high and with very limited spare capacity real wages are rising. With domestically generated inflation building and the prospect of excess demand emerging, a tightening of monetary policy is now appropriate to return inflation to the 2% target and keep it there”. Employers are having to offer higher pay which increases demand in the economy but also increases business costs.

However, there is a view among some economists that the Bank of England should allow for a bit more inflation in the economy. Instead of targeting 2% as at present, they argue for a target inflation rate of 4%-5%. In July 2007, interest rates stood at 5.75%. However, since 2009 they have been between 0.25% and 0.75%. When interest rates are so low it does become difficult for the central bank to increase aggregate demand. With the government continuing to reduce the budget/fiscal deficit, controlling aggregate demand has largely been left to the Bank of England.

The low interest rates of the last 10 years have had their costs – the most obvious is the disincentive to save. Statistics show that in 2017 household spending exceeded income for the first time since the late 1980s. On average households spent £900 more than they earned which at least helped the economy to grow, but consumption financed by borrowing is not the basis for a sustainable recovery. Britain's long term prospects depend on shifting the balance of economic growth away from consumption and towards investment and net exports. Net exports have been heavily negative for many years and this is a drag on economic growth.

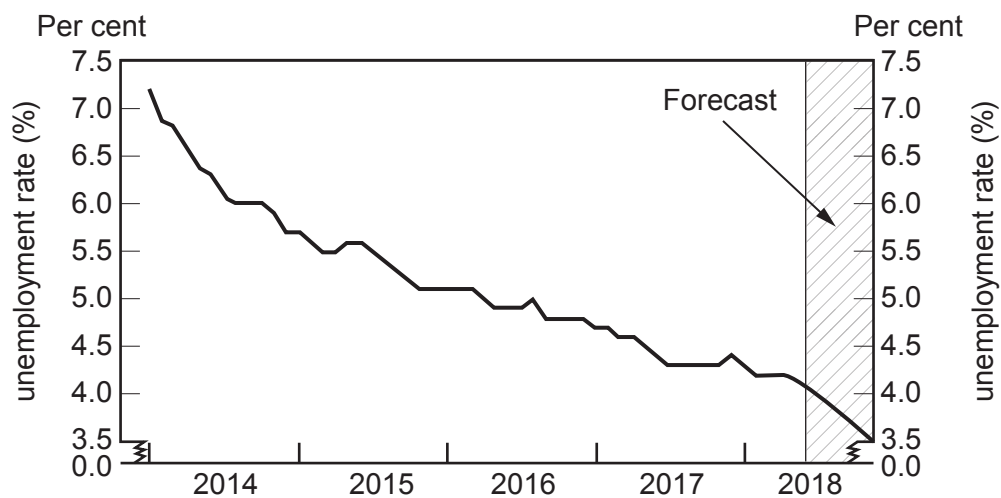
A further problem for the UK economy is low productivity, which has contributed to weak economic growth and has left real wages below their 2008 levels. A Labour Party spokesperson wants the Bank of England to work towards achieving a 3 % productivity growth target. However, the Bank of England's Chief Economist Andy Haldane has dismissed this proposal saying that the Bank of England “does not have the tools to bring about lasting change” in productivity.

Figure 2: UK inflation rate (actual and forecast)



The period after early 2018 is a forecast. The darker areas represent the more likely outcomes. Lighter areas are less probable.

Figure 3: UK unemployment (actual and forecast)



- (a) With reference to **Figure 2**, outline what is most likely to happen to the price level between 2018 and 2021. [2]
- (b) To what extent do you agree with the view that the Bank of England “does not have the tools to bring about lasting change” in productivity levels in the UK economy? [10]
- (c) Explain why a heavily negative net export figure is a ‘drag on economic growth’. [4]
- (d) Evaluate the view that the Bank of England should have its inflation target increased to 4 %-5 %. [8]
- (e) With reference to the data, explain why the UK government might want to increase the rate of economic growth. [6]
- (f) To what extent will a steady rise in interest rates help to shift the balance of economic growth away from consumption and towards investment and net exports? [10]

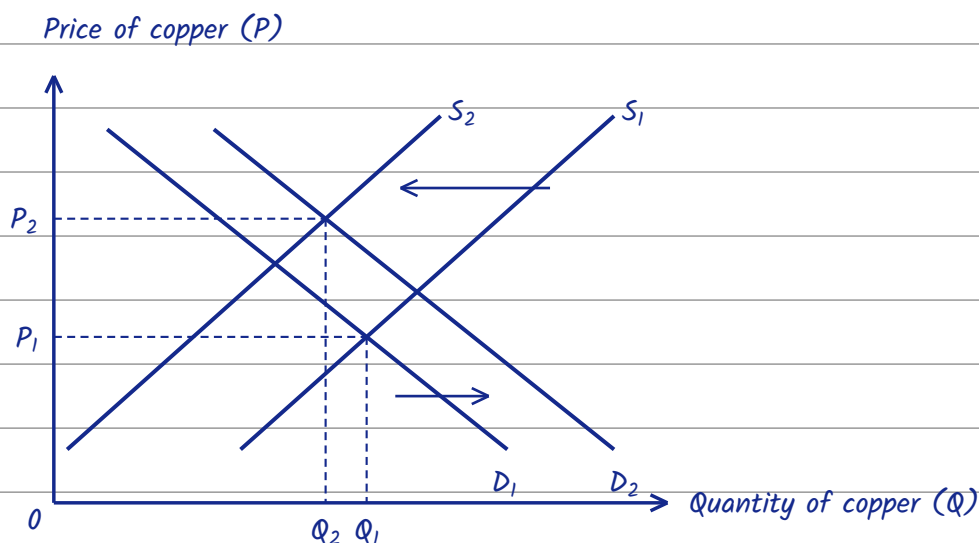
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Question
number

1 (a)

Figure 1 shows the world price of copper rising from about \$4 500 per tonne in early 2016 to about \$7 000 per tonne by the end of 2017. Demand for copper is rising because more electric cars are coming onto the market and copper is a major component in their batteries. Copper has a derived demand, so as demand for electric cars grows, the demand curve for copper shifts right from D_1 to D_2 . At the same time supply is falling because copper is running out elsewhere in the world, with global production falling by about 500 000 tonnes per year, so supply shifts left from S_1 to S_2 .

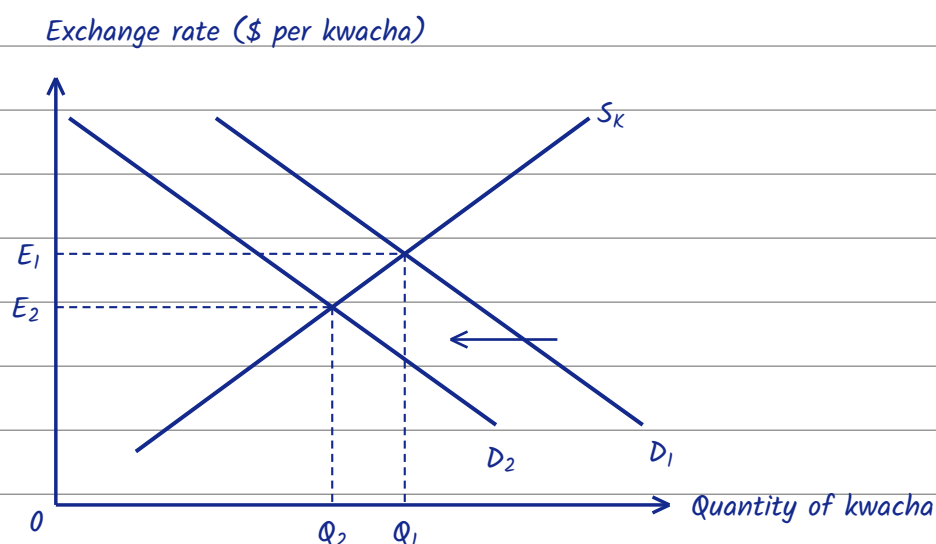
At the original price P_1 there is now excess demand, as quantity demanded is greater than quantity supplied. Buyers compete for the limited copper and bid the price up, which extends supply and contracts demand until the excess demand is eliminated at the new equilibrium P_2 . As the diagram shows, the price rises from P_1 to P_2 , and because the fall in supply is larger than the rise in demand, quantity falls from Q_1 to Q_2 . Both shifts push the price in the same direction, which is why the rise is so large.



1 (b)

An exchange rate is the price of one currency in terms of another, here US dollars per kwacha. In a floating system it is set by the demand for and supply of kwacha on the foreign exchange market.

Copper is Zambia's largest export, so foreign buyers must buy kwacha to pay Zambian producers. Demand for copper is price inelastic, so when the world price fell, Zambia's export revenue fell and buyers needed fewer kwacha. Lower prices also made mining less profitable, reducing foreign direct investment (FDI) into Zambia, which reduced demand for kwacha further. As the diagram shows, demand for kwacha shifts left from D_1 to D_2 , so the exchange rate falls from E_1 to E_2 .



Figures 1 and 2 support this link. Between 2014 and early 2016 the copper price fell from around \$7 000 to about \$4 500 per tonne, and over the same period the kwacha fell from about \$0.00019 to about \$0.00008 per kwacha, a depreciation of over 50%. When copper prices fall, the link looks strong.

However, the link is not always direct. From 2016 to the end of 2017 the copper price rose by over 50%, from about \$4 500 to \$7 000 per tonne, yet the kwacha only rose slightly, from about \$0.00009 to \$0.00011. Other factors affect the kwacha: inflation rose to about 23% in 2016 (Figure 3), making Zambian goods less competitive; growth slowed from 7.1% in 2014 to 3.4% in 2016 (Figure 5) and the current account was in deficit by up to about \$600 m

(Figure 4), which damaged confidence and inward investment. There are also time lags before higher prices raise export earnings and FDI, and speculation matters. Overall, the copper price is a major driver of the kwacha, especially when it falls, but it does not explain all its movements.

1 (c)

A budget (fiscal) deficit is when government spending (G) is greater than tax revenue (T) in a year, so the government has to borrow the difference.

Copper is Zambia's largest export, and in 2018 production was expected to exceed one million tonnes at the same time as prices were rising, so export revenue increases. This boosts firms' profitability, raises wages in a sector that employs a large number of workers and increases Zambia's rate of economic growth.

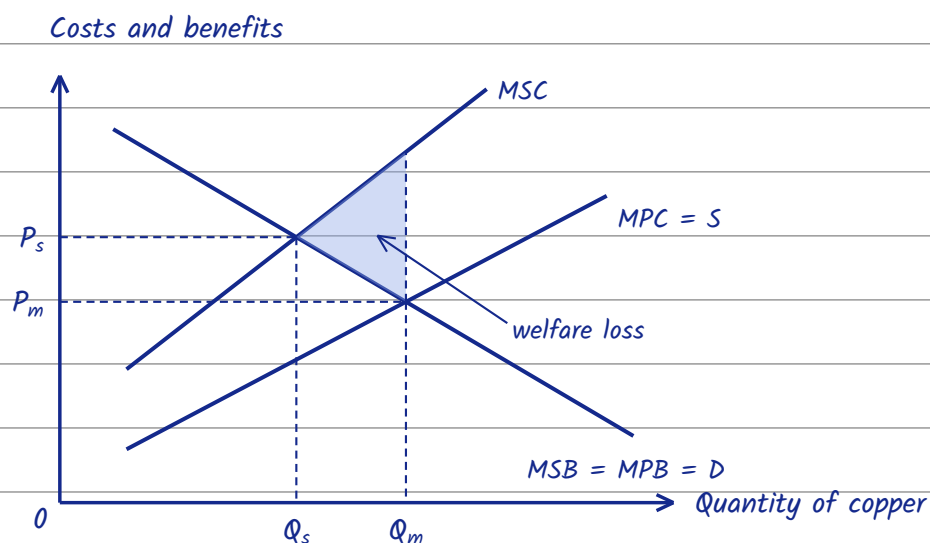
This should raise tax revenue (T). Higher profits in mining firms increase corporation tax receipts, and higher wages increase income tax receipts. Workers spend their higher incomes, so through the multiplier effect sales and profits in other firms rise too, increasing revenue from indirect taxes such as VAT and from income tax paid by newly employed workers. Growth therefore widens the tax base.

At the same time government spending (G) may fall. Faster growth creates jobs and reduces unemployment and poverty, so the government needs to spend less on benefits and support for low income households. With T rising and G falling, the gap between them narrows, so the deficit was expected to fall.

1 (d)

Market failure is when the free market leads to a misallocation of resources and a welfare loss. Copper production creates negative externalities: water near mines is contaminated by chemical spills, there is air pollution and the landscape is damaged by waste rock and mine workings. These are external costs to third parties, so marginal social cost (MSC) is greater than marginal private cost (MPC). Firms only consider MPC , so copper is over-produced at Q_m and under-priced at P_m instead of the social optimum Q_s , causing the welfare loss

shaded in the diagram.



More regulation, such as emission limits, stricter rules on storing chemicals and waste rock, or a cap on output, forces firms to use cleaner methods. This raises their costs, shifting MPC up towards MSC so the externality is internalised.

Output falls towards Q_s and price rises towards P_s , reducing the welfare loss.

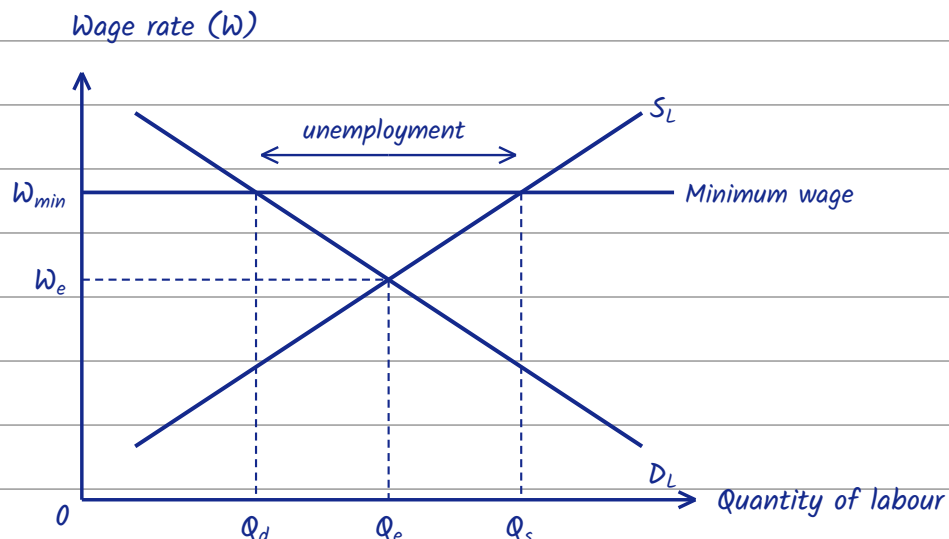
Bans such as on dumping into rivers directly cut the size of the problem, and fines on firms that break the rules raise funds that could be used to clean up contaminated water.

However, those inside Zambia say that enforcing the current regulations would make more difference. If rules are not enforced, adding more has no effect on firms' costs or behaviour, so the market failure remains. Enforcement needs inspectors, which adds to government spending when Zambia already has a budget deficit, and the right standard is hard to set because external costs are difficult to measure. Stricter rules could also cut output and profits, reducing wages and corporation tax and making Zambian copper less competitive globally. On the other hand, with rising world demand and prices (Figure 1), firms can more easily afford higher costs now.

Overall, more regulation is only a good way to correct the market failure if it is enforced. The priority should be enforcing existing rules, funded by fines on polluters, then adding tougher rules while copper prices are high and firms can afford them.

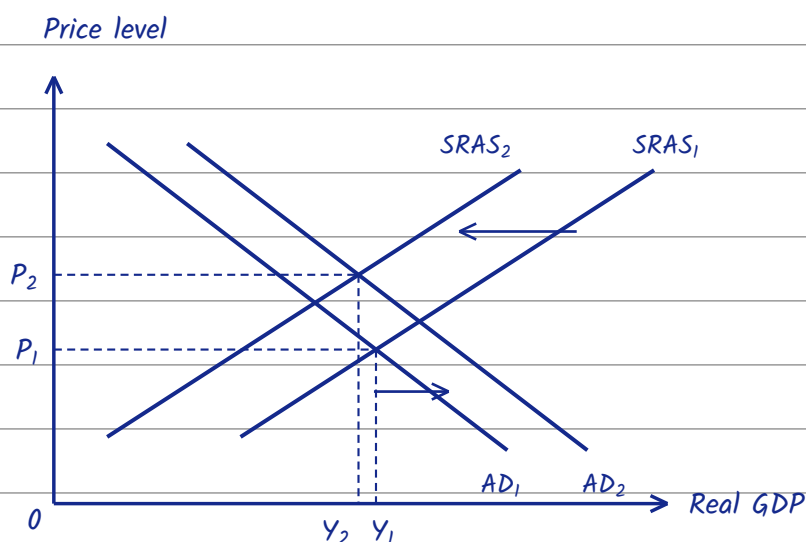
1 (e)

A minimum wage is a legal price floor below which employers cannot pay workers. If it is set above the equilibrium wage w_e , as in the diagram, firms demand only Q_d workers while Q_s people want to work, so there is an excess supply of labour (unemployment) of Q_s to Q_d .



At the micro level this could be bad. Zambia doubled the minimum wage for unskilled workers in late 2018, a very large rise. Firms in labour intensive sectors, including copper mining, face much higher costs and lower profits, so they may cut jobs or hours or replace workers with machinery, and the least skilled workers lose their jobs. Households may also face a higher cost of living if firms pass on higher wage costs as higher prices.

At the macro level, higher labour costs shift SRAS left from $SRAS_1$ to $SRAS_2$, causing cost-push inflation and lower output. Higher wages also raise consumption, shifting AD right from AD_1 to AD_2 , adding demand-pull inflation. As the AD/AS diagram shows, the price level rises from P_1 to P_2 while real GDP changes little, from Y_1 to Y_2 .



Higher inflation is a concern because it reached about 23% in 2016 (Figure 3).

It would make Zambian exports less price competitive, worsening a current account already in deficit by up to \$600 m (Figure 4), and if unemployment rises, benefit spending rises and tax revenue falls, widening the budget deficit.

However, this is the first increase since 2012, and inflation has been significant since then, usually about 7% a year and over 20% in 2016, so the real value of the minimum wage had fallen a lot. Doubling it largely restores the real wage to about its 2012 level, so the real rise in labour costs is much smaller than it looks and job losses may be small. Firms have been hiring workers cheaply in real terms, and with rising copper prices and profits mining firms can afford higher wages. Higher pay may also raise motivation and productivity, reducing unit labour costs, and workers who keep their jobs gain higher living standards, reducing poverty.

At the macro level, higher incomes raise consumption and AD with a multiplier effect, supporting growth that slowed to 4.1% in 2017 (Figure 5), and higher incomes raise income and sales tax revenue, helping to cut the budget deficit.

Inflation is currently fairly low at about 7 to 8% (Figure 3), and the rise only applies to unskilled workers, so the wider effects should be limited.

Overall, I do not think the rise will be bad at both levels. At the micro level some firms and the least skilled workers may lose out, but most low paid workers gain. At the macro level there is a real risk of inflation and a weaker

trade balance, but it is limited because the rise mainly restores real wages lost to inflation since 2012 and copper firms can afford it. The impact depends on how labour intensive firms are and how far the new wage is above equilibrium.

2 (a)

The price level is most likely to keep rising, but more slowly: inflation is forecast to fall from about 2.5% in 2018 towards 2% by 2021, as the darkest band lies between about 1.5% and 2.7%, so prices rise at a slower, fairly steady rate.

2 (b)

Productivity is output per worker or per hour worked. The Bank of England's main tool is Bank Rate, which affects the cost of borrowing for firms and households and the reward for saving. It can also use quantitative easing (QE), buying bonds to increase the money supply and lower long-term interest rates, it is lender of last resort to the banks, and it maintains monetary and financial stability by targeting 2% inflation.

I agree to a large extent, because these tools mainly influence aggregate demand rather than aggregate supply. Lower interest rates raise consumption, investment and net exports, shifting AD right and raising real GDP and the price level in the short run, but this does not directly raise output per worker.

Productivity depends on supply-side factors such as skills and education, the quantity and quality of capital, technology, infrastructure and management.

These are influenced by government supply-side policies such as training and tax incentives for research, not by the central bank, so the Bank cannot shift LRAS directly. The data supports this: interest rates have been between 0.25% and 0.75% since 2009, yet productivity has stayed weak and real wages are still below their 2008 levels, so very loose monetary policy has not brought lasting change.

However, the Bank does have some indirect influence. Low interest rates reduce the cost of borrowing for investment, so firms buy more capital and new technology, increasing capital per worker and therefore labour productivity, and

shifting LRAS right in the long run. Keeping inflation low and the financial system stable reduces uncertainty and creates the right climate for long-term investment. When there is spare capacity, a rise in AD means underemployed workers produce more, so output per worker rises, and growing demand may move resources into higher value added sectors.

On the other hand, these effects are not lasting or reliable. Investment depends on confidence and expected profits, not just interest rates, and a productivity target would conflict with the inflation target: the Bank has just raised rates to 0.75% to control inflation, which raises the cost of investment.

Overall, I largely agree with Andy Haldane. The Bank can support productivity by keeping the economy stable and borrowing cheap, but its tools work on demand, so lasting change in productivity requires government supply-side policies.

2 (c)

Net exports are the value of exports minus the value of imports ($X - M$); a heavily negative figure means the UK imports far more than it exports. Since $AD = C + I + G + (X - M)$, negative net exports reduce aggregate demand. Spending on imports is a leakage from the circular flow, creating income and jobs for producers abroad instead of in the UK, and through the multiplier this lowers UK national income, so real GDP grows more slowly than it otherwise would.

2 (d)

An inflation target is the rate of inflation the government sets for the Bank of England to achieve through monetary policy, currently 2% CPI. It guides interest rate decisions and anchors expectations that prices will rise at a steady rate. A 4% to 5% target would allow inflation to reach a higher level before the Bank raised rates.

Supporters argue that with a higher target interest rates could be kept lower for longer, boosting AD, especially investment, and growth. Also, with higher inflation, nominal interest rates would on average be higher, as in July 2007 at

5.75%, giving the Bank more room to cut them in a downturn. Since 2009 rates have been between 0.25% and 0.75%, close to the zero lower bound, so it is difficult for the Bank to raise AD. With a 2% target rates must rise earlier, as in 2018 even though inflation is forecast to fall towards 2% (Figure 2), and a policy error could tip the economy into deflation; inflation was about 0% in 2015. Higher inflation would also reduce the real burden of household debt. However, real wages are still below their 2008 levels, and higher inflation would erode them further, hurting savers and those on fixed incomes. Workers may demand higher pay, causing a wage-price spiral, and changing the target could unanchor expectations and damage the Bank's credibility. Inflation above trading partners would make UK exports less price competitive and imports relatively cheaper, worsening net exports that are already heavily negative. Uncertainty about prices damages confidence and investment, and spending on index-linked benefits and pensions would rise.

Overall, the costs of a 4% to 5% target outweigh the benefits. The zero bound problem can be eased with QE and fiscal policy, whereas a much higher target risks unanchoring expectations and hurting competitiveness. A small rise, such as to 3%, might be a compromise, but 4% to 5% is too high.

2 (e)

Economic growth is an increase in real GDP over time. Figure 1 shows growth of 0.6% over the three months to July 2018, below the 0.8% per quarter seen in early 2014.

Faster growth raises the demand for labour, as it is a derived demand, so unemployment continues to fall: Figure 3 shows unemployment falling from over 7% in 2014 to about 4% in 2018 as the economy grew. More jobs raise household incomes, which are spent, creating a positive multiplier effect, as seen in strong retail sales.

Growth can also tackle low pay and low productivity. Real wages are still below their 2008 levels; growth led by investment raises productivity, allowing firms to

pay higher real wages and raising living standards.

Growth also improves the government's finances: higher incomes and spending raise income tax and VAT revenue and cut benefit spending, helping the government keep reducing the budget deficit without cutting spending. It also boosts confidence, encouraging firms to invest. With inflation forecast to fall slowly towards 2% (Figure 2), there is room for growth without excessive inflation.

2 (f)

The interest rate is the cost of borrowing and the reward for saving. A steady rise in Bank Rate, starting from 0.5% to 0.75% with three years of rises signalled, raises the rates banks charge and pay, affecting each component of AD differently.

Higher rates should reduce consumption. Credit cards and loans become more expensive, repayments on variable rate mortgages rise, cutting discretionary income, and saving becomes more attractive. This directly targets the problem in the data: in 2017 households spent £900 more than they earned, financed by borrowing, so higher rates discourage this unsustainable consumption.

There may be gains for investment and net exports. Higher saving increases the supply of loanable funds for firms to borrow, and returning inflation to 2% keeps the economy stable, creating a strong investment climate. Lower consumption also means less spending on imports, improving $X - M$. Higher rates attract hot money, raising the exchange rate, which lowers the price of imported components and capital, cutting firms' costs and possibly helping exporters.

However, the rises are small and steady, and rates remain far below the 5.75% of 2007, so the effect on consumption may be limited. Consumption depends more on income, wealth and confidence; with employment at a record high and real wages rising, spending may continue.

Higher rates also raise the cost of borrowing for firms, so fewer projects have expected returns above the interest rate and investment may fall, especially

where it is financed by loans. With productivity already weak, and Andy Haldane saying the Bank cannot bring lasting change in productivity, interest rates are unlikely to create the investment the UK needs.

A higher exchange rate makes UK exports more expensive abroad and imports cheaper, so net exports may worsen, especially if demand for exports is price elastic. Exports also depend on growth in trading partners and non-price factors such as quality.

Overall, a steady rise in interest rates will only help to a small extent. It should shift the balance away from consumption, but it is likely to reduce investment and net exports as well, so growth slows rather than rebalances. It depends on the size and pace of the rises; supply-side policies are needed to raise investment and net exports.