



GCE AS

B520U20-1



MONDAY, 20 MAY 2024 – MORNING

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

Use black ink or black ball-point pen.

You may use a pencil for graphs and diagrams only.

Answer **all** questions.

Write your answers in the separate answer booklet provided.

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.

Answer **all** questions.

1. Cross-railing

In October 2007 the UK government authorised a new infrastructure project called Crossrail's Elizabeth Line. It was a rail capacity improvement project centred on London and the surrounding area, involving the laying of a new 118 km rail track from Reading in the west to Shenfield and Abbey Wood in the east, with a new 21 km (12 mile) tunnelled route under central London.

Figure 1: Crossrail's Elizabeth Line route



Crossrail's Elizabeth Line would cut east to west travel times by 33% for 1.5 million commuters, whilst also making it easier to access Heathrow Airport. Commuters can pay to park at a Crossrail station and then buy a ticket on the Crossrail line. Other commuters might walk or cycle to the station free of charge.

The £18.6 bn project was originally scheduled for 2017 opening. The UK Government hoped it would create a multiplier effect whilst also easing congestion, shortening journey times, increasing London's accessibility for those living outside of London and meeting the needs of London's growing population. Road pricing policies have already been implemented to reduce traffic congestion in London, such as a charge to drive into central London (congestion charge).

Table 1: Potential positive impacts of Crossrail's Elizabeth Line

	Benefits
Estimated net economic benefit (through jobs created during construction, the operation of the line and time saved by improved accessibility)	£43 bn (estimated)
Jobs supported	55 000
Construction/supplier work awarded to UK firms	96%
Suppliers that were small or medium-sized firms	67.5%
Estimated increased supply of high quality commercial and retail office space	4.4 million square metres

Source: <https://www.crossrail.co.uk/benefits/economic-sustainability>

There are further plans to build Crossrail 2 (North to South) but concerns have been raised from local residents and communities over noise and air quality during construction. Whilst there are also concerns about the tunnelling under central London which can cause unstable ground for the buildings above. Michèle Dix, managing director for Crossrail 2, has insisted that in planning the route they had “looked to minimise the impact on local residents and communities as much as possible”.

- (a) Using a diagram, outline the likely impact of new rail lines on the wages of workers in London. [4]
- (b) Discuss the likely cross elasticity of demand between the car parks at Crossrail's Elizabeth Line stations and the number of tickets sold for Crossrail. [6]
- (c) Using **Table 1**, explain how the building of Crossrail's Elizabeth Line can lead to the benefits of the multiplier effect (line 11). [6]
- (d) Evaluate whether increasing infrastructure is better than increased use of road pricing (line 13) to reduce market failure. [10]
- (e) (i) Define the term ‘government failure’ and explain why the building of new infrastructure could be considered an example of government failure. [4]
- (ii) Using the data, assess the extent to which the building of Crossrail would be positive for the short run and long run macroeconomic performance of London and the South East. [10]

2. Corbynomics

In 2008 the Great Recession occurred in the UK, with a decrease of 6% in GDP. One of the economic responses by the UK Labour party government was a decrease in the ad valorem tax of VAT from 17.5% to 15%. At the same time, the Bank of England used monetary policy by decreasing interest rates to 0.5% and injecting funds into the financial system through increasing the money supply.

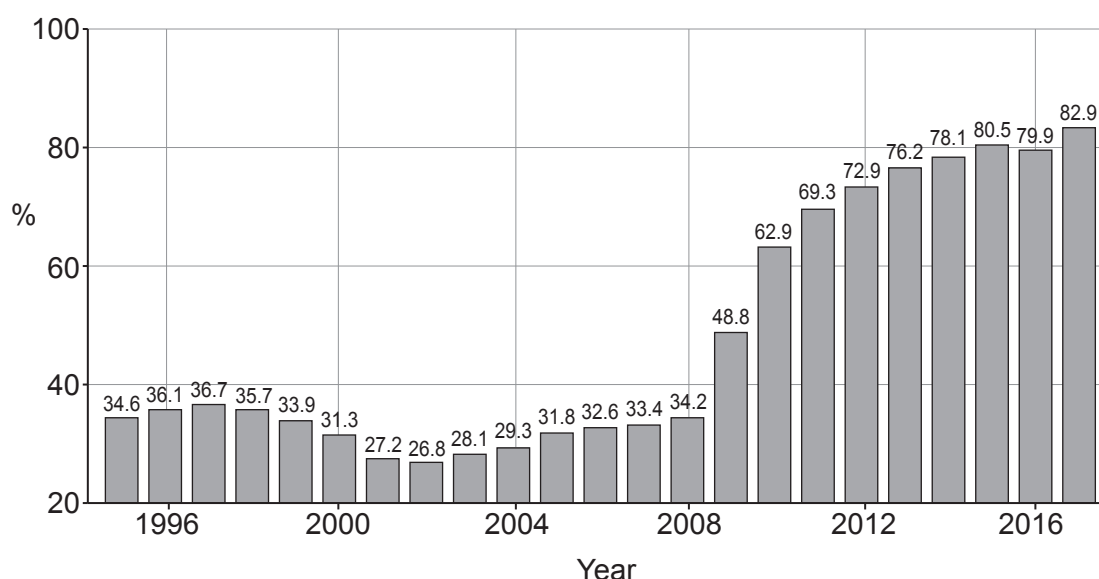
In 2016, the UK Labour party leader, Jeremy Corbyn, proposed economic policies in the hope of winning the 2019 UK general election. These have been referred to as “Corbynomics”.

These economic policies included:

- **Transformation funds:** £150 bn to pay for upgrades to schools, hospitals, social care facilities and social homes, being spent over five years. A £250 bn “green transformation fund” that would be spent over ten years, to put the UK on track for a net zero carbon energy system within the 2030’s.
- **A national investment bank** that could provide another £250 bn worth of loans to small firms at low interest rates. This would support the government’s strategy, such as energy-efficient housing and decarbonisation.
- **Free university tuition** for all 3 and 4-year undergraduate degrees, instead of keeping tuition fees at their £9250 level. In 2017, the Institute for Fiscal Studies stated this would add an extra £11 bn a year to government borrowing. However, this figure is likely to be higher, as around 45% of student loans may never be repaid, which increases government spending.
- **Housing policies**, including rent controls (a maximum price for rent), tax on empty properties and building 150 000 houses per year for those on low income.

These policies could be very expensive, especially given the increase in public sector Net Debt due to the 2008 Great Recession.

Figure 1: UK Public Sector Net Debt to GDP



- 25 The tax increases below were also proposed, whilst improvements in methods to tackle tax avoidance were highlighted as being required.

Table 1: Tax increases proposed

Income tax rates	1 560 000 people paying a higher tax rate An increase to 45% from 40% on earnings between £80 000 and £125 000 50% on earnings above £125 000
Inheritance tax rates	An increase to 40% of every £1 on an estate worth over £350 000 instead of 40% of every £1 over £500 000
Corporation tax rates	An increase to 26% from 20%
2nd home ownership	Annual tax on second homes that are used as holiday homes equivalent to 200% of the current council tax bill for the property

- (a) (i) Using a PPF diagram, illustrate the impact of a recession on an economy that consists of goods and services. [2]
- (ii) Using an AD/AS diagram, explain how monetary policy (line 3) can be used to stimulate economic growth. [6]
- (b) Using the data, describe how the proposed new national investment bank and transformation funds could
- (i) decrease negative externalities [4]
- (ii) increase positive externalities [4]
- (c) Using a demand and supply diagram, consider who benefits the most from a decrease in ad valorem tax (line 2), the consumer or the firms? [7]
- (d) Using the data from **Table 1**, discuss whether the proposed changes to UK tax rates are a good way to raise government revenue. [9]
- (e) Using the data, discuss whether free university tuition or housing policies is the best way to improve income inequality. [8]

END OF PAPER

BLANK PAGE

BLANK PAGE

BLANK PAGE

Surname *StemUp Model Solution*

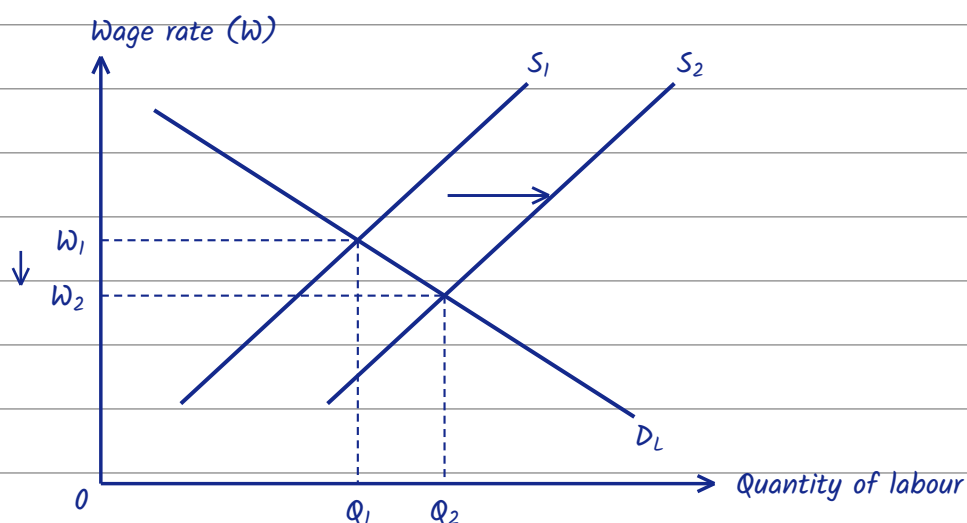
Answer booklet

Write the question number in the left-hand margin at the start of each answer.

Question
number

1 (a)

Crossrail links London with areas such as Reading and Shenfield and cuts travel times by 33% for 1.5 million commuters, which reduces the geographical immobility of labour. More workers living outside London are now willing and able to commute into London, so the supply of labour to London firms increases from S_1 to S_2 . At the original wage w_1 there is now an excess supply of labour, so the wage rate is pulled down from w_1 to w_2 and employment rises from Q_1 to Q_2 , as shown in the diagram below (although wages cannot fall below the National Minimum Wage).



1 (b)

Cross elasticity of demand (XED) measures the responsiveness of the quantity demanded of one good to a change in the price of another good: $XED = \% \Delta Q_d \text{ of good A} \div \% \Delta \text{ price of good B}$. Substitutes have a positive XED and complements a negative XED.

Car parking at the stations and Crossrail tickets are complements, because many commuters drive to the station, pay to park and then buy a ticket (line 7). If the price of parking rises, fewer people park, and some of them may

decide to drive the whole way to work or not travel, so the number of Crossrail tickets sold falls. The XED is therefore negative.

However, the relationship is likely to be weak (negative but inelastic, between 0 and -1). Commuters who need to get to central London still need to park, since driving into London means congestion and the congestion charge, so most will pay the higher parking price. The strength also depends on the substitutes for the car park: other commuters walk or cycle to the station free of charge, or car share, and for them the XED is close to zero. It also depends on the size of the price rise, as a very large rise could have a bigger effect on ticket sales. Overall I judge the XED to be negative and weak.

1 (c)

The multiplier effect occurs when an initial injection into the circular flow of income, such as government spending, leads to a larger final increase in national income (real GDP). Its size is $1 \div (1 - MPC)$, so it depends on how much of each extra £1 of income is spent rather than leaked through saving, tax and imports.

The £18.6 bn spent on building the Elizabeth Line is an injection of government spending (G), which increases aggregate demand. Construction firms and suppliers gain orders, raise output and hire more workers: Table 1 shows 55 000 jobs supported. These workers receive incomes and spend part of them on goods and services in London and the South East, for example in shops and restaurants, which creates income for other firms, who employ more workers who in turn spend more. Each round of spending is smaller, but the total rise in real GDP is greater than the original £18.6 bn.

Table 1 suggests the multiplier could be large. 96% of construction and supplier work was awarded to UK firms, so very little of the spending leaked out as imports, and 67.5% of suppliers were small or medium-sized firms, so income was spread across many local businesses that are likely to re-spend it. The estimated net economic benefit of £43 bn compared with the £18.6 bn cost implies a multiplier of about 2.3 ($43 \div 18.6 = 2.31$). The 4.4 million square

metres of new commercial and office space will also attract further investment, another injection that adds to the multiplier effect.

1 (d)

Market failure is the inefficient allocation of resources in a free market, where too much or too little of a good is produced compared with the social optimum, causing a welfare loss. Road congestion is a market failure because drivers only consider their private costs and ignore the external costs they impose on third parties, such as delays, lost productivity and pollution, so roads are over-used. Infrastructure is the collection of systems and facilities, such as new rail lines, roads and ports, that support economic activity. Road pricing is a charge paid for using a road on a per-use basis, such as the London congestion charge. Increasing infrastructure such as Crossrail increases the supply of public transport. Because rail travel is a substitute for driving, cheaper and faster train journeys (33% shorter) encourage commuters to switch out of their cars, so the demand for road space falls towards the socially optimum level. This reduces negative externalities such as congestion and emissions. Infrastructure also reduces market failure in the labour market by reducing geographical immobility, helping firms fill vacancies. Road pricing works through the price mechanism instead. It raises the private cost of driving so that it is closer to the marginal social cost, internalising the externality. Drivers who value the journey less than the charge stop driving or switch times or modes, so road use falls towards the social optimum and the welfare loss falls. It also raises revenue that can be used to fund public transport. However, how effective infrastructure is depends on whether the fares are attractive. Firms or the government may set high prices to recoup the initial £18.6 bn cost, which would limit switching unless fares are subsidised. It also depends on where it is built: Crossrail is likely to be heavily used because London is highly congested, but a line in a less congested area would do much less. The type of infrastructure matters too, as building more roads could

increase car use and emissions, whereas rail or electric charging points reduce them. It is also very expensive and slow, as the 2017 opening date shows.

Road pricing also has limitations. Demand for driving is often price inelastic, especially for essential journeys and vans and lorries making deliveries, so the fall in road use may be small. In the long run drivers may get used to the charge and traffic returns unless convenient substitutes exist. Its impact depends on how high the charge is as a % of disposable income, and it is regressive.

Overall, road pricing is the more direct way to correct the market failure of congestion because it targets the externality at its source, but it only works well when there are good substitutes, which is what infrastructure like Crossrail provides. Therefore the two are complements rather than alternatives: in London, using both together is likely to be best, although in areas with low congestion, infrastructure alone would be the better choice.

1(e)(i)

Government failure occurs when government intervention, intended to correct a market failure, leads to a net welfare loss, so the allocation of resources is worse than before the intervention.

New infrastructure is intended to bring a net welfare gain through faster journeys and less pollution, but it can have unintended consequences. During construction, roads are closed, which increases congestion, and local residents suffer noise and poor air quality from dust (line 17), while tunnelling under central London can make the ground under buildings unstable (line 18). If these external costs, plus the opportunity cost of the £18.6 bn and the delays, are greater than the benefits, there is a net welfare loss and therefore government failure.

1(e)(ii)

In the short run, the building of Crossrail increases government spending (G), a component of aggregate demand ($AD = C + I + G + (X - M)$). The £18.6 bn of spending, with 96% of work awarded to UK firms and 67.5% of suppliers

being small and medium-sized firms, keeps leakages low, so the multiplier effect raises real GDP in London and the South East by more than the initial injection. 55 000 jobs are supported, which reduces unemployment and raises incomes and consumption.

In the long run, the benefits are mainly on the supply side. Cutting east to west journey times by 33% for 1.5 million commuters increases labour productivity, as less working time is lost travelling, and reduces geographical immobility, so firms in London can recruit from a larger pool of workers and fill skills gaps. Easier access to Heathrow could attract foreign direct investment from international firms, and the 4.4 million square metres of high quality office space increases the quantity and quality of capital. These shift LRAS to the right, increasing the productive potential of the region. Real GDP grows without as much inflationary pressure, and tourism may increase invisible exports. The estimated £43 bn net economic benefit suggests the long run gains are much larger than the short run boost.

However, in the short run, if London is already close to full capacity, the extra AD could cause demand-pull inflation, for example higher wages and rents, before the LRAS benefits arrive. The project was also delayed beyond its 2017 opening date, so the long run gains were postponed while costs rose, and the £18.6 bn has an opportunity cost.

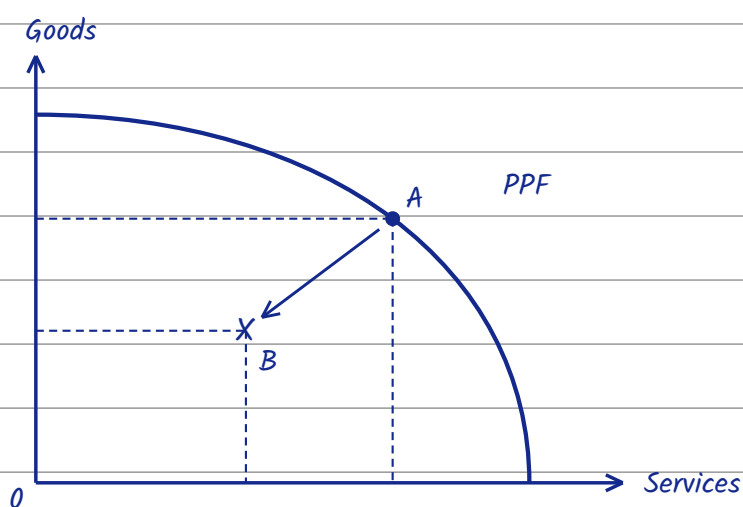
The long run gains also depend on the line actually improving journey times; if it becomes overcrowded, productivity gains will be smaller. The new office space may not be used if more people work from home. Unemployment for local London workers might even rise, since more commuters from outside London compete for the same vacancies, and closing skills gaps depends on whether workers outside London have the skills needed. Tourism and net exports depend much more on factors such as the exchange rate. Crossrail is also only one small part of a very large London economy.

Overall, Crossrail is likely to be positive for both the short and long run, but the long run supply-side effects are the most significant because they permanently

raise productive capacity, while the short run AD boost is temporary. The extent depends on how fully the line and office space are used and on how much spare capacity the economy has.

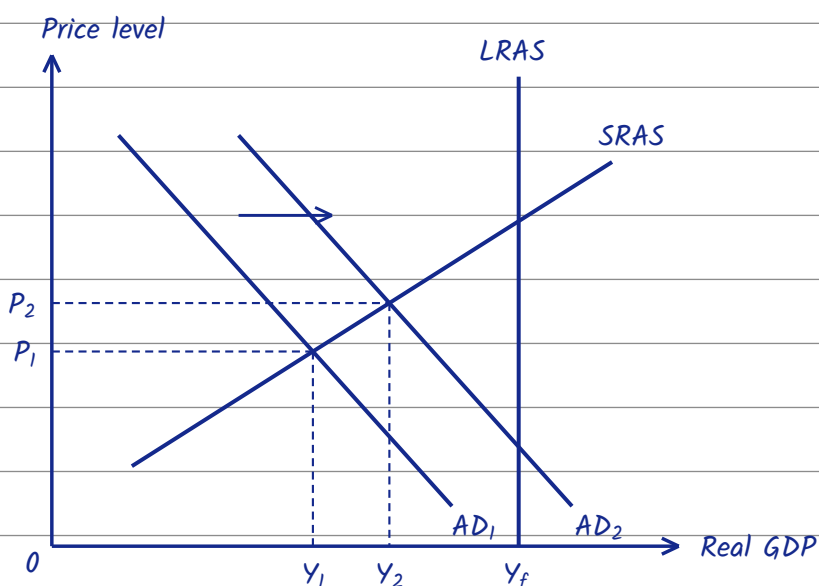
2(a)(i)

A recession means some resources, such as labour, become unemployed, so the economy moves from A on the PPF to X (point B) inside it, producing fewer goods and fewer services.



2(a)(ii)

Monetary policy is the use of interest rates and the money supply by the Bank of England to influence aggregate demand. Cutting Bank Rate to 0.5% lowers the interest rates commercial banks charge on loans and pay on savings.



Consumption rises because borrowing on credit cards and loans is cheaper and saving is less rewarding. Households on variable rate mortgages have lower repayments, raising their discretionary income and confidence. Lower mortgage costs increase demand for houses, so house and share prices rise, creating a positive wealth effect.

Investment rises because the cost of business loans falls, so more projects have an expected rate of return above the cost of borrowing, and higher sales increase profits available for investment.

Net exports rise because lower interest rates reduce hot money inflows, so the pound depreciates, making exports cheaper and imports dearer. Quantitative easing (increasing the money supply, line 4) also lowers long-term interest rates and raises asset prices.

As the diagram shows, higher C , I and $(X - M)$ shift AD from AD_1 to AD_2 , so real GDP rises from Y_1 to Y_2 : economic growth, closing part of the negative output gap, with only a small rise in the price level from P_1 to P_2 .

2(b)(i)

A negative externality is a harmful spill-over effect on a third party from the production or consumption of a good, so social cost is greater than private cost. The £250 bn green transformation fund, aiming for a net zero carbon energy system in the 2030s, would replace fossil fuel energy and reduce carbon dioxide emissions. The national investment bank would give £250 bn of low interest loans to small firms for energy-efficient housing and decarbonisation. Both reduce emissions and so the external costs of global warming, such as flooding and extreme weather damage to UK households.

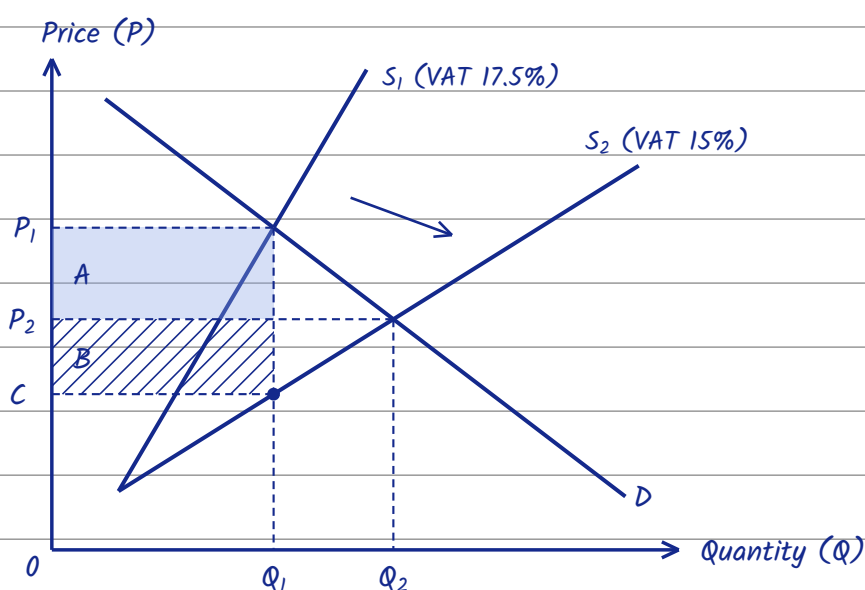
2(b)(ii)

A positive externality is a benefit to a third party from the production or consumption of a good, so social benefit is greater than private benefit. The £150 bn transformation fund for schools would create a more highly skilled workforce, benefiting firms through higher productivity and customers through better service. Upgrading hospitals and social care improves health, so firms lose

less output to staff absence, and families of those cared for benefit too. The national investment bank's low interest loans let small firms invest and become more efficient, giving customers lower prices and more choice and creating jobs for workers.

2 (c)

An ad valorem tax such as VAT is a percentage of the price, so the gap between the supply curves grows as price rises. Cutting VAT from 17.5% to 15% pivots supply downwards to the right from S_1 to S_2 , as shown below.



Price falls from P_1 to P_2 and quantity rises from Q_1 to Q_2 . The tax cut per unit at Q_1 is P_1 to C . Consumers gain the fall in price P_1 to P_2 (area A), while firms gain P_2 to C (area B), as they keep more of the price after paying VAT. Who benefits most depends on the price elasticity of demand (PED). When demand is price inelastic, quantity demanded responds little to price, so the price must fall by almost the full tax cut for the market to clear; most of the cut is passed on and consumers gain most (area A larger). When demand is price elastic, a small price cut raises sales a lot, so firms only pass on a small part of the cut and keep most of it as a higher net price (area B larger). It also depends on whether firms pass on the cut at all: some retailers may keep prices the same and use the cut to raise profit margins, especially as it was only 2.5 percentage points and temporary, and it depends on the good and

its current VAT rate. Overall, consumers benefit most for goods with inelastic demand, and in a recession, when firms compete hard for customers, much of the cut is likely to be passed on, so consumers probably gained more; but firms gain more where demand is elastic or prices are not cut.

2 (d)

The proposals are needed because public sector net debt rose from around 34% of GDP before the 2008 recession to 82.9% of GDP (Figure 1), and policies such as free tuition would add at least £11 bn a year to borrowing.

Table 1 shows a range of mainly direct, progressive taxes. Raising income tax to 45% on earnings between £80 000 and £125 000 and 50% above £125 000 means 1 560 000 people pay a higher rate, raising more direct tax revenue from high earners. Inheritance tax at 40% on estates worth over £350 000 instead of £500 000 brings many more estates into the tax, raising revenue from those with high net wealth. Corporation tax up to 26% from 20% is a 30% rise in the rate on company profits, so revenue could rise substantially. The tax on second homes equal to 200% of the council tax bill raises revenue from those able to afford holiday homes and may lead to homes being sold, bringing in more stamp duty. These taxes also make the system more progressive and could reduce inequality, as they target high income and high wealth individuals.

However, higher tax rates do not always raise more revenue. The Laffer curve shows that if rates rise past the revenue-maximising point, the disincentive to work and the incentive to avoid tax mean revenue falls. A 50% rate may encourage tax avoidance and a "brain drain" of high earners leaving the UK, though only a small number are affected and the proposal includes measures to tackle tax avoidance, which reduces this risk. Corporation tax at 26% may reduce investment and lead multinational firms to shift profits abroad, given the history of large firms avoiding it, so the net gain may be small and could reduce growth, cutting revenue from other taxes. The second home tax may cause many homes to be sold, lowering house prices, while owners have less disposable income and spend less, reducing VAT revenue.

Overall, the higher income and inheritance taxes are a sensible way to raise revenue because they target a small group whose labour supply is fairly unresponsive to small tax changes, especially if avoidance is tackled. The corporation tax rise is the least reliable source of revenue. Whether it is a good way also depends on the state of the economy: raising taxes while recovering from a recession could slow growth.

2 (e)

Income inequality is the extent to which income is unevenly distributed, where a small % of the population receives a much greater % of total income.

Free university tuition for all 3 and 4-year degrees, instead of fees of £9250 a year, removes the fear of large debts that can put students from low income families off university. This gives everyone equal access to the qualifications needed for highly skilled, higher paid jobs, so in the long run it increases the human capital and earnings of those from poorer backgrounds and narrows the income gap.

Housing policies help low income households much sooner. Rent controls set a maximum price for rent below the market equilibrium, so renters pay less and have more disposable income, while landlords earning income from owning property earn less. The tax on empty properties encourages owners to rent or sell them, increasing supply and lowering rents and prices, and building 150 000 houses per year for those on low incomes cuts their housing costs.

However, free tuition may mainly benefit middle and higher income families who were already likely to go to university, and returns vary by course, so inequality may not fall much. It is also expensive: the IFS estimated an extra £11 bn a year of borrowing, probably more as 45% of loans are never repaid, which may require higher taxes later, and if these are regressive indirect taxes inequality could rise. It also takes a long time, since degrees take 3 to 4 years before graduates earn more.

Rent controls can create a shortage of rental housing, as landlords leave the market, and lead to poorly maintained properties unless regulated. The 150 000

homes take time to build and only help if they are in the right places and remain affordable.

Overall, housing policies are likely to be the best way to improve income inequality in the short run because they directly raise the disposable income of low income households, while free tuition may be more powerful in the long run but is poorly targeted. The best approach is a combination, depending on the time scale considered.