GCE AS/A LEVEL

2520U20-1

S19-2520U20-1

ECONOMICS – AS unit 2
Economics in Action

THURSDAY, 16 MAY 2019 – MORNING

2 hours

2520U201
01

ADDITIONAL MATERIALS

In addition to this examination paper, you will need:

- a calculator;
- 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.

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

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Answer **all** *the questions.*

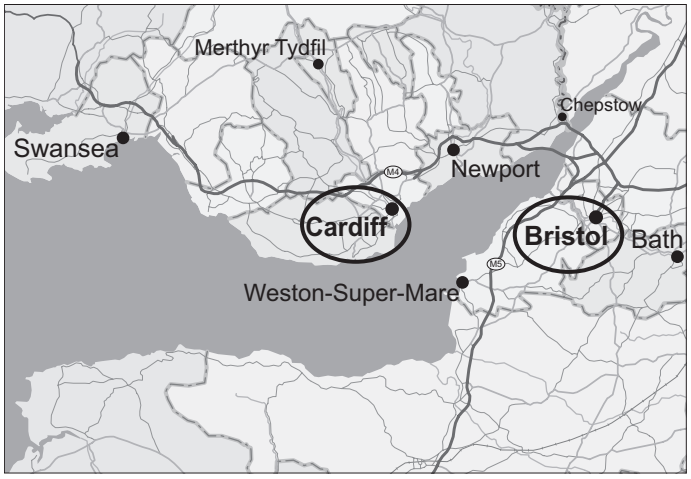
1. A BRIDGE TOO FAR!

Extract 1

The Severn Crossings is a term used to refer to the two motorway bridges over the River Severn estuary between England and Wales. The two crossings are:

- The **Severn Bridge** – built in 1966
- The **Second Severn Crossing** (Renamed The Prince of Wales Bridge in 2018) – built in 1996

The two Severn Crossings are regarded as the main crossing points from England into South Wales. Over 25 million car journeys are made over the two bridges per year.



Since their completion, motorists have paid tolls on the crossings.

In 2017, the toll price was £6.70. This toll represented 19% of the typical cost of a motorist driving from Bristol to Cardiff in 2017. In 1966, however, the toll price was just 12.5p (or £2.14 in 2017 prices).

A **toll road** is a road for which a charge (or **toll**) is paid for usage. It is a form of **road pricing** typically implemented to help recover the cost of road construction and maintenance. In many cases, tolls are also used to reduce traffic congestion – for example, the London Congestion Charge. Increasing traffic congestion on city roads presents a serious threat to economic growth. A recent Government study concluded, however, that investing in public transport was more effective than road tolls at decreasing traffic congestion in the UK.

Extract 2

In July 2017 it was announced that road tolls on the Severn Crossings were to be removed for all vehicles at the end of 2018.

The Welsh Secretary, Alun Cairns, said the move would boost the economy of South Wales by around £100m a year. He said: "the decision to remove the Severn tolls next year sends a powerful message to businesses, commuters and tourists alike that the UK government is committed to strengthening the Welsh economy.

I want to ensure that visitors and private investors know what Wales has to offer socially, culturally and economically. Most importantly, I want the world to know how accessible we are to business."

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(a) (i) Outline what is meant by the phrase “in 2017 prices”. (lines 15 and 16) [2]

(ii) Calculate the 2017 toll price of £6.70 in 1966 prices. Give your answer to the nearest whole penny. [2]

(b) (i) Identify two injections from the data given. [2]

(ii) With reference to the circular flow of income model, explain how increasing injections might lead to a larger increase in national income. [4]

(c) Discuss whether roads are a good example of a public good. [8]

(d) Consider whether the use of road tolls or investment into public transport would be more effective at reducing traffic congestion in the UK. [10]

(e) (i) Using the data, calculate the typical cost of a motorist driving from Bristol to Cardiff in 2017. Give your answer to 2 decimal places. [2]

(ii) To what extent will the removal of tolls on the Severn Crossings affect the level of consumption and private investment in Wales? [10]

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2. CHANCELLOR UNDER PRESSURE

After the General Election of 2017, many members of the Government spoke publicly about the need to increase government spending. As a result, they began to put the Chancellor of the Exchequer, Phillip Hammond, under great pressure.

Figure 1 UK Government Spending 2001-2016

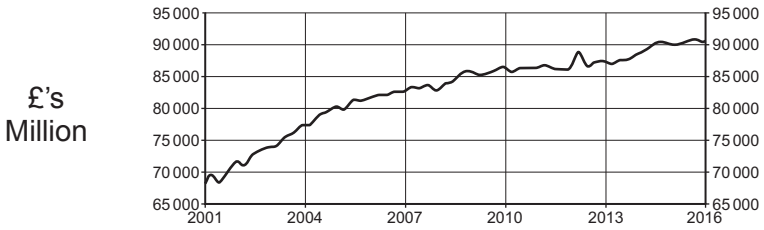
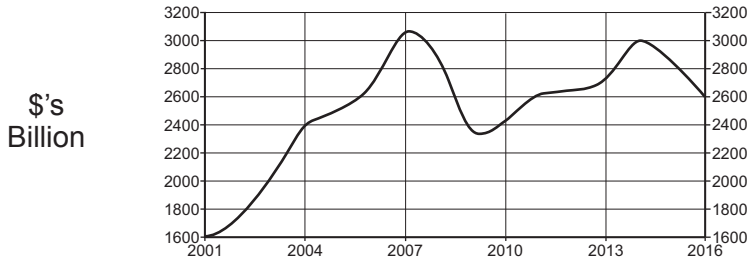


Figure 2 UK GDP 2001-2016



The Chancellor had been critical of such Keynesian expansionary policies in the past – arguing instead that reducing the public sector debt should be the government's top priority. But even he would have found it hard to say no to all of these demands. Suggestions for new policies have included:

Public sector pay increases

Until 2017, there had been a pay ceiling on the public sector. If the ceiling held until its planned end in 2020, public sector workers would be earning less in real terms than in 2004/5, potentially causing labour shortage issues.

Potential cost: £3bn for each percentage point increase in public sector pay.

A pay ceiling (or **pay cap**) effectively sets a maximum wage below the equilibrium wage in the labour market.

Getting rid of higher education tuition fees

Critics of the Government suggested getting rid of higher education tuition fees. They argued that this could be funded by imposing a 45% income tax on those earning more than £80 000 and a 50% tax on those earning more than £110 000.

Potential cost: £9bn.

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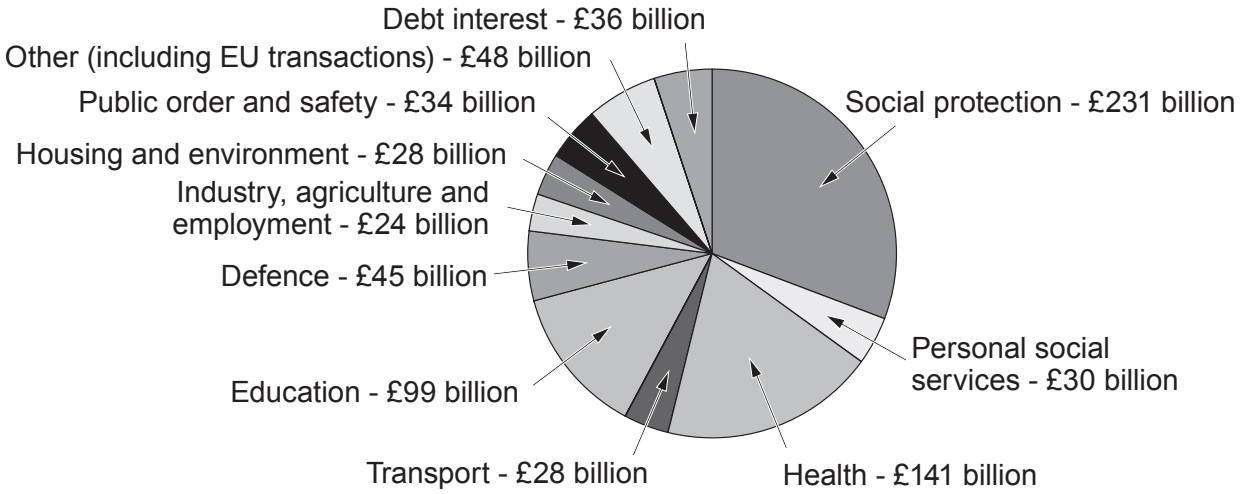
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20 **Spending more on healthcare**

Spending on the NHS has been protected since 2010, meaning that healthcare has not suffered from the deep cuts that have affected other departments. Nevertheless, critics suggested that the Government should spend £22bn more than they had promised.

Potential cost: £9bn.

Figure 3 UK Government Spending by sector, 2015/16



(a) Using examples, define the terms 'government current expenditure' and 'government capital expenditure'. [4]

(b) Using **Figures 1** and **2**, discuss the relationship between Government spending and GDP in the UK 2001-2016. [6]

(c) Using a labour market diagram, explain why imposing a pay ceiling on public sector workers might cause labour shortage issues. [6]

(d) Discuss whether a Keynesian approach to fiscal policy will be beneficial for the UK economy. [12]

(e) With reference to the data, discuss whether merit goods like higher education and healthcare should be provided free of charge by the government. [12]

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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) (i)	The 1966 toll of 12.5p has been adjusted for inflation, the general rise in the price level between 1966 and 2017, so it is shown in real terms: what 12.5p in 1966 would cost at 2017 price levels (£2.14).
(a) (ii)	£6.70 × (12.5p ÷ £2.14) = 6.70 × 0.125 ÷ 2.14 = £0.3914 = 39p (£0.39) in 1966 prices.
(b) (i)	1. Government spending on building the bridges (G). 2. Private investment into Wales by investors (I). (Also exports from extra tourism.)
(b) (ii)	In the circular flow of income, households supply factors of production to firms and receive income (wages, rent, interest, profit), which they spend on firms' output. Injections (investment, government spending, exports) add money to the flow; withdrawals (savings, taxes, imports) leave it. An injection such as government spending on bridge building means more factors of production are bought, so households receive more income. Ceteris paribus they spend part of it, so firms' revenue rises and they hire more factors, creating further income in the next round. This is the multiplier: because each round of spending becomes someone else's income, national income rises by more than the initial injection, although each round is smaller as part leaks out as withdrawals.
(c)	A public good is non-rival (one person's consumption does not reduce the amount available to others) and non-excludable (people who do not pay

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cannot be stopped from consuming it). It is also non-rejectable. Because of non-excludability, there is a free-rider problem: people can benefit without paying, so no-one is willing to pay and a private firm cannot make a profit. The free market therefore fails to provide the good at all (missing market), so the government provides it, funded by taxation.

Many roads fit this. Most roads are non-excludable, since anyone can drive on a normal road without paying for access, and non-rival, since many drivers can use an uncongested road at the same time without affecting each other. If roads were left to the market, drivers would free ride, there would be no revenue to build or maintain roads and they would be under-provided, which is why the government provides most of them.

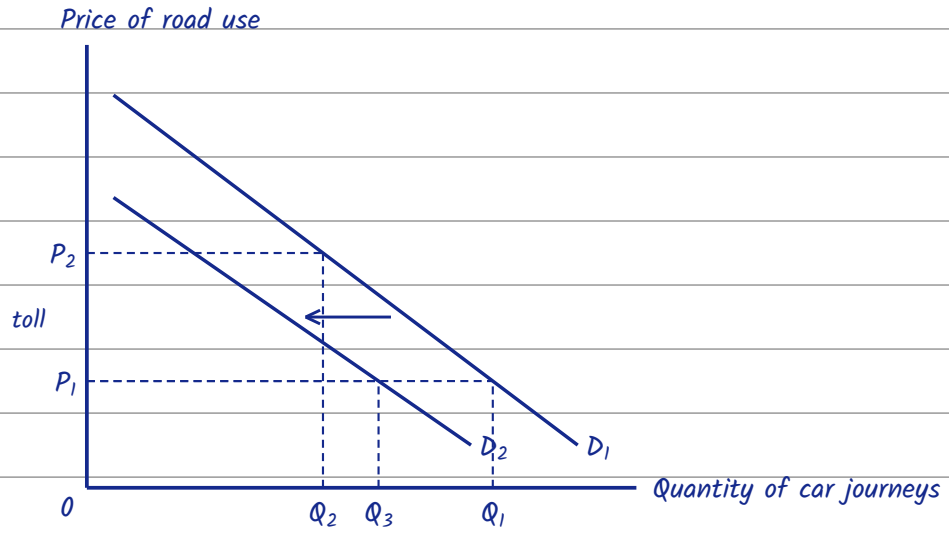
However, roads are not pure public goods. They can be excludable: the Severn Crossings charged a toll of £6.70 in 2017 (line 10), and toll roads and the London Congestion Charge (line 23) show that access can be priced. Drivers also pay vehicle excise duty, which works as a price for using roads. Roads are also rival when congested: at peak times one more car slows every other driver, as on the busy M4 with over 25 million crossings a year (line 7). They are also rejectable, unlike national defence, since people can choose not to drive.

It depends on the type of road. Motorways and bridges are easy to toll, whereas country lanes and residential streets are almost impossible to charge for and are rarely congested. Overall, roads are a quasi-public good rather than a good example of a pure public good: they become excludable with technology and rival when busy, but quiet local roads remain close to public goods.

(d) Traffic congestion occurs when demand for road space exceeds capacity, causing delays. This is a negative externality, since each extra driver slows others and raises their journey times, fuel costs and pollution, and the extract warns that increasing congestion on city roads is a serious threat to economic growth (line 24).

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A road toll increases the price of using the road from P_1 to P_2. As the diagram shows, there is a contraction along the demand curve D_1 from Q_1 to Q_2, so fewer car journeys are made and congestion falls. Ideally the toll equals the marginal external cost, internalising the externality, as with the London Congestion Charge (line 23). The revenue can also pay for road maintenance (line 21).



Investment in public transport works differently. Car travel and public transport are substitutes, so if investment makes buses and trains cheaper, more frequent and more reliable, demand for public transport rises and demand for car use falls. In the diagram, D_1 shifts left to D_2, so car journeys fall from Q_1 to Q_3 without charging drivers more.

However, demand for car use is price inelastic, especially for commuters with no good alternative, so a toll may cause only a small fall in journeys; the Severn toll of £6.70 did not stop over 25 million journeys a year. Tolls are also regressive, taking a larger share of income from poorer drivers, and may simply divert traffic onto side roads. Public transport also has drawbacks: it requires huge capital spending with an opportunity cost, takes years to build, and only works if it improves enough to persuade drivers to switch. UK rail fares are already high, so a large improvement would be needed. Much congestion comes from short urban journeys, so investment in cycle paths and walkways may be more effective still.

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	On balance, the Government study (lines 24 to 26) supports public transport investment, which tackles the cause by offering an alternative and is not regressive. It depends on the time scale: a toll works immediately, while investment works in the long run. The most effective approach is to combine them, since the toll revenue can fund public transport and better public transport makes demand for car use more price elastic, so the toll has a bigger effect.
(e) (i)	£6.70 = 19% of the cost, so the cost = 6.70 ÷ 0.19 = £35.263... = £35.26.
(e) (ii)	Consumption (C) is spending by households on goods and services. Private investment (I) is spending by private firms on capital goods such as machinery, factories and vehicles, which increases productive capacity. Consumption should rise. Removing the £6.70 toll cuts the cost of a typical Bristol to Cardiff journey by 19% (£35.26 to £28.56), raising the real disposable income of Welsh commuters who cross regularly. More tourism and economic activity (line 31) should create jobs in Wales and make it easier for Welsh residents to take jobs across the border. Higher incomes lead to higher consumption, ceteris paribus, and through the multiplier this could add to the £100m a year boost to the South Wales economy (lines 29 to 30). Private investment should also rise. Firms' transport costs fall, especially for hauliers and firms delivering to England, raising expected profits. The Welsh Secretary hopes investors will see how 'accessible' Wales is (line 34), so entrepreneurs attracted by lower costs and higher profits may build factories and distribution centres in South Wales. However, the effect may be small. £6.70 is not a large price compared with the full cost of the journey, so it may not change many decisions. Spending in Wales by English visitors counts as Welsh exports, not consumption, and if Welsh residents now shop in Bristol, this is an import that reduces Welsh spending (C − M). The £100m figure is unsourced and small compared with

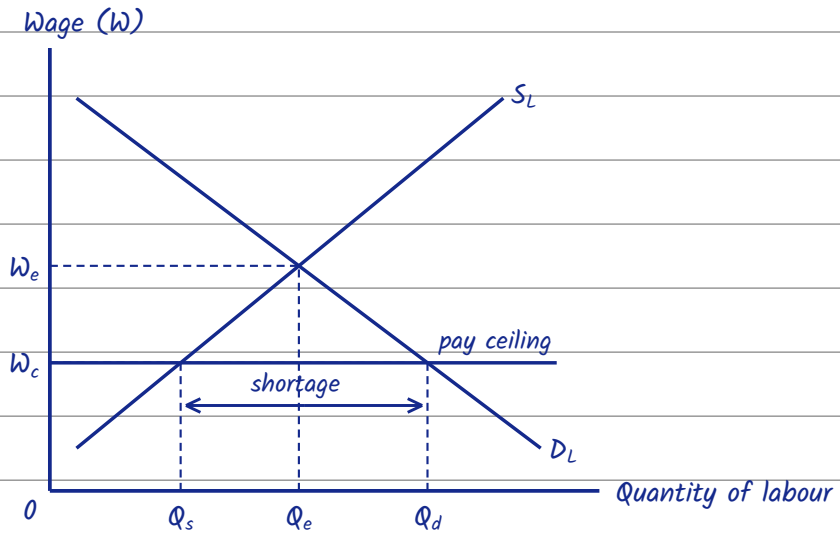
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	Cardiff's GVA of about £9.4bn, so it may be an over-estimate. Investment may be held back by other obstacles, such as structural unemployment and skills shortages, and confidence factors like Brexit uncertainty. Benefits will mainly go to areas near the border such as Newport and Cardiff, not rural or west Wales. Overall, removing the tolls will increase consumption and investment in South Wales, but only to a small extent, and more for investment near the M4 corridor than for Wales as a whole.
2. (a)	Government current expenditure is ongoing, short-term spending that must be renewed each year on day-to-day running of public services, e.g. paying public sector workers such as nurses and teachers. Government capital expenditure is spending on capital goods and physical assets that last for many years, so it is long-term and not renewed each year, e.g. building roads, bridges such as the Severn Crossings, or hospital buildings.
(b)	Figure 1 shows government spending rose steadily from about £69 000m in 2001 to about £90 500m in 2016, an increase of around 31%. Figure 2 shows GDP rose from about $1 600bn in 2001 to about $3 050bn in 2007, so in this period both variables rose together, a positive relationship. This is expected because G is a component of AD (AD = C + I + G + X − M), so higher G directly raises GDP. Spending on public sector wages also creates income for households, which is re-spent, causing a multiplier effect that raises GDP further. However, after 2007 the relationship breaks down. GDP fell to about $2 350bn in 2009 and fell again from about $3 000bn in 2014 to $2 600bn in 2016, while G kept rising. G is not the largest component of AD, so falls in C and I during the 2008 financial crisis outweighed the rise in G. The multiplier may also be small, or spending may be wasted. Also, GDP is in dollars, so

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the falls partly reflect the depreciation of the pound in 2008 and after the 2016 referendum. Causation may also run from GDP to G, since automatic stabilisers raise spending in recessions.

(c) A labour shortage is excess demand for labour: at the wage paid, employers want to hire more workers than are willing to work ($Q_d > Q_s$).

In a free labour market the wage is set at W_e, where demand for labour equals supply, employing Q_e. A pay ceiling sets a maximum wage W_c below W_e (line 13).

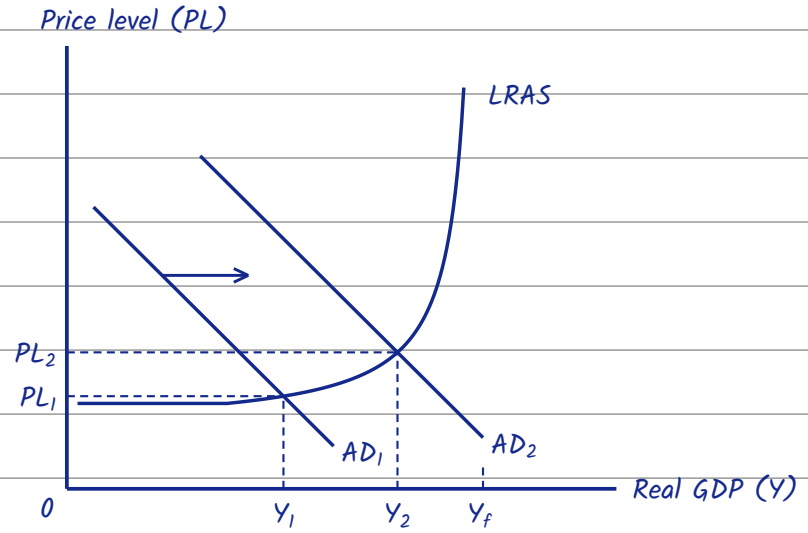


As the diagram shows, at W_c there is a contraction along the supply curve to Q_s, because fewer people are willing to work as teachers or nurses at the lower wage and some leave for better-paid private sector jobs. At the same time there is an extension along the demand curve to Q_d: the government wants to employ more workers at the lower wage. The excess demand $Q_d - Q_s$ is the labour shortage. As real pay falls below 2004/5 levels (line 10), the gap grows, causing vacancies and pressure on public services.

(d) A Keynesian approach to fiscal policy means the government uses spending and taxation to manage aggregate demand. Keynes argued that when private spending and investment are inadequate, the government should increase spending (G) or cut taxes (T), running a budget deficit, as with the proposed

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public sector pay rises, extra NHS spending and abolishing tuition fees. Expansionary fiscal policy shifts AD right from AD_1 to AD_2. As the diagram shows, real GDP rises from Y_1 to Y_2, giving economic growth, and as firms need more workers to produce the extra output, unemployment falls. A 1 percentage point public sector pay rise costing £3bn (line 12) would raise household incomes, and through the multiplier boost consumption and GDP by more than £3bn.



If there is a large negative output gap, as the UK arguably still had after slow growth following 2008, the increase in AD occurs on the flat part of the LRAS curve, so there is little demand-pull inflation. Borrowing is also cheap: the UK has a strong credit rating and interest rates and bond yields were at record lows (Bank Rate 0.25% to 0.5% in 2017), so it was a good time to borrow. Spending on public services can also tackle labour shortages and boost confidence.

However, Keynesian policy increases the budget deficit, and UK public sector debt was already over 85% of GDP, which is why the Chancellor made reducing debt the top priority (line 5). Debt interest already costs £36bn a year (Figure 3), more than the transport budget, and this rises if interest rates increase. With unemployment at only about 4.5% in 2017, the economy was close to full capacity (Y_f), so extra AD would mainly raise the price level, adding to demand-pull inflation when CPI was already about 3%, above the

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2% target. Higher inflation makes UK exports less price competitive, worsening the current account. Time lags mean the policy may take effect when it is no longer needed.

Overall, whether Keynesian policy is beneficial depends on the size of the output gap. In a recession, such as 2008 to 2009, it is clearly beneficial; with low unemployment and high debt in 2017, small targeted rises, such as public sector pay, are justified, but a large fiscal expansion would risk inflation and higher debt.

(e) Merit goods are goods whose social benefits exceed their private benefits; they are under-consumed in a free market because consumers ignore the positive externalities and may have imperfect information about the benefits. Healthcare and higher education are examples.

Education raises the productivity of workers, who pay more tax, innovate and are less likely to commit crime. Healthcare reduces the spread of disease and absence from work. As the diagram shows, the free market produces at Q_1, where MPC = MPB, below the social optimum Q^*, where MSB = MSC, causing a welfare loss. Providing these goods free at the point of use raises consumption towards Q^*, and makes them accessible to low-income people, improving equity and living standards such as life expectancy.

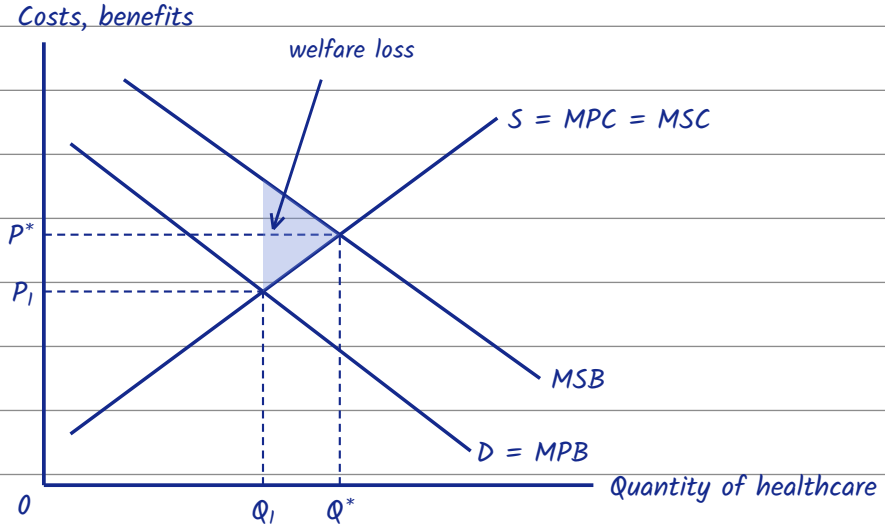


Figure 3 shows the government already spent £141bn on health and £99bn on

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education in 2015/16, the second and third largest areas after social protection (£231bn). Abolishing tuition fees would cost £9bn and extra NHS spending £9bn (lines 19 and 24).

However, free provision has drawbacks. At a zero price, quantity demanded may exceed Q^*, causing over-consumption, for example people visiting GPs for minor ailments, and waiting lists, a government failure. These services are very expensive, so taxes must be high; the proposed 45% and 50% income tax rates on those earning over £80 000 and £110 000 (line 17) could reduce incentives to work and cause high earners to avoid tax. The opportunity cost is high: £9bn on tuition fees could instead fund schools or the NHS.

Graduates gain large private benefits through higher lifetime earnings, so it is fair that they contribute, and the income-contingent loan system means poorer graduates repay little, protecting access.

Overall, it depends on the size of the external benefits relative to the private benefits. Healthcare has large positive externalities and serious information failure, so it should remain free at the point of use. Higher education has a larger private benefit, so partial charging, with loans, is justified, and the £9bn would be better spent elsewhere.