

A-level ECONOMICS

Paper 2 National and International Economy

Monday 22 May 2023

Afternoon

Time allowed: 2 hours

Materials

For this paper you must have:

- an AQA 12-page answer book
- a calculator.

Instructions

- Use black ink or black ball-point pen. Pencil should only be used for drawing.
- Write the information required on the front cover of your answer book.
The **Paper Reference** is 7136/2.
- In **Section A**, answer **EITHER** Context 1 **OR** Context 2.
- In **Section B**, answer **ONE** essay.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 80.
- There are 40 marks for **Section A** and 40 marks for **Section B**.

Advice

- You are advised to spend 1 hour on **Section A** and 1 hour on **Section B**.

Section A

Answer **EITHER** Context 1 **OR** Context 2.

EITHER

Context 1

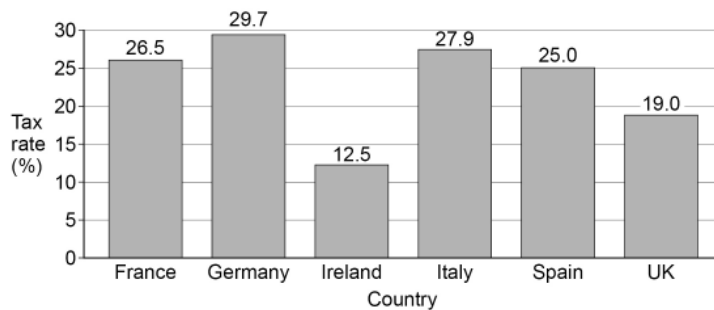
Total for this context: 40 marks

Corporation tax in Ireland

Study **Extracts A, B and C** and then answer **all** parts of Context 1 which follow.

Extract A

Figure 1: Corporation tax rates (%) in selected European nations, 2021



Note: Main tax rates only.
Some figures rounded.

Figure 2: Macroeconomic performance indicators for selected European nations, 2021

	France	Ireland	Spain
GDP at current prices (\$bn)	2935	499	1202
Exports (\$bn)	775	641	462
Inflation (%)	1.6	2.4	3.1
Unemployment (thousands)	3074	127	3105
Labour force (millions)	31.0	2.5	23.3

Source: Official statistics, 2022

Extract B: Irish corporation tax

Ireland has dropped its low-tax policy of the past 18 years, which had helped to persuade some of the world's biggest companies, including Google and Facebook, to site their European headquarters in Ireland. Countries who are members of the Organisation for Economic Co-operation and Development (OECD), have agreed to a minimum corporation tax rate of 15%. Initially, Ireland was one of nine countries that refused to join the scheme but they have now all agreed to do so. 5

The deal brings an end to the country's 12.5% corporation tax rate that has applied since January 2003, which has been criticised in other EU countries and the UK, where higher corporation tax rates have applied. The new tax, which will be limited to firms with annual global revenues of over €750m, will come into force in 2023. According to some estimates, it will cost the Irish government between €800m and €2bn a year in lost tax revenue. Multinational corporations (MNCs) located in Ireland and elsewhere, employing up to 500 000 staff, could be affected. 10

Over the years, as a consequence of its low corporate tax policy, Ireland has attracted an estimated 1000 MNCs in the technology, finance and pharmaceutical sectors, including Pfizer, Intel, Yahoo, LinkedIn, TikTok, Apple, IBM and Twitter. Such is the importance of MNCs to the Irish economy, that figures released in May showed that just 100 companies accounted for almost 80% of government tax revenue. The figures exclude those sectors closed due to the lockdown, including hospitality and travel, but showed Ireland's reliance on MNCs for employment and tax revenue. In 2020, about 32% of all jobs in Ireland were in MNCs and those employees contributed 49% of all taxes on income. 15 20

Source: News reports, 2021

Extract C: Extra tax revenue?

According to figures published by the EU Tax Observatory, an independent research group, Ireland could collect an extra €12.4bn in corporation tax under the 15% global minimum corporation tax rate. The group stated that Ireland should not be that concerned about MNCs leaving the country. The biggest blow to Ireland's low-tax regime came in 2015 when, under pressure from the EU, tax avoidance schemes known as the "double Irish" were made illegal. Under this scheme multinationals paid as little as 1% tax on their profits, a fraction of the 12.5% headline corporation tax rate.

5

The argument that the Irish Government would raise more tax revenue is simple: if all OECD members have a common minimum corporation tax rate, then global MNCs would not move to where taxation is lowest, and would just pay more tax in the countries in which they are located. The report finds developing and low-income countries will benefit less than more-economically-developed countries as most MNCs operate in high-income countries. High economic growth rates allowed Ireland to run a budget surplus in 2018 and 2019. However, Ireland is now running a large budget deficit, made worse by the pandemic, and any additional government revenue would be welcomed. Ireland also has an ageing population and could use the money to pay for pensions, social care and improved welfare.

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Source: News reports, 2021

0	1
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Using the data in **Extract A (Figure 1)**, calculate the difference between Ireland's corporation tax rate and the mean corporation tax rate of the other five European nations.

Give your answer to **one** decimal place.

[2 marks]

0	2
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Explain how the data in **Extract A (Figure 2)**, show that Ireland's economy performed better than the economies of France and Spain in 2021.

[4 marks]

0	3
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Extract C (line 13) states: 'High economic growth rates allowed Ireland to run a budget surplus in 2018 and 2019.'

With the help of a diagram, explain how high economic growth could help to create a budget surplus.

[9 marks]

0	4
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Extract B (lines 1–3) states: 'Ireland has dropped its low-tax policy of the past 18 years, which had helped to persuade some of the world's biggest companies, including Google and Facebook, to site their European headquarters in Ireland.'

Using the data in the extracts and your knowledge of economics, assess the view that a rise in Ireland's corporation tax rate is likely to have a damaging effect on its macroeconomic performance.

[25 marks]

Do **not** answer Context 2 if you have answered Context 1.

OR

Context 2

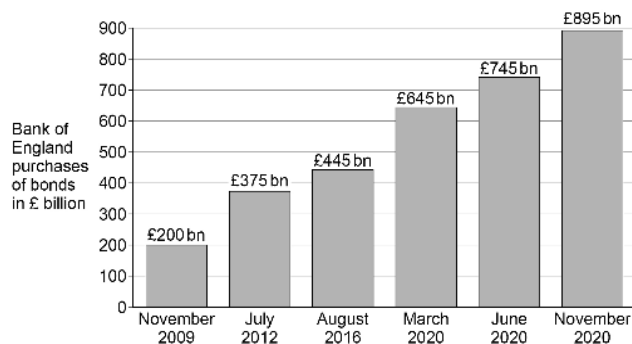
Total for this context: 40 marks

Quantitative easing in the UK

Study **Extracts D, E and F** and then answer **all** parts of Context 2 which follow.

Extract D

Figure 3: Cumulative value of quantitative easing in the UK



Source: Bank of England, 2022

Figure 4: Macroeconomic performance indicators for the UK, averages, 2006 to 2021

	2006 –2009	2010 –2013	2014 –2017	2018 –2021
Economic growth rate (%)	0.1	1.8	2.5	0.4
CPI inflation rate (%)	2.6	3.3	1.2	2.0
Unemployment rate (%)	6.0	7.9	5.2	4.2
Balance of payments on current account (% of GDP)	–3.3	–3.3	–4.8	–3.1

Source: ONS, 2022

Extract E: Unconventional monetary policy?

Since March 2009, an experiment has been underway in the UK. The Bank of England reduced Bank Rate to almost zero and introduced a new policy to the UK, known as quantitative easing (QE). Back then, financial markets around the world were in crisis and banks in the UK decreased lending, reducing the availability of credit for households and firms. This damaged the real economy and created high unemployment.

5

Faced with these problems, the Monetary Policy Committee (MPC) decided to cut Bank Rate to 0.5%, down from 5% in October 2008, but this was not enough on its own. Emergency meetings with the Chancellor at the time, Alistair Darling, led to the use of unconventional monetary policy in the form of QE. Initially, the Bank of England bought bonds worth £75bn but soon began to purchase more.

10

QE was originally intended to be an emergency measure but has remained in place. The total spent on buying government bonds under QE has been expanded repeatedly, reaching £895bn, with the latest round coming during the coronavirus pandemic. However, the fact that the Bank of England has continued increasing its bond purchases, and that interest rates remain close to zero, indicate that QE may not have been as successful as was hoped. Andrew Sentance, an economist who was on the MPC and who helped draw up the plan, said that financial markets in March 2009 pointed to Bank Rate returning to 3% by 2011. He also stated that he didn't think anybody on the MPC believed that QE was anything other than an emergency measure.

15

In some respects, the policy worked wonders. The UK enjoyed a strong recovery from the 2008 crash and had the longest run of unbroken quarterly growth of any major economy. UK unemployment peaked at 8.5%, compared to 10% in the US and 12.1% in the eurozone. It then dropped to 3.8% before the pandemic, the lowest rate since the mid-1970s.

20

Source: News reports, 2022

Extract F: Quantitative easing – a dangerous addiction?

While helping to keep borrowing costs down, low interest rates and QE created huge inequalities. Those with assets such as property have seen their prices soar. The FTSE 100 share index reached record highs and more than doubled between 2009 and 2021. The least wealthy 10% of households saw their real wealth rise by an average of £3000 between 2008 and 2014, compared to an average rise of £350 000 for the wealthiest 10%. However, the Bank of England argues that QE has helped to keep people in work.

5

Low interest rates meant that the return on savings fell but families with mortgages had cheaper repayment costs. This encouraged spending, helping to fuel the economic recovery. Cheap borrowing costs have, however, allowed debts to build up. Borrowing on credit cards, personal loans and car finance have soared above pre-2008 levels. There is also the effect on the cost of living through higher inflation rates.

10

Rock-bottom interest rates and QE stimulated the economy. However, the Conservative-led coalition government, elected in 2010, adopted a policy of austerity, cutting government spending to reduce the budget deficit. Monetary policy fuelled growth, but austerity pulled in the opposite direction. This made it harder to raise Bank Rate as growth was low. Although interest rates began to rise in late 2017 and 2021, they are still below the rates seen before the 2007–08 financial crisis.

15

Some say that the use of QE is a dangerous addiction and its overuse can lead to problems in the future. Many economists believe QE has lost some of its effectiveness and warn that a fresh round could lead to higher inflation and increase wealth inequality. It is argued that, in the future, the Treasury should use fiscal policy to stimulate the economy rather than relying on QE.

20

Source: News reports, 2022

0 5

Using the data in **Extract D (Figure 3)**, calculate the value of bonds that had been purchased by November 2020 for every £1 worth of bonds purchased by November 2009.

Give your answer in £s and to **two** decimal places.

[2 marks]

0 6

Explain how the data in **Extract D (Figure 4)**, show that the growth in quantitative easing (shown in **Figure 3**) may have been successful in helping the UK achieve its macroeconomic objectives since 2009.

[4 marks]

0 7

Extract E (lines 4–5) states: ‘...banks in the UK decreased lending, reducing the availability of credit for households and firms. This damaged the real economy and created high unemployment.’

With the help of a diagram, explain how reduced availability of credit from banks may lead to increased unemployment.

[9 marks]

0 8

Extract F (lines 18–19) states: ‘Some say that the use of QE is a dangerous addiction and its overuse can lead to problems in the future.’

Using the data in the extracts and your knowledge of economics, assess the view that the continued use of quantitative easing (QE) is damaging for the UK economy.

[25 marks]

Section B

Answer **one** essay from this section.

Each essay carries 40 marks.

EITHER**Essay 1**

Over the last two centuries, international trade has grown faster than global GDP, completely transforming the world economy. Today, about one quarter of total global output is exported. Globalisation has generated gains for the UK economy but has also made it vulnerable to external shocks.

0	9
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Explain the main causes of globalisation.

[15 marks]

1	0
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Assess the view that increased globalisation has been beneficial for the UK economy.

[25 marks]

OR**Essay 2**

Throughout 2021 and 2022, the UK suffered from supply-side problems which caused prices to rise. Within an economic cycle, there are often trade-offs between different macroeconomic objectives. However, many economists argue that the government should do more to reduce the likelihood of these trade-offs persisting in the long run.

1	1
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Explain the possible causes of a shift in the short-run aggregate supply curve to the left.

[15 marks]

1	2
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Evaluate how, in the long-run, governments could try to reconcile conflicts between the various objectives of economic policy.

[25 marks]

OR

Essay 3

According to the Office for National Statistics, the UK's real gross domestic product (GDP) increased by an estimated 7.5% in 2021, the fastest rate in 80 years. This followed a fall in real GDP of 9.4% in 2020.

1	3
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Explain possible causes of economic growth.

[15 marks]

1	4
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Evaluate the view that economic growth usually leads to an improvement in living standards.

[25 marks]

END OF QUESTIONS

There are no questions printed on this page

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0 1

Mean of the other five nations = $(26.5 + 29.7 + 27.9 + 25.0 + 19.0) \div 5 =$
 $128.1 \div 5 = 25.62\%$

Difference = $25.62 - 12.5 = 13.12$

Ireland's rate is 13.1 percentage points below the mean of the other five nations.

0 2

A better macroeconomic performance means getting closer to the main objectives:
 high output, low unemployment, price stability and a strong trade position.

Ireland's GDP per worker in its labour force was \$199 600 ($\$499\text{bn} \div 2.5\text{m}$),
 about twice France's (\$94 677) and almost four times Spain's (\$51 588), so
 each Irish worker produced far more output.

Ireland's unemployment rate was only 5.1% ($127\ 000 \div 2.5\text{m}$), compared with
 9.9% in France and 13.3% in Spain, so a much smaller proportion of its labour
 force was out of work and seeking a job.

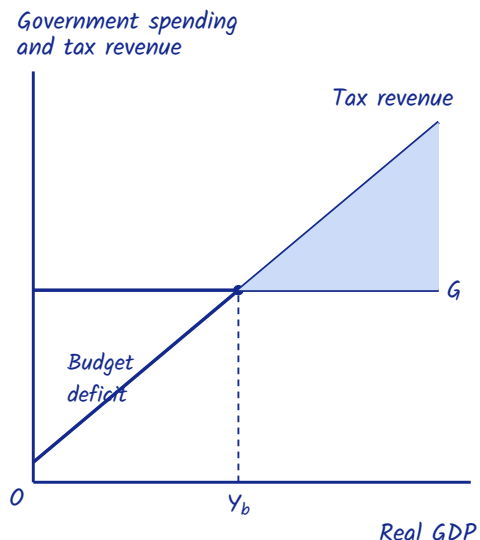
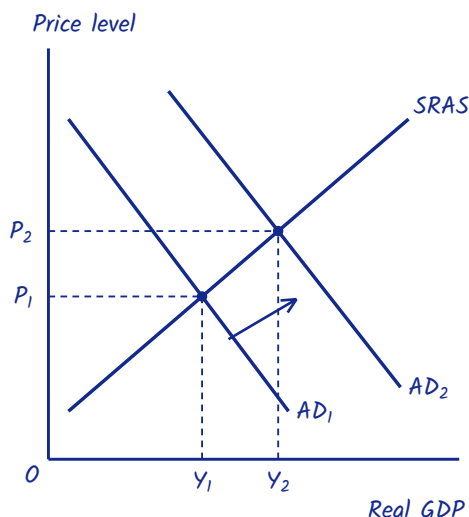
Exports were worth 128% of Ireland's GDP, against 26.4% for France and 38.4%
 for Spain, showing a much stronger trade performance.

Ireland's inflation of 2.4% was higher than France's 1.6%, but closer to the ECB's
 2% target than Spain's 3.1%, so it was also close to price stability.

0 3

Economic growth is an increase in real GDP. Short-run growth comes from a rise
 in aggregate demand (AD), while long-run growth is an increase in the productive
 potential of the economy (LRAS). A budget surplus occurs when government
 revenue, mainly from taxation, is greater than government spending in a year; a
 budget deficit is the reverse.

High growth usually happens when one of the components of AD, $C + I + G +$
 $(X - M)$, rises. In Ireland, investment by MNCs and rising exports would shift
 AD to the right from AD_1 to AD_2 , as shown in the first diagram, raising real
 GDP from Y_1 to Y_2 .



As output rises, firms need more workers because labour is a derived demand, so cyclical unemployment falls. This raises tax revenue automatically. More people in work and higher wages increase income tax and national insurance receipts, and because income tax is progressive, revenue can rise faster than GDP. Higher consumer spending raises VAT and excise duty receipts, and higher company profits raise corporation tax revenue. This matters greatly in Ireland, where just 100 companies paid almost 80% of government tax revenue.

At the same time, government spending tends to fall. With lower unemployment, less is paid out in unemployment benefits and other means-tested welfare payments. These automatic stabilisers move the budget towards surplus as the economy grows. The second diagram shows this: tax revenue rises with real GDP while government spending (G) stays roughly constant, so beyond Y_b , where the budget is balanced, a surplus appears and grows as GDP rises.

If the growth is long-run, the higher level of GDP is sustained, so the bigger tax base is permanent rather than just cyclical. Strong Irish growth in 2018 and 2019 therefore allowed revenue to exceed spending. However, the size of any surplus also depends on government choices: if the extra revenue had been spent on pensions or social care, growth may only have reduced the deficit.

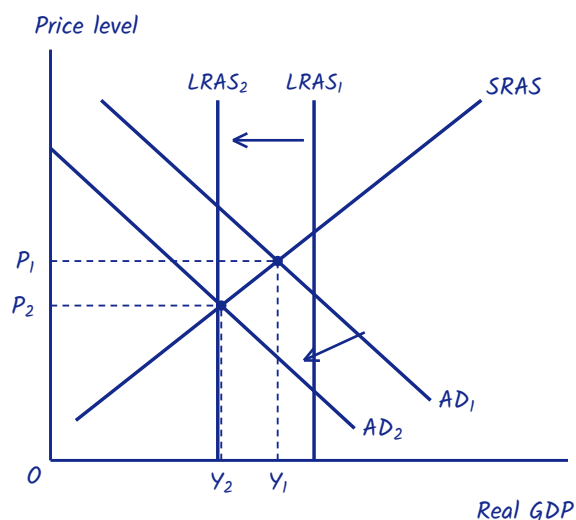
0 4

Corporation tax is a direct tax on the profits of companies. Macroeconomic performance is judged by how well an economy meets objectives such as strong and sustained economic growth, low unemployment, low and stable inflation and a

satisfactory current account, as well as healthy government finances. Ireland is raising its rate from 12.5% to the OECD minimum of 15% for firms with global revenues over €750m from 2023 (Extract B).

The main argument that this will be damaging is that Ireland's low rate has attracted foreign direct investment (FDI). A lower tax rate raises the post-tax profit that an MNC earns on each euro of profit, so Ireland has attracted around 1000 MNCs such as Google, Apple, Pfizer and Intel. Many of these firms are footloose, especially in technology and finance, so if the rate rises they may relocate or choose other countries for new investment. Because about 32% of all Irish jobs are in MNCs, and up to 500 000 staff could be affected, the impact on the labour market could be large.

A fall in FDI reduces investment (I), a component of AD , and because many MNCs use Ireland as an export base, it would also reduce exports, which are worth 128% of Irish GDP. As shown in the diagram, AD would shift left from AD_1 to AD_2 , and through the negative multiplier effect, as lost jobs reduce consumer spending, real GDP falls from Y_1 to Y_2 . Labour is a derived demand, so cyclical unemployment would rise from its low rate of 5.1%. In the long run, the loss of capital, technology and highly skilled jobs would reduce the productive potential of the economy, shifting $LRAS$ to the left from $LRAS_1$ to $LRAS_2$, lowering trend growth.



Government finances could also suffer. Extract B estimates the change may cost the Irish government €800m to €2bn a year in lost revenue if firms leave, and

MNC employees pay 49% of all taxes on income. With Ireland already running a large budget deficit after the pandemic, lower revenue might force spending cuts or tax rises elsewhere, further reducing AD. Lower AD may reduce inflation from 2.4%, but this would be a sign of weakness rather than a benefit, and there is a risk of deflation.

However, there are strong reasons to doubt that the damage will be large. First, the new rate applies to all OECD members, so MNCs cannot simply move to a country with a lower rate; the incentive to relocate is greatly reduced. Even at 15%, Ireland's rate would still be well below France (26.5%), Germany (29.7%) and the UK (19%), so it keeps a relative advantage. The rise is also small, only 2.5 percentage points, and only for the largest firms, so smaller firms are unaffected.

Second, tax is only one reason MNCs locate in Ireland. It is English-speaking, inside the EU single market, has a young, highly educated workforce and established clusters of technology and pharmaceutical firms. MNCs also have large sunk costs in their Irish headquarters and factories. Extract C notes that when the "double Irish" scheme was banned in 2015, raising some firms' effective rate far above 1%, MNCs did not leave. This suggests their location decisions are not very sensitive to tax.

Third, if most MNCs stay, revenue is likely to rise. The EU Tax Observatory estimates Ireland could collect an extra €12.4bn. This could reduce the budget deficit and pay for pensions and social care for an ageing population. If it is spent on education, training and infrastructure, it could increase productivity and shift LRAS to the right, improving long-run performance.

Finally, Irish GDP overstates the benefit of MNCs to Irish people, because much of their profit is repatriated to their home countries. GNI, which excludes these flows, is far below GDP, so even if some MNC profit is lost, living standards may change much less than GDP figures suggest. Indeed, the heavy reliance on just 100 firms is itself a risk, and a less tax-driven economy could be more stable.

In conclusion, a rise in corporation tax could damage Ireland's macroeconomic performance if it led MNCs to leave, as falling investment and exports would

reduce growth and raise unemployment. However, because the 15% minimum is global, the rise is small and Ireland keeps many non-tax advantages, large-scale relocation is unlikely. In the short run there may be some reduction in new FDI, but in the long run the extra revenue, if used well, could improve performance. The overall effect depends mainly on how other countries respond, for example with subsidies to attract MNCs, and on how the Irish government spends the extra revenue. On balance, I do not think the rise is likely to be seriously damaging.

0 5

$$£895bn \div £200bn = 4.475$$

£4.48 of bonds had been purchased by November 2020 for every £1 purchased by November 2009.

0 6

Quantitative easing (QE) is when the Bank of England creates new money to buy bonds, increasing the money supply and lowering long-term interest rates to boost AD. The macroeconomic objectives include growth, low unemployment and inflation of $2\% \pm 1\%$.

As QE grew from £200bn in 2009 to £895bn in 2020, average growth was always above the 0.1% of 2006 to 2009, reaching 2.5% in 2014 to 2017, and even the lowest later average, 0.4% in 2018 to 2021, was still higher.

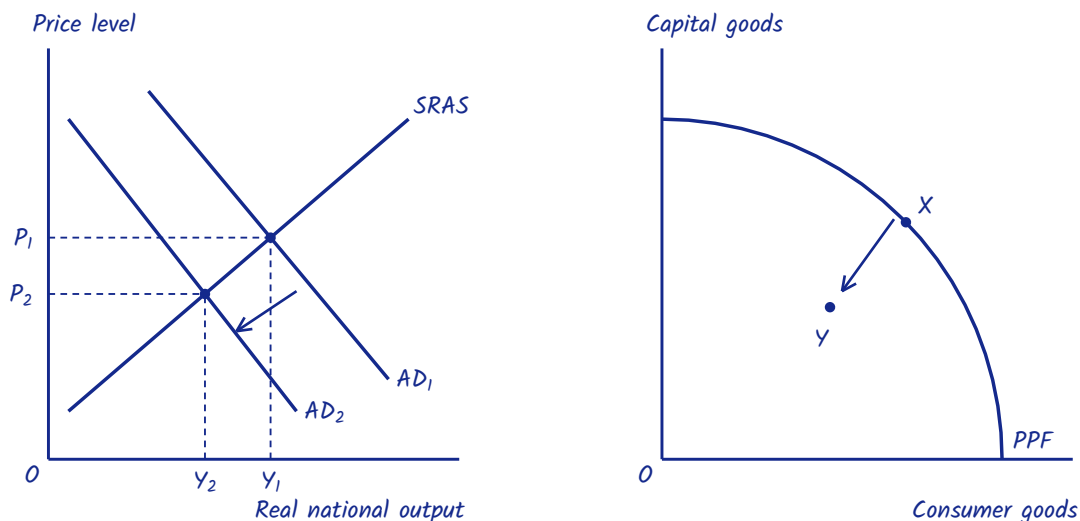
Unemployment fell from 6.0% in 2006 to 2009 to 4.2% in 2018 to 2021, suggesting that higher real output increased the derived demand for labour.

The UK also avoided deflation: the lowest average inflation rate, 1.2% in 2014 to 2017, was inside the target range, and in 2018 to 2021 it averaged exactly the 2.0% target.

0 7

Credit is money borrowed from banks and other lenders, for example loans, mortgages, overdrafts and credit cards. Unemployment is when people who are willing and able to work, and actively seeking work, cannot find a job. During the 2008 financial crisis banks suffered large losses and had less capital, so they became more risk averse and reduced lending, or raised the interest rates and deposits they demanded.

With less credit available, households cannot borrow to buy houses, cars and other durable goods, and they become less confident, so consumption (C) falls. Firms cannot finance new machinery and buildings, and many small firms rely on overdrafts for working capital, so investment (I) falls. As C and I are components of aggregate demand ($C + I + G + X - M$), AD shifts left from AD_1 to AD_2 , as shown in the first diagram, and real national output falls from Y_1 to Y_2 .



Because labour is a derived demand, firms that sell less need fewer workers, so they cut hours, stop hiring and make workers redundant. This is demand-deficient (cyclical) unemployment, which is involuntary: people want to work at the going wage but there are not enough jobs. Some firms that cannot roll over their loans may go out of business altogether, causing further job losses.

The effect is made larger by the negative multiplier. Workers who lose their jobs have less income, so they cut their own spending, which reduces the income of other firms, causing further falls in output and employment. Falling output also reduces investment through the accelerator. The economy moves from a point on its production possibility frontier, X , to a point inside it, Y , as shown in the second diagram, meaning resources, including labour, are unemployed. This explains why the credit crunch in Extract E damaged the real economy and why UK unemployment peaked at 8.5%.

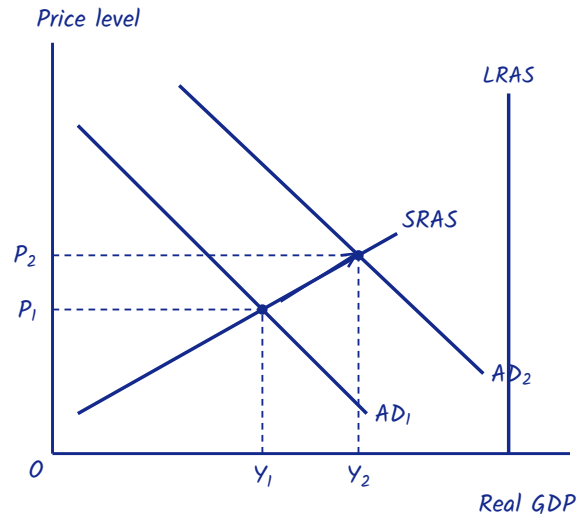
0 8

Quantitative easing (QE) is an unconventional monetary policy in which the Bank of England creates new electronic money to buy assets, mainly government bonds (gilts), from financial institutions such as pension funds and banks. It increases the money supply and is used when Bank Rate is already close to zero, as it was after being cut to 0.5% in 2009. Since 2009 the total spent has been expanded repeatedly to £895bn (Extract E).

QE works through several channels. When the Bank of England buys bonds, their price rises and their yield falls, which lowers long-term interest rates on

mortgages and business loans. Sellers of the bonds have more money, which they use to buy other assets such as shares and property, raising their prices; the FTSE 100 more than doubled between 2009 and 2021 (Extract F). Higher asset prices create a positive wealth effect and increase confidence, so consumption rises. Cheaper borrowing encourages investment, and lower interest rates tend to cause the pound to depreciate, making UK exports more competitive. Banks also have more liquidity, so they can lend more.

As shown in the diagram, these effects shift AD to the right from AD_1 to AD_2 , raising real GDP from Y_1 to Y_2 . The evidence suggests this helped: the UK had a strong recovery from the 2008 crash with the longest run of unbroken quarterly growth of any major economy, and unemployment peaked at only 8.5%, compared with 10% in the US and 12.1% in the eurozone, before falling to 3.8% (Extract E). Average growth in Figure 4 was 1.8% and 2.5% in the periods after 2009, compared with 0.1% before, and inflation stayed close to target, avoiding deflation.



However, there are several ways in which continued QE could be damaging. First, it increases inequality. QE works by raising asset prices, which benefits those who already own property and shares. Extract F shows that the wealthiest 10% of households saw their real wealth rise by about £350 000 between 2008 and 2014, compared with only £3000 for the least wealthy 10%. Low interest rates also reduce the return on savings, hurting many pensioners. Rising house prices make it harder for young people to buy homes.

Second, it may create inflation and asset price bubbles. If more money is created when the economy is close to full capacity, at Y_2 near LRAS in the diagram, further rises in AD mainly increase the price level. This is a particular risk when inflation is caused by supply-side shocks, as in 2021 and 2022. Extract F warns that a fresh round could lead to higher inflation, which would reduce real incomes and the international competitiveness of UK goods. Cheap borrowing has also allowed debts to build up, with credit card and car finance borrowing above pre-2008 levels, which makes households vulnerable when interest rates rise.

Third, QE may be becoming less effective, which is the 'dangerous addiction' in Extract F. When bond yields are already very low, buying more bonds can hardly reduce them further, and the economy may be in a liquidity trap where banks hoard the extra money rather than lend it and households save rather than spend. Some bonds are sold by foreign investors, so the money may not stimulate the UK economy at all. Very low interest rates can keep unproductive 'zombie' firms alive, reducing productivity and long-run growth. Finally, the Bank of England's bond holdings make losses when interest rates rise, and these losses are borne by the Treasury, worsening government finances.

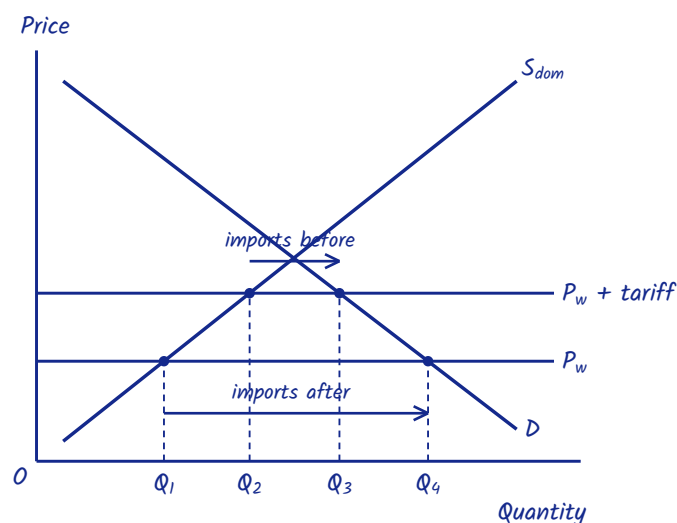
On the other hand, it is difficult to know what would have happened without QE. The weak growth of the 2010s may have been caused by fiscal austerity rather than by QE, since austerity 'pulled in the opposite direction' (Extract F). Without QE, the UK may have suffered a much deeper recession and possibly deflation, and the Bank of England argues it helped to keep people in work. The damage from inequality could be reduced by using fiscal policy, such as progressive taxes and benefits, rather than by abandoning QE.

The word 'continued' is important. QE was successful as an emergency measure in 2009 and during the pandemic, when AD collapsed, inflation was low and Bank Rate could not be cut any further. Its success in those conditions does not mean continued use will be successful, especially when the economy has spare capacity used up. Its effects depend on the state of the economy: in a deep recession with low inflation the benefits are likely to outweigh the costs, but in normal times or with high inflation continued QE is more likely to be damaging.

In conclusion, QE has been a useful tool, but its continued use as a permanent feature of policy is likely to be damaging in the long run because of growing inequality, asset bubbles, high debt and its declining effectiveness. The Bank of England should keep QE for emergencies, rely on Bank Rate and forward guidance in normal times, and the Treasury should use targeted fiscal policy and supply-side policies to stimulate the economy, as Extract F suggests.

Globalisation is the process by which national economies become increasingly integrated and interdependent through greater international trade in goods and services, flows of capital (such as FDI), movement of labour and the transfer of technology and ideas. The introduction notes that about one quarter of global output is now exported.

One major cause is trade liberalisation. Since 1995 the World Trade Organization (WTO) has worked to reduce tariffs, quotas and other trade barriers through negotiation rounds, and it settles trade disputes. Countries have also formed trading blocs and free trade areas such as the EU single market and many bilateral agreements. As shown in the diagram, when a tariff is removed the domestic price falls from $P_w + \text{tariff}$ to the world price P_w . Domestic production falls from Q_2 to Q_1 and consumption rises from Q_3 to Q_4 , so imports increase from Q_2Q_3 to Q_1Q_4 . Repeated across many goods and countries, this greatly increases world trade.



Freer trade allows countries to specialise according to comparative advantage, producing the goods in which they have the lowest opportunity cost and trading for the rest. This raises world output and gives countries an incentive to trade even more, so trade grows faster than GDP.

A second cause is the opening up of previously closed economies. China began market reforms after 1978 and joined the WTO in 2001, while the former Soviet bloc and India liberalised in the early 1990s. This added billions of workers and consumers to the world economy, and their low labour costs made them attractive

locations for production.

Third, falling transport costs have made trade cheaper. Containerisation allows goods to be moved quickly from ship to rail to road with little handling, larger container ships give economies of scale, and air freight has become cheaper. Improvements in infrastructure such as ports and motorways have had a similar effect. When transport costs fall, the price of imported goods falls, so more goods become worth trading internationally.

Fourth, improvements in communications and technology, such as the internet, mobile phones and video calls, allow firms to coordinate global supply chains, provide services such as call centres and software development from abroad, and sell online to customers anywhere. Information about foreign markets and prices is cheap to obtain.

Fifth, the growth of multinational corporations (MNCs) has driven globalisation. MNCs locate different stages of production in the countries with the lowest costs or best skills, which increases trade in components and FDI. The liberalisation of capital flows, with the removal of exchange controls in many countries since the 1980s, has made it easier to invest abroad.

Finally, the freer movement of labour, for example within the EU, and policies that encourage the migration of skilled workers have increased the international integration of labour markets, while international economic cooperation through bodies such as the IMF and G20 has supported open markets.

These causes reinforce each other: lower trade barriers and cheaper transport encourage MNCs to build global supply chains, and technology makes them easier to manage, which is why globalisation accelerated so rapidly from the 1990s.

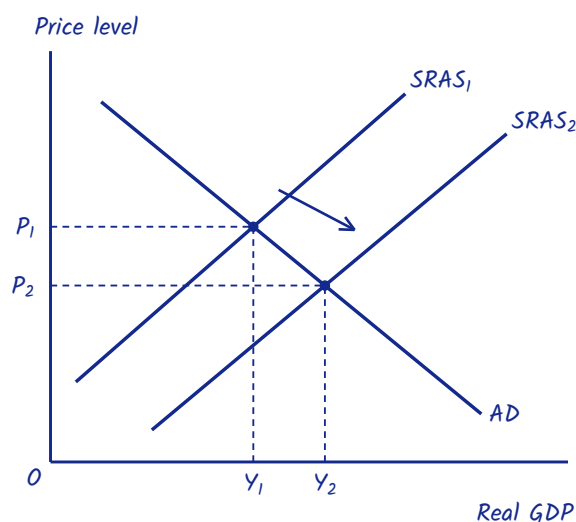
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Globalisation is the increasing integration of national economies through trade, capital flows, labour migration and the spread of technology. Whether it has been beneficial for the UK can be judged by its effects on the macroeconomic objectives, such as growth, unemployment, inflation and the current account, and on living standards, inequality and the environment.

The main benefit comes from specialisation according to comparative advantage.

The UK has a comparative advantage in services such as finance, insurance, higher education and creative industries, and in high-value manufacturing such as pharmaceuticals and aerospace. By specialising in these and importing goods such as clothing and electronics from countries with lower opportunity costs, total output and consumption are higher than without trade, raising UK living standards. Access to world markets also lets UK firms exploit economies of scale, lowering their average costs.

Globalisation has also lowered inflation. Cheap imports from low-cost countries such as China reduce the prices of consumer goods and of imported raw materials and components. As shown in the diagram, lower import costs shift SRAS to the right from $SRAS_1$ to $SRAS_2$, reducing the price level from P_1 to P_2 while increasing real GDP from Y_1 to Y_2 . This helped the UK to achieve low and stable inflation in the 2000s. Consumers also benefit from far greater choice, and competition from foreign firms forces UK firms to become more efficient and innovative.



The UK has been one of the largest recipients of inward FDI in Europe. Foreign firms such as Nissan in Sunderland and Tata in the West Midlands have created jobs, brought new technology and management practices, and increased exports. Investment adds to AD in the short run and to productive capacity in the long run. The City of London has become a global financial centre, creating many highly paid jobs and large tax revenues. Free movement of labour has helped fill

skill shortages, for example in the NHS, and migrants have added to the size of the labour force and paid taxes.

However, globalisation has also imposed costs. Many manufacturing jobs, for example in steel, textiles and shipbuilding, have been lost to lower-cost competitors or outsourced abroad. These job losses were concentrated in the North of England, Wales and Scotland, creating structural unemployment because workers' skills did not match the new service jobs, which were mainly in London and the South East. This has widened regional and income inequality, so the gains have not been shared evenly.

Globalisation has also made the UK more vulnerable to external shocks, as the introduction suggests. The 2008 financial crisis spread rapidly to the UK through its global banks, and the pandemic and the war in Ukraine disrupted supply chains and caused imported inflation in energy and food in 2021 and 2022.

Overdependence on imports of strategic goods, such as energy and medical supplies, is a risk. The UK has also run a persistent current account deficit, as consumers buy large amounts of imported goods.

Other costs include the ability of MNCs to avoid UK taxes by shifting profits to low-tax countries, their influence over government decisions, and the environmental damage caused by transporting goods long distances. Some argue that migration has put pressure on housing and public services in certain areas and held down wages for low-skilled workers, although most evidence suggests this effect is small.

When weighing these arguments, the overall gains for the UK as a whole seem to outweigh the losses, since total output, choice and productivity are higher and inflation is lower. The problem is that the gains are spread thinly across all consumers, while the losses are concentrated on particular workers and regions.

The costs could be reduced by government policies such as retraining, regional investment and a fair tax system for MNCs, rather than by reducing globalisation.

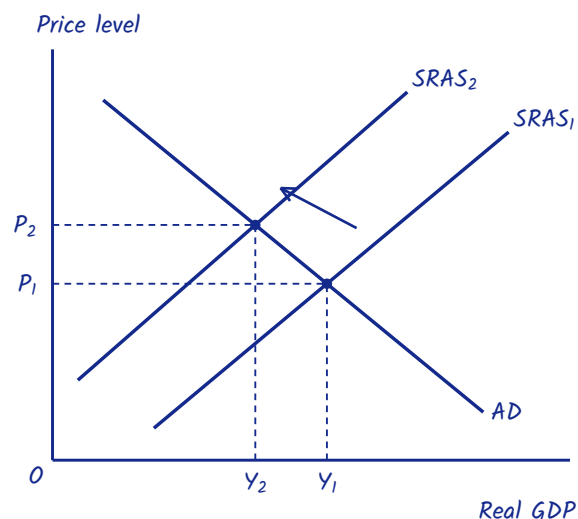
The answer also depends on the time period. In the short run, workers who lose jobs to imports suffer greatly, but in the long run resources move to more

productive uses. Comparative advantage is dynamic, so the UK cannot assume its advantage in services will last if emerging economies develop. The UK's departure from the EU has also reduced the degree of its integration with its largest trading partner, which suggests that many voters felt globalisation had not benefited them.

In conclusion, increased globalisation has been beneficial for the UK economy overall, raising growth and living standards and lowering inflation, but it has been less beneficial for some regions and groups, and it has made the economy more exposed to global shocks. The size of the net benefit depends on how well the government manages the adjustment costs and spreads the gains.

Aggregate supply is the total amount of goods and services that all firms in an economy plan to produce at each price level. The short-run aggregate supply (SRAS) curve shows this relationship in the short run, when factor prices such as money wages, productivity and technology are assumed to be constant. It slopes upwards because, with costs fixed, a higher price level increases profit margins, so firms are willing to produce more. A shift to the left means that at each price level firms supply less real output; it is mainly caused by a rise in firms' costs of production.

As shown in the diagram, if SRAS shifts left from $SRAS_1$ to $SRAS_2$, the price level rises from P_1 to P_2 and real GDP falls from Y_1 to Y_2 . This is cost-push inflation, and it is what happened to the UK in 2021 and 2022.



The first cause is a rise in money wage rates. Wages are the largest cost for most firms, especially in labour-intensive services. If trade unions negotiate higher wages, the national living wage is raised, or labour shortages force firms to pay more, as happened in the UK after the pandemic, then unit labour costs rise unless productivity rises by the same amount. Firms need a higher price to supply the same output, so SRAS shifts left.

Second, a rise in the price of raw materials and energy increases costs for nearly all firms. Oil and gas are used in transport, heating and the production of plastics and fertiliser, so a rise in oil prices, such as after Russia's invasion of Ukraine in 2022, raises costs throughout the economy. Higher prices for metals and food commodities have similar effects.

Third, a rise in import prices shifts SRAS left. The UK imports many components and raw materials, so if the pound depreciates, as it did after the 2016 referendum, the sterling price of these imports rises, increasing firms' costs. Rising world prices and higher tariffs or new trade barriers, such as the extra paperwork after Brexit, have the same effect.

Fourth, higher business taxes increase costs. A rise in employers' national insurance contributions or business rates, or higher indirect taxes such as VAT and fuel duty, raise the cost of supplying goods, so firms supply less at each price level. Increased regulation, such as costly environmental standards, can also raise costs.

Fifth, a fall in productivity, holding wages constant, raises unit labour costs, as each worker produces less output. This could be caused by worker illness, as during the pandemic, or by disruption to production.

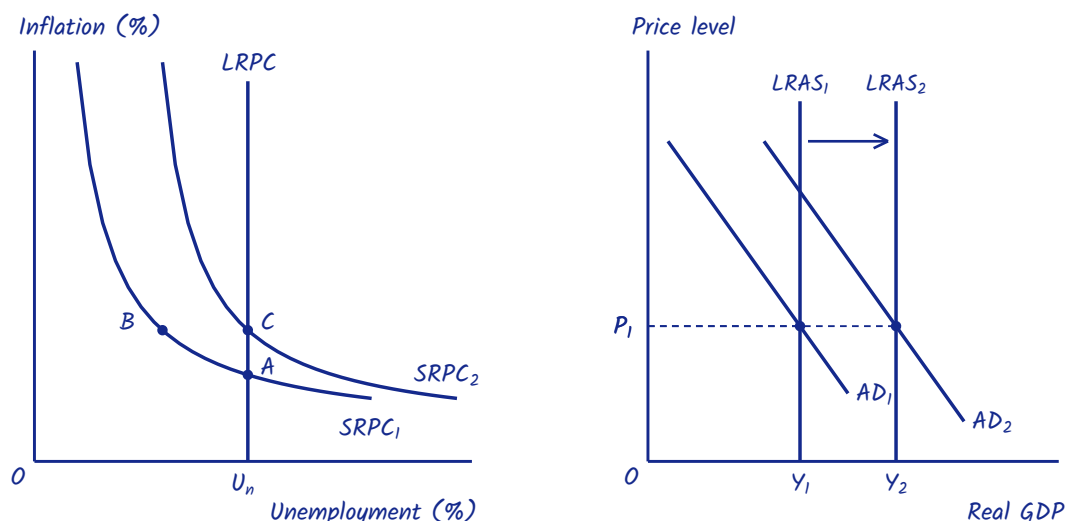
Finally, supply-side shocks and shortages, such as natural disasters, wars, extreme weather affecting harvests, or the global shortage of computer chips and shipping containers in 2021, reduce the availability of inputs and raise their prices, shifting SRAS to the left.

The size of the shift depends on how large the cost increase is and how much of the economy it affects: an oil price rise affects almost all firms, while a rise in one raw material price affects only a few industries. If costs rise only temporarily, SRAS may shift back to the right once the shock passes.

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The main objectives of government macroeconomic policy are strong and sustainable economic growth, low unemployment, price stability (the UK's 2% CPI target) and a satisfactory balance of payments on current account. Other objectives include a balanced budget, a fair distribution of income and protecting the environment. In the short run these objectives often conflict, and the long run is the period in which all factors of production and factor prices can change. The main conflict is between unemployment and inflation. If the government uses expansionary demand-side policy to reduce unemployment, AD rises and the economy may move towards a positive output gap, where firms compete for scarce

labour, wages rise and inflation increases. This is shown by a movement along the short-run Phillips curve ($SRPC_1$) from A to B in the first diagram: lower unemployment comes at the cost of higher inflation. Rapid growth also tends to increase imports as incomes rise, worsening the current account deficit, which is a particular problem in the UK where consumers have a high propensity to import.



However, the monetarist and new classical view is that this trade-off only exists in the short run. Once workers expect higher inflation, they demand higher money wages, so the $SRPC$ shifts up to $SRPC_2$ and unemployment returns to the natural rate (U_n) at C, but with higher inflation. The long-run Phillips curve (LRPC) is vertical. This implies that demand-side policy cannot permanently reduce unemployment below the natural rate, so the way to reconcile the objectives in the long run is to use supply-side policies.

Supply-side policies increase the productive capacity of the economy and shift $LRAS$ to the right. As shown in the second diagram, if $LRAS$ shifts from $LRAS_1$ to $LRAS_2$, AD can rise from AD_1 to AD_2 , so real GDP grows from Y_1 to Y_2 with no rise in the price level. Growth and lower unemployment can then be achieved without inflation. If supply-side policies improve productivity and the quality of UK goods, firms also become more internationally competitive, which improves the current account.

Interventionist supply-side policies include government spending on education and training, which raises labour productivity and reduces structural unemployment by

giving workers skills that match the jobs available; spending on infrastructure such as roads, rail and broadband; and subsidies for research and development.

Market-based policies include cutting income tax to increase incentives to work, reducing corporation tax to encourage investment, reducing trade union power and deregulation to make labour markets more flexible, and privatisation to increase competition and efficiency. Both reduce the natural rate of unemployment, shifting the LRPC to the left.

However, supply-side policies have limitations. Many take a long time to work: improvements in education may take a decade or more to raise productivity, so they do little to resolve conflicts in the short run, when governments face elections. Interventionist policies are expensive and may require higher taxes or borrowing, conflicting with the objective of a balanced budget, and there is a risk of government failure if money is spent on the wrong projects, such as the rising cost of HS2. Market-based policies may increase inequality: lower taxes on high earners and weaker unions may widen the gap between rich and poor, conflicting with equity objectives. Their effectiveness is also hard to measure, since many other factors affect productivity.

Governments can also reduce conflicts by using a mix of policies. Giving an independent central bank the job of controlling inflation, as the Bank of England has done since 1997, makes inflation expectations more stable, so the SRPC does not shift up as easily and unemployment can fall with less inflation. Credible fiscal rules can reduce the risk of excessive borrowing. Policies to reduce the costs of energy, such as investment in renewables, can reduce the risk of supply-side shocks like those of 2021 and 2022, which caused stagflation, the worst conflict of all.

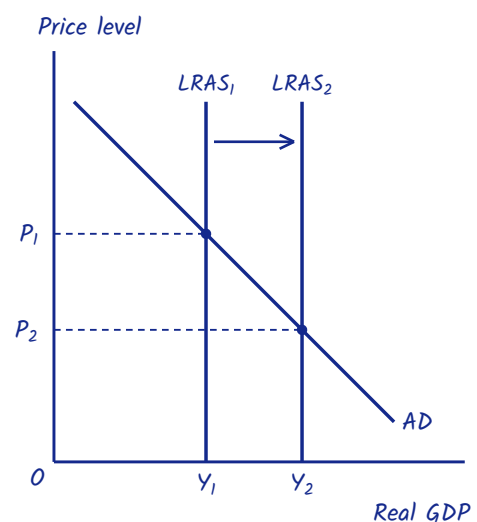
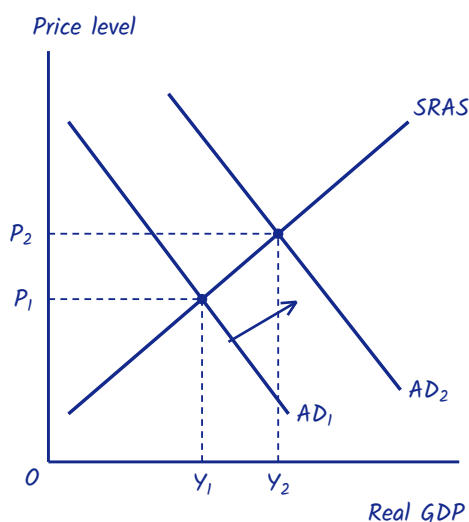
Some conflicts may never be fully reconciled. Economic growth tends to increase pollution and resource depletion, conflicting with environmental objectives, unless it is based on green technology. Governments may therefore have to satisfice, aiming for acceptable rather than perfect outcomes, and decide on priorities. The importance attached to each objective can change: in the 1970s inflation was the main concern, whereas in 2020 the priority was preventing unemployment. A

developing country may give more weight to growth than to the environment.

In conclusion, in the long run governments can reduce conflicts between objectives mainly through supply-side policies that increase productive capacity, combined with credible monetary policy that anchors inflation expectations. However, these policies are slow, costly and uncertain, and some conflicts, such as between growth and the environment, and between efficiency and equity, cannot be completely removed. How successful a government is depends on the type of supply-side policy, how well it is designed and whether it can avoid government failure.

Economic growth is an increase in real GDP. Short-run (actual) growth is an increase in real output due to a rise in aggregate demand, using spare capacity in the economy. Long-run (potential) growth is an increase in the productive capacity of the economy, shown by an outward shift of the PPF or a rightward shift of LRAS. The UK's 7.5% growth in 2021 was mainly short-run, as the economy recovered from the 9.4% fall in 2020.

Short-run growth is caused by an increase in one or more of the components of AD: consumption (C), investment (I), government spending (G) and net exports (X – M). As shown in the first diagram, a rise in AD from AD_1 to AD_2 increases real GDP from Y_1 to Y_2 , although with some rise in the price level from P_1 to P_2 . The second diagram shows long-run growth, where LRAS shifts right from $LRAS_1$ to $LRAS_2$, increasing real GDP from Y_1 to Y_2 while reducing the price level.



Consumption, the largest component of AD in the UK at around 60%, can rise for several reasons. Expansionary monetary policy, such as a cut in Bank Rate or QE, reduces the cost of borrowing and the reward for saving, so households spend more, and lower mortgage repayments increase disposable income. Expansionary fiscal policy, such as cuts in income tax, also increases disposable income. Rising house and share prices create a positive wealth effect, and increased consumer confidence and falling unemployment, as in 2021 when lockdowns ended, encourage spending of accumulated savings.

Investment can rise because of lower interest rates, increased availability of credit, higher retained profits or business confidence. The accelerator theory states that investment depends on the rate of change of national income, so when the economy is growing quickly, firms invest to expand capacity. Advances in technology and spending on research and development encourage firms to buy new capital. Investment has a multiplier effect on income.

Government spending can rise through increased spending on infrastructure, public services such as health and education, or welfare benefits, as in 2020 and 2021 when the UK government spent heavily on furlough and business support. Net exports can rise if the pound depreciates, making UK exports cheaper abroad and imports more expensive, or if growth in trading partners such as the USA and EU increases demand for UK exports.

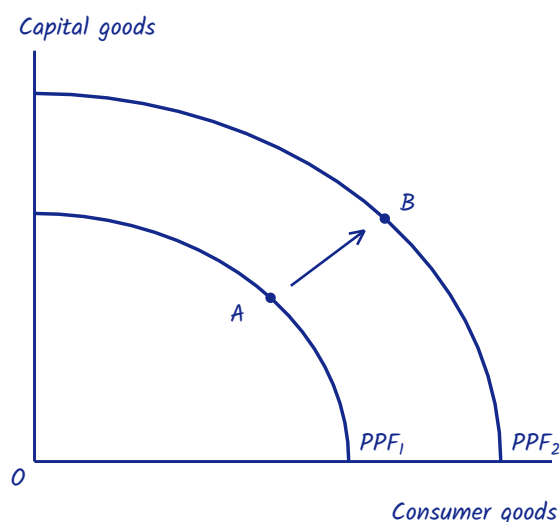
All of these increases in AD are magnified by the multiplier: an initial injection of spending becomes income for others, who spend part of it, so the final rise in real GDP is larger than the initial rise in AD. However, short-run growth is limited by the economy's productive capacity.

Long-run growth is caused by an increase in the quantity or quality of the factors of production. Investment in new capital increases the capital stock, and research and development and new technology raise the productivity of existing resources. Spending on education and training improves the quality of the labour force (human capital), raising output per worker. Net immigration and higher labour participation increase the size of the workforce.

Supply-side policies can also cause long-run growth. Market-based policies, such as lower income and corporation taxes, deregulation and labour market reforms, increase incentives to work and invest, while interventionist policies such as government spending on infrastructure, education and R&D directly increase capacity. The discovery of new natural resources, such as North Sea oil in the 1970s, can also shift LRAS to the right.

Many causes affect both. For example, investment increases AD in the short run and the capital stock in the long run, so it is especially important for sustained growth.

Economic growth is an increase in real GDP, while living standards refer to the material and non-material wellbeing of people, including income, consumption, health, education, the environment and leisure. Real GDP per capita is often used as a measure of average living standards, so growth is expected to improve them. There are good reasons why growth usually improves living standards. As real output rises, firms need more workers because labour is a derived demand, so unemployment falls and incomes rise. Higher real disposable incomes allow people to consume more goods and services, improving material living standards. Long-run growth, shown in the diagram by the PPF shifting out from PPF_1 to PPF_2 , means the economy can produce more of both capital and consumer goods, moving from A to B, so consumption can increase without sacrificing investment.



Growth also increases tax revenue from income tax, VAT and corporation tax, and reduces spending on unemployment benefits. Governments can therefore spend more on public services and merit goods such as healthcare, education and housing, improving non-material living standards like life expectancy and literacy. In developing countries, growth is the main way to reduce absolute poverty: rapid growth in China since 1980 has lifted hundreds of millions of people out of extreme poverty.

However, growth does not always lead to higher living standards. First, what matters is real GDP per capita. If the population grows faster than real GDP, average incomes fall. Second, the benefits of growth may be unequally distributed.

If most of the gains go to the richest people or to the owners of capital, the incomes of many households may not rise at all; in the UK, real wages hardly grew in the decade after 2008 despite positive growth. Trickle-down effects may be weak.

Third, growth can create negative externalities. Increased production and consumption cause air pollution, congestion, deforestation and climate change, which reduce health and quality of life. Rapid growth in China caused severe air pollution in cities such as Beijing. Growth based on using up scarce non-renewable resources is unsustainable and may reduce the living standards of future generations.

Fourth, rapid short-run growth beyond the economy's capacity causes demand-pull inflation, which erodes the real incomes of people on fixed incomes, such as pensioners and benefit claimants, and of workers with low bargaining power. Growth may also come with longer working hours, stress and less leisure, none of which are captured in GDP.

Fifth, the composition of growth matters. If growth is caused by increased spending on the military, or on clearing up after disasters or pollution, GDP rises but living standards may not improve. Growth from corruption-prone industries may benefit only a small elite. Equally, the UK's 7.5% growth in 2021 mainly reflected recovery from the 9.4% fall in 2020, so living standards only returned to roughly where they had been.

GDP is also a limited measure of living standards. It excludes the informal economy and unpaid work such as caring and volunteering, ignores the quality of goods, and does not account for leisure or the environment. Composite measures such as the Human Development Index, which combines income with life expectancy and years of schooling, give a broader picture, and some countries with lower GDP per capita have higher life expectancy than richer ones. This suggests economic development is a better guide to living standards than growth alone.

The link between growth and living standards also depends on the country. For a low-income country, extra income has a large effect on welfare, by providing clean

water, food and healthcare, so growth is likely to raise living standards substantially. In rich countries such as the UK, extra income adds less to wellbeing, and environmental and inequality costs become relatively more important. It also depends on where the economy is in the economic cycle: growth that closes a negative output gap reduces unemployment with little inflation, while growth in a boom mainly raises prices.

In conclusion, economic growth usually does lead to an improvement in average living standards, particularly when it is long-run, sustainable growth, when it is faster than population growth and when the gains are widely shared through jobs and public services. However, this is not guaranteed: growth that is unequal, inflationary, environmentally damaging or caused by unproductive spending may not improve, and may even reduce, the quality of life. The government's role in redistributing income and correcting externalities determines how far growth translates into better living standards.