

A-level ECONOMICS

Paper 2 National and International Economy

Monday 20 May 2024

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

Productivity and living standards

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

Extract A: Indicators of economic performance and living standards, selected nations, 2021

	Productivity (GDP per hour worked, US \$)	Productivity change 2010–2021 (%)	Life expectancy at birth (years)	Gini coefficient	Expected years of schooling (years)	CO ₂ emissions per capita (tonnes)
Estonia	42.9	+28.8	77.1	0.308	15.9	7.9
Hungary	39.9	+16.7	74.5	0.300	15.0	5.0
UK	59.1	+3.5	80.7	0.351	17.3	4.9

Source: OECD & WHO, 2022

Extract B: The UK's productivity puzzle

The economist Paul Krugman once wrote that “Productivity isn’t everything, but, in the long-run, it is almost everything”. Productivity is a key determinant of living standards because it affects the amount of goods and services that can be produced, and therefore consumed, from the resources that are available. Historically, productivity has increased over time, which has contributed to real wage rises and improved living standards. Although productivity can be measured in several different ways, one common way is GDP per hour worked.

5

When economies move through their economic cycles, it is not unusual for productivity to fall during downturns, as happened in 2008–2009. However, the persistently low rate of growth of productivity that the UK has experienced since 2010 is unusual. Productivity growth in other nations, including Estonia and Hungary, has been much higher. The UK's low rate of productivity growth is often referred to as ‘The UK's productivity puzzle’. If the pre-2007 trend in productivity growth had continued, UK productivity would now be over 30% higher than it is today.

10

Many economists have tried to provide reasons for the productivity puzzle. Among the suggestions are low levels of investment and the impact of the financial crisis on banks' willingness to lend to new businesses. More people working beyond normal retirement age has led to an older workforce and may have affected productivity. These factors may be relevant but they do not provide a complete explanation for the weakness in UK productivity growth.

15

So, what can be done to raise productivity? Investing in human capital to improve people's skills and supporting improvements in technology should help. Creating a stable economy and effective use of the tax and benefits system are also key factors in driving productivity growth.

20

Source: News reports, 2022

Extract C: Falling living standards in the UK?

According to the Office for Budget Responsibility (OBR), in 2022, the UK faced its biggest fall in living standards on record as the surging cost of living reduced real wages. The OBR also forecast a significant increase in unemployment.

Energy and food bills had risen dramatically due to shocks to the economy, such as labour shortages, a depreciation of the pound and the war in Ukraine. Inflation was at a 41-year high and average real household income was expected to fall by 7%, back to the level it was in 2013. The rising cost of living led to industrial action by workers trying to achieve pay increases that compensated for the rise in prices. 5

In response to the rise in inflation, the Bank of England increased Bank Rate. The rise in Bank Rate meant that financial institutions raised the rate of interest on mortgages. As a result, it has been forecast that house prices are likely to fall by around 9% over the next two years. 10

In his Autumn Statement of 2022, the UK Chancellor of the Exchequer, Jeremy Hunt, announced tax rises and cuts in public spending even though the UK economy was expected to contract in 2023. The cuts in public spending are likely to damage public services and came at a time when poverty and inequality appeared to be rising with life expectancy falling. Some have argued that tackling these issues, to prevent a further fall in living standards, is more important than introducing measures to increase productivity. 15

Source: News reports, 2022

0 1

Using the data in **Extract A**, calculate the ratio of the UK's GDP per hour worked to \$1 of GDP per hour worked in Hungary.

Give your answer to **two** decimal places.

[2 marks]

0 2

Explain how the data in **Extract A** show that higher productivity may result in higher living standards.

[4 marks]

0 3

Extract C (lines 4–5) states 'Energy and food bills had risen dramatically due to shocks to the economy, such as labour shortages, a depreciation of the pound...'

With the help of a diagram, explain how a depreciation of the pound may cause inflation.

[9 marks]

0 4

Extract B (lines 4–5) states: 'Historically, productivity has increased over time, which has contributed to real wage rises and improved living standards.'

Using the data in the extracts and your knowledge of economics, assess the view that the government should make raising productivity a priority in order to improve living standards in the UK.

[25 marks]

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

OR

Context 2

Total for this context: 40 marks

Globalisation and deglobalisation

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

Extract D: Macroeconomic performance indicators, selected Southeast Asian economies, 2010 to 2021

	GDP per capita (constant prices, PPP)		Average annual growth rate 2010–2021 (%)	Average unemployment rate 2010–2021 (%)	Exports (% of GDP)	
	2010	2021			2010	2021
Malaysia	9 041	11 371	4.3	3.4	86.9	68.8
Thailand	5 076	7 233	2.6	0.7	66.5	58.2
Vietnam	1 673	3 694	5.9	1.6	54.2	93.3

Note: PPP = Purchasing power parity

Source: World Bank, 2022

Extract E: Made in Vietnam

Trade and foreign investment have helped Vietnam emerge from extreme poverty. Integration with global manufacturing has kept Vietnam's economy growing even during the pandemic. In 2020, GDP rose by 2.9%, while many other countries experienced recession. The latest forecasts indicate an economic growth rate of over 8% in 2022.

Vietnam's openness to trade and investment has made the country an important link in the global economy and it has been one of the five fastest growing countries in the world over the past 30 years. Its record has been characterised by steady growth compared to boom-busts in similar nations. According to the World Bank, Vietnam is a lower-middle income economy but the government wants it to become a high-income economy by 2045.

5

Vietnam's development is often compared to that of China in the 1990s or early 2000s. Both are former command economies that now focus on export-led growth. However, Vietnam is very different in terms of the amount of foreign investment and its connection to global supply chains. Since 1990, Vietnam's inflows of foreign direct investment have averaged 6% of GDP each year, more than twice the global average and a much higher percentage of GDP than China has ever recorded over a sustained period.

10

15

As many countries in Southeast Asia developed and wages rose, multinational corporations (MNCs) were attracted by Vietnam's low labour costs and stable exchange rate. A low rate of corporation tax has also contributed to both short-run and long-run economic growth. Vietnam is also a member of the ASEAN free trade area and has bilateral trade deals with the European Union and the USA. In the past decade, exports have risen by over 140%. However, Vietnam has become increasingly dependent on foreign companies for growth and employment, while foreign competition has meant that many domestic firms have struggled.

20

Source: News reports, 2022

Extract F: A period of deglobalisation?

After decades of growing integration and interdependence between nations, trade and investment flows between countries have been growing more slowly and, in some cases, falling. This process has been labelled 'deglobalisation' and is characterised by rising protectionism, reduced dependence on foreign imports and increased self-reliance by nations. However, could the rise in protectionism have boosted the Vietnamese economy in the short term?

5

The trade war between the USA and China, which started in 2018, has probably helped Vietnam. It is estimated that, in 2019, US tariffs on imports from China resulted in the US buying \$31bn more imports from other low-cost Asian countries rather than China. Vietnam supplied almost half of these imports.

10

China's rising labour costs, and the growing tensions between the world's superpowers, make it easy to see why many big firms are relocating to Vietnam. Apple's biggest suppliers, Foxconn and Pegatron, are building big factories in Vietnam, creating many jobs. Other big firms moving production from China to Vietnam include Dell, Hewlett Packard, Google and Microsoft.

15

Some see deglobalisation as a threat. Many nations such as Vietnam rely on international trade and investment for employment and economic growth. If other countries start to protect their economies from Vietnamese imports, this could damage the economic development of Vietnam. The slowing, or reversal, of globalisation could mean that the benefits of specialisation and foreign direct investment are lost.

20

Source: News reports, 2022

0 5

Using the data in **Extract D**, calculate the percentage change in Vietnam's GDP per capita between the years 2010 and 2021.

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

[2 marks]

0 6

Explain how the data in **Extract D** show that Vietnam may have outperformed the other selected Southeast Asian economies between 2010 and 2021.

[4 marks]

0 7

Extract E (lines 17–18) states: 'A low rate of corporation tax has also contributed to both short-run and long-run economic growth.'

With the help of a diagram, explain how a low rate of corporation tax may cause short-run **and** long-run economic growth.

[9 marks]

0 8

Extract F (lines 19–20) states: 'The slowing, or reversal, of globalisation could mean that the benefits of specialisation and foreign direct investment are lost.'

Using the data in the extracts and your knowledge of economics, discuss the view that a slowing, or reversal, of globalisation would be harmful to developing economies such as Vietnam.

[25 marks]

Section B

Answer **one** essay from this section.

Each essay carries 40 marks.

EITHER**Essay 1**

In November 2022, the Bank of England warned there was a risk that the UK was heading for a recession. This announcement came shortly after the money supply fell, following its rapid growth in 2020 and 2021.

0	9
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 Explain possible reasons why a country may enter a recession. **[15 marks]**

1	0
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 Assess whether an increase in the money supply is always damaging for an economy. **[25 marks]**

OR**Essay 2**

In August 2022, the Office for National Statistics (ONS) announced that the unemployment rate had reached 3.5%, the lowest rate in almost 50 years. Some argue this is below the natural rate of unemployment (NRU) and that very high levels of employment may cause problems for the economy.

1	1
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 Explain the factors which determine the natural rate of unemployment. **[15 marks]**

1	2
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 Discuss the view that high levels of employment are always beneficial for an economy. **[25 marks]**

OR

Essay 3

In November 2022, the UK government announced large public spending cuts and tax rises in order to reduce the budget deficit. Some economists worry that this may cause a negative multiplier effect and damage economic activity.

1	3
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 Explain how the multiplier **and** accelerator affect the overall level of economic activity.
[15 marks]

1	4
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 Evaluate the view that increasing taxation is the best way to reduce a budget deficit.
[25 marks]

END OF QUESTIONS

There are no questions printed on this page

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0 1

UK GDP per hour worked = \$59.1, Hungary GDP per hour worked = \$39.9

Ratio = $59.1 \div 39.9 = 1.4812...$

UK : Hungary = 1.48 : 1 (to two decimal places), ie \$1.48 : \$1

0 2

Productivity is output per unit of input, measured in Extract A as GDP per hour worked. Living standards refer to the economic welfare and quality of life of the population, including health, education and the environment as well as real income. Higher productivity means more goods and services are produced per hour, raising real incomes and the tax revenue available to fund public services.

Extract A supports this. The UK has the highest productivity (\$59.1 per hour) and also the highest life expectancy (80.7 years) and the longest expected schooling (17.3 years), suggesting better healthcare and education. Hungary has the lowest productivity (\$39.9) and the lowest life expectancy (74.5 years) and schooling (15.0 years). The UK also has the lowest CO₂ emissions per capita (4.9 tonnes), whereas Estonia, with productivity only slightly above Hungary at \$42.9, has the highest (7.9 tonnes), indicating more pollution per person. However, the UK has the highest Gini coefficient (0.351), so higher productivity may not mean higher living standards for everyone.

0 3

A depreciation is a fall in the value of the pound against other currencies in a floating exchange rate system, for example from \$1.30 to \$1.15. It may be caused by lower UK interest rates relative to other countries, speculation or a large current account deficit. Inflation is a sustained rise in the general price level, measured in the UK by the CPI.

Firstly, a depreciation can cause cost-push inflation. Each pound buys less foreign currency, so the sterling price of imports rises. The UK imports much of its energy, food and raw materials, so firms' costs of production rise, which helps explain why energy and food bills rose dramatically (Extract C). Higher costs shift the SRAS curve to the left from SRAS₁ to SRAS₂, as shown in Diagram 1, raising the price level from P₁ to P₂ while real output falls from Y₁ to Y₂.

Imported consumer goods such as food also become dearer, which feeds directly

into the CPI.

Diagram 1: cost-push
Price
level

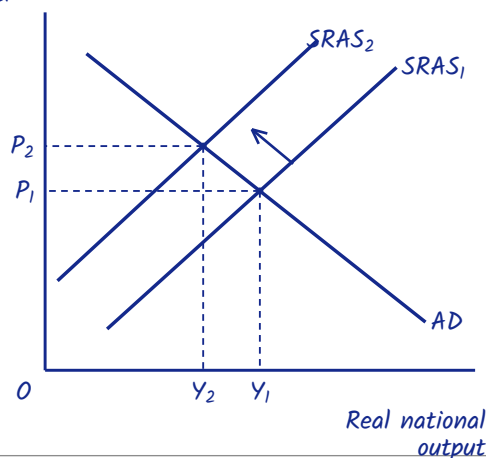
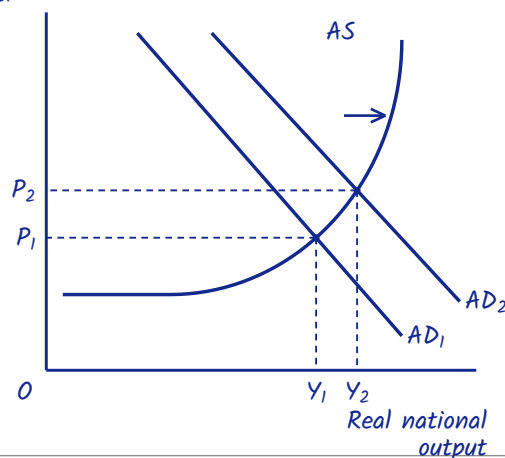


Diagram 2: demand-pull
Price
level



Secondly, a depreciation can cause demand-pull inflation. UK exports become cheaper in foreign currency, so foreign demand for them rises, while imports become relatively more expensive, so UK consumers switch to domestically produced goods. Net exports ($X - M$) are a component of AD ($C + I + G + X - M$), so AD shifts right from AD_1 to AD_2 in Diagram 2, and the initial injection is magnified by the multiplier as exporters' extra income is spent. If the economy is close to full capacity, as the UK was in 2022 with labour shortages, the AS curve is steep, so the price level rises from P_1 to P_2 with only a small rise in real output from Y_1 to Y_2 .

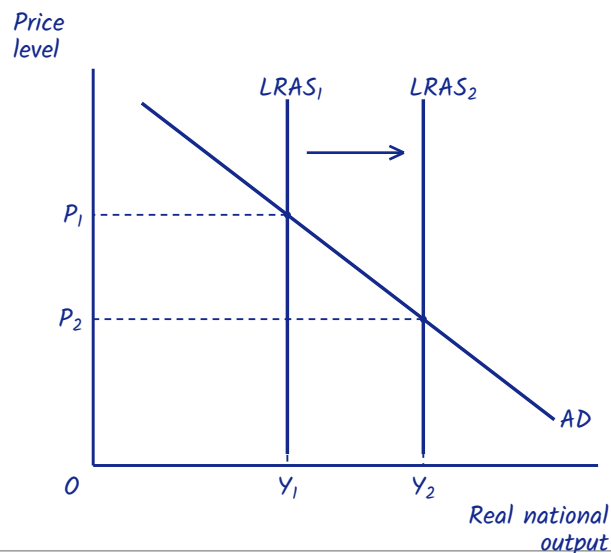
The size of the demand-side effect depends on the price elasticity of demand for exports and imports. If the Marshall-Lerner condition holds ($PED_x + PED_m > 1$) net exports rise, but in the short run demand is often price inelastic (the J-curve effect), so the cost-push effect is likely to dominate at first. Inflation may then persist if workers whose real wages are falling win higher pay, as with the industrial action in Extract C, creating a wage-price spiral that shifts SRAS left again.

0 4

Productivity is output per worker per hour, commonly measured as GDP per hour worked (Extract B). Living standards refer to the economic welfare of the population: material living standards depend on real income per head, while the wider quality of life depends on health, education, the environment and how fairly

income is distributed. Real wages are money wages adjusted for inflation, and they show how many goods and services workers can actually buy.

There is a strong case for prioritising productivity. If each worker produces more per hour, firms' unit labour costs fall, so they can pay higher real wages without raising prices. Higher productivity increases the productive capacity of the economy, shifting LRAS to the right from $LRAS_1$ to $LRAS_2$, as shown in the diagram. Real national output rises from Y_1 to Y_2 while the price level falls from P_1 to P_2 , so growth is non-inflationary and real GDP per capita rises. This is why Krugman says productivity is 'almost everything' in the long run: it is the only sustainable source of higher real wages.



The data show how costly weak productivity has been. UK productivity rose by only 3.5% between 2010 and 2021, compared with 28.8% in Estonia and 16.7% in Hungary (Extract A). Extract B states that if the pre-2007 trend had continued, UK productivity would be over 30% higher, implying a large loss of potential real income. Higher productivity would also improve international competitiveness, as lower unit costs make UK exports cheaper, raising net exports and employment. Higher incomes generate more tax revenue, which could fund the NHS and education, improving the non-material aspects of living standards. The UK's high productivity relative to Estonia and Hungary is already associated with higher life expectancy and schooling (Extract A).

The government could raise productivity through supply-side policies. Investing in education and training improves human capital and labour mobility; subsidies or

tax credits for R&D encourage new technology; capital allowances and a lower corporation tax encourage firms to invest; and spending on infrastructure and healthcare raises the efficiency of the workforce. Extract B also highlights creating a stable economy and effective use of the tax and benefits system. Deregulation and competition policy can push firms to cut X-inefficiency. However, there are reasons to doubt that productivity should be the priority. Firstly, the causes of the 'productivity puzzle' are not fully understood: Extract B says low investment, reduced bank lending and an older workforce 'do not provide a complete explanation'. If the government does not know the cause, its policies may be poorly targeted and lead to government failure. Secondly, supply-side policies suffer from long time lags: a better-educated workforce may take ten years or more to emerge, so they do little to help households now. Thirdly, they have a high opportunity cost at a time when the Chancellor is raising taxes and cutting public spending (Extract C), and much productivity growth depends on private sector investment and innovation, which the government can only influence indirectly.

Moreover, higher productivity does not automatically raise living standards for everyone. The UK has the highest productivity in Extract A but also the highest Gini coefficient (0.351), suggesting the gains may go mainly to profits and high earners rather than to all workers. New technology may also cause structural unemployment in the short run, and faster output growth may increase pollution unless it is clean growth.

In 2022 there were more pressing threats to living standards. The OBR expected the biggest fall in living standards on record, with inflation at a 41-year high and real household income falling by 7% to its 2013 level (Extract C). Unemployment was forecast to rise, poverty and inequality appeared to be rising and life expectancy was falling. Some argue that tackling these issues is 'more important than introducing measures to increase productivity'. Controlling inflation would protect real wages immediately, although this is mainly the role of the Bank of England, which has raised Bank Rate. The government could instead protect living standards through targeted benefits for low-income households, higher public

sector pay or by not cutting public services. These policies act quickly but are costly, add to government borrowing, and higher pay could fuel further inflation, so they are only a short-term solution.

Importantly, the objectives are not mutually exclusive. Spending on healthcare and education raises living standards directly and also raises productivity, and a stable, low-inflation economy encourages the investment that drives productivity growth (Extract B). So the choice is partly about timing: in the short run the priority may be protecting the poorest from the cost of living crisis, while in the long run only productivity growth can deliver sustained rises in real wages.

In conclusion, I agree that the government should make raising productivity a priority, but not the only priority. The magnitude of the lost income from the productivity puzzle, over 30% of output, dwarfs most other policy gains, so in the long run productivity matters most. However, given record falls in real incomes in 2022, the government should combine supply-side policies that also improve welfare directly, such as education, health and infrastructure, with targeted support for low-income households. Whether productivity gains improve living standards also depends on whether they are shared through higher real wages, so policies to reduce inequality should accompany them.

0 5

Change in GDP per capita = $3694 - 1673 = 2021$

Percentage change = $(2021 \div 1673) \times 100 = 120.80\ldots$

= 120.8% (to one decimal place)

0 6

Outperformance can be judged against macroeconomic objectives such as economic growth, low unemployment and strong export performance. Vietnam's GDP per capita rose by 120.8% between 2010 and 2021, far more than in Malaysia (25.8%) or Thailand (42.5%), indicating the largest rise in average material living standards. Vietnam also had the highest average annual growth rate, 5.9%, compared with 4.3% in Malaysia and 2.6% in Thailand.

Vietnam's average unemployment rate of 1.6% was lower than Malaysia's 3.4%, although higher than Thailand's 0.7%. Its exports rose from 54.2% to 93.3% of GDP, from the lowest share in 2010 to the highest in 2021, while the shares fell in Malaysia (86.9% to 68.8%) and Thailand (66.5% to 58.2%), indicating improved export competitiveness. However, Vietnam's GDP per capita is still the lowest of the three.

0 7

Corporation tax is a direct tax on company profits and is part of fiscal policy.

Short-run economic growth is an increase in actual real GDP, using spare capacity, while long-run economic growth is an increase in the productive potential of the economy, shown by a rightward shift of LRAS or an outward shift of the PPF.

A low rate of corporation tax increases firms' post-tax, retained profits. Domestic firms then have both the funds and the incentive to invest, as the expected post-tax return on new capital rises. It also attracts foreign direct investment from MNCs, already drawn to Vietnam by low labour costs and a stable exchange rate (Extract E); FDI inflows have averaged 6% of GDP a year. Investment is a component of AD ($C + I + G + X - M$), so AD shifts right from AD_1 to AD_2 in Diagram 1. Much of this FDI is in export-oriented manufacturing, so exports, which rose by over 140% in the past decade, increase further and add to AD. These injections have a multiplier effect, as wages paid in new factories are

spent, so real output rises by more than the initial investment. This is short-run growth: in Diagram 2 the economy moves from point X, inside the frontier, towards point Y.

Diagram 1
Price
level

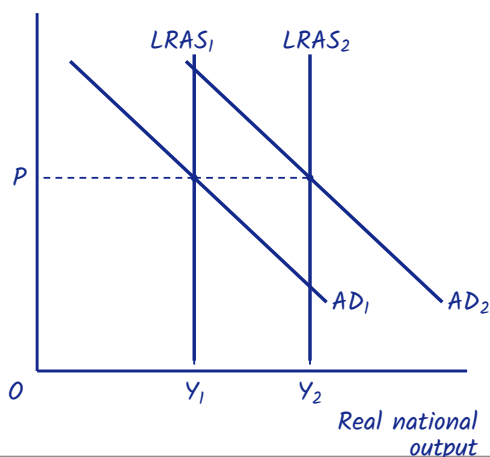
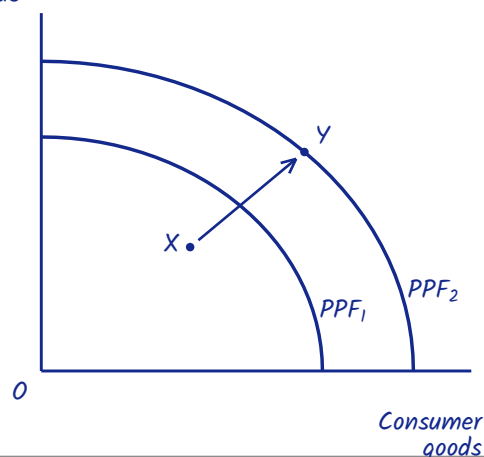


Diagram 2
Capital
goods



Investment also adds to the capital stock. New factories, machinery and technology increase the quantity and quality of factors of production, and MNCs bring technology transfer, management skills and training, raising labour productivity. This increases productive capacity, so LRAS shifts right from $LRAS_1$ to $LRAS_2$ and the PPF shifts outwards. Because AD and LRAS both increase, real output rises from Y_1 to Y_2 with the price level stable at P , so growth is sustainable and non-inflationary. This is consistent with Vietnam's average growth rate of 5.9% a year from 2010 to 2021 (Extract D).

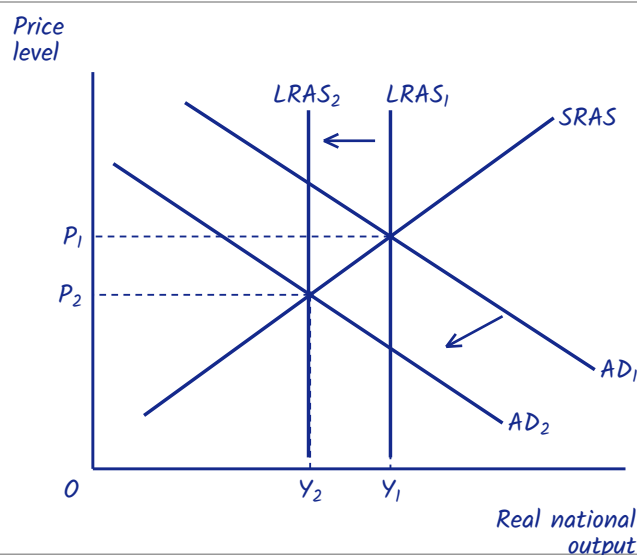
The size of these effects depends on business confidence, the size of the multiplier and whether profits are reinvested in Vietnam or repatriated by MNCs, which would weaken the effect on AD.

0 8

Globalisation is the growing integration and interdependence of the world's economies through trade in goods and services, flows of FDI and capital, migration and the spread of technology. Deglobalisation is the slowing or reversal of this process, characterised by rising protectionism, reduced dependence on imports and greater self-reliance (Extract F). A developing economy has relatively low GDP per capita; Vietnam is classed as lower-middle income.

The main argument that deglobalisation would harm Vietnam comes from the loss

of specialisation. According to the theory of comparative advantage, countries gain by specialising in goods they produce at the lowest opportunity cost and trading. Vietnam has a comparative advantage in labour-intensive manufacturing due to low labour costs, and trade allows it to consume beyond its PPF and gain economies of scale by selling to a world market. Vietnam is highly dependent on trade: exports were 93.3% of GDP in 2021 (Extract D). If other countries impose tariffs or quotas on Vietnamese goods, export demand falls. Since exports are a component of AD, AD shifts left from AD_1 to AD_2 , and the negative multiplier reduces real output from Y_1 to Y_2 , as shown in the diagram. Unemployment would rise and growth, which averaged 5.9% a year, would slow, threatening the goal of high-income status by 2045.



Reduced FDI would add to the harm. FDI inflows have averaged 6% of GDP a year, more than twice the global average (Extract E). FDI brings capital, jobs, technology and skills, and generates tax revenue to fund infrastructure, health and education, all of which raise productive capacity. Trade and investment have helped Vietnam emerge from extreme poverty. If MNCs stop investing or relocate, productive capacity grows more slowly or even falls, shifting LRAS to the left from $LRAS_1$ to $LRAS_2$ in the diagram, so long-run growth and development suffer. Deglobalisation could also raise the cost of imported components and capital goods, increasing costs and inflation and reducing living standards. However, deglobalisation may not be harmful to Vietnam, at least in the short term. Extract F explains that the US-China trade war has probably helped

Vietnam: US tariffs on Chinese imports led the US to buy \$31bn more imports from other low-cost Asian countries in 2019, and Vietnam supplied almost half of these, about \$15bn. Big firms such as Foxconn, Pegatron, Dell, Google and Microsoft are relocating production from China to Vietnam, creating many jobs. This is trade diversion: protectionism aimed at one country can benefit its competitors. So a selective deglobalisation targeted at China could raise Vietnam's exports, FDI and growth. Its free trade agreements with ASEAN, the EU and the USA also give it some protection from rising tariffs.

This benefit may be temporary. If deglobalisation becomes widespread, protectionism may extend to Vietnam itself, especially if the US believes Chinese goods are being routed through Vietnam. Retaliation and trade wars reduce world trade and world incomes, which would reduce demand for Vietnam's exports. As a small, very open economy, Vietnam would be harmed more than large developed economies such as the USA, whose large domestic markets allow them to be more self-reliant.

Furthermore, some economists argue that a slowing of globalisation could have benefits for developing economies. Extract E notes that Vietnam has become increasingly dependent on foreign companies for growth and employment, while foreign competition has meant many domestic firms have struggled. Less foreign competition could allow infant industries to grow and help Vietnam diversify, reducing its vulnerability to external shocks such as a global recession. MNCs may also repatriate profits and exploit low-wage labour. However, protected domestic firms may become inefficient, and Vietnam's steady growth, even 2.9% during the 2020 pandemic, suggests integration has made it more resilient, not less.

The effect also depends on whether globalisation slows or reverses. A slowing still allows trade and FDI to grow, just more slowly, which may only reduce Vietnam's growth slightly, whereas a reversal would cut its export markets and supply chains and be far more damaging. The harm also varies between developing economies: those reliant on primary products with inelastic demand, or on remittances from migrant workers, may be hit hardest, while Vietnam's manufacturing base gives it more flexibility.

In conclusion, a general slowing or reversal of globalisation would be harmful to developing economies like Vietnam, because their growth model depends on exports, FDI and the gains from specialisation, and exports make up 93.3% of Vietnam's GDP. In the short run Vietnam has actually benefited from deglobalisation aimed at China, but this depends on trade diversion continuing and on Vietnam not becoming a target itself. In the long run, widespread protectionism would reduce world trade and FDI and slow Vietnam's progress towards high-income status, so overall the harm is likely to outweigh the benefits, although the magnitude depends on whether globalisation merely slows or actually reverses.

A recession is commonly defined as two consecutive quarters of negative economic growth, that is a fall in real GDP. It is the downturn phase of the economic cycle, the fluctuation of actual output around the trend rate of growth. In a recession, output and incomes fall, unemployment rises, firms' profits fall and inflation usually slows. Recessions differ in depth (how far output falls) and duration.

The most common cause is a fall in aggregate demand, $AD = C + I + G + (X - M)$. A fall in any component shifts AD to the left from AD_1 to AD_2 , as shown in Diagram 1, reducing real output from Y_1 to Y_2 and the price level from P_1 to P_2 .

Diagram 1: fall in AD
Price level

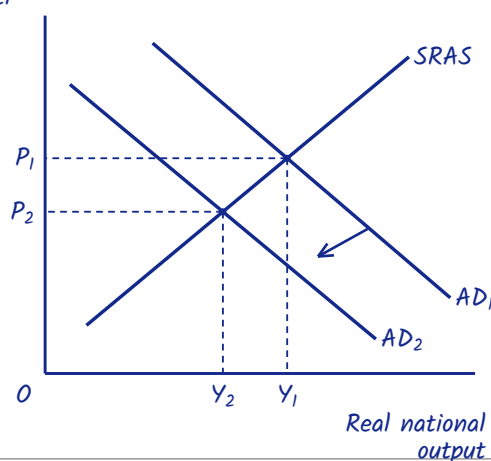
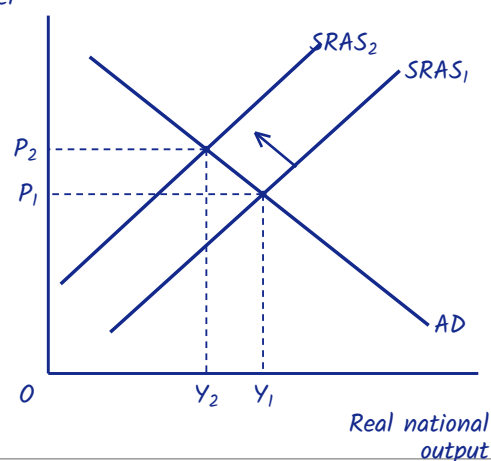


Diagram 2: supply shock
Price level



Monetary factors can reduce AD. If the central bank raises Bank Rate, borrowing becomes more expensive and saving more attractive, so consumption of durables and investment fall, and households with variable mortgages have less discretionary income. Higher interest rates also tend to appreciate the currency, making exports less competitive. A reduction in the supply of money and credit, as in the 2008 financial crisis when banks stopped lending, has a similar effect, as in the context where the money supply fell after rapid growth in 2020 and 2021.

Falling confidence is also important. Consumption and investment depend on expectations: if households fear unemployment they save more, and if firms expect lower sales they postpone investment. The bursting of a speculative bubble, such as a house price crash, creates a negative wealth effect that reduces

consumption. Contractionary fiscal policy, such as higher taxes or cuts in government spending, also directly reduces AD.

External causes include a recession in major trading partners, which reduces demand for exports, and an appreciation of the exchange rate, which makes exports dearer and imports cheaper, so net exports fall. For a very open economy such external shocks can be the main cause of recession.

Any initial fall in AD is magnified by the negative multiplier. A fall in investment of £10bn reduces incomes, so those affected spend less, reducing other people's incomes. With a marginal propensity to withdraw of 0.5, the multiplier is $1/MPW = 2$, so national income falls by £20bn. The accelerator adds to this: as output falls, firms need less capital, so net investment falls by a larger proportion than output, deepening the downturn.

A recession can also be caused by a negative supply-side shock, such as a sharp rise in oil, gas or other commodity prices, or higher indirect taxes. This raises firms' costs of production, shifting SRAS to the left from $SRAS_1$ to $SRAS_2$ in Diagram 2. Real output falls from Y_1 to Y_2 , but the price level rises from P_1 to P_2 , so the economy suffers stagflation, as with the oil shocks of the 1970s and the energy price rises of 2022.

Causes can be internal, such as domestic policy decisions, or external, such as global shocks, and often several combine: in 2022 the UK faced rising energy prices, rising interest rates and falling real incomes at the same time, which is why the Bank of England warned of a recession.

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The money supply is the total stock of money in the economy that can be used for transactions. Narrow money ($M0$) is notes and coins plus banks' reserves at the central bank, while broad money ($M4$) also includes bank deposits. Most money is created by commercial banks when they lend. The money supply may increase because of lower interest rates encouraging borrowing, quantitative easing (QE), banks holding lower reserves and expanding credit, or government borrowing financed by the central bank. Whether it is damaging can be judged by its effect on the macroeconomic objectives: price stability, growth, unemployment and the

balance of payments.

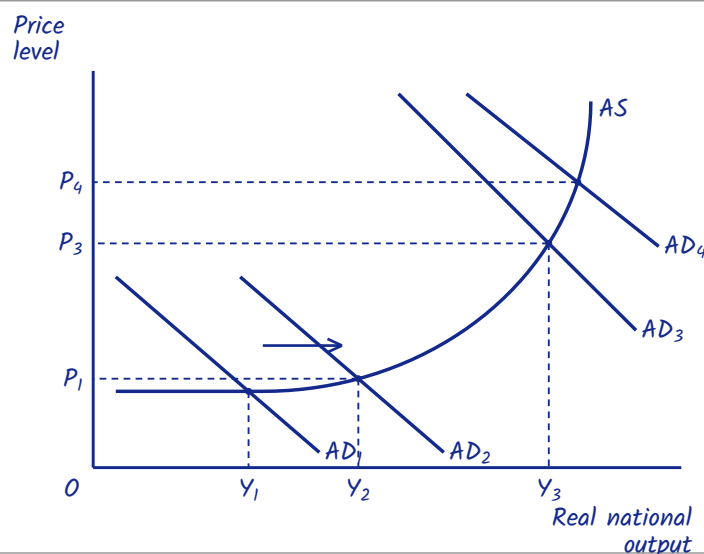
The main argument that an increase in the money supply is damaging comes from the quantity theory of money. The Fisher equation of exchange states $MV = PT$ (or $MV = PY$), where M is the money supply, V the velocity of circulation, P the price level and T the volume of transactions. Monetarists assume V is stable and that T is determined by supply-side factors in the long run. Therefore an increase in M leads to a proportionate increase in P : 'too much money chasing too few goods'. Rapid monetary growth in 2020 and 2021 was followed by UK inflation reaching 11.1% in 2022.

Inflation is damaging because it reduces the real value of incomes and savings, especially for those on fixed incomes and with weak bargaining power, and redistributes wealth from savers to borrowers. It creates uncertainty that reduces investment, makes exports less price competitive, worsening the current account, and creates menu and shoe-leather costs. Once expectations of inflation rise, workers demand higher wages, creating a wage-price spiral. The central bank must then raise interest rates sharply, which can cause a recession, as the Bank of England warned in November 2022. So excessive monetary growth can create cyclical instability, a boom followed by a bust.

Increases in the money supply can also inflate asset prices. QE raised the prices of bonds, shares and houses, benefiting wealthier households who own these assets and so increasing inequality of wealth. Cheap credit can lead to malinvestment in projects that are only profitable at very low interest rates, and to speculative bubbles, such as the US housing bubble that caused the 2008 financial crisis.

However, an increase in the money supply is not always damaging. In a recession with spare capacity, more money and credit increase consumption and investment, shifting AD to the right. As the diagram shows, if the economy is on the horizontal section of the Keynesian AS curve, a shift from AD_1 to AD_2 raises real output from Y_1 to Y_2 with little or no rise in the price level. Unemployment falls, incomes rise and the positive multiplier increases national income further. Higher investment can also increase productive capacity, shifting $LRAS$ to the right. Only

when the economy is close to full capacity, such as a shift from AD_3 to AD_4 , does extra spending mainly raise prices from P_3 to P_4 .



Keynesians also argue that velocity is not stable. In 2009 and 2020, when uncertainty was high, households and banks hoarded money, so V fell sharply; QE prevented a collapse in spending and deflation rather than causing inflation.

Inflation stayed below 2% for most of the decade after 2009 despite huge increases in narrow money. Increases in money are also needed for a growing economy: if real output grows at its trend rate of about 2% a year, the money supply must grow too, otherwise prices would have to fall, and deflation can be very damaging as it delays spending and increases the real burden of debt.

Therefore the effect depends on several factors. It depends on the rate of growth of the money supply relative to the growth of real output: moderate growth in line with productive capacity is not inflationary, but rapid growth well above it is. It depends on the degree of spare capacity in the economy and on what happens to velocity. It also depends on time: in the short run more money may raise output, but in the long run, once output reaches its potential, the effect is mainly on prices. Finally, it depends on the policy response: an independent central bank with credible inflation targeting can raise interest rates to prevent excessive inflation, although with time lags of up to two years.

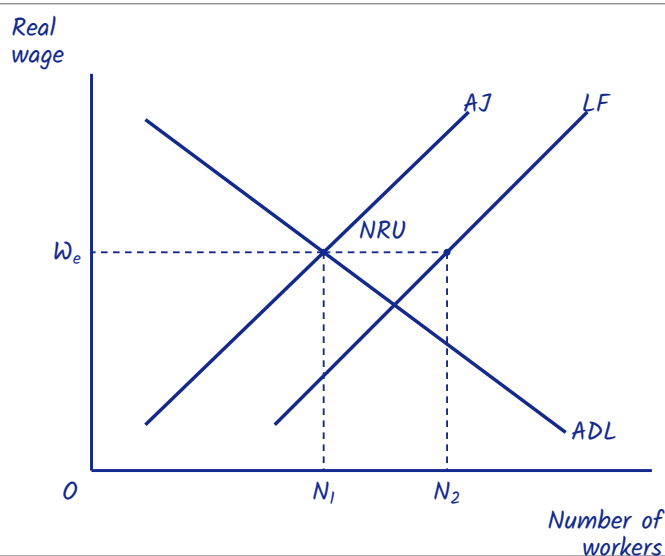
In conclusion, an increase in the money supply is not always damaging. When there is spare capacity, low confidence and a risk of deflation, as in 2009 and 2020, monetary expansion can raise output and employment with little inflation.

However, rapid and sustained increases beyond the growth of productive capacity, especially when the economy is near full capacity, are likely to be damaging, causing inflation, asset bubbles and a later recession. The word 'always' is therefore too strong; the effect depends on the size of the increase, the state of the economy and how the central bank responds.

1 1

Unemployment is when people of working age are willing and able to work but cannot find a job. The natural rate of unemployment (NRU) is the rate of unemployment that exists when the labour market is in equilibrium, so there is no demand-deficient (cyclical) unemployment. At the NRU there is no involuntary unemployment in the sense that everyone willing to work at the current real wage could find a job; the remaining unemployment is largely voluntary, frictional and structural.

This can be shown in the diagram. ADL is the aggregate demand for labour and AJ shows the workers willing and able to accept a job at each real wage. LF is the total labour force, which includes those who are not willing to accept a job at that wage. The labour market clears at real wage w_e where $ADL = AJ$, with employment N_1 . The distance between N_1 and N_2 , the gap between AJ and LF, is the natural rate of unemployment.



Because the NRU is determined by the supply side of the labour market, anything that widens the gap between AJ and LF increases it. Frictional unemployment arises when workers are between jobs and is caused by imperfect information about vacancies. If job information is poor, search times are longer, so better job centres and online job matching reduce the NRU.

Structural unemployment arises from a mismatch between the skills and location of workers and the jobs available, for example when manufacturing declines and workers lack the skills for jobs in services. It depends on occupational and geographical immobility of labour. Low levels of education and training, high

housing costs in areas with vacancies and poor transport increase it, and therefore the NRU.

The level of welfare benefits is an important determinant. The replacement ratio is the ratio of income when out of work to income in work. If benefits are generous relative to wages, the incentive to find work is weak and people may remain voluntarily unemployed, so AJ shifts left and the NRU rises. The unemployment trap occurs when the combination of losing benefits and paying income tax means a person is little better off in work. High marginal income tax rates on low earners also reduce the incentive to work.

Labour market flexibility also matters. If real wages are kept above the equilibrium, for example by a national minimum wage set too high or by powerful trade unions, the supply of labour exceeds demand and real wage unemployment results. Strict employment protection laws make firms reluctant to hire, as dismissal is costly. Expectations matter too: if workers expect higher wages than firms are willing to pay, they may search longer.

Therefore the NRU is determined by the level of benefits and taxes, skills, labour mobility, information, the minimum wage, trade union power and labour market flexibility. Since these are supply-side factors, the NRU can only be reduced by supply-side policies, not by raising AD .

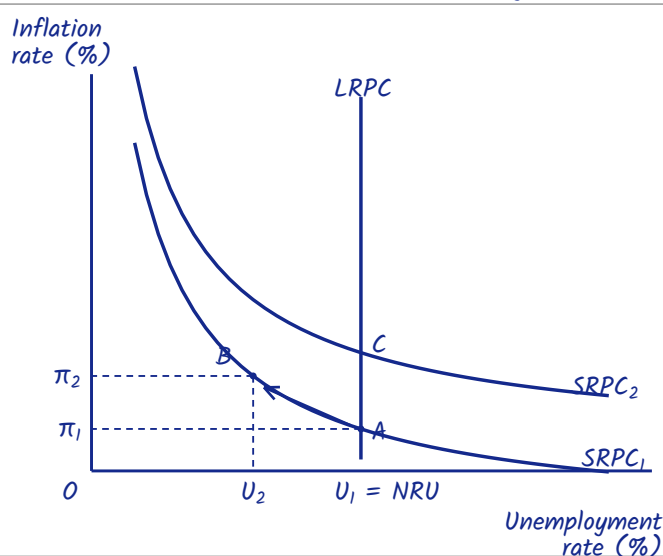
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1 2

Employment is the number of people in paid work, while unemployment is the number of people willing and able to work who cannot find a job. A high level of employment means a high proportion of the working-age population are in work. Minimising unemployment is one of the government's main macroeconomic objectives, alongside economic growth, price stability and a stable current account. High employment has many benefits. Output and incomes are higher, as more labour is used, so the economy produces closer to its PPF and real GDP rises. This raises consumption possibilities and material living standards. Unemployment has large costs: lost output, loss of skills and confidence among the unemployed, higher poverty and inequality, and social problems such as crime and poor mental health. High employment avoids these costs.

High employment also benefits the government's finances. More people in work pay income tax and national insurance and spend more, raising VAT revenue, while spending on unemployment benefits falls. This reduces the budget deficit and government borrowing, allowing more spending on public services or lower taxes. Firms benefit from higher demand, revenue and profits, which encourages investment and shifts LRAS to the right.

However, high levels of employment may not always be beneficial. If unemployment falls below the natural rate, as some argued happened when it reached 3.5% in 2022, the labour market becomes very tight. Firms compete for scarce workers by raising wages faster than productivity, which raises unit labour costs and causes cost-push inflation. Higher incomes also increase AD and cause demand-pull inflation. This is the trade-off shown by the short-run Phillips curve in the diagram: a fall in unemployment from U_1 to U_2 is associated with a rise in inflation from π_1 to π_2 , a movement from A to B along $SRPC_1$.



According to the expectations-augmented Phillips curve, this is only a short-run gain. Once workers expect higher inflation they demand higher wages, so the SRPC shifts up to $SRPC_2$ and unemployment returns to the NRU at point C, with permanently higher inflation. The long-run Phillips curve is vertical at the NRU, so trying to keep employment above its natural level through demand management only causes accelerating inflation and a wage-price spiral, which reduces real incomes and international competitiveness.

High employment can create other problems. Labour shortages limit firms' ability

to expand and can reduce productivity if firms hire less suitable workers or workers are overstretched. Higher incomes increase spending on imports, worsening the current account. A booming labour market may also prompt the central bank to raise interest rates, which could cause a recession later.

However, the effects depend on why employment is high. If employment has risen because of supply-side improvements, such as better skills, greater labour mobility or more people joining the labour force through migration or returning to work, then the NRU itself has fallen and LRAS has shifted right. High employment can then be achieved without inflation. Rising employment does not necessarily mean falling unemployment, as the labour force may also grow. In contrast, high employment caused by excessive AD is likely to be unsustainable.

It also depends on where the economy is in the economic cycle. Coming out of a recession, rising employment uses spare capacity and is clearly beneficial. At the peak of a boom, when the economy has a positive output gap, further rises in employment mainly cause inflation. The quality of employment also matters: high employment in low-paid, insecure or part-time jobs may not raise living standards much, and underemployment may persist.

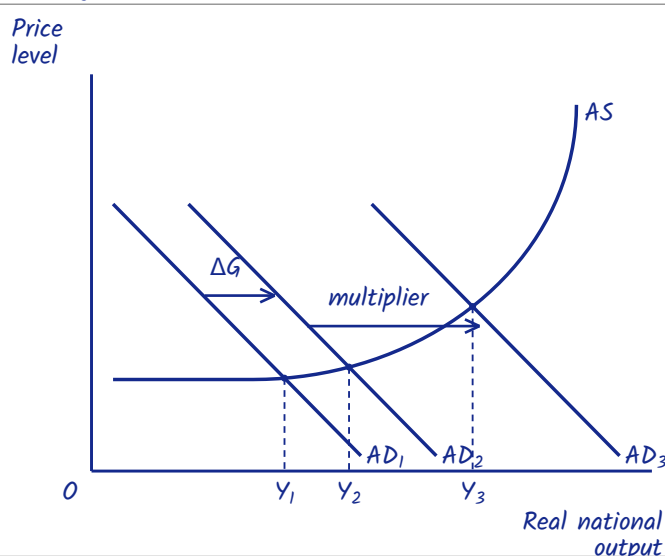
In conclusion, high levels of employment are generally beneficial, as they raise output, incomes and tax revenue and avoid the large economic and social costs of unemployment. However, they are not always beneficial: when employment is pushed above its natural level by excessive demand, as may have been the case in 2022, the result is a tight labour market, inflation and possibly a later recession. The benefits are greatest and most sustainable when high employment is achieved through supply-side improvements that lower the NRU rather than through demand alone.

1 3

Economic activity refers to the level of output, income and employment in the economy, measured by real GDP. The circular flow of income shows that one person's spending is another's income. Injections into the circular flow are investment (I), government spending (G) and exports (X); withdrawals are saving (S), taxation (T) and imports (M). National income is in equilibrium when injections equal withdrawals.

The multiplier is the process by which a change in an injection or withdrawal causes a larger final change in national income. If the government increases spending by £10bn, firms supplying the goods receive £10bn of extra income and pay it to workers and shareholders. They spend part of it, determined by the marginal propensity to consume (MPC), and withdraw the rest in saving, tax and imports. The amount spent becomes someone else's income, who again spends a fraction, and so on in successive rounds.

The size of the multiplier is given by $k = 1/(1 - MPC) = 1/MPW$, where $MPW = MPS + MPT + MPM$. For example, if $MPC = 0.6$, the multiplier is $1/0.4 = 2.5$, so an extra £10bn of government spending raises national income by £25bn. In the diagram, the initial injection shifts AD from AD_1 to AD_2 , and the multiplier shifts it further to AD_3 , raising real output from Y_1 to Y_3 . The larger the withdrawals, the smaller the multiplier: the UK is a very open economy with a high MPM, so its multiplier is relatively small.



The accelerator theory states that the level of net investment depends on the rate of change of national income or output. Firms need a certain amount of capital to produce a given output, the capital-output ratio. If demand rises, firms must buy new capital to meet it, so a small percentage increase in output can cause a much larger percentage increase in investment. For example, with a capital-output ratio of 3, a rise in output of £5m requires £15m of new investment. Investment therefore fluctuates far more than output.

The difference between them is that the multiplier shows how a change in spending affects income, while the accelerator shows how a change in income affects investment. They interact. An initial injection raises income through the multiplier; rising income causes extra investment through the accelerator; that investment is itself an injection which causes a further multiplier effect. This interaction magnifies the rise in economic activity, raising output and employment and helping to explain booms.

The process also works in reverse. Cuts in public spending or tax rises, as announced in November 2022, are a fall in injections or a rise in withdrawals. Through the negative multiplier, incomes fall by more than the initial cut. As output growth slows, the accelerator causes net investment to fall sharply, which reduces income further. This is why economists worried that fiscal tightening could cause a negative multiplier effect and damage economic activity.

Therefore the multiplier and accelerator amplify changes in spending and help explain the economic cycle. Their size depends on the propensity to withdraw, confidence, spare capacity and how quickly firms adjust their capital stock, and if the economy is near full capacity the multiplier raises prices rather than real output.

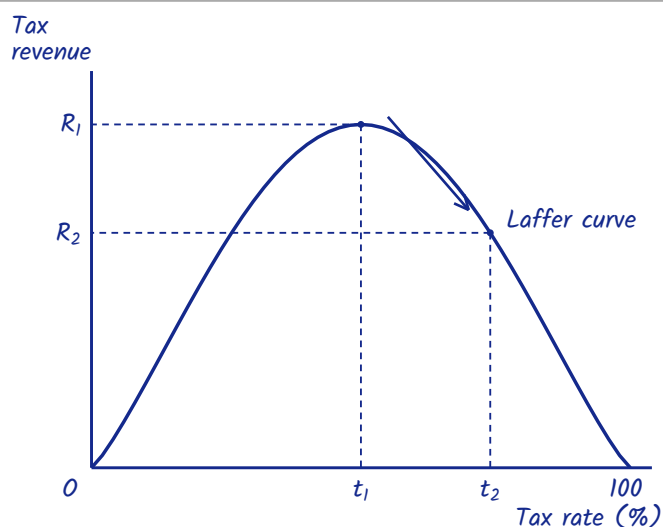
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A budget deficit occurs when government spending exceeds tax revenue in a year, and it is financed by borrowing, adding to the national debt. Fiscal policy is the use of government spending and taxation to influence the economy. A cyclical deficit results from the economic cycle, as tax revenue falls and benefit spending rises in a recession, while a structural deficit remains even when the economy is

at its trend level of output. Governments may wish to reduce a deficit to limit the growth of debt and debt interest payments, which have an opportunity cost, to maintain the confidence of lenders and keep borrowing costs low, and to create room to respond to future shocks.

Increasing taxation can reduce a deficit quickly and predictably. Direct taxes, such as income tax and corporation tax, are levied on income and profits, while indirect taxes, such as VAT, are levied on spending. Raising progressive taxes, where higher earners pay a higher proportion of income, is based on the ability to pay and can reduce inequality while raising revenue. Raising revenue through freezing income tax thresholds, so that fiscal drag brings more people into higher bands, is politically easier than raising rates. Higher taxes on demerit goods or pollution, such as tobacco, fuel or carbon, raise revenue and also reduce negative externalities, improving resource allocation.

However, higher taxes have significant costs. Higher income tax rates may reduce the incentive to work, to work longer hours or to gain promotion, and may encourage highly skilled workers to emigrate, a 'brain drain'. Higher corporation tax reduces retained profits and investment and makes the UK less attractive for FDI, slowing long-run growth. Higher tax rates also increase incentives for tax avoidance and evasion. These effects are shown by the Laffer curve in the diagram: beyond tax rate t_1 , where revenue is maximised at R_1 , any further increase in the tax rate reduces total tax revenue, to R_2 if the rate rises to t_2 , so raising rates could fail to reduce the deficit at all.



Tax rises are also contractionary. Higher income tax reduces disposable income and consumption, and AD falls, with a negative multiplier effect on output and employment, as economists feared in November 2022. Lower incomes then reduce tax revenue and raise benefit spending, so the deficit falls by less than planned and may even rise if the economy enters a recession. Higher VAT is regressive, taking a larger share of the income of the poor, and also raises the price level, causing cost-push inflation.

An alternative is cutting government spending. This avoids disincentives to work and invest and may improve efficiency if public sector waste is reduced; it also makes room for the private sector if there was crowding out. However, it also reduces AD, with a negative multiplier effect, and cuts to merit goods such as health and education, and to welfare spending, may increase poverty and inequality and reduce long-run productivity. Cutting public sector investment damages future growth. Spending cuts can also be politically difficult, as with the damage to public services mentioned in 2022.

Arguably the best way to reduce a deficit is economic growth. A cyclical deficit falls automatically as the economy recovers, since tax revenues rise and spending on unemployment benefits falls, without raising tax rates at all. Supply-side policies that raise productivity increase the trend rate of growth and reduce the structural deficit over time, and the ratio of debt to GDP falls as GDP rises.

However, growth cannot be guaranteed, takes time, and may require extra government spending in the short run, so it will not solve a large structural deficit quickly.

Therefore whether tax rises are best depends on several factors. It depends on the type of deficit: tax rises or spending cuts are needed for a structural deficit, whereas a cyclical deficit is best left to fall with growth. It depends on which tax is raised and the current level of taxation: the UK tax burden is already at a historically high level, so further rises risk moving towards the wrong side of the Laffer curve, whereas taxes on wealth, pollution or with low current rates may raise revenue with fewer distortions. It also depends on timing: raising taxes in a recession deepens the downturn and may be self-defeating.

In conclusion, increasing taxation is not necessarily the best way to reduce a budget deficit. It raises revenue quickly and can be progressive, but it reduces incentives and AD and may raise less revenue than expected if tax rates are already high. The most effective approach is likely to be a combination: allowing growth to reduce the cyclical deficit, using supply-side policies to raise the trend rate of growth, and making modest, well-targeted tax rises and efficiency savings to reduce any structural deficit once the economy is strong enough.