Cambridge Assessment International Education

Cambridge International AS & A Level

ECONOMICS **9708/21**

Paper 2 Data Response and Essay **October/November 2021**

1 hour 30 minutes

0159240016

You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

- Answer **two** questions in total:
  - Section A: answer Question 1.
  - Section B: answer **one** question.
- Follow the instructions on the front cover of the answer booklet. If you need additional answer paper, ask the invigilator for a continuation booklet.
- You may use a calculator.
- You may answer with reference to any economy you have studied where relevant to the question.

INFORMATION

- The total mark for this paper is 40.
- The number of marks for each question or part question is shown in brackets [ ].

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Section A

Answer this question.

1 What is the 'right' level of inflation?

Central banks aim to keep inflation under control, but what does 'under control' mean? How much inflation is too much? And, a question only an economist could ask, how much inflation is too little?

Hyperinflation, where the rate of inflation is extremely high, is an economic catastrophe for a country. Table 1.1 below gives details of four cases of hyperinflation.

Table 1.1

Country	Date	Highest monthly inflation rate (%)	Time taken for prices to double (hours)
Hungary	1945 to 1946	41900000000000000	15
Zimbabwe	2007 to 2008	79600000000	25
Germany	1922 to 1923	29500	89
Venezuela	2016 to 2018	219	430

Source: www.cato.org/research/world-inflation-and-hyperinflation-table, accessed October 2019

The consequences of hyperinflation are far-reaching. Inflation undermines the functions of money. Rapid price rises encourage panic-buying by consumers, creating shortages that further increase inflation. In the most extreme cases countries stop using money completely, and resort to barter. In Zimbabwe, hyperinflation led to the abandonment of its currency in 2008 and the use of the US dollar as an alternative. More recently, Venezuelan restaurants and supermarkets stopped displaying prices and consumers only found out the value of their purchases at the checkout.

To avoid the consequences of high inflation, central banks often set a low 'target' rate of inflation, typically around 2% a year. But this policy has also been criticised by some people. If central banks follow such a target the outcome would be to erode the real value of money over time. Central banks have often been instructed by governments to have an inflation target, and yet even a 2% inflation rate will halve the real value of money in 36 years.

Central banks can use high interest rates as a tool of monetary policy to keep down the rate of inflation, but very often monetary policy requires low interest rates to stimulate consumption spending and investment in an economy.

It should not be forgotten that there are potential benefits of relatively low levels of inflation and this is why some countries have an inflation target of, say, 2%. A former chief economist of the International Monetary Fund even suggested that many countries' inflation target should be 4% rather than 2%.

Source: Adapted from The Times and The Financial Times, both 9 February 2019.

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(a) Explain how inflation can halve the 'real value' of money. [2]

(b) With the aid of a diagram, explain why 'rapid price rises encourage panic-buying by consumers, creating shortages that further increase inflation'. [4]

(c) With reference to **one** function of money explain why hyperinflation in Zimbabwe caused the country to abandon its currency in 2008. [2]

(d) Using aggregate demand and aggregate supply analysis, discuss whether it is possible to use monetary policy to achieve **both** a high level of investment **and** a low rate of inflation. [6]

(e) Discuss whether everybody in an economy such as Venezuela would be worse off as a result of hyperinflation. [6]

Section B

Answer **one** question.

2 **(a)** With the aid of a diagram, compare what happens to an economy's resources to cause a movement along its production possibility curve with what happens to an economy's resources to cause a shift of its production possibility curve. [8]

(b) Discuss whether the advantages of a transition from a planned economy to a market economy always outweigh the disadvantages. [12]

3 **(a)** With the aid of a diagram, explain the consequences for consumers and producers of introducing a minimum price in the market for a product. [8]

(b) Discuss whether decisions made by a business are more likely to be influenced by knowledge of the price elasticity of demand for its product or by knowledge of the price elasticity of supply of its product. [12]

4 **(a)** With the aid of a diagram, explain how a central bank intervenes to maintain a fixed exchange rate when the economy is experiencing a current account deficit on its balance of payments. [8]

(b) Discuss whether expenditure-reducing policies are likely to reduce the current account deficit on the balance of payments for an economy with a floating exchange rate. [12]

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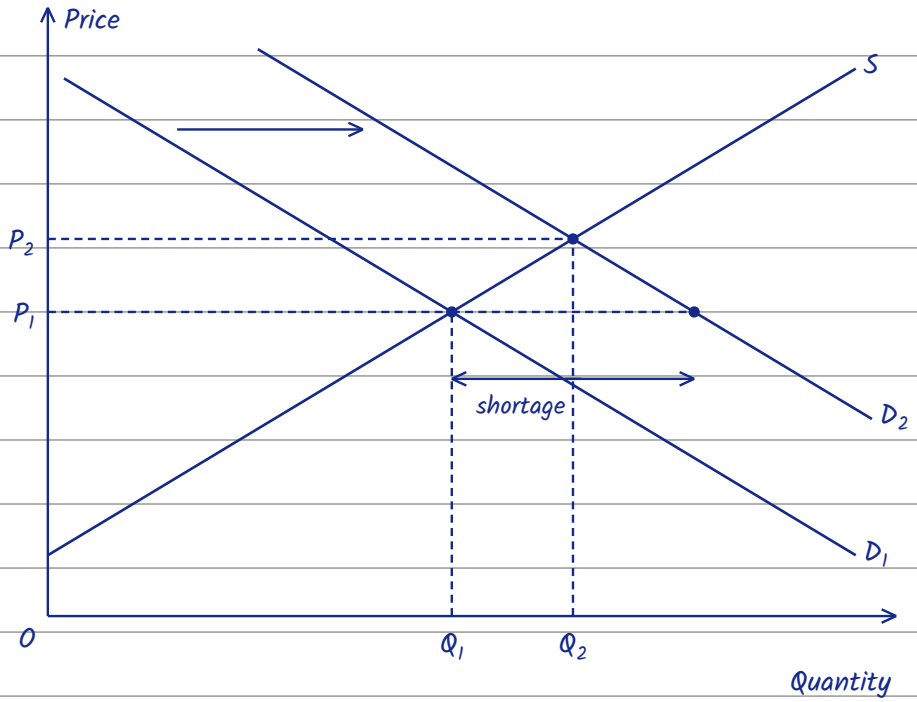
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Answer booklet	Write the question number in the left-hand margin at the start of each answer.

Question number

Answers for paper 9708/21

1(a) The real value of money is the quantity of goods and services that a given amount of money can buy, i.e. its purchasing power. If the general price level doubles, each unit of money buys only half as many products as before, so its real value has halved (e.g. at 2% inflation prices double in about 36 years).

1(b) Initially the market is in equilibrium at P1 and Q1. When prices rise rapidly, consumers expect prices to keep rising, so they buy now before prices go up again (panic-buying). Demand increases from D1 to D2.



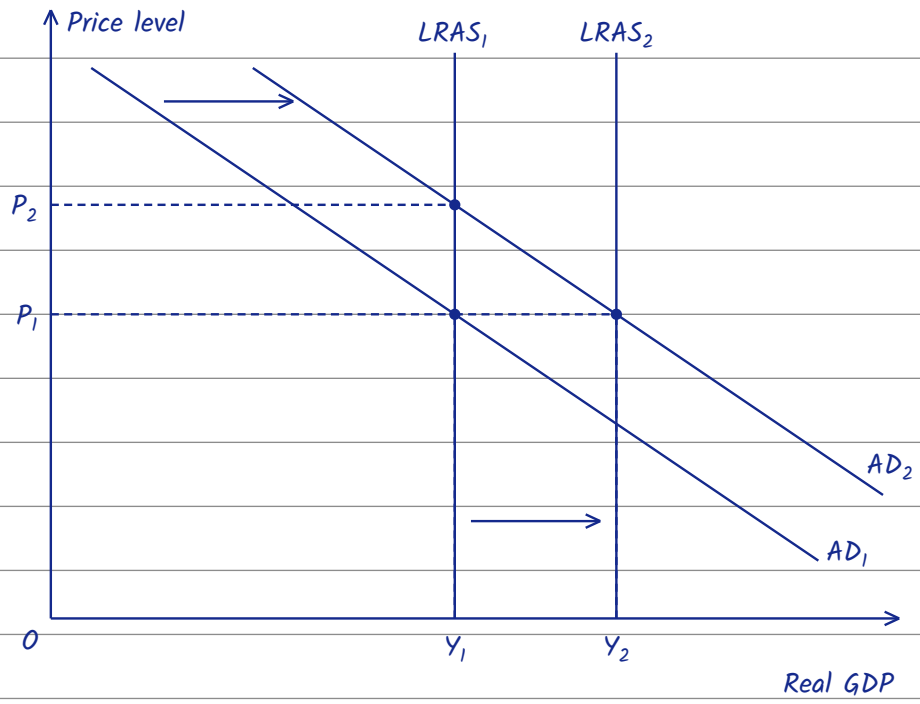
In the short run supply cannot respond, so at the original price P1 quantity demanded is far greater than quantity supplied: there is excess demand (a shortage). The shortage forces the price up to P2. This higher price confirms consumers' expectations of further price rises, so they buy even more, demand

Question number

shifts right again and the process repeats. This creates a price spiral, so inflation increases further.

1(c) One function of money is as a store of value: it should keep its purchasing power so that it can be saved and spent later. With a highest monthly inflation rate of about 79.6 billion % in Zimbabwe and prices doubling every 25 hours, the Zimbabwean dollar lost almost all of its value within days, so nobody was willing to hold or save it. People lost confidence in it and preferred a stable currency, so it was abandoned for the US dollar.

1(d) Monetary policy uses changes in interest rates, the money supply and the exchange rate. To encourage a high level of investment the central bank would cut interest rates. Borrowing becomes cheaper, so the expected return on more projects exceeds the cost of borrowing and firms invest more. Investment is a component of aggregate demand, so AD shifts right from AD1 to AD2.



In the short run this is likely to be inflationary. If the economy is near full capacity the price level rises from P1 to P2, so low interest rates conflict with low

Question number

inflation. However, investment also adds to the capital stock and improves technology, which increases productive capacity, so LRAS shifts right from LRAS1 to LRAS2. Output then rises to Y2 and the price level can return to P1.

The outcome depends on the time period: AD rises immediately, but the extra capacity takes years to arrive, so in the short run inflation is likely. It also depends on spare capacity: if the economy is in recession and AS is horizontal, lower interest rates can raise investment with little inflation. Business confidence matters too, as firms may not invest even at low rates.

So it is possible to achieve both in the long run, or when there is spare capacity, but in the short run near full employment there is likely to be a trade-off.

1(e) Most people in Venezuela are made worse off. Hyperinflation of up to 219% a month erodes the real value of money, so people's purchasing power falls rapidly. Those on fixed incomes, such as pensioners and workers whose wages are not index-linked, suffer most, and savers see the real value of their savings disappear. There are high menu costs (shops stopped displaying prices) and shoe leather costs, uncertainty discourages investment, and exports become uncompetitive, reducing output and jobs.

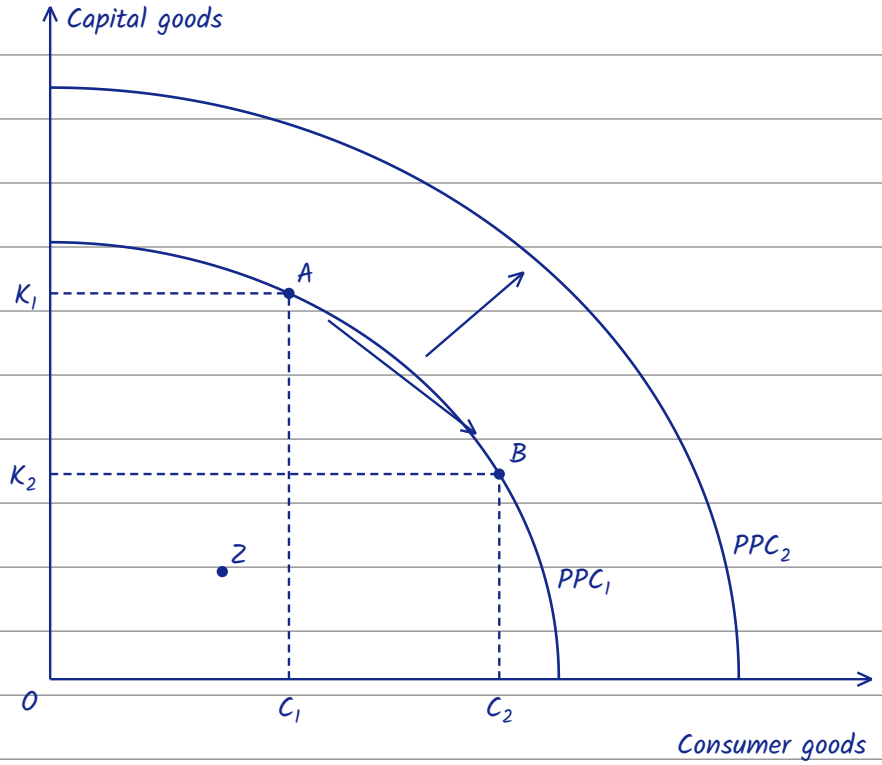
However, not everybody loses. Borrowers gain because the real value of their debts falls, so a person or firm with a large loan can repay it easily with money that is worth much less. Firms whose prices rise faster than their costs, for example because wages lag behind, earn higher profits and may expand, which could reduce unemployment. People who hold foreign currency such as US dollars, or real assets such as property, protect their wealth, and the government as a large debtor also gains.

In conclusion, it is not true that everybody is worse off, as debtors and some firms gain. But at the extreme rates seen in Venezuela the economy almost stops functioning, so the gains are small and short lived and the vast majority of people

Question number

are worse off.

2(a) A production possibility curve (PPC) shows the maximum combinations of two goods an economy can produce when all its resources are fully and efficiently employed, with a given state of technology.



A movement along the PPC, for example from A to B, happens when the same resources are reallocated from one use to another. Land, labour and capital are moved out of capital goods production into consumer goods, so output of consumer goods rises from C1 to C2 while output of capital goods falls from K1 to K2. The total quantity of resources has not changed and they remain fully employed; only their allocation has changed, and the capital goods given up are the opportunity cost of the extra consumer goods. (A move from inside the curve, point Z, towards it happens when unemployed resources are brought into use.)

A shift of the PPC, from PPC1 to PPC2, happens when the quantity or quality of the economy's resources changes. An outward shift is caused by more resources, for example a larger labour force through immigration, investment in more capital,

Question number

or the discovery of natural resources, or by better quality resources, such as improved technology or a better educated workforce raising productivity. Productive capacity rises, so more of both goods can be produced. An inward shift happens when resources are lost, for example through war or natural disasters.

So a movement along the curve involves a change in how a fixed amount of resources is used, whereas a shift involves a change in the amount or quality of the resources themselves.

2(b) In a planned economy the state owns resources and decides what, how and for whom to produce. In a market economy these decisions are made through the price mechanism by private firms and consumers.

The transition has important advantages. Prices act as signals of consumer preferences: when demand for a good rises its price rises, giving firms a profit incentive to produce more, so resources move to where they are most valued and the shortages and queues of planned economies are reduced. Private ownership and the profit motive encourage firms to cut costs and innovate, and competition between firms leads to greater productive and allocative efficiency, lower prices and more choice. Decisions are taken by many people with local knowledge, instead of a few planners who cannot process all the information needed.

There are also disadvantages. Markets fail: public goods such as defence and street lighting will not be provided at all because of the free rider problem; merit goods such as education and health care will be under-consumed because of information failure and positive externalities; demerit goods will be over-consumed and negative externalities such as pollution will be ignored. Income and wealth become more unequal. During the transition itself, inefficient state firms close, causing high unemployment, and removing price controls often causes high inflation, as happened in Russia in the 1990s.

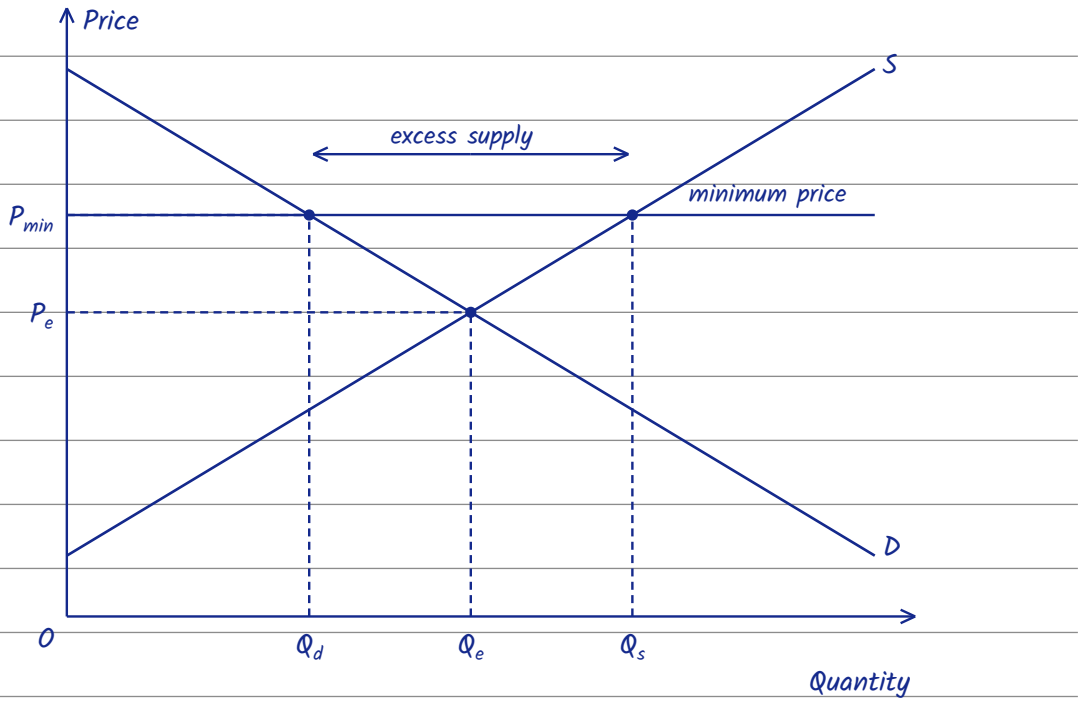
Whether the advantages outweigh the disadvantages depends on several things.

Question number

Over the long run, growth in living standards in countries such as Poland and China after reform suggests the efficiency gains are large. In the short run, however, the costs can be severe. The speed of the change matters: a gradual transition allows institutions such as property rights, competition law and a banking system to develop, whereas 'shock therapy' can lead to private monopolies and corruption. It also depends on whether the government keeps a role, providing public and merit goods and a safety net, so that the result is a mixed economy rather than a pure free market.

In conclusion, the advantages do not always outweigh the disadvantages. They usually do in the long run, provided the government continues to correct market failure, but in the short run, and where the transition is rushed, the disadvantages may be greater.

3(a) A minimum price is a price floor set by the government below which the price is not allowed to fall. To have any effect it must be set above the equilibrium price, as shown below.



Consequences for consumers: the price rises from the equilibrium Pe to Pmin, so

Question number	
	consumers pay more for each unit and their consumer surplus falls. Quantity demanded contracts from Qe to Qd, so consumption falls and some consumers are priced out of the market. This is beneficial if the product is a demerit good such as alcohol, where the minimum price discourages over-consumption and reduces negative externalities. Consequences for producers: those who can sell receive a higher, guaranteed price, so their revenue per unit and incomes rise, which is why minimum prices are often used to support farmers' incomes. However, at Pmin quantity supplied extends to Qs while only Qd is bought, so there is an excess supply of Qs – Qd. Producers are left with unsold stock unless the government buys up the surplus (at a cost to taxpayers) or restricts production with quotas. Some producers may sell illegally below the minimum price, and the guaranteed price can encourage inefficiency.
3(b)	Price elasticity of demand (PED) shows how far a change in price will affect a firm's revenue. If demand is price elastic (PED > 1), a price cut causes a more than proportionate rise in quantity demanded, so total revenue rises; a price rise would reduce revenue. If demand is inelastic (PED < 1), the firm should raise its price, as the fall in quantity is proportionately smaller and revenue increases. PED therefore guides pricing decisions, sales promotions, and how much of an indirect tax the firm can pass on to consumers. Its value depends on the availability of substitutes, how widely the product is defined, the proportion of income spent on it and the time period. Price elasticity of supply (PES) shows how far quantity supplied responds to a change in price. A firm that knows its supply is inelastic, for example a farmer whose crop takes months to grow, knows it cannot take advantage of a sudden rise in price. It can respond by holding larger stocks, keeping spare capacity, or planning the factors of production it needs, such as flexible labour, so that it can increase output quickly when prices rise. PES therefore helps with decisions on

Question number

stock levels, capacity and production.

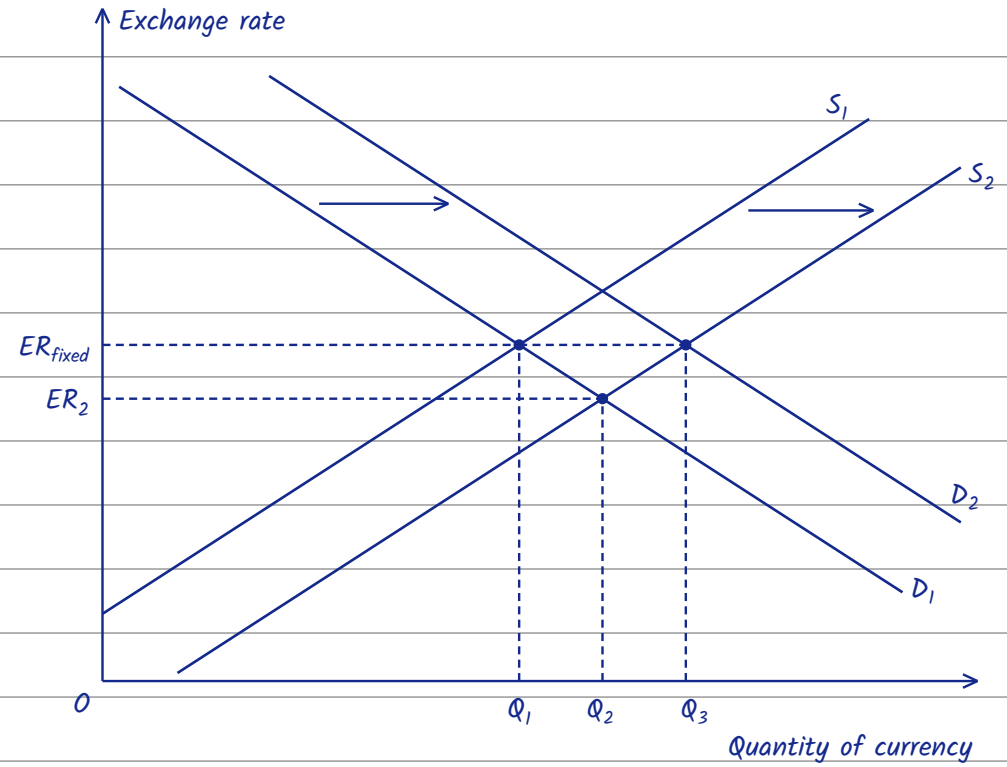
The firm's decisions are more likely to be influenced by PED. Price is the variable a firm directly controls, and every firm with some market power must decide what price to charge, so PED affects decisions every day and directly affects revenue and profit. PES describes the firm's own production conditions, which it usually knows from experience without measuring an elasticity, and it is mainly relevant when market prices change in ways the firm does not control, as for price takers in agriculture or commodities.

However, it depends on the market. For a price taker in a highly competitive market, PED for its own product is perfectly elastic and of little use, while PES is very important in deciding how to respond to price changes. Both estimates are also based on past data and assume other things are equal, so they may be inaccurate.

In conclusion, for most businesses with some control over price, knowledge of PED is more likely to influence decisions, but for price-taking firms PES is likely to be more useful.

4(a) A current account deficit means that the value of imports is greater than the value of exports. To pay for imports, residents sell their own currency to buy foreign currency, while foreigners buy less of the currency to pay for exports. Supply of the currency on the foreign exchange market rises from S1 to S2. At the fixed rate there is excess supply, so there is downward pressure and the market rate would fall to ER2.

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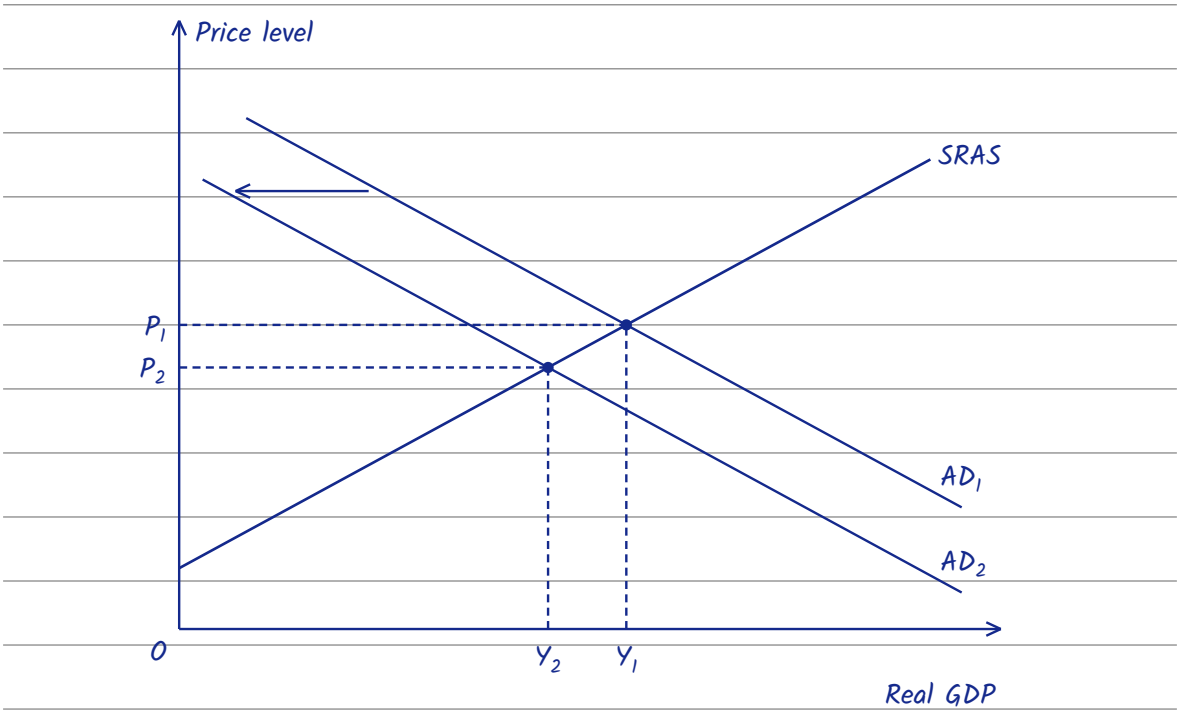


To maintain the fixed exchange rate, the central bank must increase demand for its currency. It uses its reserves of foreign currency to buy its own currency on the foreign exchange market, which shifts demand from D1 to D2, so the exchange rate stays at ERfixed, with Q3 traded. It can also raise interest rates, which attracts inflows of hot money from abroad, increasing demand for the currency. However, if the deficit persists the central bank may run out of reserves, and it may then have to devalue.

4(b)

Expenditure-reducing policies are policies that reduce total spending (aggregate demand) in the economy, such as raising interest rates, reducing the money supply, increasing income taxes or cutting government spending (contractionary fiscal and monetary policy).

Question number



They can reduce a current account deficit. When AD falls from AD1 to AD2, real incomes fall and households spend less on all goods, including imports, so the import bill falls (more so where the marginal propensity to import is high). Lower demand at home also reduces demand-pull inflation, as the price level falls from PI to P2, which makes exports more price competitive. Domestic firms facing weaker home demand have an incentive to sell more abroad, so exports may rise. However, there are limitations. With a floating exchange rate, raising interest rates attracts hot money, so the currency appreciates. Exports become dearer and imports cheaper, which works against the policy and may even worsen the deficit. Demand for imports may stay strong if they are necessities with inelastic demand, such as oil and food, or if there are no domestic substitutes. Resources released from home markets may not move into exports if firms are uncompetitive on quality. The policy also has a high cost: lower output and higher unemployment, and lower investment may harm long-run competitiveness.

How successful the policy is depends on which tool is used: fiscal tightening avoids the appreciation caused by higher interest rates. It also depends on the cause of the deficit. If the deficit is due to excess domestic demand in a boom,

Question number

expenditure-reducing policies are well suited; if it is due to poor competitiveness, supply-side or expenditure-switching measures are needed.

In conclusion, expenditure-reducing policies are likely to reduce the deficit in the short run, mainly by cutting imports, but with a floating exchange rate the effect is weakened, and the cost in lost output means they are rarely the best long-term solution.

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ECONOMICS **9708/22**

Paper 2 Data Response and Essay **October/November 2021**

1 hour 30 minutes

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You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

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- You may use a calculator.
- You may answer with reference to any economy you have studied where relevant to the question.

INFORMATION

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Section A

Answer this question.

1 India no longer the world's fastest-growing economy

Table 1.1: India – components of aggregate demand as % of total demand

Components of aggregate demand as % of total demand	Quarter 4 2018	Quarter 1 2019
Consumption expenditure	58.9%	56.8%
Investment expenditure	34.5%	31.8%
Government expenditure	9.7%	9.9%
Export expenditure	21.8%	20.0%

Source: Trading Economics

India's income has grown at its slowest rate in almost five years, according to the latest data released by the government. In the past financial year - April 2018 to March 2019 - income grew by 6.8%. And in the quarter between January and March 2019, it expanded by just 5.8% - falling behind the rate of China's growth for the first time in nearly two years. This means India is no longer the world's fastest-growing economy. The new data make it clear that India is facing an economic slowdown.

Unlike China, India's growth in income has been driven by domestic consumption over the past 15 years. But data released over the past few months suggest that consumer spending is slowing, despite the continuing growth in incomes. Motorbike and scooter sales are down. Demand for bank loans has slowed and India's leading maker of fast-moving consumer goods, such as packaged food and drink, has reported slower revenue growth in the past quarter. However, sales of smartphones have continued to increase faster than incomes have been growing. All of these are important indicators for measuring the state of consumption spending.

The government has promised that it would cut income tax to ensure greater purchasing power and some economists believe that the government should also consider cutting business taxes in the next budget, which will be announced in July 2019. These measures should act as a stimulus for the economy.

India's government has promised to spend US$1.44 trillion to build roads and other infrastructure such as bridges and street lighting, but India's large budget deficit might restrict the government's options. Many observers say that this money will have to come from the private sector. Experts say that the widening fiscal deficit will hold back medium-term and long-term growth.

Weak exports have also been a problem when it comes to creating jobs. In response the government is expected to prioritise policies that will make Indian businesses more competitive.

Source: Sameer Hashmi, BBC News, 31 May 2019

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(a) Calculate import expenditure as a percentage of total demand in India in quarter 1 2019. [1]

(b) The Indian government promised that it would cut income tax to ensure greater purchasing power for consumers.

(i) Explain how economists would measure the impact of a cut in income tax upon the demand for different goods such as scooters and smartphones. [2]

(ii) With reference to the data, explain whether the impact of the income tax cut is likely to be the same on the demand for scooters and the demand for smartphones. [2]

(c) Using the information, identify **one** policy that could be considered a supply-side measure and explain how this policy could make Indian businesses more competitive. [3]

(d) Discuss whether the advantages of cutting interest rates in the Indian economy would outweigh the disadvantages. [6]

(e) Consider whether roads and other items of infrastructure in India would be better provided by the private sector or by the government in India. [6]

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Section B

Answer **one** question.

2 **(a)** Use a diagram(s) to explain how a production possibility curve can be used to show opportunity cost and why such a curve is usually drawn with increasing opportunity costs. [8]

(b) Discuss whether the principle of comparative advantage concludes that a movement to free trade will always result in an overall benefit for an economy. [12]

3 **(a)** Explain what is meant by consumer surplus and use diagrams to assess the impact on consumer surplus when an indirect tax is imposed on a good with price-elastic demand compared with the impact when the demand is price-inelastic. [8]

(b) A government is considering whether to adopt a policy of maximum price legislation in the market for food or to provide food subsidies to alleviate hunger in a period of food shortages.

Discuss whether maximum price legislation or food subsidies are more likely to alleviate hunger under these circumstances. [12]

4 **(a)** Explain what is meant by inflation and, using diagrams, show how it can arise both as a result of a shift in the aggregate demand curve and a shift in the aggregate supply curve. [8]

(b) Discuss whether the domestic effects of inflation are more serious than the external effects for an economy. [12]

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Answers for paper 9708/22

1(a) Total demand = C + I + G + X − M = 100%

C + I + G + X = 56.8 + 31.8 + 9.9 + 20.0 = 118.5%

Imports = 118.5 − 100 = 18.5% of total demand

1(b)(i) Economists would use income elasticity of demand (YED), which measures the responsiveness of demand for a good to a change in income: YED = % change in quantity demanded ÷ % change in income. A tax cut raises disposable income, so YED shows how demand for scooters and smartphones would change.

1(b)(ii) No, the impact is likely to differ. The data show incomes continuing to grow while scooter sales are down, so scooters appear to be inferior goods (negative YED) and demand may even fall after the tax cut. Smartphone sales have grown faster than incomes, so they are luxury goods (YED > 1) and demand will rise more than proportionately.

1(c) A supply-side measure mentioned is cutting business taxes. Firms keep more of their profits, so they have more funds and a greater incentive to invest in new machinery and technology. This raises productivity and lowers unit costs, so Indian firms can cut prices or improve quality, making their goods more competitive against foreign producers, at home and in export markets.

1(d) A cut in interest rates makes borrowing cheaper and saving less attractive, so consumption, especially on credit-financed goods such as motorbikes, and

Question number

investment both rise. This would help reverse the falls in consumption (58.9% to 56.8% of demand) and investment (34.5% to 31.8%) shown in Table 1.1. Lower rates also cause an outflow of hot money, so the rupee depreciates, making exports cheaper and helping the weak exports. Aggregate demand increases, so output and employment rise and the slowdown (growth of only 5.8%) is reversed.

The main disadvantage is that if AD rises faster than productive capacity, demand-pull inflation will occur. The depreciation also makes imported raw materials and oil dearer, adding cost-push inflation, reducing real incomes and later harming the competitiveness of exports. Lower rates may also encourage too much borrowing and reduce saving.

However, the extra investment increases productive capacity, shifting LRAS to the right, which may offset the inflationary pressure in the long run. Since India is in a slowdown with spare capacity, the advantages are likely to outweigh the disadvantages, provided inflation is monitored and businesses are confident enough to borrow.

1(e)

Some infrastructure is better provided by the government. Street lighting is a public good: it is non-rival and non-excludable, so people can be free riders and a private firm cannot make a profit, so the market would not provide it at all. Most roads and bridges are quasi-public goods, as charging every user is difficult and costly, and they create large positive externalities, such as lower transport costs for firms, which a private firm would ignore, so they would be under-provided. The huge scale of investment (US$1.44 trillion) and long payback period also deter private firms.

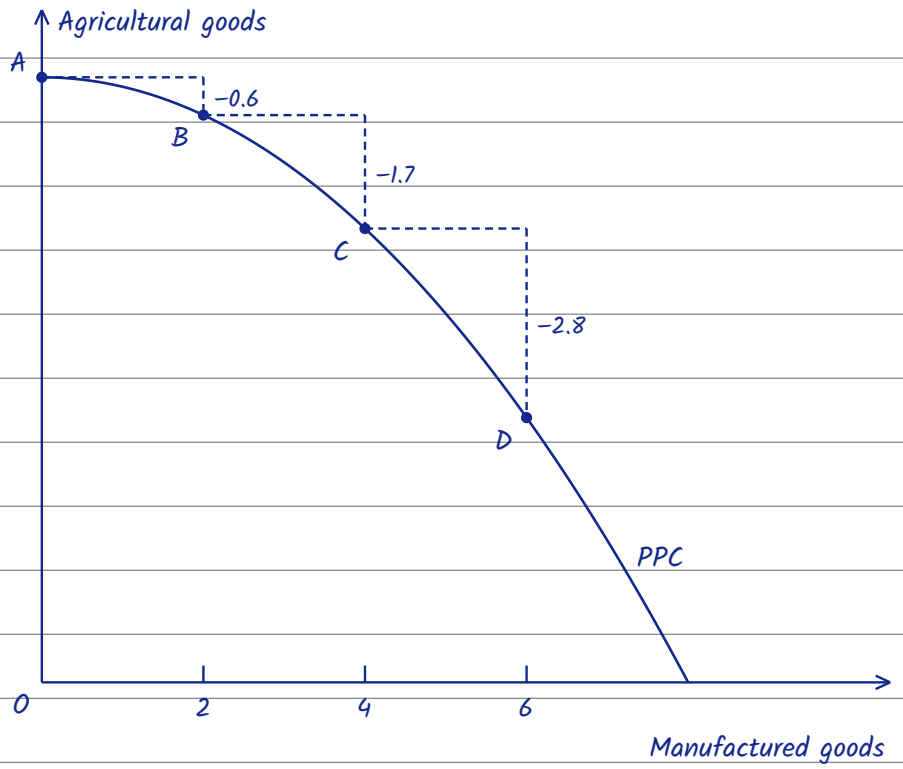
On the other hand, the private sector may provide some infrastructure better. Where users can be excluded, such as toll roads and toll bridges, the profit motive gives firms an incentive to build efficiently, on time and at low cost. India's large budget deficit restricts government spending, and the extract says observers expect

Question number

the money to come from the private sector. Government spending also has an opportunity cost, as the money could be used for health or education.

In conclusion, public goods such as street lighting and most local roads are better provided by the government, while excludable projects such as toll roads can be provided by the private sector, often through public-private partnerships that combine private finance with government planning.

2(a) A production possibility curve (PPC) shows the maximum combinations of two goods that an economy can produce when all resources are fully and efficiently employed. Opportunity cost is the next best alternative forgone when a choice is made.



A movement along the PPC shows opportunity cost. Moving from B to C, output of manufactured goods rises from 2 to 4 units, but resources have to be moved out of agriculture, so output of agricultural goods falls by about 1.7 units. The 1.7 units of agricultural goods given up are the opportunity cost of the extra 2 units of manufactured goods.

Question number

The PPC is usually drawn concave to the origin, showing increasing opportunity costs. In the diagram each extra 2 units of manufactured goods costs more agricultural goods: about 0.6 units from A to B, 1.7 from B to C and 2.8 from C to D. This is because resources are not equally suited to producing both goods. When manufacturing first expands, the resources best suited to it (for example skilled factory workers) are switched first, so little farm output is lost. As manufacturing expands further, resources that are much better at farming, such as fertile land and skilled farmers, have to be used, so each extra unit of manufactured goods costs more and more agricultural output. If resources were equally productive in both uses, the PPC would be a straight line with constant opportunity cost.

2(b) The principle of comparative advantage states that a country should specialise in producing the goods it can make at a lower opportunity cost than other countries. Even if one country is better at producing everything (an absolute advantage), if each country specialises according to comparative advantage and trades at an exchange ratio between their opportunity costs, total world output rises. Each country can then consume a combination of goods outside its own PPC. A movement to free trade removes tariffs and quotas, so this specialisation can happen, consumers get lower prices and more choice, and producers gain economies of scale and face more competition, raising efficiency.

However, the principle relies on assumptions that may not hold. It assumes no transport costs; high transport costs can cancel out the cost differences. It assumes constant opportunity costs, but as a country specialises, opportunity costs usually rise, so the gains are smaller. It assumes perfect mobility of factors of production between industries; in reality workers in declining industries may become structurally unemployed for a long time. The terms of trade or the exchange rate may also be unfavourable, so that a country gains little.

Question number

Over-specialisation makes an economy dependent on a few products and vulnerable to falls in world prices.

There are also arguments for protection that suggest free trade may not always benefit an economy: infant industries may need protection until they achieve economies of scale; strategic industries such as food and defence may need protecting; and imports may be dumped below cost.

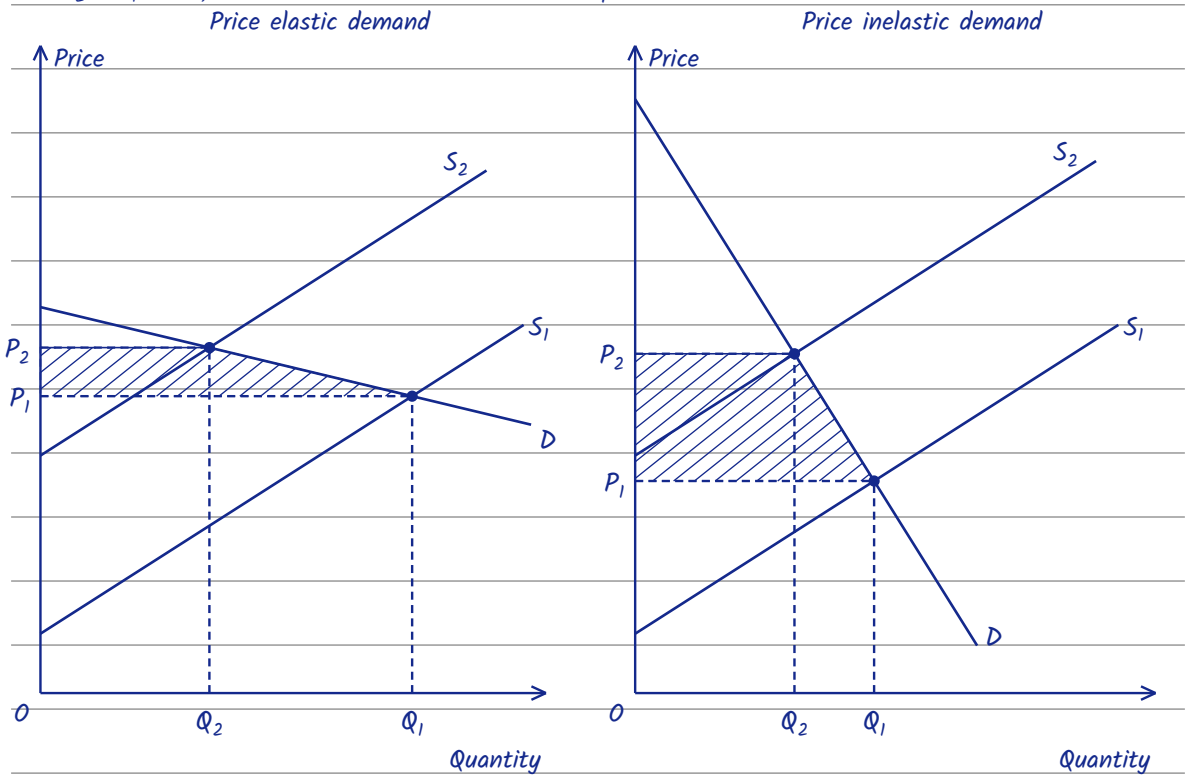
So the principle shows that free trade creates a potential overall gain, but it does not show that every economy, or every group within it, will gain. The gains depend on how different opportunity costs are, the size of transport costs, the terms of trade and how quickly resources can move between industries. For a developing economy dependent on primary products the gains may be small and unevenly shared.

In conclusion, the principle of comparative advantage suggests that a move to free trade is likely to benefit an economy overall in the long run, but because its assumptions are unrealistic it cannot conclude that free trade will always result in an overall benefit.

3(a) Consumer surplus is the difference between the price a consumer is willing to pay for a product and the market price they actually pay. It is the area below the demand curve and above the price.

Question number

$S_2 = S_1 + tax$; hatched area = loss of consumer surplus



An indirect tax raises firms' costs, so supply shifts left from S1 to S2 by the amount of the tax. In both diagrams the price rises from P1 to P2 and quantity falls from Q1 to Q2, and consumer surplus falls by the hatched area.

When demand is price elastic (flat demand curve), consumers can easily switch to substitutes, so firms cannot pass much of the tax on. The price rises only a little and quantity falls a lot. Consumers bear a small share of the tax, so the loss of consumer surplus is relatively small; producers bear most of it.

When demand is price inelastic (steep demand curve), for example for goods with few substitutes or addictive goods such as cigarettes, the price rises by most of the tax while quantity falls only a little. Consumers bear most of the tax, so the fall in consumer surplus is much larger than for the price elastic good, mainly because consumers keep buying almost the same amount at a much higher price.

3(b) A maximum price set below the equilibrium price makes food cheaper, so poor households can afford to buy it, which could alleviate hunger for those who

Question number

manage to buy it. It is quick to introduce and costs the government very little. However, at the lower price quantity demanded extends while quantity supplied contracts, so the existing shortage gets worse. Excess demand leads to queues, rationing by first come first served, and black markets where food is sold at even higher prices. Farmers earn less, so in the long run they produce less food, which could increase hunger.

A subsidy paid to food producers lowers their costs, so supply shifts to the right. Price falls and, unlike a maximum price, the quantity of food supplied and consumed increases, so there is no excess demand. This tackles the actual cause of hunger, the shortage. However, the impact depends on price elasticities: if supply is inelastic in the short run, as is common for food, which takes time to grow, little extra is produced. Subsidies have an opportunity cost and put pressure on the government budget, they may not be passed on fully to consumers, and they may encourage inefficient producers. In a famine or a breakdown in supply chains, extra food simply may not be available, so subsidies are ineffective.

Comparing the two, a maximum price helps the poor afford food in the short term but reduces the quantity available, so overall it does not tackle a shortage; it just changes who gets the limited food. Subsidies increase the quantity of food, so they are more likely to reduce hunger, but they are expensive and work slowly if supply is inelastic. The result also depends on how the policy is targeted: subsidies or vouchers aimed at the poorest households may be most effective.

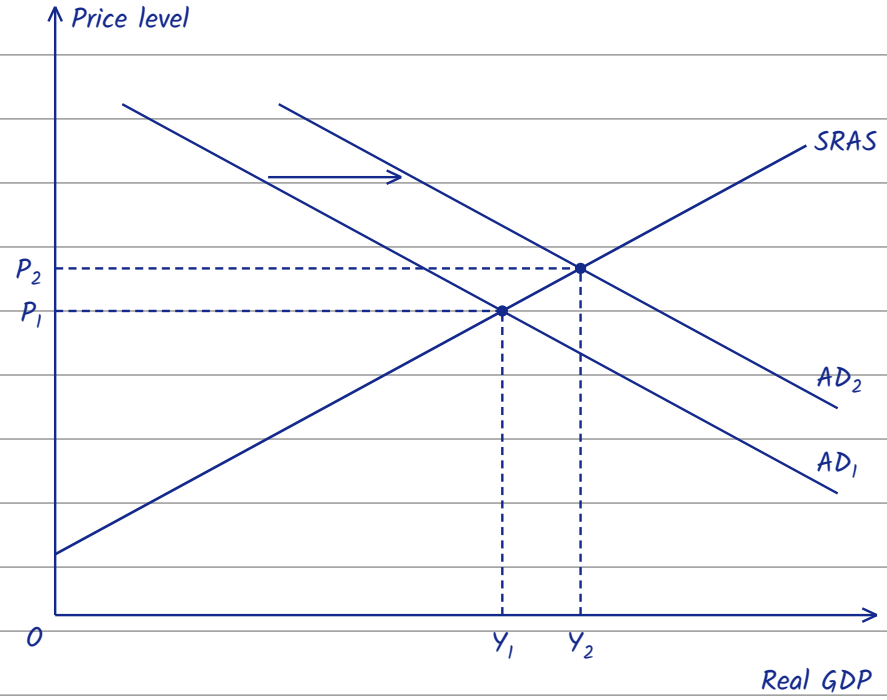
In conclusion, food subsidies are more likely to alleviate hunger because they increase the supply of food, while a maximum price makes the shortage worse, as long as the government can afford them and supply can respond.

4(a) Inflation is a sustained increase in the general (average) price level in an economy over a period of time, so the value of money falls.

Demand-pull inflation: aggregate demand may increase because of a rise in

Question number

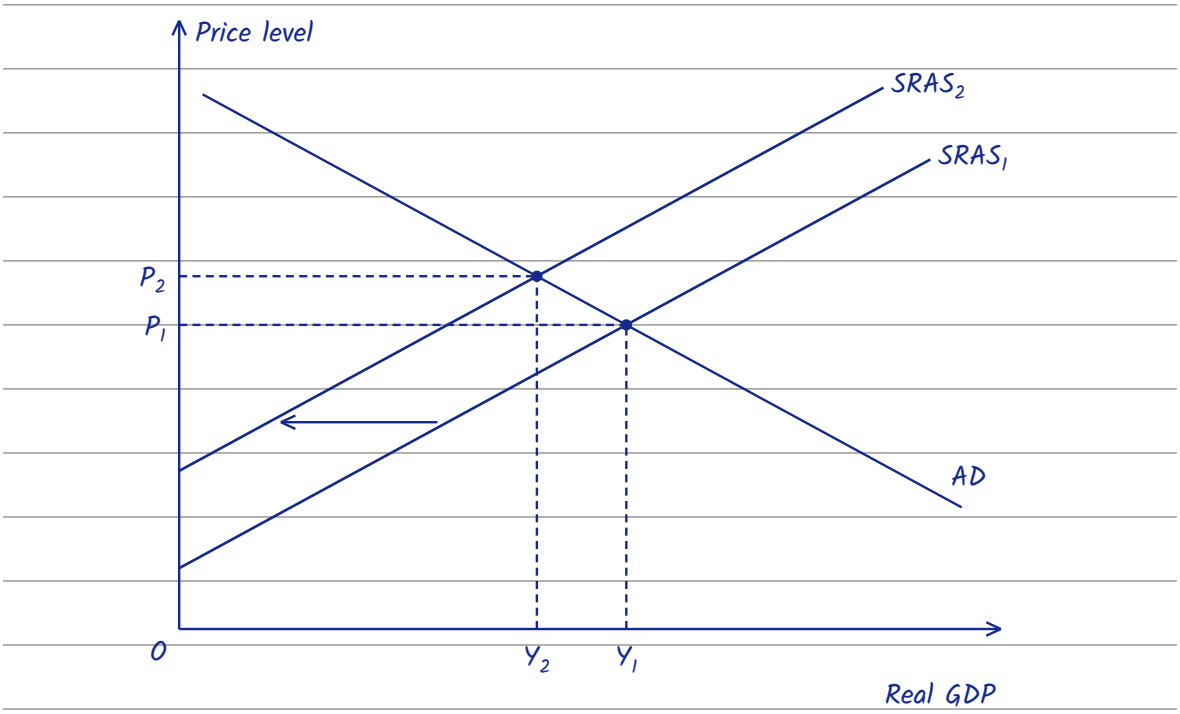
consumption, investment, government spending or exports, or a fall in imports, for example after a cut in interest rates or income tax. AD shifts right from AD1 to AD2.



As AD rises the economy approaches full capacity, so firms face rising costs and excess demand, and the general price level rises from P1 to P2. Inflation occurs because aggregate demand is greater than the economy's ability to supply at the original price level.

Cost-push inflation: aggregate supply may fall because of a rise in costs of production, such as higher wages, higher oil and raw material prices, a depreciation raising import prices, or higher indirect taxes. SRAS shifts left from SRAS1 to SRAS2.

Question number



Firms pass on the higher costs as higher prices, so the general price level rises from P1 to P2 while real GDP falls from Y1 to Y2. Inflation occurs because of the decrease in aggregate supply, not excess demand.

4(b) Domestic effects of inflation: inflation reduces the purchasing power of money, so people on fixed incomes, such as pensioners, lose and there is an arbitrary redistribution of income from savers and lenders to borrowers. If the interest rate is below the inflation rate, the real value of savings falls, so saving is discouraged. Firms face menu costs of changing prices and shoe leather costs of managing cash, and uncertainty about future prices makes it harder to plan, so productive investment falls, which reduces long-term economic growth. Wage demands may also start a wage-price spiral.

External effects: if domestic inflation is higher than in trading partners, the country's exports become relatively more expensive and imports relatively cheaper. Demand for exports falls and demand for imports rises, so the current account of the balance of payments worsens, reducing AD and causing job losses in export and import-competing industries. With a floating exchange rate, weaker export

Question number

demand and stronger import demand cause the currency to depreciate, and expected inflation can cause capital to flow out, putting further pressure on the exchange rate.

Which is more serious depends on several factors. For an open economy where exports are a large share of GDP, the loss of international competitiveness can be very damaging. But the external effects depend on relative inflation: if trading partners have similar inflation, there is no loss of competitiveness, and with a floating exchange rate a depreciation can restore price competitiveness. The domestic effects occur whatever happens abroad. They also depend on the rate: mild, anticipated inflation causes few domestic problems if incomes are index-linked, but high and unpredictable inflation seriously damages saving, investment and the distribution of income.

In conclusion, the domestic effects are generally more serious because they affect every household and firm and cannot be offset by the exchange rate, although for a small open economy with a fixed exchange rate the external effects may be the more serious.

Cambridge Assessment International Education

Cambridge International AS & A Level

ECONOMICS **9708/23**

Paper 2 Data Response and Essay **October/November 2021**

1 hour 30 minutes

2011463172

You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

- Answer **two** questions in total:
  - Section A: answer Question 1.
  - Section B: answer **one** question.
- Follow the instructions on the front cover of the answer booklet. If you need additional answer paper, ask the invigilator for a continuation booklet.
- You may use a calculator.
- You may answer with reference to any economy you have studied where relevant to the question.

INFORMATION

- The total mark for this paper is 40.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **4** pages.

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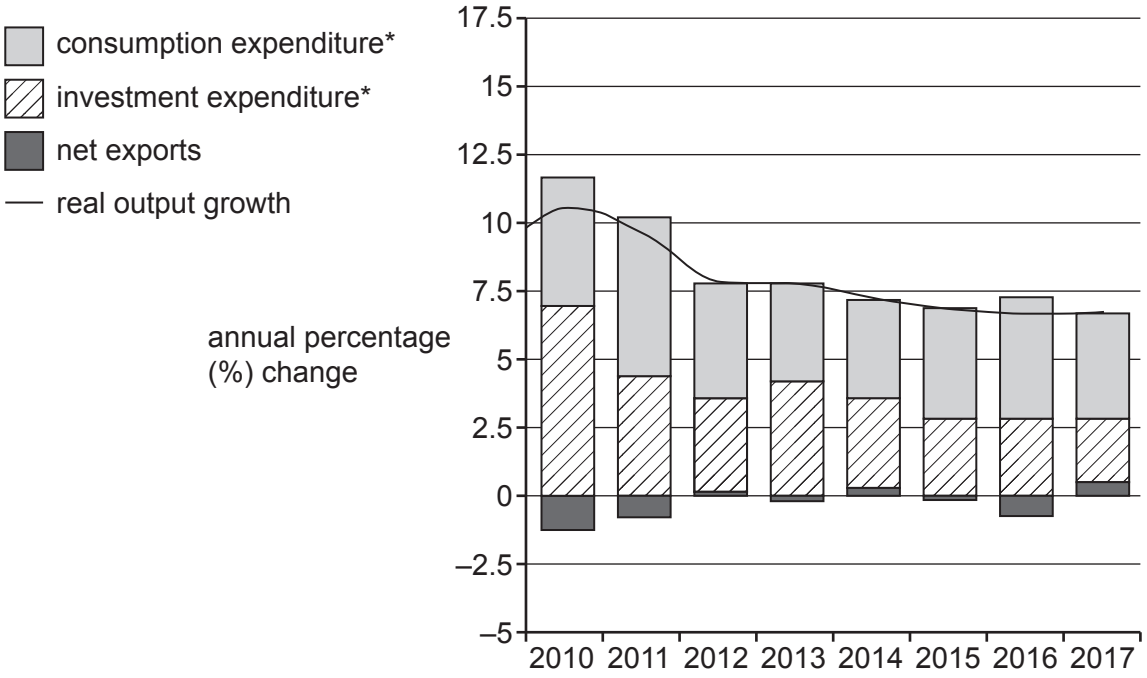
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Section A

Answer this question.

1 **China's uncertain economic prospects**

Fig. 1.1 below shows growth in real output by components of aggregate demand in China from 2010 to 2017.



* Consumption expenditure and investment expenditure include both public sector and private sector expenditure, so government expenditure is not shown separately.

Fig. 1.1

Table 1.1 below shows the annual percentage (%) change in new car sales in China from 2010 to 2017.

Table 1.1

Year	% change
2010	33.2
2011	5.2
2012	7.1
2013	15.7
2014	9.9
2015	7.6
2016	14.9
2017	2.4

Source: knoema.com, October 2019

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In 2018, real output in China's economy grew by 6.6%, its lowest figure this century (see Fig. 1.1). Many economists believe that growth in China's real output will continue to be around this level over the next few years.

In looking to the future, the Chinese government has sought to restructure its economy. This has resulted in an increased contribution from domestic consumption, with less reliance on large-scale manufacturing in favour of quality manufacturing. For Chinese consumers, buying a house is the main priority, followed by purchasing a new car. Table 1.1 shows the annual rate of change in new car sales from 2010 to 2017.

China's plans for maintaining its growth in real output at a rate of around 6.6% are threatened by ongoing tensions over trade with the United States (US). These tensions provide a real threat to China meeting even its most pessimistic growth targets for real output. Various studies have estimated the effects of a protectionist trade war with the US on China's economy. These estimates are all negative and range from –0.6% to –1.4% of real output.

Source: China Daily, 19 February 2019

(a) Use the data in Fig. 1.1 to describe how the contribution to real output growth of the different components of aggregate demand in China has changed from 2010 to 2017. [2]

(b) **(i)** What relationship might you expect between the rate of growth in real output and sales of new cars in an economy? [1]

(ii) Consider whether the evidence in Fig. 1.1 and Table 1.1 supports this relationship. [2]

(c) State **one** protectionist measure that may be adopted by the US in a trade war with China and explain what effect this would have on consumers and producers in the US. [3]

(d) Discuss whether cuts in direct taxes would increase the demand for all types of consumer goods in China. [6]

(e) Discuss whether increasing domestic consumption is the best way for China to maintain the growth in real output at the current rate 'over the next few years'. [6]

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Section B

Answer **one** question.

2 **(a)** Explain how the fundamental economic problem is addressed in a planned economy and in a market economy. [8]

(b) Discuss the view that in a mixed economy the only role of government should be to provide public goods and the supply of merit goods should be left to the private sector. [12]

3 **(a)** Using the concept of price elasticity of demand, explain why increasing the price of the product is:

(i) a bad idea for a firm producing a product that constitutes a large proportion of household income, and

(ii) a good idea for a firm producing a product that constitutes a small proportion of household income. [8]

(b) Discuss whether cross elasticity of demand or income elasticity of demand is likely to be more useful in assisting a firm in its pricing decisions. [12]

4 **(a)** Explain how inflation is measured and why a rising rate of inflation may be of concern to consumers and producers. [8]

(b) Discuss whether a policy of increasing interest rates is the best way of controlling a rising rate of inflation in an economy. [12]

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Surname	StemUp Model Solution
Answer booklet	Write the question number in the left-hand margin at the start of each answer.

Question number

Answers for paper 9708/23

1(a) The contribution of investment expenditure fell over the period, from about 7 percentage points in 2010 to under 3 in 2017. The contribution of consumption expenditure stayed relatively stable at about 4 to 5 percentage points, so it became the largest component. Net exports were negative in 2010 (about −1.2) but positive by 2017 (about +0.5), fluctuating between negative and positive in between.

1(b)(i) A positive relationship: as real output grows faster, incomes rise, so sales of new cars (a normal good) would be expected to grow faster too.

1(b)(ii) It is broadly consistent: both real output and car sales grew in every year, and the highest growth in both was in 2010 (about 10.5% and 33.2%) and the lowest in 2017 (about 6.7% and 2.4%). However, the rates do not always match: car sales rose by 15.7% in 2013 and 14.9% in 2016 while output growth was steady at about 7%, so output growth is much more stable than car sales.

1(c) The US could impose a tariff on imports from China. US consumers would pay higher prices for Chinese goods and have less choice, reducing their real incomes. US producers that use Chinese components would face higher costs of production, but US firms competing with Chinese imports would gain, as demand for their products increases.

1(d) A cut in direct taxes, such as income tax, increases households' disposable income,

Question number

so consumers have more spending power and the demand for consumer goods would generally increase.

For normal goods, which have a positive income elasticity of demand (YED), demand will rise as disposable income rises. For luxuries, such as new cars, YED is greater than 1, so demand rises more than proportionately: a 10% rise in disposable income might raise demand by 15% or more.

However, for inferior goods, which have a negative YED, such as cheap basic foods or public transport, demand will fall as incomes rise, because consumers switch to better quality alternatives. Also, the increase may be small if households save much of the extra income, as Chinese households have a high saving ratio and are saving to buy a house, or if the tax cut mostly benefits higher earners.

So a cut in direct taxes would not increase the demand for all types of consumer goods: demand for normal and luxury goods would rise, but demand for inferior goods would fall.

1(e) Increasing domestic consumption, for example through tax cuts, raises aggregate demand, so output and employment rise. Consumption is the largest and most stable component (about 4 percentage points of growth a year in Fig. 1.1), and relying on it is more certain than relying on exports, which are threatened by the trade war with the US (estimated to cut output by 0.6% to 1.4%). However, if AD grows faster than capacity it causes inflation, and the high saving ratio may limit the rise in spending.

Alternatives are increasing investment or exports. Investment raises AD now and also increases productive capacity, shifting LRAS right, so growth can be sustained without inflation; but investment's contribution has been falling and there is a risk of overcapacity and rising debt. Export-led growth worked for China in the past, but with trade tensions and slower world growth it is uncertain.

In conclusion, increasing domestic consumption is probably the best way to

Question number	
	maintain growth of about 6.6% over the next few years because it is under China's control, but it works best combined with investment in quality manufacturing so that supply keeps pace with demand.
2(a)	The fundamental economic problem is that resources are scarce (finite) while human wants are unlimited, so choices must be made about what to produce, how to produce it and for whom. In a planned economy the problem is addressed by the government. Resources are owned by the state and central planners decide what to produce, setting output targets for each industry. They decide how to produce by allocating labour, raw materials and capital to state enterprises. They decide for whom by setting wages and prices and by providing goods such as housing, health care and education according to need, aiming for an equitable distribution and full employment. However, planners lack information on consumer preferences, so shortages and surpluses often occur. In a market economy the problem is addressed by the price mechanism, through the interaction of demand and supply. What to produce is decided by consumer demand: if demand for a good rises, its price rises, which signals to producers that more is wanted and gives them a profit incentive to supply more, so resources move into that market. How to produce is decided by firms choosing the lowest cost methods to maximise profit. For whom is decided by ability to pay: price rations scarce goods to those willing and able to pay, which depends on their income. This is efficient, but can be unequal, and some goods such as public goods are not provided.
2(b)	Public goods, such as national defence and street lighting, are non-excludable and non-rival. Once they are provided, people who do not pay cannot be stopped from benefiting, so everyone has an incentive to be a free rider and will not pay. Firms

Question number

cannot make a profit, so the market will not provide them at all, a missing market. The government must therefore provide them, financed by taxation, so this is clearly one essential role of government.

Merit goods, such as education, health care and childcare, are excludable and rival, so the private sector can and does provide them, charging a price at the point of use. Private provision has advantages: competition and the profit motive encourage efficiency, innovation and choice, and it saves government spending and taxation.

However, if merit goods are left to the private sector they will be under-consumed. Consumers lack information about the full private benefits (information failure) and ignore the positive externalities, such as a more productive workforce and less spread of disease, so marginal private benefit is below marginal social benefit. Poorer households may also be unable to afford them, which is inequitable.

So the view is too narrow. Without government involvement merit goods would be under-provided, so the government should at least subsidise them or provide them free, as most mixed economies do, while allowing private schools and hospitals to operate alongside. Government also has other roles in a mixed economy, such as correcting negative externalities, regulating monopolies, redistributing income and stabilising the economy. However, government provision can suffer from government failure: inefficiency, lack of choice and high tax costs, so how much the government should be involved depends on how efficient it is and how highly society values the benefits of merit goods.

In conclusion, providing public goods is an essential role of government, but it should not be the only one. Merit goods should not be left entirely to the private sector; a mixture of public and private provision is likely to give the best outcome.

3(a) Price elasticity of demand (PED) measures the responsiveness of quantity demanded to a change in the price of the product: PED = % change in quantity demanded ÷ % change in price.

Question number	
	(i) If a product takes a large proportion of household income, such as a car or a holiday, a price rise has a large effect on households' real income, so they are very sensitive to it. Demand is therefore likely to be price elastic (PED > 1). This means a rise in price causes a more than proportionate fall in quantity demanded: for example, with PED = −2, a 10% price rise reduces quantity demanded by 20%. Total revenue (price × quantity) therefore falls, so raising the price is a bad idea for the firm. (ii) If a product takes only a small proportion of household income, such as salt or matches, a price rise hardly affects households' budgets, so they barely notice it. Demand is therefore likely to be price inelastic (PED < 1). A rise in price causes a less than proportionate fall in quantity demanded: for example, with PED = −0.2, a 10% price rise reduces quantity demanded by only 2%. Total revenue therefore rises, so raising the price is a good idea for the firm.
3(b)	Cross elasticity of demand (XED) measures how demand for one good responds to a change in the price of another. For substitutes, XED is positive. If a firm knows its product has a high positive XED with a rival's product, it knows a rival's price cut will take many of its customers, so it may have to match the cut; it also knows that if it raises its own price, customers will switch away. For complements, XED is negative: a firm selling games consoles and games knows that cutting the console price will raise demand for games, so it can price the console low and make its profit on the games. Income elasticity of demand (YED) measures how demand responds to a change in income. For normal goods, and especially luxuries with YED greater than 1, demand rises strongly when incomes rise, so a firm can raise its price in a boom without losing sales, and may need to cut prices in a recession. For inferior goods, with negative YED, demand rises when incomes fall, so a firm selling budget products can raise prices in a recession and may need to cut them in a boom.

Question number

XED is likely to be more useful for day-to-day pricing decisions, because firms in competitive markets, especially oligopolies, must constantly react to rivals' prices, and the price of a rival's product can change at any time. YED is more useful for longer-term planning, as incomes change more slowly, and its main use is forecasting sales and output rather than setting prices. However, for firms selling luxuries whose demand is highly sensitive to the economic cycle, YED matters a lot. Both have limitations: estimates are based on past data, may be inaccurate and assume other things stay the same.

In conclusion, for most firms XED is likely to be more useful in assisting pricing decisions because it relates directly to competitors' and complementary prices, but YED is useful too and a firm would ideally use both.

4(a) Inflation is a sustained increase in the general price level in an economy. It is normally measured by a consumer price index (CPI). A base year is chosen and given the value 100. A household expenditure survey finds what a typical household buys, and a basket of these goods and services is chosen. Each item is given a weight according to the proportion of income spent on it, and its price is recorded regularly. The weighted price changes give the index, and the inflation rate is the percentage change in the CPI over a year.

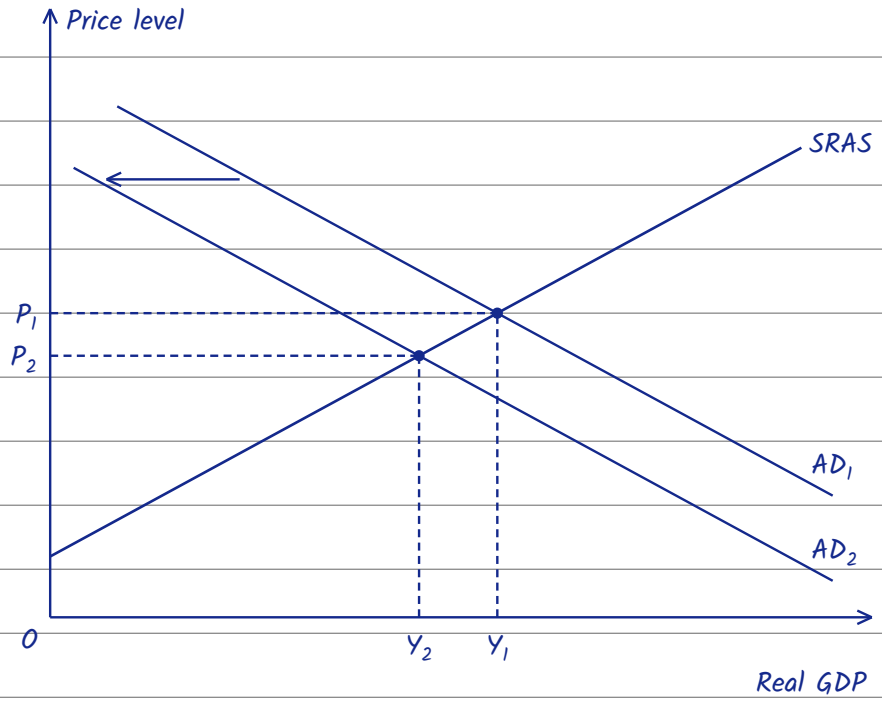
A rising rate of inflation concerns consumers. People on fixed incomes, such as pensioners, lose purchasing power, because prices rise faster than their incomes, so their real income falls. The real value of savings is eroded if the interest rate is lower than inflation. It also creates uncertainty, making it harder for households to budget, and the poor may be hit hardest.

It also concerns producers. Firms face menu costs of changing price lists and shoe leather costs. Workers demand higher wages, raising costs. Uncertainty about future prices and costs makes long-term decisions, such as investment, more difficult, so business confidence falls. If inflation is higher than in other countries,

Question number

the firm's exports become less price competitive and imports more attractive, so sales fall.

4(b) Raising interest rates (contractionary monetary policy) makes borrowing more expensive and saving more attractive. Households spend less, especially on goods bought on credit, and those with variable-rate mortgages have less disposable income. Firms cut investment as fewer projects are profitable. Higher rates also attract hot money, so the currency appreciates, making imports cheaper. AD shifts left from AD1 to AD2 and the price level falls from P1 to P2 compared with what it would have been.



However, the policy has disadvantages. It works with long time lags of up to two years. It reduces output and raises unemployment, and the fall in investment harms long-run growth. The appreciation hurts exporters. It is not effective against cost-push inflation caused by, say, rising oil prices: it would cut output further without tackling the cause. If interest rates are already high, or confidence is low, the effect may be small.

Alternatives include contractionary fiscal policy: raising taxes or cutting government

Question number

spending also reduces AD and acts directly on spending, but it is politically unpopular, may reduce incentives, and also has time lags because budgets are set once a year. Supply-side policies such as training, deregulation and privatisation raise productivity and shift LRAS to the right, reducing inflationary pressure while increasing output, but they are expensive and take many years to work.

Which is best depends on the cause of inflation. For demand-pull inflation, interest rates are flexible, can be changed quickly and are set by an independent central bank, so they are often the best tool. For cost-push inflation, supply-side policies are more appropriate, and in practice a combination of policies is usually needed.

In conclusion, increasing interest rates is the best short-term way to control rising demand-pull inflation, but it is not the best way in every case, and supply-side policies are needed to control inflation in the long run.