Cambridge Assessment International Education

Cambridge International AS & A Level

ECONOMICS **9708/42**

Paper 4 Data Response and Essays **February/March 2022**

2 hours 15 minutes

7075137232

You must answer on the enclosed answer booklet.

You will need: Answer booklet (enclosed)

INSTRUCTIONS

- Answer **three** questions in total:
  - Section A: answer Question 1.
  - Section B: answer **two** questions.
- 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 70.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **4** pages.

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Section A

Answer this question.

1 Changes in the New York yellow taxi industry

The yellow taxi is one of New York's famous sights.

There are two types of drivers of yellow taxis: owner-drivers who own the licence and lease-drivers who pay a yearly fee for the licence to the owner. Historically, owning a licence was valuable because the demand for them has been greater than the supply. The huge demand for licences meant that, in 2011, two licences sold for US$1m each.

For lease-drivers the only way to cover the lease fee and expenses such as fuel and maintenance is to work long hours and have few days off. By 2020 the value of the licence had fallen significantly leaving owners in financial hardship.

It was in 2011 that things began to change. Until then part of New York, known as Manhattan, had always been monopolised by yellow taxis. They worked only in the busiest areas resulting in large numbers of yellow taxis often seen in movies and on television.

In 2011 the local government allowed the introduction of another taxi service (painted green) in the less densely populated areas of the city where yellow taxis typically did not go. Regulations stopped the green taxis picking up customers in Manhattan, and at the airports – unless they were pre-booked. Also in 2011, a third company launched a rival taxi service right in Manhattan. This service again could not pick up customers in the street but it could be booked on a smartphone app and was cheaper than the yellow taxi. By 2019 this new company's taxis outnumbered the yellow taxis by four to one.

In 2018, as a result of protests and strikes organised by the yellow taxi drivers' trade union, the local government agreed to limit the number of alternative taxis. Also, the body responsible for the licences did not increase the fee.

In 2018, there was also a plan to introduce a minimum wage for drivers whose taxis were booked using the smartphone app. One analyst said: 'this would put enormous economic pressure on the business model of the app-based companies who operate on methods that have very low labour costs.'

In 2019, there was a proposal to introduce a surcharge for taxis, known as congestion pricing. Every taxi trip will have a surcharge added to the fare and the funds from this would go towards repair work on the underground subway (metro) system to improve its efficiency and reduce fares.

Source: Geographical, March 2019 p28 ff

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(a) Distinguish between a fixed cost and a variable cost and identify **one** example of each from the article. [3]

(b) Cross-subsidisation is when consumers of one product are charged higher prices in order to subsidise consumers of other products who then pay lower prices.

Identify an example of cross-subsidisation in the article and consider whether it can be justified. [5]

(c) Analyse whether there is any evidence that the market structure for New York taxis could be called a monopoly. [5]

(d) Identify **two** types of local government intervention allowed in 2018 and discuss how these might affect the profits of taxi owners. [7]

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Section B

Answer **two** questions.

2 **(a)** Explain what is meant by dynamic efficiency and consider which type of market structure is most likely to achieve dynamic efficiency. [12]

(b) The use of cars in large cities can cause traffic congestion and pollution.

Explain how the use of cars may cause allocative inefficiency and discuss **two** alternative government policies that might be used to solve this problem. [13]

3 **(a)** Explain what economists mean by indifference curves and budget lines and evaluate whether they might be used together to support rational consumer decision making. [12]

(b) Use indifference theory to analyse the view that the demand for an inferior good is likely to be more price inelastic than the demand for a normal good. [13]

4 **(a)** A profit maximising firm operating in a perfectly competitive labour market might decide to increase the number of workers it employs but it will not choose to increase its workers' wage rates.

Discuss the extent to which you agree with this statement. [12]

(b) The government of a country sets an effective national minimum wage for workers.

Discuss the arguments for and against the government's decision. [13]

5 Many developing countries rely heavily on the production and export of primary products. This is the main cause of low levels of economic growth in developing countries and therefore the main explanation for the low standard of living in these countries.

Discuss the extent to which you agree with this statement. [25]

6 Government policies which rely on increasing budget deficits to solve the problem of unemployment will not be successful because they do not affect the natural rate of unemployment.

Discuss the extent to which you agree with this statement. [25]

7 **(a)** Consider, with the help of a circular flow diagram, the potential impact of a fall in the rate of interest on the level of output and the level of employment. [12]

(b) Discuss whether there is likely to be a conflict when a government attempts to fix exchange rates while at the same time introducing policies to decrease the level of inflation. [13]

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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 9708/42 (all questions answered)

1(a) A fixed cost is a cost that does not change with the level of output (here the number of journeys) in the short run, so it must be paid even if the taxi does no work. A variable cost changes directly with output, rising as more journeys are made.

Fixed cost: the yearly lease fee paid by a lease-driver for the licence (or the cost of buying the licence). Variable cost: fuel (or maintenance), since more fuel is used the more trips are made.

1(b) The proposed congestion surcharge is an example. Every taxi passenger pays a higher fare, and the funds pay for repairs to the subway, improving its efficiency and reducing subway fares. So taxi users subsidise subway users.

It can be justified because taxis add to traffic congestion and pollution, which are negative externalities: each trip imposes costs on third parties, such as time lost in traffic and poorer air, that are not in the fare. The surcharge makes taxi users pay closer to the full social cost, reducing the overconsumption of taxi trips, and the cheaper, more efficient subway is a substitute with lower external costs per passenger. This moves the transport system towards allocative efficiency, and lower subway fares help lower-income travellers.

Against this, taxi drivers already face financial hardship and falling licence values. If demand for taxis is price elastic, the surcharge will cut the number of trips and drivers' incomes, while some taxi users, such as disabled or elderly people, have no real alternative. On balance it is justified if the external costs are significant, but its effect on drivers should be monitored.

Question number

1(c) A pure monopoly is a market with a single seller of a product with no close substitutes, protected by high barriers to entry, so the firm is a price maker.
There is evidence of monopoly. Before 2011 Manhattan had "always been monopolised" by yellow taxis, and entry was restricted by the licence system: demand for licences exceeded supply, so two licences sold for US$1m each in 2011. This high cost of entry is a barrier to entry. After 2011 the barriers continued: green taxis could not pick up customers in Manhattan or at airports unless pre-booked, the app-based service could not pick up customers in the street, and in 2018 the government limited the number of alternative taxis.
However, the evidence against is stronger. The yellow taxis are owned by many separate owner-drivers, who compete with each other, so there is no single firm. By 2019 the app company's taxis outnumbered yellow taxis by four to one, and passengers also have close substitutes such as the subway and private cars. So yellow taxis had a legal monopoly of street pick-ups in Manhattan, but the taxi market as a whole is not a monopoly.

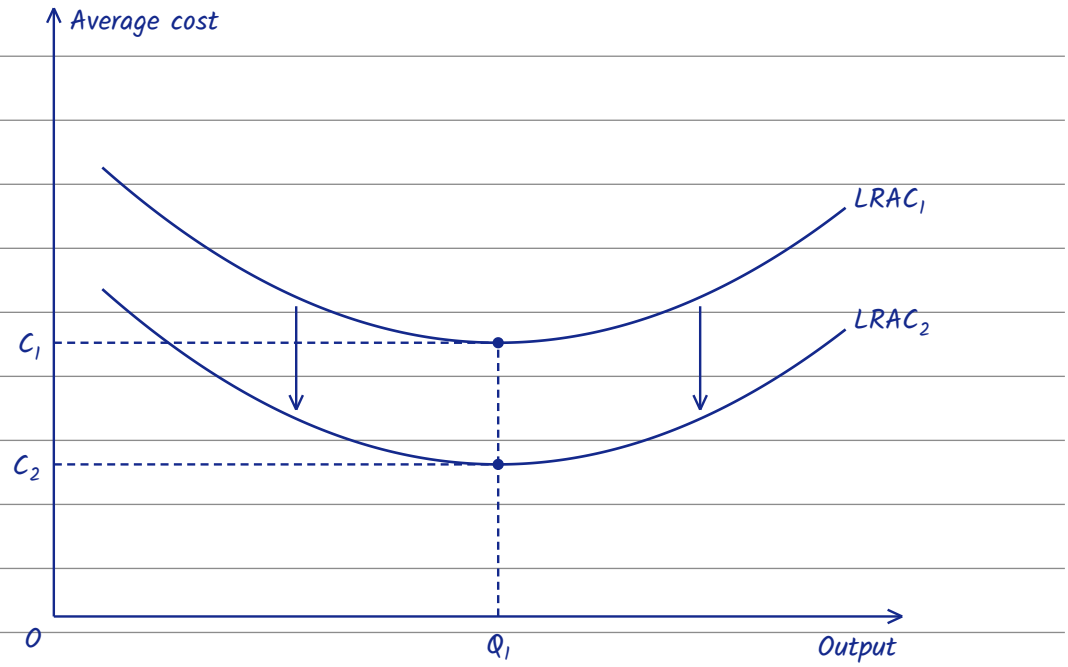
1(d) In 2018 the local government (1) limited the number of alternative (app-based and green) taxis and (2) did not increase the licence fee.
Limiting alternative taxis reduces the supply of competing taxis, so demand for yellow taxis should rise, as passengers have fewer substitutes. Yellow taxis can then fill more trips and possibly charge higher fares, raising total revenue and profit. However, the effect depends on demand: the app company already outnumbers yellow taxis four to one and may raise its own prices, and passengers may switch to the subway or private cars, especially if the congestion charge makes taxis dearer. Demand may rise anyway if the population or incomes grow.
Keeping the licence fee the same keeps a fixed cost constant. Total revenue is unaffected, but average cost does not rise, so profits are protected compared with

Question number

a fee rise. However, the effect is small because it only stops costs rising; it does not cut them, and lease-drivers still need long hours to cover fuel and maintenance.

The planned minimum wage for app drivers would also help yellow taxi owners, as it would raise the low labour costs of rivals and so their fares. Overall, profits of yellow taxi owners are likely to rise slightly, but the size of the rise is uncertain because it depends on how passengers respond and on the strength of the competition.

2(a) Dynamic efficiency is efficiency over time. It is achieved when firms use their profits to invest in research and development (R&D) and new capital, creating new or improved products (product innovation) and cheaper methods of production (process innovation). Process innovation shifts the long-run average cost curve downwards at every level of output, from LRAC1 to LRAC2 in the diagram, so the same output Q1 can be produced at a lower average cost, C2 instead of C1, and consumers gain from better products and lower prices.



Perfect competition is unlikely to achieve dynamic efficiency. Firms are small and

Question number

in the long run make only normal profit, because the absence of barriers to entry means new firms enter until supernormal profit is competed away. They therefore have no retained profit to fund R&D. With perfect knowledge, any innovation would be copied immediately, so there is also no incentive to innovate.

Monopolistic competition is also unlikely. Firms have some incentive to innovate to differentiate their product, but low barriers to entry mean they too earn only normal profit in the long run, so funds for large-scale R&D are limited.

Oligopoly is more likely to be dynamically efficient. Firms are large, barriers to entry allow supernormal profit in the long run, and interdependence encourages non-price competition through new products, as in smartphones and cars. However, some of the profit goes on advertising and branding rather than R&D, and if firms collude the pressure to innovate is reduced.

A monopoly has the greatest ability to achieve dynamic efficiency. High barriers to entry protect its supernormal profit in the long run, and it gains all the reward from an innovation, especially when protected by patents, as in pharmaceuticals. However, without competition it may lack the incentive to innovate: profits may be paid out as dividends, and X-inefficiency may mean costs rise rather than fall.

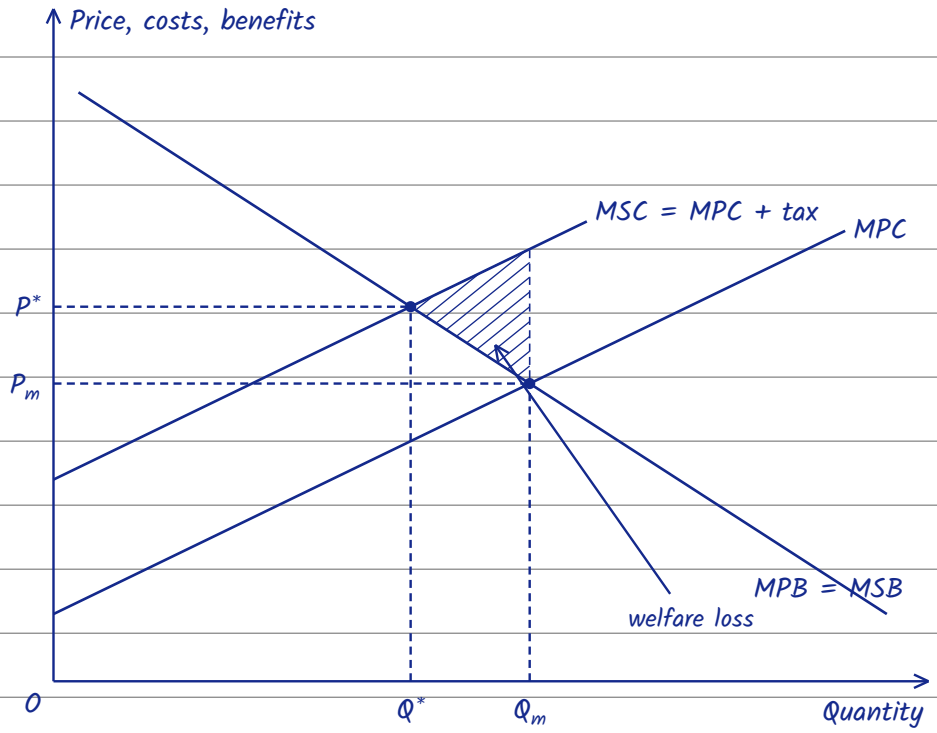
In conclusion, a monopoly is most likely to achieve dynamic efficiency because it has both the funds and the protected rewards from R&D, with oligopoly a close second. But this depends on contestability: a monopoly that faces the threat of new entry, or rivalry for future markets, is far more likely to reinvest its profits than a secure one.

2(b) Allocative efficiency is achieved when resources are allocated to the goods and services that consumers value most, where price equals marginal cost, or, allowing for externalities, where marginal social benefit (MSB) equals marginal social cost (MSC).

Car use causes allocative inefficiency because of negative externalities. A driver

Question number

considers only the private costs of a journey, such as fuel and time (MPC). Each extra car also slows every other road user, adding to their journey times and fuel use, and causes air and noise pollution that damages health. These external costs fall on third parties, so MSC = MPC + external cost lies above MPC. In the diagram, drivers choose Qm, where MPB = MPC, but the social optimum is Q^*, where MSB = MSC. Too many car journeys are made, because for units between Q^* and Qm the MSC is greater than the MSB, so there is the shaded welfare loss and the market fails.



Policy 1: a congestion charge or tax on car use, as in London and Singapore. A tax equal to the marginal external cost at Q^* shifts the private cost curve up to MSC, internalising the externality: price rises to P^* and car journeys fall to Q^*, removing the welfare loss. The revenue can fund public transport. However, it is very hard to measure the external cost in money, so the tax may be set too high or too low. Demand for car journeys is often price inelastic, especially where there is no good public transport, so journeys may fall only a little. The charge is also regressive, hitting low-income drivers hardest, and the cameras and enforcement are costly.

Question number

Policy 2: subsidising public transport, such as buses and metro systems. Lower fares make public transport relatively cheaper, so some people switch from cars, reducing the demand for car journeys and moving output towards Q^*. Public transport also has positive externalities. However, the subsidy has an opportunity cost, since the money could be spent on health or education, and must be financed by taxes or borrowing. Its success depends on the cross elasticity of demand between public transport and car use: if this is low, because people value the comfort and convenience of cars, few will switch and congestion remains.

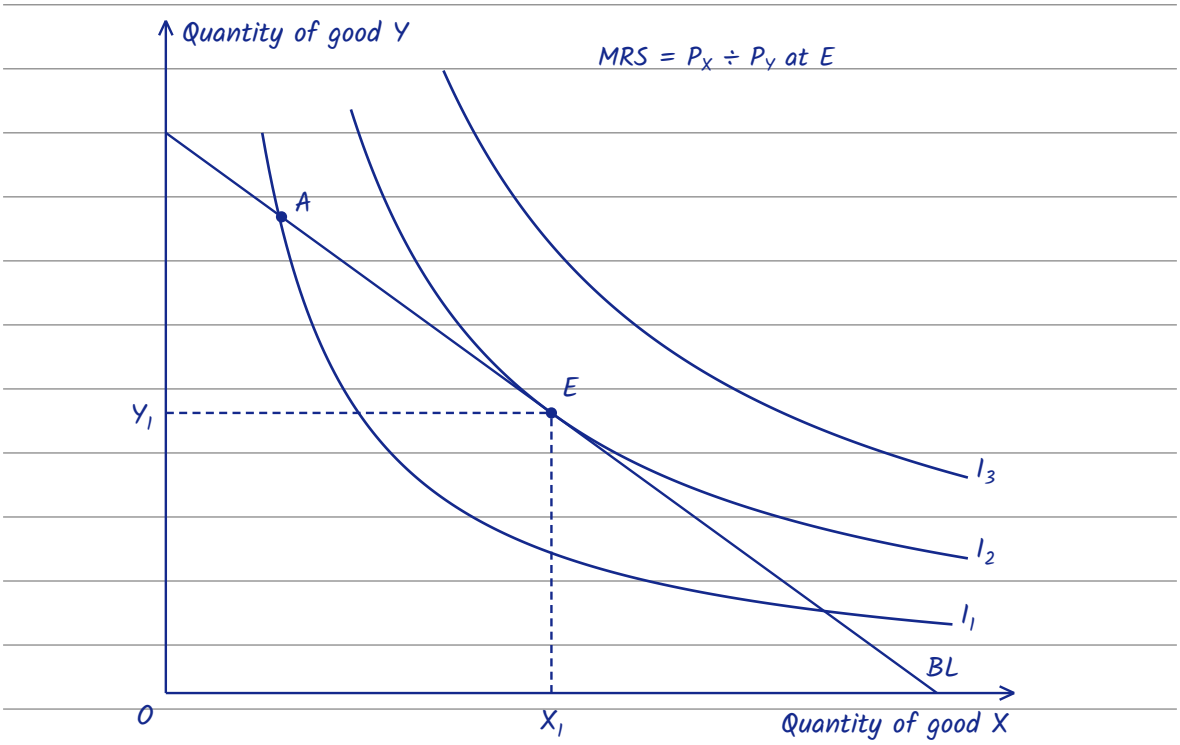
In conclusion, a congestion charge acts directly on the source of the externality and is likely to be more effective in the short run, while a subsidy works only through substitution. The best approach is to combine them, using the charge revenue to improve public transport, so that drivers have a real alternative and demand for car use becomes more price elastic.

3(a)

An indifference curve shows all the combinations of two goods that give a consumer the same level of satisfaction, so the consumer is indifferent between them. Indifference curves slope downwards, because to keep satisfaction constant the consumer must have more of one good if they have less of the other, and they are convex to the origin because of a diminishing marginal rate of substitution (MRS). Higher curves, further from the origin, show higher satisfaction, and curves never cross.

A budget line shows all the combinations of two goods a consumer can buy when spending all of their income, given the prices of the goods. It is a straight line sloping downwards, and its slope is the price ratio, PX ÷ PY. A rise in income shifts it outwards in parallel, and a change in one price pivots it.

Question number



Used together, they show how a rational consumer maximises satisfaction subject to an income constraint. The consumer reaches the highest indifference curve that the budget line allows, at point E, where the budget line is tangent to I2 and MRS = PX ÷ PY, buying X1 of good X and Y1 of good Y. Point A on I1 is affordable but gives less satisfaction, and I3 is unattainable with this income. The model also predicts how a rational consumer responds to changes in income and prices, which is the basis for deriving the demand curve.

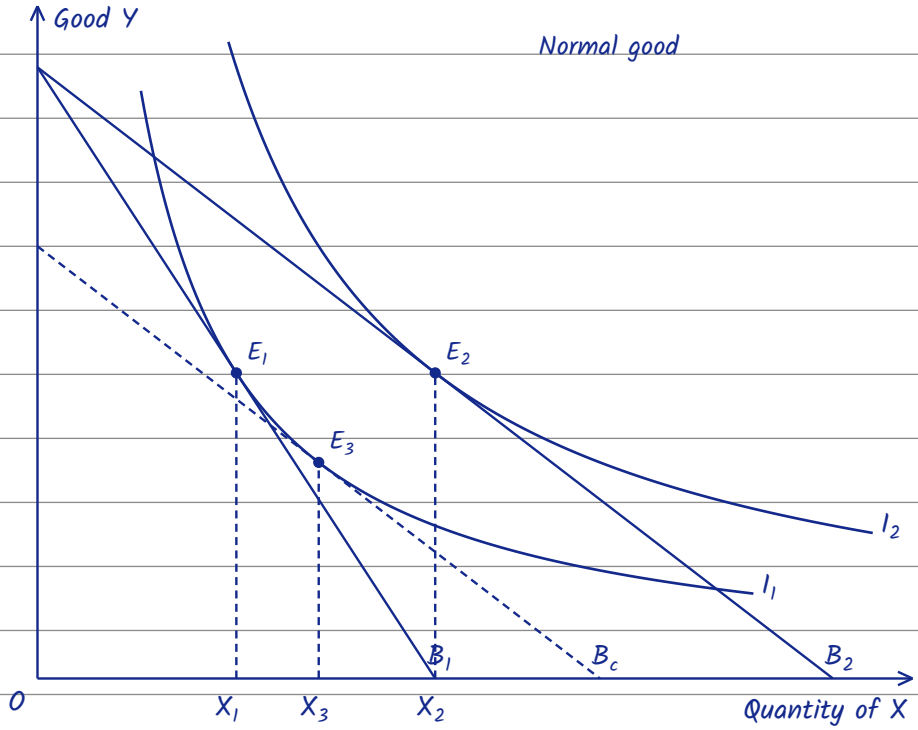
Evaluation: the model depends on assumptions. It assumes consumers are rational, always aim to maximise satisfaction, have perfect information about prices and products, and can rank every combination of goods consistently. Behavioural economics shows that real consumers often use rules of thumb, act out of habit, follow others (herd behaviour), are influenced by advertising and the way choices are framed, and suffer from bounded rationality and bounded self-control, such as buying on impulse. Real choices involve many goods, not two, and tastes change over time.

However, the model does not require consumers to draw indifference curves, only to

Question number

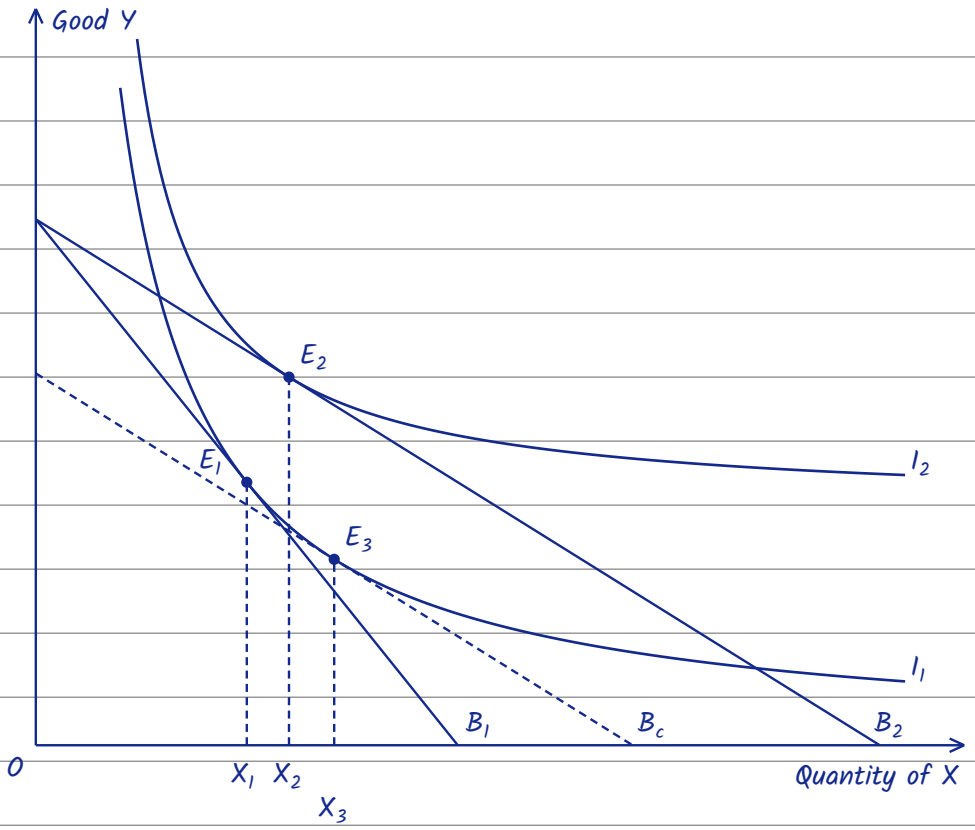
act as if they compare combinations, and it only needs them to rank choices, not to measure utility in numbers. It predicts most consumer behaviour well, such as buying more when prices fall. In conclusion, indifference curves and budget lines together are a useful description of rational decision making and a good starting point, but they are less useful for explaining impulse, habitual or advertising-led purchases, where consumers do not behave rationally.

3(b) Indifference theory assumes a rational consumer who maximises satisfaction where the budget line is tangent to the highest indifference curve. A fall in the price of good X pivots the budget line outwards from B1 to B2, and the total effect on the quantity demanded can be split into two parts. The substitution effect is the change caused only by the change in relative prices, holding real income constant: it is shown by the compensated budget line Bc, parallel to B2 and tangent to the original curve I1. It always increases demand when price falls, since X is now relatively cheaper. The income effect is the change caused by the rise in real income, the shift from Bc to B2.



Question number

For a normal good, demand rises as real income rises. In the first diagram the substitution effect, E1 to E3, increases demand from X1 to X3, and the positive income effect, E3 to E2, increases it further from X3 to X2. Both effects work in the same direction, so the price fall causes a large rise in quantity demanded, from X1 to X2 (doubling in my diagram). The demand curve slopes downwards and is relatively price elastic.



For an inferior good, demand falls as real income rises, because consumers switch to better-quality goods. In the second diagram the same price fall gives the same substitution effect, E1 to E3, from X1 to X3. But the income effect is negative: the rise in real income, E3 to E2, reduces demand from X3 to X2, partly cancelling the substitution effect. So quantity rises only from X1 to X2, a much smaller increase than for the normal good. The percentage change in quantity demanded for a given change in price is smaller, so the demand for the inferior good is more price inelastic, which supports the view. If the negative income effect were larger than the substitution effect, the good would be a Giffen good and

Question number

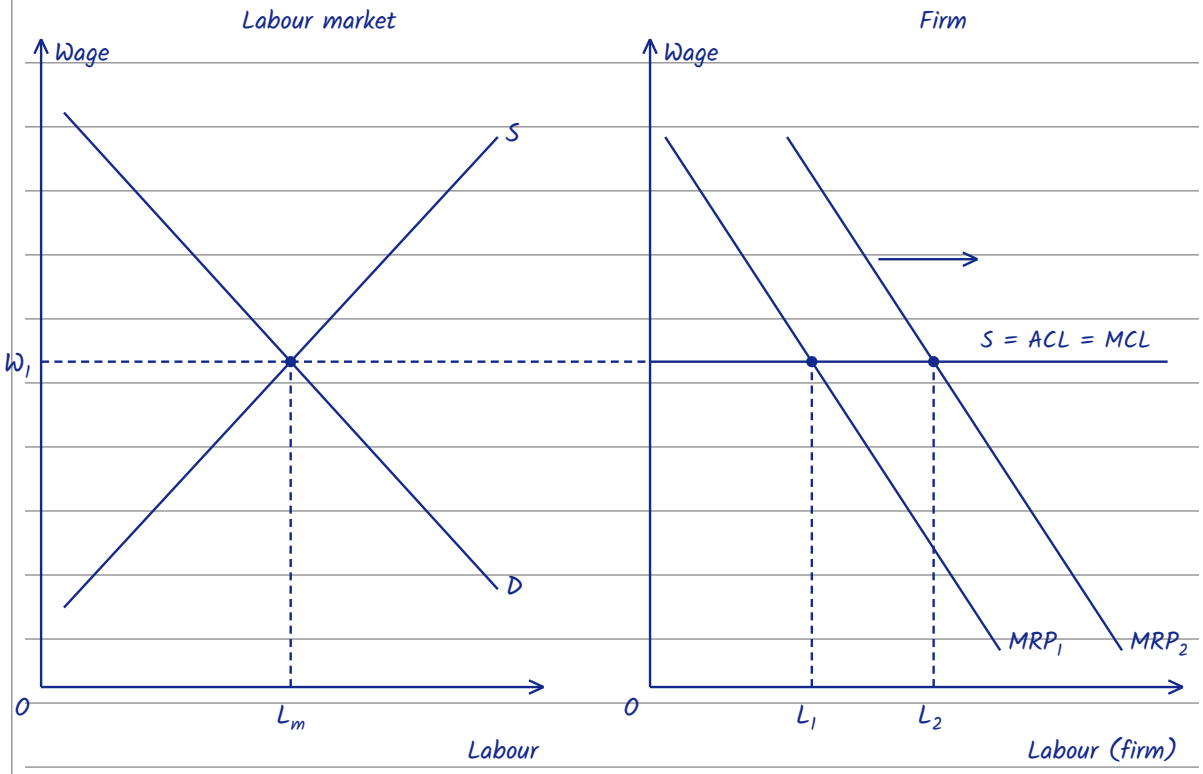
demand would rise when price rises.

However, the view only holds if the substitution effects are the same size. Price elasticity depends mainly on the size of the substitution effect, which depends on the number and closeness of substitutes, shown by how curved the indifference curves are. An inferior good with close substitutes, such as a supermarket own-brand product, has a large substitution effect and very elastic demand, while a normal good with no close substitutes, such as petrol, has inelastic demand. The income effect is also usually small for inferior goods because they take up a small share of income, so the difference it makes to elasticity may be minor.

In conclusion, indifference theory shows that, other things being equal, the negative income effect makes the demand for an inferior good more price inelastic than that for a normal good, so the view is correct in theory. In practice, the availability of substitutes and the share of income spent on the good matter more, so an inferior good is not always more inelastic.

4(a) A perfectly competitive labour market has many small firms hiring many workers, homogeneous labour, perfect knowledge, perfect mobility of labour and freedom of entry and exit. The wage is set by the market supply and demand for labour, at W1 in the left-hand diagram, and each firm is a wage taker. So the supply of labour to the firm is perfectly elastic at W1: the firm can hire as many workers as it wants at W1, and the average and marginal cost of labour are equal to the wage ($S = ACL = MCL$).

Question number



A profit maximising firm employs workers up to the point where the marginal revenue product of labour equals the marginal cost of labour, MRP = MCL = W1. MRP is the extra revenue from employing one more worker (marginal physical product × marginal revenue), and it is the firm's demand curve for labour. If workers' productivity rises, for example after training or new machinery, or the price of the firm's product rises, MRP shifts from MRP1 to MRP2. The firm then increases employment from L1 to L2, still at the wage W1. So the firm will decide to increase the number of workers it employs.

The firm will not choose to raise its wage rate. It can already hire all the workers it needs at W1, so paying more would raise its costs with no gain in labour. At a higher wage MCL would be above MRP for the last workers employed, so profits would fall, and to maximise profit it would have to employ fewer workers. It cannot pay less than W1 either, because with perfect knowledge and mobility all its workers would leave for other firms. This supports the statement.

However, the firm's wage can still rise. If the market demand for labour increases, because all firms' MRP rises, or the market supply falls, for example through

Question number

emigration, the market wage rises above W1. Each firm must then pay the higher wage or lose its workers, so both wages and employment could change at the same time. In this case the firm does not choose the wage rise; it is forced on it by the market. In reality, firms may choose to pay efficiency wages above the market rate to motivate workers and reduce labour turnover, but this happens only when the assumptions of perfect competition do not hold.

In conclusion, I largely agree with the statement: a wage-taking, profit-maximising firm will increase employment when MRP rises but will not choose to raise wages. The wage it pays can only rise when market conditions of supply and demand for labour change, which is outside the control of the individual firm.

4(b)

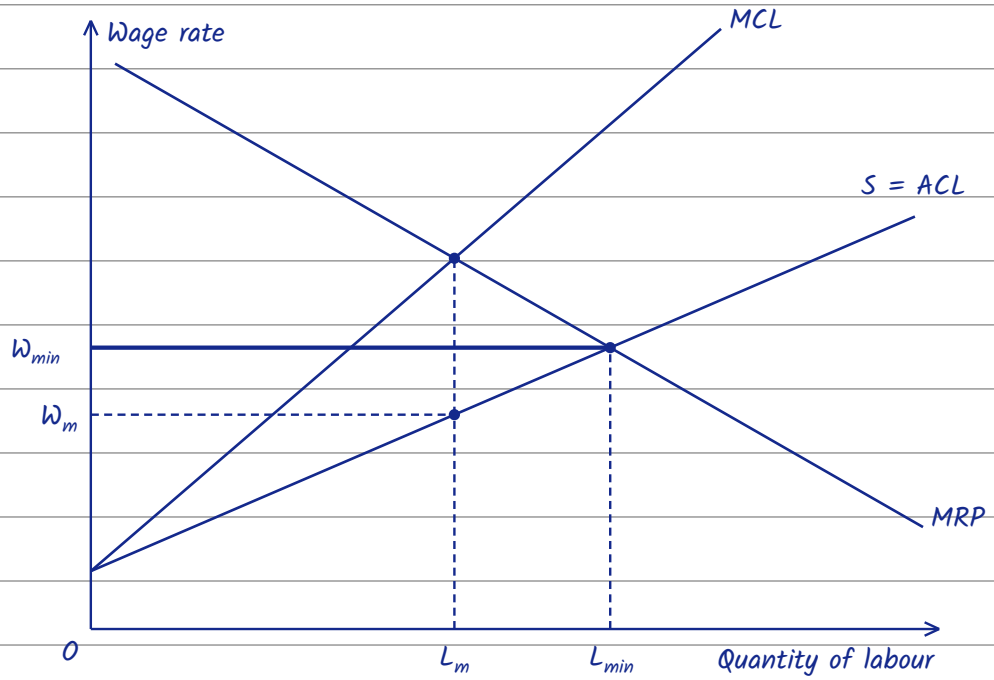
An effective national minimum wage is a legal minimum wage set above the market equilibrium wage, so it raises the pay of the lowest-paid workers.

Arguments for: it raises the incomes and living standards of the low paid and reduces in-work poverty, making the distribution of income more equal. It increases the incentive to work rather than claim benefits, helping to reduce the poverty and unemployment traps, and it may cut government spending on in-work benefits.

Higher pay can act as an efficiency wage, raising morale and productivity and lowering labour turnover, which benefits employers. Higher incomes of the low paid, who have a high marginal propensity to consume, raise consumption and aggregate demand, so through the multiplier output and employment may rise.

Where an employer is a monopsony, a minimum wage can raise both wages and employment. In the first diagram, the monopsonist employs Lm where MCL = MRP and pays only Wm from the supply curve. A minimum wage at Wmin makes the supply of labour perfectly elastic up to Lmin, so MCL equals Wmin and the firm hires more workers, Lmin, at a higher wage. This removes the exploitation of workers by the monopsonist.

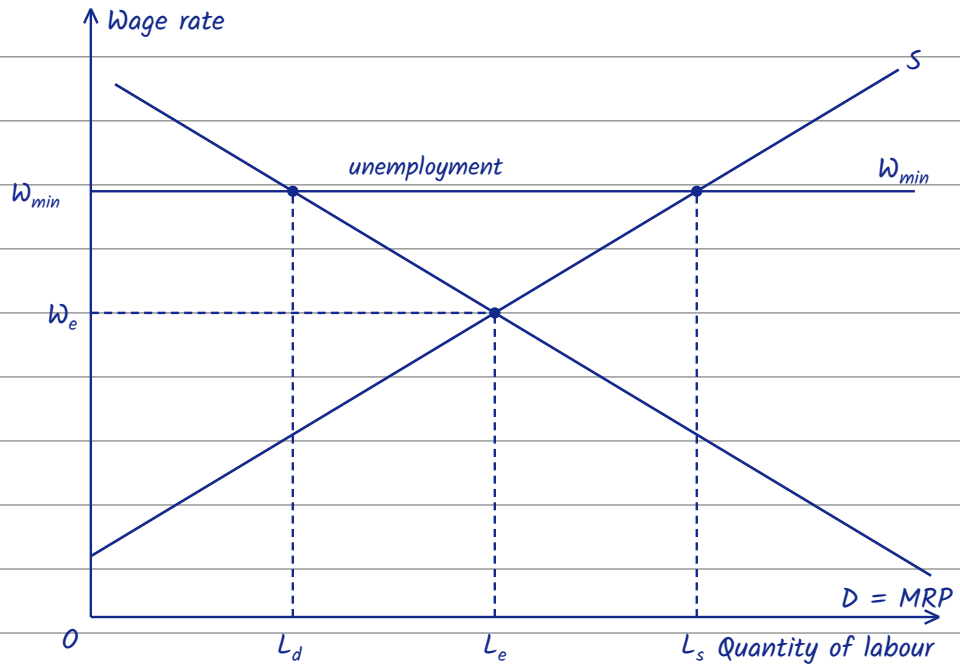
Question number



Arguments against: in a competitive labour market, shown in the second diagram, the minimum wage Wmin above the equilibrium We reduces the quantity of labour demanded to Ld and increases the quantity supplied to Ls, causing unemployment of Ls – Ld. Job losses fall on the least skilled and young workers, the groups the policy aims to help. The size of the loss depends on the elasticity of demand for labour: it is greatest where labour can easily be replaced by machines or where labour costs are a large share of total costs.

Higher wage costs may also be passed on in higher prices, causing cost-push inflation and raising the cost of living, which reduces the real gain to workers. Firms become less internationally competitive, so exports may fall. Some employers may move work into the informal economy, and the government's own wage bill rises, which may have to be financed by higher taxes. The policy is also poorly targeted at poverty, since many minimum wage earners are second earners in higher-income households, while the poorest are often unemployed.

Question number



In conclusion, the decision is justified if the minimum wage is set at a moderate level relative to average wages, as in the UK, where research suggests few jobs were lost, and especially where employers have monopsony power. If it is set too high, or in a competitive market with elastic demand for labour, the costs in unemployment and inflation could outweigh the benefits.

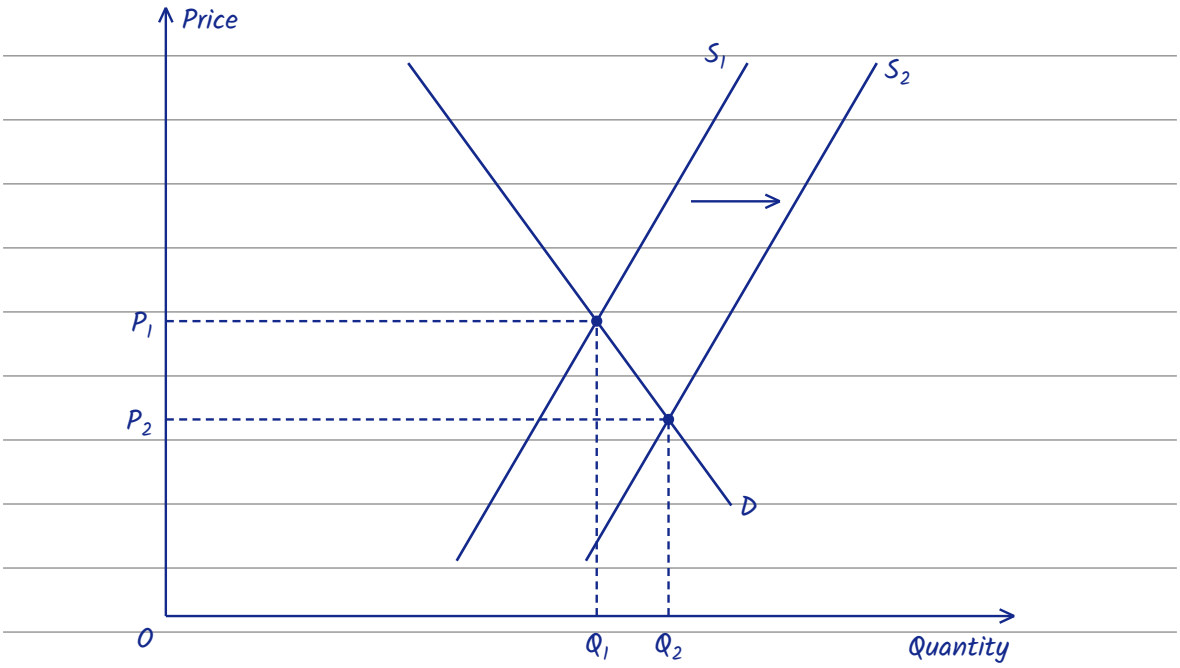
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Primary products are raw materials and food from the primary sector, such as coffee, cocoa, copper and oil. Many developing countries depend on them for most of their export earnings. Economic growth is an increase in real GDP over time, and the standard of living is the material and non-material well-being of the population.

Reliance on primary products can cause low growth in several ways. First, prices are very volatile. Demand and supply are both price inelastic in the short run, since food is a necessity and crops take time to grow, so a supply shock such as a drought or a good harvest causes a large change in price. In the diagram, a good harvest shifts supply from S1 to S2, and price falls sharply from P1 to P2 while quantity rises only from Q1 to Q2, so export revenue falls. This uncertainty in

Question number

incomes makes it hard for farmers and governments to plan investment.



Second, primary products have a low income elasticity of demand. As world incomes rise, demand for manufactures and services grows faster than demand for food and raw materials, so primary product prices tend to fall relative to the prices of manufactured imports. This long-run decline in the terms of trade (the Prebisch-Singer hypothesis) means a developing country must export more to buy the same imports, limiting its ability to buy capital goods. Third, primary production has low value added and low productivity, with little scope for economies of scale or technology, so incomes stay low. Low incomes mean low savings, so there are few funds for investment, and low investment keeps productivity and incomes low: a vicious circle of poverty. Finally, dependence on mineral exports can cause the resource curse, with corruption and an exchange rate appreciation that damages other industries, and profits from foreign-owned mines may be sent abroad.

However, reliance on primary products is not the only cause of low growth, and may not be the main one. Other causes include low levels of education and training, poor health, weak infrastructure such as roads and power, corruption and

Question number

weak institutions, political instability and conflict, a heavy burden of foreign debt, and capital flight. Primary products can also drive growth: Botswana used diamond revenues to achieve rapid growth, Chile has grown with copper, and the Gulf states with oil, while commodity price booms, such as in the 2000s, raised growth in many African countries. What matters is how the revenue is used, for example invested in education and diversification into manufacturing and services. So the first part of the statement is only partly true.

The second part, that low growth is the main explanation for low living standards, also needs evaluation. Growth raises real income, so it is important for material living standards, but GDP is an imperfect measure. If population grows faster than real GDP, GDP per head falls. Income may be distributed very unequally, so most people gain little from growth. Growth can also lower living standards through negative externalities, such as pollution and deforestation from mining. The standard of living includes health, education, life expectancy and freedom, measured by the Human Development Index (HDI). Some countries, such as Sri Lanka and Cuba, have achieved relatively high HDI with modest incomes by investing in health and education, while some resource-rich countries have high GDP per head but poor social indicators.

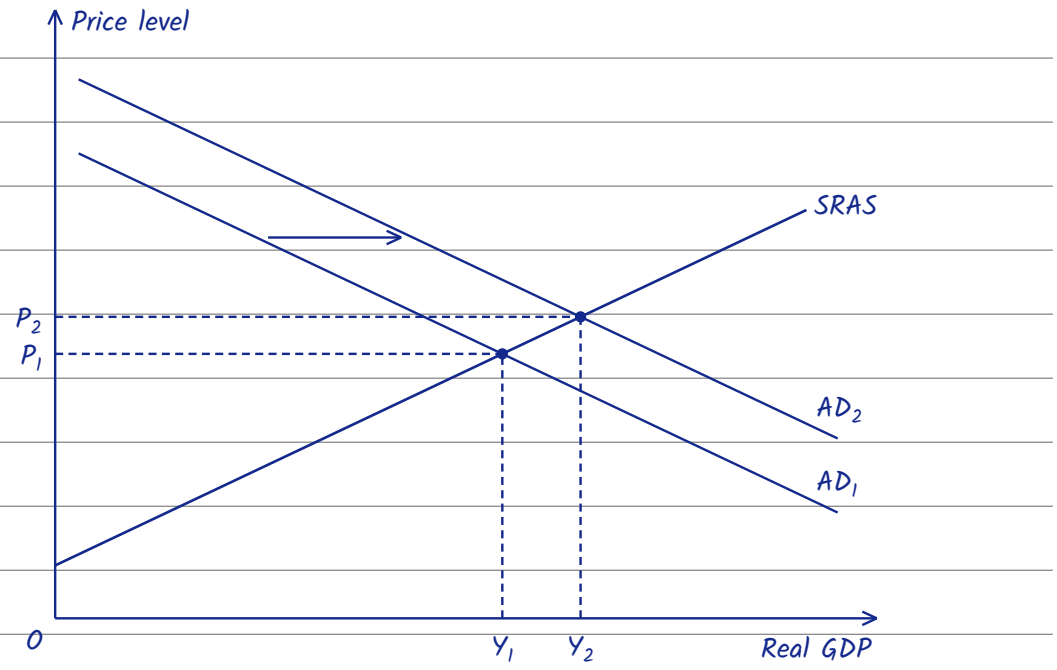
In conclusion, I partly agree. Heavy reliance on primary products is an important cause of low and unstable growth, through price volatility, declining terms of trade and low productivity, but it is not the only cause, and its effect depends on how governments manage the revenues. Low growth is a major reason for low material living standards, but it is not the whole explanation, since distribution of income, population growth and public spending on health and education also determine the standard of living.

6 A budget deficit occurs when government spending is greater than tax revenue. Increasing the deficit, by raising government spending or cutting taxes, is

Question number

expansionary fiscal policy, associated with Keynesian demand management. The natural rate of unemployment is the rate that exists when the labour market is in equilibrium, made up of frictional and structural unemployment, and it is the rate at which inflation is stable (the NAIRU).

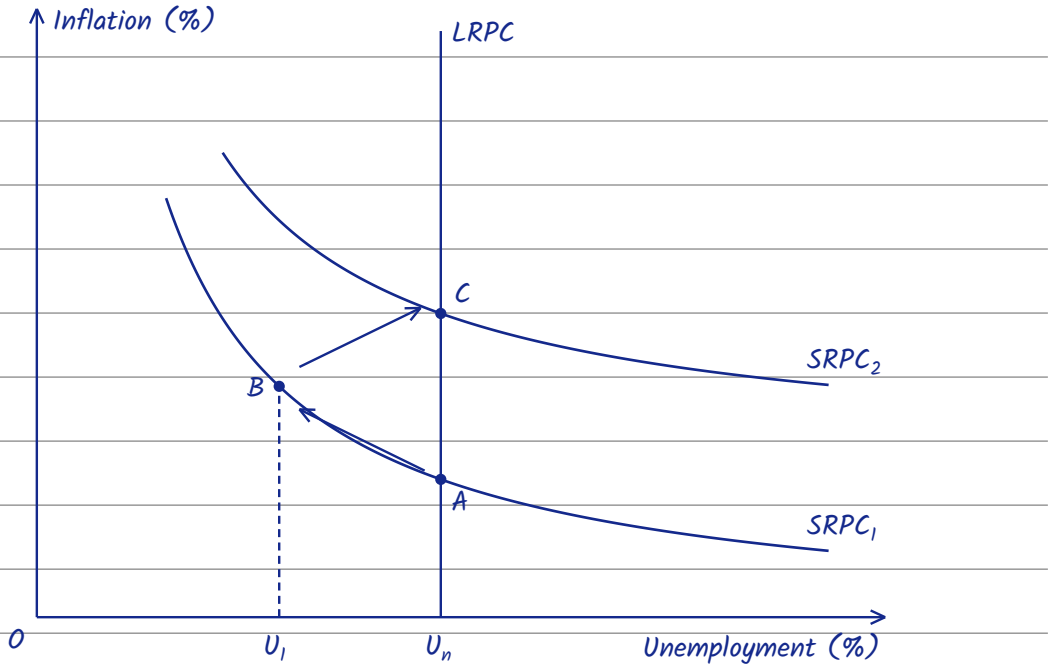
A larger deficit is aimed at cyclical (demand-deficient) unemployment, caused by too little aggregate demand. Higher government spending or lower taxes increase aggregate demand from AD1 to AD2. Through the multiplier, $k = 1 \div (1 - MPC)$, national income rises by more than the initial injection. Since labour is a derived demand, firms hire more workers to produce the extra output, real GDP rises from Y1 to Y2 and cyclical unemployment falls. In a recession with spare capacity, as in 2009 or 2020, this is effective and the price level rises only a little.



However, the statement is correct that a deficit cannot permanently reduce unemployment below the natural rate. Frictional unemployment comes from workers searching between jobs, and structural unemployment from a mismatch of skills or location after changes in the structure of the economy. Extra demand does not give coal miners the skills for software jobs. Monetarists use the expectations-augmented Phillips curve: starting at A at the natural rate Un, a

Question number

demand stimulus moves the economy along SRPC1 to B, reducing unemployment to U1 at a cost of higher inflation. As workers come to expect the higher inflation they demand higher wages, so real wages and employment return to their original level. SRPC shifts up to SRPC2 and the economy moves to C: unemployment is back at Un but inflation is permanently higher. The long-run Phillips curve (LRPC) is vertical at the natural rate.



To reduce the natural rate, supply-side policies are needed: education and training, improving information about vacancies, help with geographical mobility, reforms to trade unions and benefits to increase the incentive to work, and lower taxes on profits to encourage firms to invest and create jobs.

Evaluation: first, much unemployment is cyclical, especially in a recession, so the deficit can be successful for that part. Second, demand can affect the natural rate through hysteresis: people who are unemployed for a long time lose skills and motivation, so a long recession raises the natural rate, and a deficit that prevents this keeps it lower. Third, a deficit can itself be used for supply-side policies: borrowing to fund training, education and infrastructure, or cutting income taxes to raise work incentives, does reduce the natural rate in the long run.

Question number

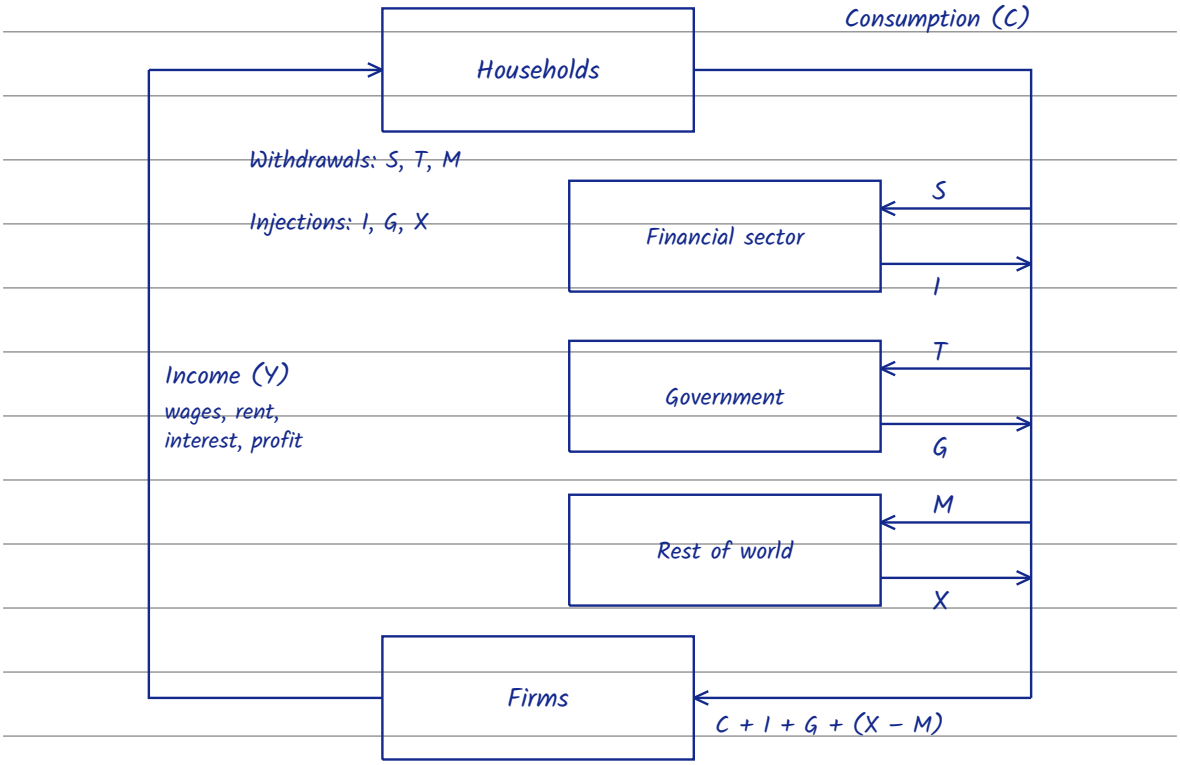
On the other hand, deficits may fail for reasons other than the natural rate. Government borrowing may raise interest rates and crowd out private investment, so AD rises little. If households expect higher future taxes to repay the debt, they may save rather than spend (Ricardian equivalence). In an open economy much of the extra spending leaks into imports, reducing the multiplier, and time lags mean the stimulus may arrive after recovery has begun. A growing national debt also raises debt interest and may reduce confidence, and if the deficit is financed by creating money it may cause inflation that later forces policy to be tightened.

In conclusion, the statement is only partly correct. Increasing budget deficits can be successful against cyclical unemployment, particularly in a deep recession, but they cannot permanently reduce unemployment below the natural rate. The most effective approach combines demand management to close a negative output gap with supply-side policies, some of which may be funded by borrowing, to reduce the natural rate itself.

7(a)

The circular flow of income shows how income, output and expenditure flow between households and firms. Firms pay households incomes (wages, rent, interest and profit) for the factors of production, and households spend their income on the goods and services firms produce. Not all income is spent on domestic output: savings (S), taxes (T) and imports (M) are withdrawals from the flow. Injections into the flow are investment (I), government spending (G) and exports (X). National income is in equilibrium when total withdrawals equal total injections, $S + T + M = I + G + X$. This equilibrium may be below the full employment level of income.

Question number



A fall in the rate of interest affects both withdrawals and injections. Saving falls, since the reward for saving is lower, and borrowing to buy consumer durables such as cars becomes cheaper, so consumption rises and the marginal propensity to save falls. Investment rises, since the cost of borrowing to buy capital goods falls and more projects become profitable. Lower interest rates may also cause an outflow of hot money, so the exchange rate depreciates, making exports cheaper and imports dearer, which increases X and reduces M.

With injections now greater than withdrawals, the flow of spending increases. Firms respond by increasing output, and because labour is a derived demand they employ more workers. The extra incomes are partly spent again, so through the multiplier, $k = 1 \div (MPS + MPT + MPM)$, national income, output and employment rise by more than the initial change in spending, until withdrawals rise to equal injections at a new, higher equilibrium. A fall in the MPS also increases the size of the multiplier.

Question number

Evaluation: the size of the impact is uncertain. Investment may be interest inelastic if business confidence is low; in the 2009 recession interest rates near zero did little to raise investment. Households in debt may use lower rates to repay debt rather than spend, and banks may not pass the cut on. Some of the extra consumption goes on imports, a withdrawal, which reduces the multiplier. The effect also depends on the state of the economy: with a lot of spare capacity, output and employment rise significantly, but near full employment, extra spending mainly raises prices, causing inflation rather than higher output. There are also time lags of up to two years.

In conclusion, a fall in the rate of interest is likely to raise output and employment by reducing withdrawals and increasing injections, but the extent depends on the interest elasticity of saving and investment, confidence, the size of the multiplier and how much spare capacity exists.

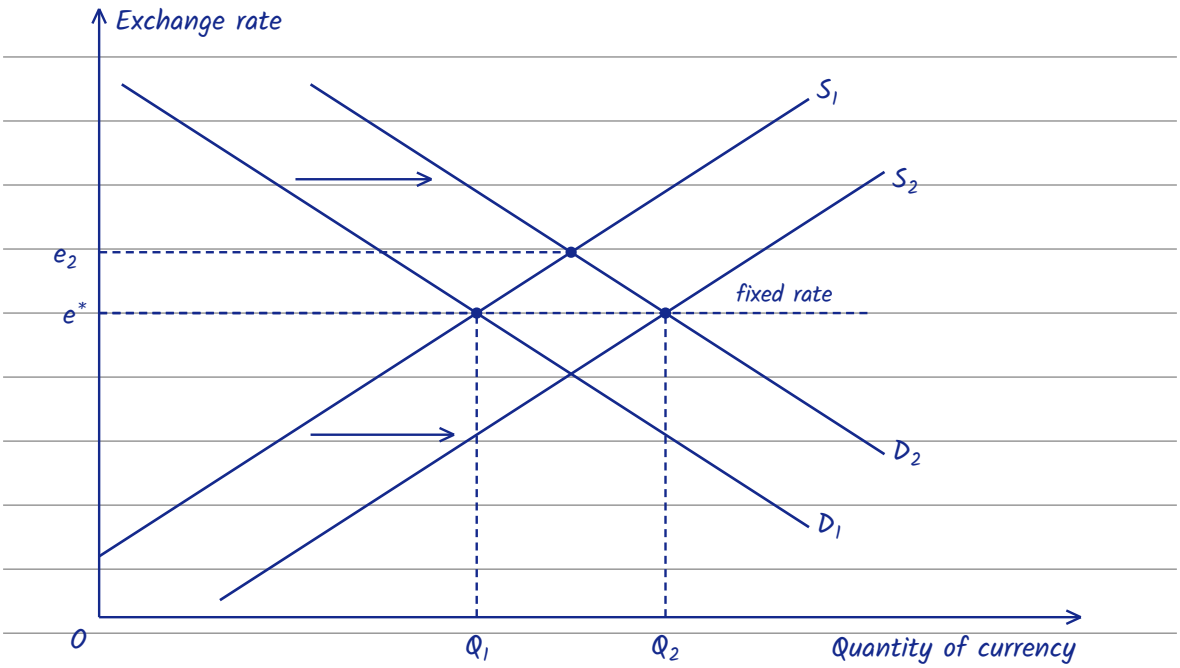
7(b) A fixed exchange rate is one where the government sets the value of its currency against another currency, such as the US dollar, and the central bank maintains it. If there is downward pressure on the currency, for example from a current account deficit, the central bank uses its foreign currency reserves to buy its own currency, or raises interest rates. If there is upward pressure, it sells its own currency in exchange for foreign currency, adding to its reserves. A formal decision to change the fixed rate is a devaluation or a revaluation.

Policies to reduce inflation include contractionary monetary policy, raising interest rates or reducing the growth of the money supply, and contractionary fiscal policy, cutting government spending or raising taxes, both of which reduce aggregate demand. There are also supply-side policies that reduce costs.

There is likely to be a conflict with monetary policy. If interest rates are raised to reduce inflation, the higher return attracts short-term capital inflows (hot money). Demand for the currency rises from D1 to D2, which would push the exchange rate

Question number

up from the fixed rate e* to e2. To keep the rate fixed, the central bank must sell its own currency, shifting supply from S1 to S2. But this increases the domestic money supply, which tends to reduce interest rates again and increases spending, so it works against the anti-inflation policy. With free movement of capital, a country cannot have both a fixed exchange rate and an independent monetary policy.



Contractionary fiscal policy causes a similar problem more slowly. Lower inflation makes exports more price competitive and reduces imports, so the current account improves and demand for the currency rises again, so the central bank must again sell currency and the money supply rises.

However, the conflict is not always present. If the currency is under downward pressure, for example because of a current account deficit, raising interest rates helps both to defend the fixed rate and to reduce inflation. A fixed rate can also support low inflation: pegging to the currency of a low-inflation country, as Hong Kong does with the US dollar, prevents depreciation from raising import prices and disciplines firms and unions, who know that rising costs cannot be offset by a falling currency. The conflict can be reduced by sterilisation, in which the central

Question number

bank sells bonds to remove the extra money from the economy, although this is costly and keeps interest rates high, or by capital controls, as in China. The government could also rely on supply-side policies, which reduce inflation without large effects on capital flows, although in time they also make exports more competitive.

In conclusion, there is likely to be a conflict when higher interest rates are used to reduce inflation while capital is free to move and the currency is under upward pressure, because defending the fixed rate expands the money supply. The conflict is smaller when the currency is under downward pressure, capital controls exist, or inflation is tackled mainly through fiscal and supply-side policies.