Cambridge Assessment International Education

Cambridge International AS & A Level

ECONOMICS **9708/41**

Paper 4 Data Response and Essays **October/November 2022**

2 hours 15 minutes

1703059915

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.

© UCLES 2022

stemup.co.uk

Section A

Answer this question.

1 **Romania's economy booms**

Romania, like other former planned economies in eastern Europe has increased the amount of private enterprise and foreign direct investment (FDI) in its economy. Romania's economy has boomed in recent years and compares favourably with economies in the European Union (EU) as indicated in Fig. 1.1.

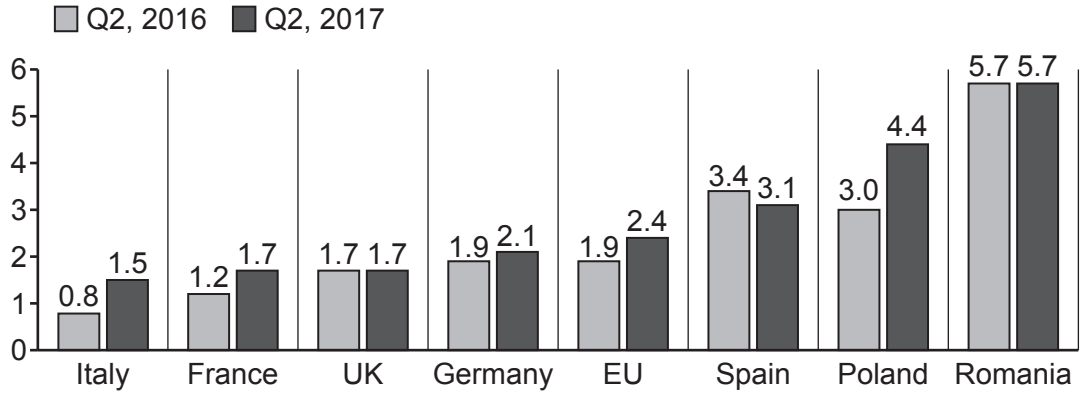


Fig. 1.1: GDP growth rates in selected European economies 2016, 2017

This economic boom has been characterised by the expansion of services and manufacturing sectors. In particular the high-tech industries have been very successful and are expected to double their contribution to GDP to 12% by 2025. The low wage rate in Romania was a benefit for foreign companies. For example, global car companies have, since 2008, invested US$1.4 billion in Romania's car factories that has increased employment.

After Romania joined the EU in 2007, many Romanian workers took advantage of the free movement of labour the EU allows. In 2008, 600 000 out of a population of 21.2m left Romania. In spite of its economic boom, Romania has failed to attract sufficient workers back and there is now a shortage of labour. The total population is lower than in 2008 at 19.4m. Unemployment was only 5.9% in 2017 compared with an average rate of 8.6% for the EU as a whole.

Since 2015, the government has taken measures to boost the economy. It reduced sales tax from 24% to 19%, which increased consumer demand. It also doubled the national minimum wage providing a boost for both private sector and public sector employment.

But there are also serious economic challenges. The gap between government income and spending has widened causing a rising budget deficit. The transport infrastructure remains poor. In a World Economic Forum report in 2016, Romania was ranked 128th out of 138 countries for the quality of its road network and 79th for its railway system.

Sources: 1. Romania is poor man of the EU no more as economy booms,
The Observer, 15 October 2017
2. Table 2.6 Private Sector Activity: 'Transition Economics Two Decades On',
Gerard Turley and Peter J. Luke, Routledge 2011

© UCLES 2022

stemup.co.uk

(a) Use the information to indicate how Romania's economy performed in 2017 compared with the European Union as a whole. [3]

(b) Use the information to explain the reasons for Romania's rapid economic growth. [4]

(c) Describe the changes in Romania's workforce mentioned and consider whether they have been a benefit to Romania. [6]

(d) The information states that Romania had a budget deficit. Explain what is meant by a budget deficit and discuss whether the measures taken by the government in 2015 were likely to reduce this deficit. [7]

© UCLES 2022

stemup.co.uk

Section B

Answer **two** questions.

2 Explain what is meant by cost benefit analysis and consider how it might be used by a government to decide whether a new hospital should be built. [25]

3 **(a)** Monopoly firms will always aim to maximise profits and limit pricing is the only way to ensure that these profits are maintained in the long run.

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

(b) Explain what economists mean by collusion and consider the view that collusion will occur only in a certain type of market structure. [13]

4 **(a)** Explain what is meant by the marginal revenue product theory and consider the relationship between this theory and a trades union's ability to gain higher wages for its members. [12]

(b) Distinguish between economic rent and transfer earnings and, with the help of diagrams, discuss why famous sports people receive much higher pay than street cleaners. [13]

5 **(a)** Explain, with the help of a diagram, the Keynesian theory of the liquidity trap and consider the importance of the liquidity trap to government policy makers when an economy is in a recession. [12]

(b) The most important aim of a central bank is to control the money supply while the most important aim of a commercial (retail) bank is to maximise profits.

Discuss the extent to which these two aims can be achieved together. [13]

6 Explain what economists mean by an increase in real GDP per capita and discuss the extent to which an increase in real GDP per capita will have a positive impact on economic development. [25]

7 A government's decision to increase its budget deficit as a proportion of the economy's GDP will depend significantly upon whether the economy's output gap is positive or negative.

With the help of a diagram explain and evaluate this statement. [25]

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.

© UCLES 2022

stemup.co.uk

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 9708/41

1(a) Romania performed better than the EU as a whole on growth and unemployment. In Q2 2017 Romania's GDP grew by 5.7%, more than twice the EU rate of 2.4%, and it was the fastest of all the economies shown in Fig. 1.1. Unemployment was only 5.9% in 2017 compared with an average of 8.6% for the EU.
However, its performance was weaker in other ways: it has a rising budget deficit and poor infrastructure, ranked 128th out of 138 countries for roads and 79th for railways.

1(b) Firstly, foreign direct investment: low wage rates attracted foreign firms, for example global car companies invested US$1.4 billion in Romania's car factories since 2008. This investment is an injection which raises AD and, through the multiplier, raises national income by more than the original spending, as well as increasing productive capacity and employment.
Secondly, the expansion of services and manufacturing, especially the very successful high-tech industries, which are expected to double their contribution to GDP to 12% by 2025.
Thirdly, government policy: the cut in sales tax from 24% to 19% raised consumer demand, and doubling the national minimum wage raised incomes and consumption, so AD increased further.

1(c) Changes: after joining the EU in 2007, many workers used the free movement of labour to work in higher-wage EU countries; in 2008, 600 000 out of a population of 21.2m left. Few have returned, so the population has fallen to 19.4m and there

Question number

is now a shortage of labour, although unemployment is only 5.9%.

Benefits: emigration reduced unemployment, so the government pays less in welfare benefits. Migrants may send remittances home, which raise incomes and spending in Romania. The labour shortage puts upward pressure on wages, and the government doubled the minimum wage so workers share in the growth. Firms may respond by raising productivity, for example through investment in high-tech and manufacturing.

Costs: the loss of workers, often young and skilled, reduces the labour force and the productive capacity of the economy, which may limit growth now that the economy is booming. Fewer workers means less tax revenue, and labour shortages may push up costs and reduce the low-wage advantage that attracted FDI. Wages are still relatively low, so migrants have little incentive to return.

On balance the changes were a benefit when unemployment was high, but are now more of a cost because the shortage of labour constrains Romania's growth.

1(d) A budget deficit occurs when government spending is greater than government revenue (mainly taxation) in a given year, so the government has to borrow to cover the difference, which adds to the national debt.

Sales tax cut from 24% to 19%: in the short run this reduces revenue per unit sold, so on its own it would widen the deficit. However, lower prices increase consumer demand; if demand is price elastic, spending rises proportionately more than prices fall, so total sales tax revenue may not fall much. Higher spending also raises incomes, employment and income tax through the multiplier, and reduces welfare spending, so in the longer run the deficit could fall. If demand is inelastic, revenue falls and the deficit widens.

Doubling the minimum wage: the government does not pay the extra wages in the private sector, and higher incomes raise income tax and sales tax revenue as consumer spending rises. However, the government must pay the higher minimum

Question number

wage to its own public sector workers, which directly increases government spending. Higher wage costs could also reduce employment in some firms and raise benefit payments.

Conclusion: in the short run both measures are likely to increase the deficit, which is consistent with the information that the deficit has widened. In the long run the effect is uncertain and depends on the price elasticity of demand, the size of the multiplier and how much growth raises tax revenue.

2 Cost benefit analysis (CBA) is a method of appraising a project by identifying and putting a monetary value on all its costs and benefits, both private and external, over its whole life, so that a decision can be made in the interests of society as a whole. Social cost = private cost + external cost, and social benefit = private benefit + external benefit. The project should go ahead if the social benefits exceed the social costs, that is if net social benefit is positive, and where projects compete for limited funds the government should choose those with the highest net social benefit or benefit to cost ratio.

CBA follows several stages. First all the costs and benefits are identified. Then they are given a monetary value: market prices are used for private costs, and shadow prices are estimated for items with no market price, for example from surveys of willingness to pay or from what people pay for similar goods. Because costs and benefits occur over many years, future values are discounted to their present value, since £1 received in the future is worth less than £1 today. The probability of the outcomes is considered, and finally the results are compared and a decision is made.

A government needs CBA for a hospital because healthcare is a merit good: left to the market it would be under-consumed, because consumers underestimate its benefits and many could not afford it. The price mechanism does not include external costs and benefits, so a decision based on private costs and revenue alone

Question number

would lead to a misallocation of resources. A hospital is also a large capital project with a high opportunity cost, since the same money could be spent on schools or roads, so the decision must be made rationally.

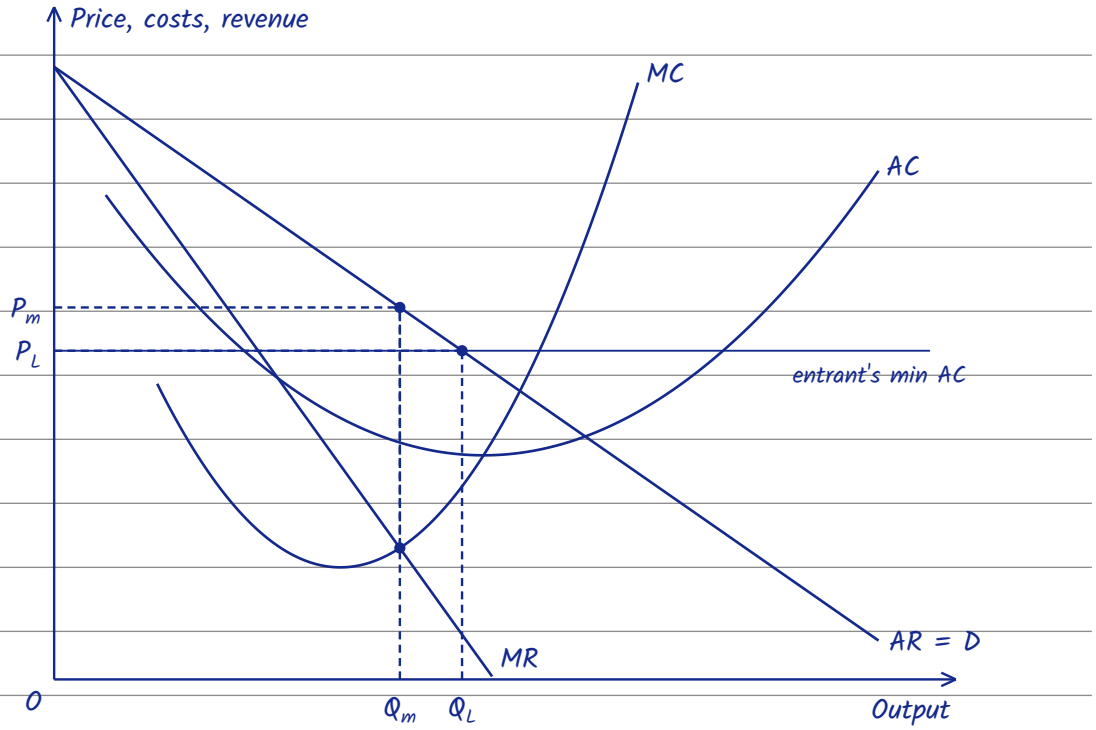
Applying CBA to a new hospital: the private costs include the cost of land, construction and equipment and the running costs over its life, such as wages of doctors and nurses, medicines and maintenance. The external costs may include noise, dust and congestion during construction, more traffic and pollution around the hospital once it opens, and the loss of green space or wildlife habitat. The private benefits are the improved health of the patients treated. The external benefits are large: a healthier population is more productive, works more days and pays more tax, infectious diseases are less likely to spread, families gain from not having to travel far for treatment, waiting lists at other hospitals may fall, and construction and employment create a local multiplier effect on incomes. The government would add up the discounted values and build the hospital if the net present value of social benefit is positive and higher than for alternative uses of the funds, for example extending an existing hospital.

However, CBA has significant difficulties. Firstly, it is very hard to put a monetary value on intangible items such as a life saved, reduced pain or the loss of a park. Different shadow prices give very different results, and the values chosen may reflect the judgements of those carrying out the study. Secondly, it is difficult to identify all the externalities and to decide how far into the future and how widely to look. Thirdly, the choice of discount rate matters: a high rate makes long-lived projects like hospitals look less worthwhile because benefits arrive over 40 or 50 years. Fourthly, forecasts of future demand, costs and inflation may be wrong, and large projects often overrun their budgets. Finally, CBA ignores the distribution of costs and benefits: local residents may bear the congestion while patients from a wide area gain, so a project with a positive net benefit may still be unfair, and the decision may in practice be influenced by political pressure.

Question number

In conclusion, CBA is a valuable tool because it makes the government consider all the social costs and benefits, including externalities, rather than only financial ones, which is essential for a merit good like a hospital. However, it is not an exact science: the result depends on the valuations and assumptions used. It should be used as a guide alongside other considerations such as equity and the health needs of the area, rather than as the only basis for the decision.

3(a) A monopoly is a single seller of a good with no close substitutes, protected by high barriers to entry; in practice a firm with at least 25% market share may be treated as a monopoly. Profit maximisation is traditionally assumed to be the main aim, achieved by producing where MC = MR. In the diagram the monopolist produces Q_m and charges P_m, earning supernormal profit, and because of barriers to entry this profit can be kept in the long run.



Limit pricing is setting a price below the profit maximising price, at a level just below the minimum average cost of a potential entrant (P_L in the diagram), so that a new firm could not make a profit if it entered. The monopolist can do this

Question number

because economies of scale and dynamic efficiency give it lower average costs than a new smaller firm. In the short run, at P_L and Q_L, MC is not equal to MR so profit is not maximised, but entry is deterred and market share is protected, so in the long run supernormal profits can be maintained. In this sense the statement is partly correct.

However, limit pricing is not the only way to protect profits. A monopoly can rely on other barriers such as patents, control of raw materials, heavy advertising and brand loyalty, sunk costs, predatory pricing against firms that do enter, or legal protection. Limit pricing also only works if the firm knows the costs of potential entrants and if the threat of entry is real; in a contestable market even limit pricing may not stop hit and run entry.

Also, monopolies will not always aim to maximise profits. Because of the divorce of ownership and control, the principal agent problem means managers may pursue sales or revenue maximisation (where MR = 0), growth of market share, or satisficing, making just enough profit to keep shareholders content. A state owned monopoly may aim for allocative efficiency (P = MC) or to serve the public.

In conclusion, I only partly agree. Profit maximisation is a common aim, and limit pricing can protect long run profits, but it sacrifices short run profit, it is only one of several ways to protect profits, and many monopolies have other objectives.

3(b)

Collusion is when firms co-operate with each other rather than compete, in order to reduce uncertainty and increase joint profits. Formal collusion is an agreement to fix prices, output or market shares, such as a cartel like OPEC; it acts like a monopoly, restricting output to raise price, and is usually illegal. Tacit (informal) collusion happens without an agreement, for example price leadership, where a dominant firm sets the price and others follow.

Collusion is most likely when: there are few firms, so agreement is easy to reach and monitor; firms produce similar products with similar costs; there are high

Question number

barriers to entry so profits are not competed away; demand is stable; and government competition law is weak. Game theory explains the incentive: in the payoff matrix below (profits), if both firms charge a high price each earns $10m, but each has an incentive to cut its price to earn $14m, so without collusion both end up at a low price earning $6m.

	Firm B: high price	Firm B: low price
Firm A: high price	A $10m, B $10m	A $4m, B $14m
Firm A: low price	A $14m, B $4m	A $6m, B $6m

Perfect competition: there are very many small firms selling identical products, each is a price taker and there is free entry, so any agreement would be impossible to organise and enforce, and new firms would enter and undercut. Collusion will not occur. Monopolistic competition: there are many small firms with differentiated products and no barriers to entry, so again collusion is very unlikely and any supernormal profit is competed away in the long run. Monopoly: there is only one firm, so there is no one to collude with; collusion is irrelevant. Oligopoly: a few large interdependent firms dominate the market, products are often similar and there are high barriers to entry. Each firm must consider rivals' reactions, as shown by the kinked demand curve, and price wars are damaging, so there is a strong incentive to collude. Oligopoly therefore provides the ideal conditions, which supports the view.

However, even in oligopoly collusion is not certain. It is illegal in most countries and competition authorities impose large fines; cartels often break down because each member has an incentive to cheat by secretly cutting prices or raising output; and firms may instead compete through non-price competition such as advertising and product differentiation. Also, collusion can occur between firms in different markets, for example between buyers of labour or in bidding for government contracts.

Question number

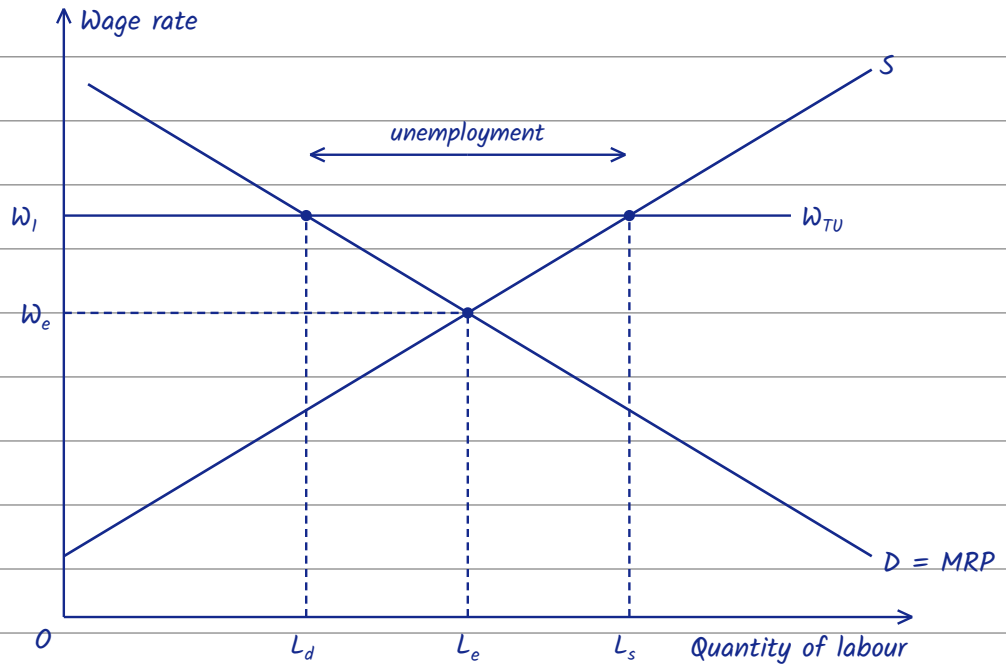
In conclusion, I largely agree: collusion is realistically only possible in oligopoly, but it does not automatically occur there, as it depends on the number of firms, the legal framework and the stability of the market.

4(a) Marginal revenue product theory explains the demand for labour. The marginal revenue product (MRP) of a worker is the extra revenue a firm gains from employing one more worker: MRP = MPP × MR, where MPP is the marginal physical product of the worker and MR is the marginal revenue from selling the extra output (equal to price in a perfectly competitive product market). Because of diminishing returns, MPP and so MRP eventually fall as more workers are employed. A profit maximising firm employs workers up to the point where MRP = marginal cost of labour (MCL), so the MRP curve is the firm's demand curve for labour. MRP rises if productivity (MPP) rises or if the price of the product rises, shifting the demand for labour right.

Trade unions can use the theory in two ways. First, they can raise the demand for labour by increasing MRP, for example by promoting training, accepting new technology or productivity deals; this shifts the MRP curve right, so higher wages can be paid without losing jobs. However, wages in a competitive market only rise if MRP rises for all firms in the market, not only in one firm.

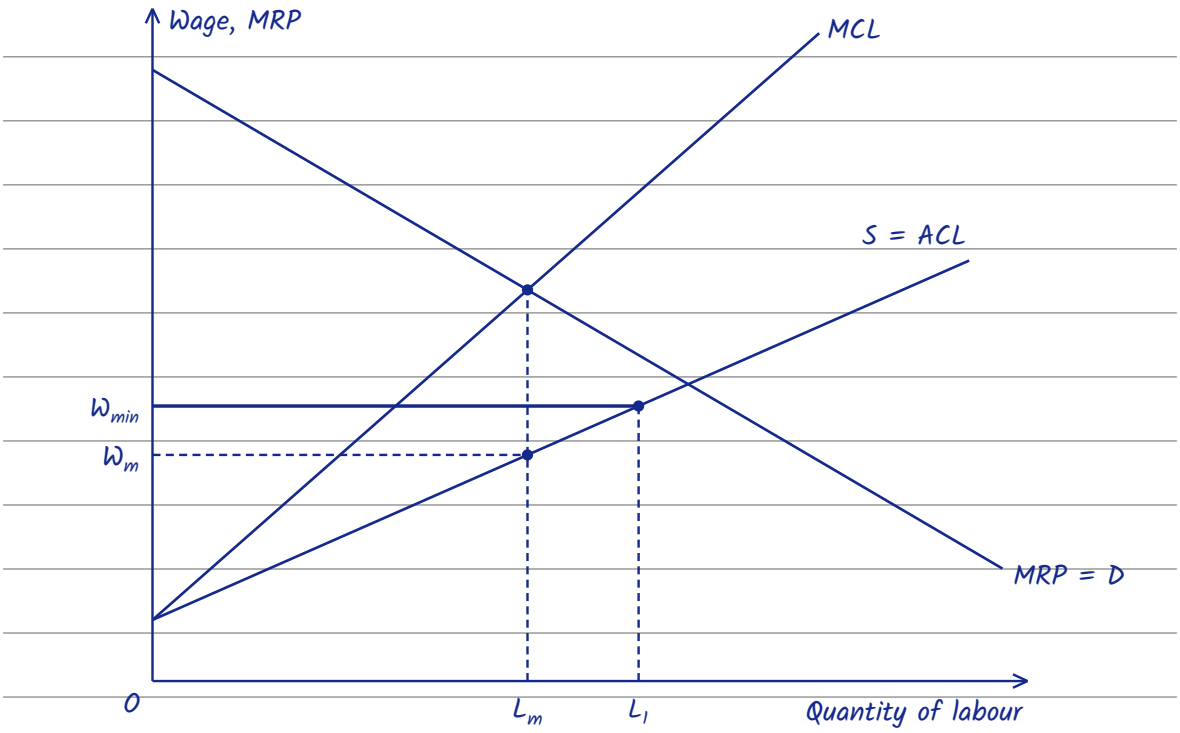
Secondly, unions can bargain collectively for a wage above the market rate. In a perfectly competitive labour market (first diagram), a union wage W_{TU} above the equilibrium W_e means firms demand only L_d workers while L_s want to work, so employment falls. Union members in work gain, but others lose their jobs. The more elastic the demand for labour (MRP), the more jobs are lost.

Question number



In a monopsony labour market (second diagram) the single employer equates MCL with MRP, employs L_m and pays only W_m, below MRP. A strong union bargaining with the monopsonist (bilateral monopoly) can set a wage such as W_{min}; the supply curve becomes horizontal at that wage, so MCL = W_{min}, and the firm employs more workers, L_1. Higher wages and more employment can be achieved together, up to the point where the wage equals MRP.

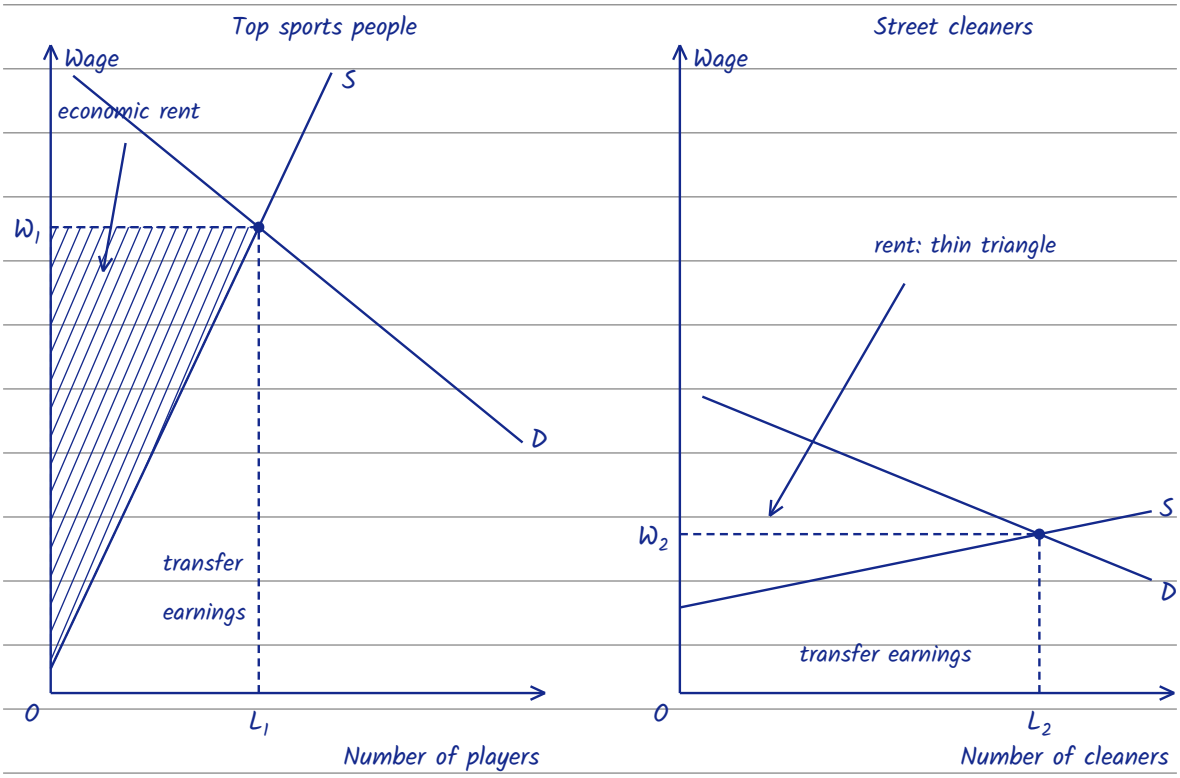
Question number



In conclusion, the link between MRP and union power depends on the labour market: in a competitive market higher wages cost jobs unless MRP rises, whereas against a monopsonist a union can raise wages and employment. The outcome also depends on the relative bargaining strength of the union and the employer.

4(b) Transfer earnings are the minimum payment needed to keep a factor of production, such as a worker, in its present use, so it equals what it could earn in its next best alternative. Economic rent is any payment above transfer earnings. In a labour market diagram transfer earnings are the area under the supply curve and economic rent is the area above the supply curve and below the wage, up to the number employed. The split depends on the elasticity of supply: the more inelastic the supply of labour, the larger the share of pay that is economic rent; if supply were perfectly elastic, all pay would be transfer earnings.

Question number



Famous sports people: their talent is rare and cannot be acquired by training, so supply is very small and very inelastic. Demand for them is high, because their MRP is very high: they attract millions of spectators, TV audiences and sponsorship, so clubs earn large revenues from them. High demand with an inelastic supply gives a very high wage W_1. Since their next best job would pay far less, most of their pay is economic rent, shown by the large shaded area.

Street cleaners: the job needs few skills and little training, so many people can do it and supply is large and elastic. Their MRP is low and demand is relatively low, so the wage W_2 is low. Even if demand rose, the elastic supply means the wage would hardly rise. Most of their pay is transfer earnings, with only a thin triangle of economic rent.

However, other factors also matter. A sports star's pay depends on continued demand: if form declines, injury occurs or interest in the sport falls, demand and pay fall sharply, and careers are short, so high pay compensates for this. Street cleaners may gain higher pay if they join a trade union or if the government raises the minimum wage or public sector pay. Non-monetary factors, such as job

Question number

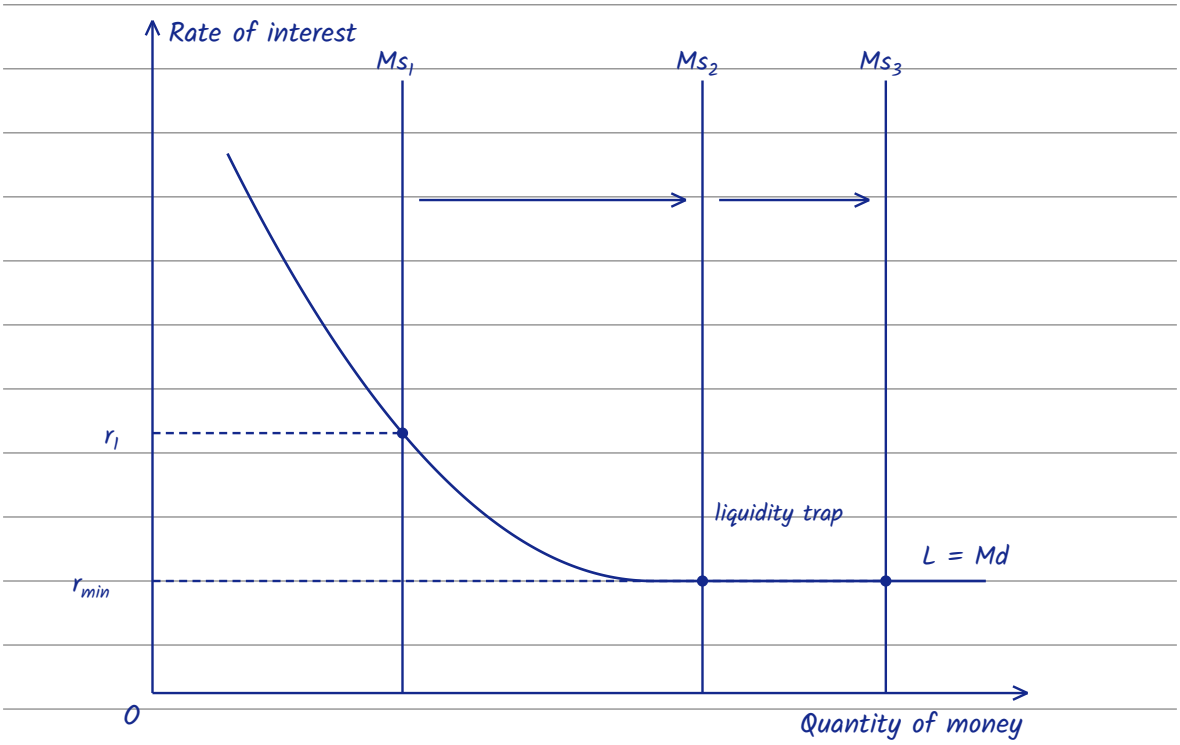
security for street cleaners, also affect the supply of labour. Pay also reflects bargaining power and agents rather than only MRP.

In conclusion, the main reason for the difference is the combination of high demand (high MRP) and very inelastic supply for sports stars compared with low demand and elastic supply for street cleaners, so that most of a star's pay is economic rent and most of a cleaner's is transfer earnings, although institutional factors can narrow or widen the gap.

5(a) In Keynesian theory the rate of interest is determined by the demand for money (liquidity preference) and the supply of money. The demand for money has three motives: transactions and precautionary demand, which depend on income, and speculative demand, which depends inversely on the rate of interest, because when interest rates are high bond prices are low, so people hold bonds rather than idle money. The money supply is set by the central bank, so it is perfectly inelastic (vertical).

At very low interest rates, bond prices are very high and everyone expects them to fall (interest rates to rise), so people prefer to hold any extra money rather than buy bonds. The demand for money becomes perfectly elastic: this is the liquidity trap, the horizontal section of the curve.

Question number



In the diagram, an increase in the money supply from Ms_1 to Ms_2 lowers the rate of interest from r_1 to r_{min}. But once in the trap, a further increase to Ms_3 has no effect: the extra money is simply held as idle balances and the rate of interest stays at r_{min}.

A recession is a fall in real GDP for two consecutive quarters, with rising unemployment and low confidence. Policy makers would normally cut interest rates or expand the money supply to raise consumption and investment and so AD. The liquidity trap matters because it means expansionary monetary policy becomes ineffective: interest rates cannot fall further, and even if they could, pessimistic firms and consumers may not borrow. This was relevant after 2008 when interest rates in many countries were close to zero.

Policy makers must therefore use other policies: expansionary fiscal policy, increasing government spending on infrastructure or cutting taxes, which raises AD directly with a multiplier effect and does not cause crowding out when interest rates are stuck at a low level; devaluation of the currency if there is a fixed exchange rate to boost net exports; quantitative easing to influence long term

Question number

rates and asset prices; and supply-side policies to raise productivity in the long run.

In conclusion, the liquidity trap is very important in a deep recession because it shows the limits of monetary policy, so governments should rely mainly on fiscal policy, although high government debt may limit this, and monetarists argue that the trap is rare in practice.

5(b) A central bank, such as the Bank of England, is responsible for monetary policy and financial stability. Controlling the money supply is important because, according to the quantity theory of money (MV = PT), if the money supply grows faster than output, the result is inflation. It controls the money supply mainly through the interest rate (the bank rate), open market operations, reserve requirements and quantitative easing or tightening, in order to meet an inflation target such as 2%.

Commercial banks are profit making firms owned by shareholders. Their main source of profit is the difference between the interest charged on loans and the interest paid on deposits. They create most of the money supply: when a bank makes a loan, it creates a new deposit, so more lending increases the money supply through the credit multiplier. To maximise profits they want to lend as much as possible, while keeping enough liquidity to meet withdrawals: the conflict between liquidity and profitability.

The two aims conflict when the central bank wants to reduce the money supply. If it raises interest rates or sells bonds in open market operations, banks' reserves fall and borrowing becomes more expensive, so the demand for loans falls. Less lending means fewer deposits, so the money supply falls, but lending is the main source of bank profit, so profits may fall. Higher reserve requirements also reduce the amount banks can lend. Also, if banks lend excessively to make profits, as before the 2008 financial crisis, the money supply and asset prices grow too fast,

Question number

which undermines the central bank's aim.

However, the aims can be compatible. Higher interest rates may allow banks to widen the margin between lending and deposit rates; if the demand for loans is interest inelastic, for example for mortgages already taken out, bank profits may rise. When the central bank wants to expand the money supply in a recession, as with quantitative easing, its aim matches the banks' wish to lend more, although banks may be reluctant to lend if they fear bad debts. A stable financial system with low inflation is also good for banks' long term profits, and central bank regulation of capital and liquidity reduces the risk of bank failure.

In conclusion, the two aims can be achieved together when the central bank wants to expand the money supply, or when loan demand is inelastic, but they tend to conflict in the short run when the central bank tightens policy. In the long run both benefit from financial stability.

6

Gross domestic product (GDP) is the total value of all goods and services produced within an economy in a given time period, usually a year. Nominal GDP is measured at current prices, so it can rise simply because of inflation. Real GDP is adjusted for inflation using a price index (real GDP = nominal GDP × base year price index ÷ current price index), so it measures changes in the volume of output. Real GDP per capita divides real GDP by the population, giving the average output, and so average income, per person. An increase means output is growing faster than the population, so on average each person has more goods and services available, which is economic growth in a per person sense and suggests higher material living standards.

Economic development is a broader concept: an improvement in the overall quality of life and economic welfare of the population. As well as income, it includes better access to education and healthcare, longer life expectancy, lower poverty and inequality, better housing, sanitation and clean water, and more freedom and

Question number

choice. It is measured by indicators such as the Human Development Index (HDI), which combines life expectancy, education (mean and expected years of schooling) and GNI per capita, and the Multidimensional Poverty Index (MPI).

There are strong positive links. Firstly, higher real incomes allow households to buy more and better food, housing and healthcare, which raises health and life expectancy. Secondly, higher GDP raises tax revenue without raising tax rates, so the government can spend more on schools, hospitals, infrastructure and welfare payments, improving education and health. Thirdly, growth creates jobs, reducing unemployment and absolute poverty. Fourthly, a better educated and healthier labour force is more productive, so development and growth reinforce each other in a virtuous circle. Countries such as South Korea show how sustained growth in real GDP per capita was accompanied by large improvements in development.

However, an increase in real GDP per capita may not have a positive impact. Firstly, it is an average: if the gains go mainly to the richest, inequality widens (a higher Gini coefficient) and many people may remain in poverty. Secondly, growth may come from activities that harm the environment, such as deforestation, mining or polluting industries, causing health problems and depleting resources so growth is unsustainable. Thirdly, people may work longer hours, so leisure and quality of life fall, and rapid urbanisation may cause overcrowding and slums. Fourthly, the extra output may be capital goods, military spending or exports, or profits may be repatriated by multinationals, so consumption does not rise much. Finally, the government may not use the extra revenue on health and education, especially if there is corruption. For example, some oil-rich economies have high GDP per capita but relatively low HDI rankings.

There are also measurement issues. GDP excludes the informal economy and unpaid work, which are large in developing countries, and comparisons between countries need purchasing power parity exchange rates. So a rise in measured real GDP per capita may over or understate the true change in living standards.

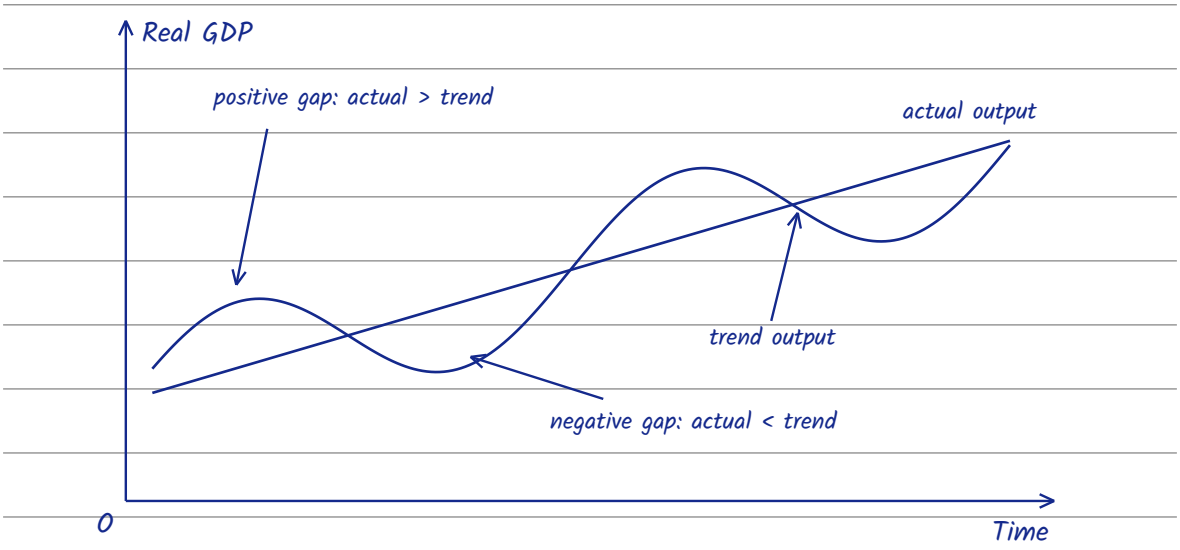
Question number

In conclusion, an increase in real GDP per capita is a necessary condition for long term economic development, because it provides the resources for better health, education and lower poverty. However, it is not sufficient: the extent of the positive impact depends on how the growth is distributed, whether it is environmentally sustainable, what is produced, and whether the government uses the extra revenue to provide merit goods. Growth that is inclusive and sustainable has the largest positive effect on development.

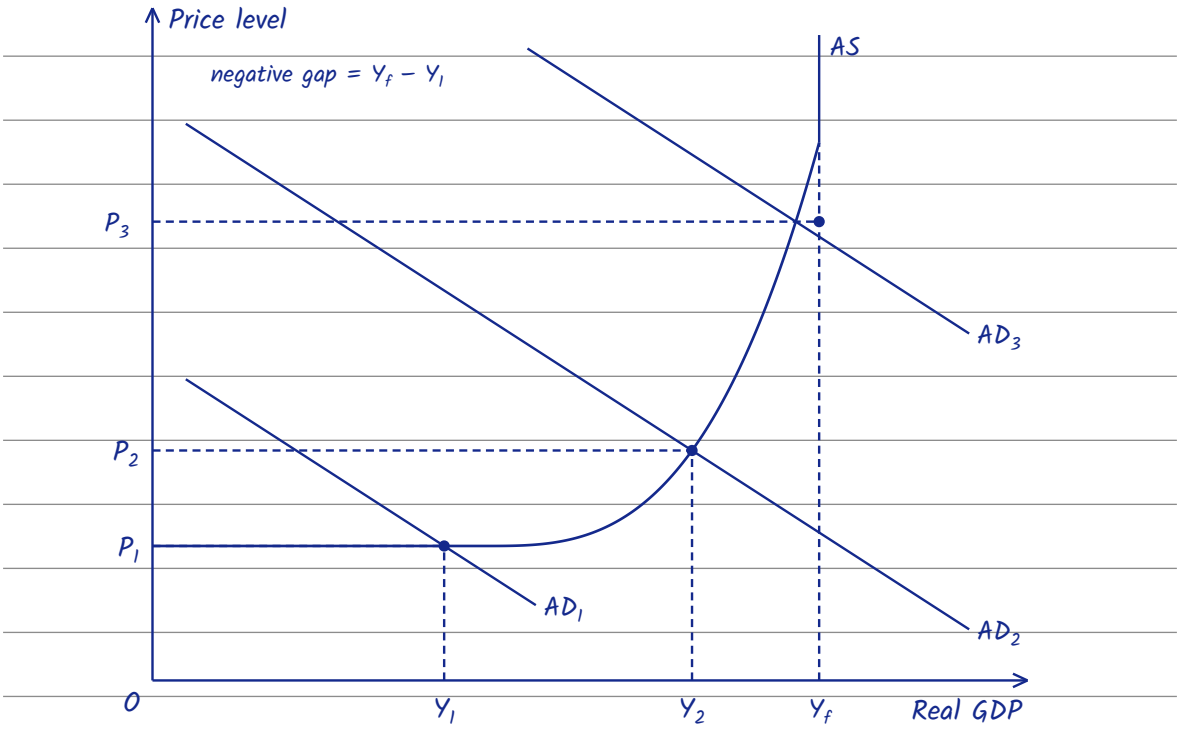
7 A budget deficit occurs when government spending is greater than government revenue in a year, so the government must borrow. Increasing the deficit as a proportion of GDP means expansionary fiscal policy: higher government spending or lower taxes inject extra spending into the circular flow, raising AD, and through the multiplier increasing national income, output and employment by more than the initial change.

The output gap is the difference between actual output and potential (trend) output. A negative output gap exists when actual output is below potential: resources such as labour are unemployed, as in a recession. A positive output gap exists when actual output is above trend: resources are over-used and the economy is overheating, causing inflationary pressure. The first diagram shows actual output fluctuating around trend.

Question number



The second diagram uses a Keynesian AS curve, with Y_f the full employment level of output. With AD_1 the economy is at Y_1, well below Y_f: a negative output gap. Increasing the budget deficit shifts AD to AD_2; because there are spare resources, output rises a lot to Y_2 and unemployment falls with only a small rise in the price level from P_1 to P_2. A larger deficit is therefore appropriate.



If the economy is already at or beyond full capacity (a positive output gap), a further rise in AD, to AD_3, cannot raise output above Y_f in the long run; it only

Question number

raises the price level to P_3. It would also worsen the current account as imports rise. So a government would be very unlikely to increase its deficit; instead it should reduce it to cool the economy. This supports the statement.

However, other factors also affect the decision. Firstly, the cause of the negative gap matters: a larger deficit reduces cyclical (demand-deficient) unemployment, but not structural or frictional unemployment, which need supply-side policies. Secondly, the size of the multiplier matters: if the marginal propensity to import or save is high, much of the extra spending leaks abroad. Thirdly, higher government borrowing may raise interest rates and crowd out private investment, and it adds to the national debt and future interest payments, which may worry financial markets and raise borrowing costs, as in Greece after 2010. Fourthly, time lags mean that by the time the policy works the gap may have closed, causing inflation. Also, the deficit rises automatically in a recession through automatic stabilisers, as tax revenue falls and benefit spending rises, so this is not always a decision. Finally, there are political factors, rules such as the EU limit of 3% of GDP, and the size of existing debt.

It is also very hard to measure the output gap accurately, because potential output cannot be observed, so the government may misjudge the situation.

In conclusion, the statement is largely correct: the sign of the output gap is a key factor, as a larger deficit is appropriate to close a negative gap but harmful with a positive gap. However, the decision also depends on the type of unemployment, the existing level of debt, the effectiveness of the multiplier and the accuracy of the estimate of the gap.

Cambridge Assessment International Education

Cambridge International AS & A Level

ECONOMICS **9708/42**

Paper 4 Data Response and Essays **October/November 2022**

2 hours 15 minutes

4273091403

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. Any blank pages are indicated.

© UCLES 2022

[Turn over

stemup.co.uk

Section A

Answer this question.

1 An Opportunity for Guyana

The International Monetary Fund (IMF) believed that Guyana, one of South America's geographically smallest countries, was likely to see a dramatic 86% rise in its economic output in 2020.

Content removed due to copyright restrictions.

- invest in coastal protection to guard against rising sea levels.

Source: The Economist, *29 February 2020 pg.35*

(a) Explain how the discovery and extraction of oil affects the productive capacity of Guyana. [2]

(b) Using the information in the article:

(i) Explain the type of unemployment arising from the closure of sugar plantations in Guyana. [2]

(ii) Explain how this type of unemployment might be reduced. [4]

(c) Explain how an over-valuation of the exchange rate may affect Guyana's economy. [4]

(d) Discuss, with reference to the article, how the establishment of the new fund may benefit the population of Guyana. [8]

© UCLES 2022

stemup.co.uk

Section B

Answer **two** questions.

2 **(a)** Using diagrams, explain with examples the meaning of a positive externality for a consumer and a negative externality for a producer. [12]

(b) Discuss the extent to which positive externalities and negative externalities explain all forms of market failure. [13]

3 **(a)** Explain the law of diminishing returns and its relevance to the shapes of the marginal cost curve and the average variable cost curve of a firm. [12]

(b) Discuss the extent to which a firm's ability to operate a policy of price discrimination is determined by the market structure in which that firm operates. [13]

4 Discuss the extent to which the marginal revenue product theory can be used to explain the determination of wages. [25]

5 **(a)** Using Keynesian theory of interest rate determination, explain why interest rates are sometimes very low. [12]

(b) Discuss whether in a period of very low interest rates, monetary policy alone can solve the problem of cyclical unemployment. [13]

6 **(a)** Explain how changes in the internal value of a country's currency can affect the external value of that currency. [12]

(b) Discuss whether a government can achieve all its key macroeconomic aims simultaneously. [13]

7 Discuss the ability of multinational corporations to increase living standards in their home country **and** the other countries in which they operate. [25]

© UCLES 2022

stemup.co.uk

BLANK PAGE

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.

© UCLES 2022

stemup.co.uk

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

1(a) The discovery and extraction of oil increases the quantity of natural resources (land) available, so the productive capacity of Guyana rises: this is potential economic growth. The production possibility curve shifts outwards and LRAS shifts to the right, allowing the IMF's forecast 86% rise in output.

1(b)(i) Structural unemployment: a long term mismatch between workers' skills and the jobs available, caused by the decline of an industry. The sugar plantations closed because they could not compete with cheaper foreign sugar producers, so sugar workers lost their jobs and their skills are not needed elsewhere.

1(b)(ii) Through supply-side policies. Firstly, the government can provide education, training and retraining schemes so that former sugar workers gain the skills needed in growing sectors such as oil, construction and services, reducing the skills mismatch. Secondly, it can improve geographical mobility, for example with relocation grants, better transport and housing, so workers can move to where jobs are. It could also give subsidies or tax incentives to firms that locate in the former plantation areas or employ these workers, and use oil revenue to diversify the economy, for example into agriculture and tourism.

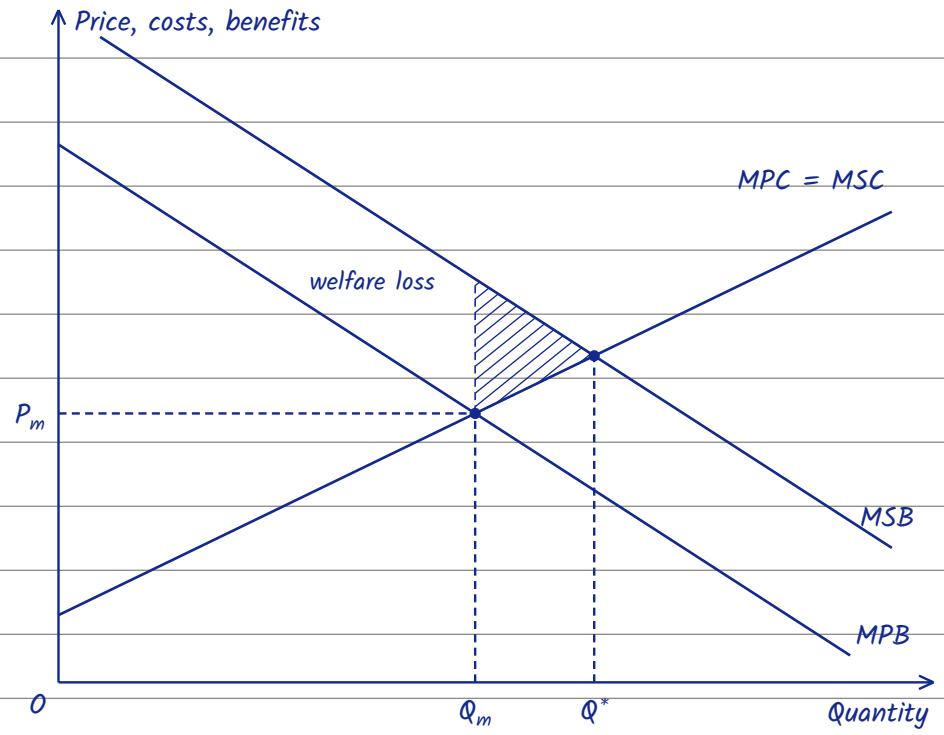
1(c) If the exchange rate is over-valued, Guyana's export prices in foreign currency rise and import prices in Guyanese dollars fall. So exports fall and imports rise, which worsens the current account of the balance of payments. Non-oil industries such as agriculture and manufacturing become less competitive, so their output falls and

Question number	
	unemployment rises (the Dutch disease). Net exports fall, reducing AD and economic growth outside the oil sector. On the other hand, cheaper imports reduce cost-push inflation and raise the real incomes of consumers.
1(d)	The new fund is a sovereign wealth fund that saves and invests the government's oil revenue rather than spending it all at once. The article sets out several uses of the fund, including investing in coastal protection to guard against rising sea levels. Firstly, saving the revenue: much of the oil money can be invested abroad, which stops a flood of foreign currency over-valuing the exchange rate, protecting jobs in non-oil exports and avoiding inflation. It also spreads the benefit of a non-renewable resource over future generations, giving a stable income when the oil runs out or prices fall. Secondly, investment in infrastructure and coastal protection: most of the population lives on the low coast, so sea defences protect homes, farms and businesses from flooding. Spending on roads, ports and electricity raises productivity and attracts investment, creating jobs and raising incomes through the multiplier. Thirdly, spending on human capital such as education, training and healthcare: this raises productivity, helps workers such as those from the closed sugar plantations find new jobs, and improves life expectancy and the HDI, so development as well as growth improves. However, the benefits depend on how well the fund is managed: there is a risk of corruption or waste, and spending may cause inflation if it is too fast. Overall, if it is well governed, the fund should benefit the population by turning temporary oil revenue into lasting improvements in living standards.
2(a)	An externality is a cost or benefit that affects a third party not directly involved in the production or consumption of a good, and which is not reflected in the

Question number

market price. Social cost = private cost + external cost; social benefit = private benefit + external benefit. Because the market ignores externalities, the market equilibrium is not allocatively efficient.

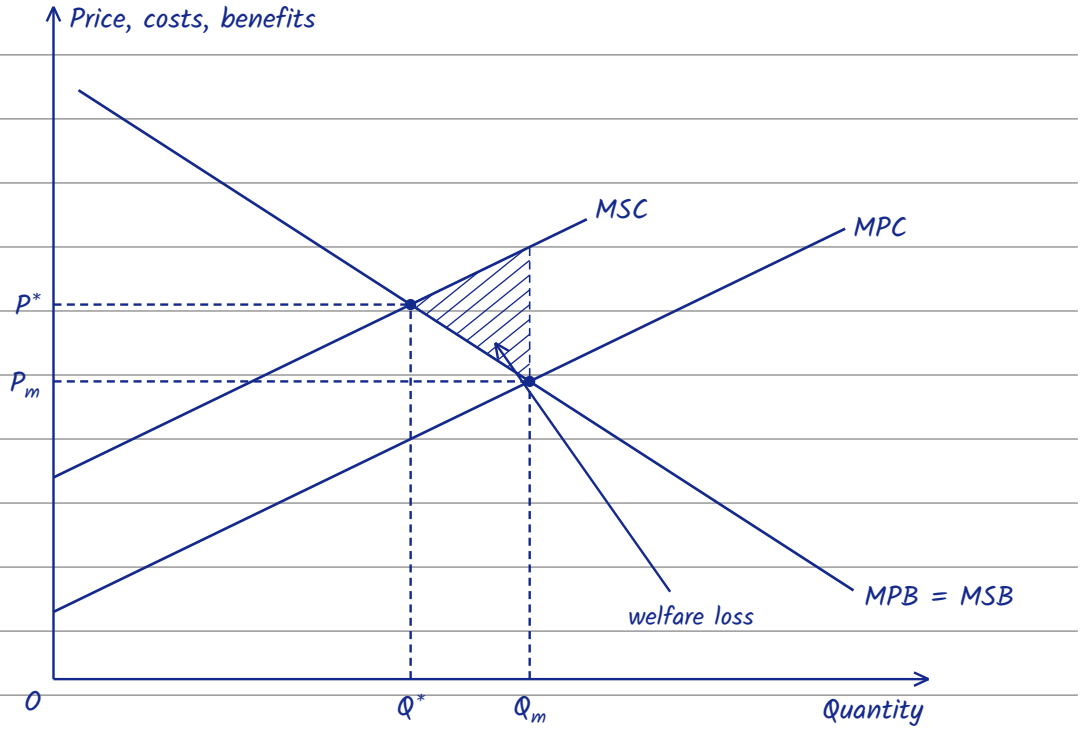
A positive consumption externality exists when consuming a good gives benefits to third parties, so marginal social benefit (MSB) is greater than marginal private benefit (MPB). For example, when a person is vaccinated, others are less likely to catch the disease; education raises the productivity of the workforce. In the diagram consumers consider only MPB, so the market output is Q_m where MPB = MPC. The socially optimal output is Q^*, where MSB = MSC. The good is under-consumed by $Q^* - Q_m$, and the shaded triangle shows the welfare loss: units whose social benefit exceeds their cost are not consumed.



A negative production externality exists when production imposes costs on third parties, such as air pollution from a factory or chemical waste from a farm polluting a river, harming health and fishing. Marginal social cost (MSC) is greater than marginal private cost (MPC) by the external cost. Producers consider only MPC, so the market output is Q_m at price P_m, where MPC = MPB. The socially

Question number

optimal output is Q^*, at price P^*, where MSC = MSB. The good is over-produced and under-priced, and the shaded triangle is the welfare loss, where the social cost of the extra units exceeds their social benefit.



In both cases the market fails because the price mechanism does not take account of the external effects, so resources are misallocated, which justifies government intervention such as subsidies for vaccination or taxes and regulation on pollution.

2(b) Market failure is when the free market fails to allocate resources efficiently, so that allocative efficiency (where P = MC, or MSB = MSC) is not achieved and economic welfare is not maximised. Externalities are an important cause: positive externalities lead to under-consumption of goods such as education and healthcare, and negative externalities lead to over-production of goods such as those causing pollution. Merit and demerit goods are linked to this, since they partly arise from externalities, although they also result from imperfect information.

However, there are other forms of market failure. Firstly, public goods such as street lighting and national defence are non-excludable and non-rival. Because

Question number

people cannot be excluded, consumers have an incentive to be free riders and not pay, so private firms cannot make a profit and the good is not provided at all: a missing market. This is not caused by an externality, although the benefit of one person's payment does spill over to others.

Secondly, imperfect competition: a monopoly restricts output and charges a price above marginal cost (P > MC), so it is allocatively inefficient, and it may not produce at minimum average cost, so it is also productively inefficient. Consumers lose surplus and there is a deadweight welfare loss. Collusion between oligopolists has the same effect. This market failure arises from market power, not externalities.

Thirdly, information failure: consumers may not know the true benefits of goods such as education or the harm of smoking, and asymmetric information, for example in second-hand cars or insurance (adverse selection and moral hazard), causes markets to under-perform. Fourthly, factor immobility and unemployment of resources: when labour is occupationally or geographically immobile, resources are left unemployed, so the economy operates inside its production possibility curve.

Fifthly, inequality: the market may produce a very unequal distribution of income and wealth that society considers unfair, although this is a question of equity rather than efficiency and involves value judgements.

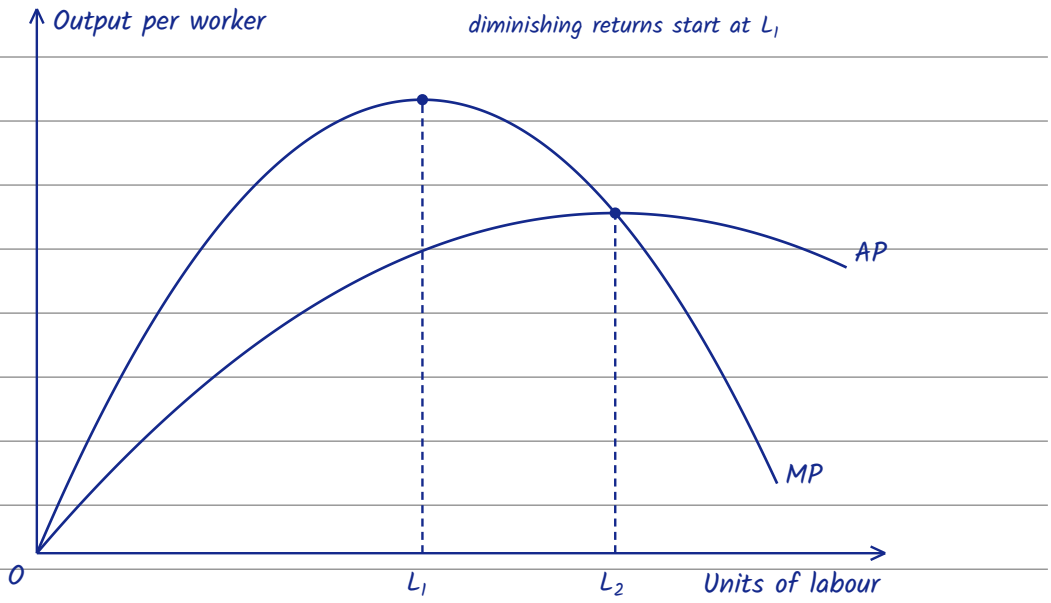
In conclusion, externalities explain an important part of market failure, including much of the case for merit and demerit goods, but they certainly do not explain all forms of it. Public goods, market power, information failure, immobility of factors and inequity are separate causes, so a government needs a range of policies, such as direct provision, competition policy and regulation, not only taxes and subsidies aimed at externalities.

3(a) The law of diminishing returns states that in the short run, when increasing quantities of a variable factor (such as labour) are added to a fixed factor (such

Question number

as capital or land), the marginal product of the variable factor will eventually fall. It is a short run concept because at least one factor is fixed; in the long run all factors are variable and the relevant concept is returns to scale.

At first, adding workers gives increasing returns, because workers can specialise and use the fixed capital more fully, so marginal product (MP) rises. After a point (L_1) each extra worker has less capital to work with, so MP falls: diminishing returns set in. Average product (AP) rises while MP is above it and falls once MP is below it, so MP cuts AP at its maximum (L_2).



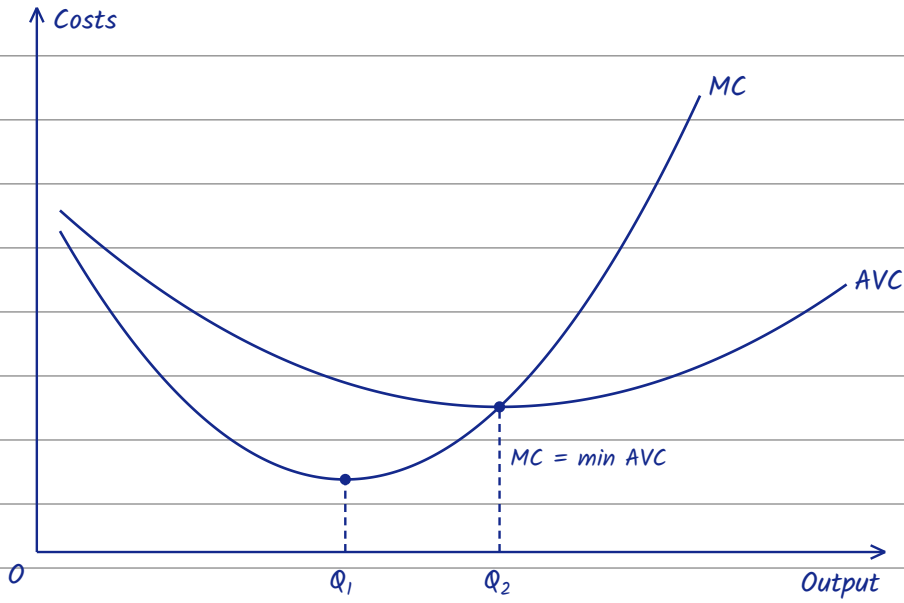
The cost curves are the mirror image of the product curves. If the wage (W) of each worker is constant, marginal cost MC = W ÷ MP and average variable cost AVC = W ÷ AP. While MP is rising, each extra unit of output needs less extra labour, so MC falls. When diminishing returns set in and MP falls, each extra unit needs more labour, so MC rises. Therefore the MC curve is U-shaped, with its minimum at the output Q_1 where MP is at its maximum.

Similarly, while AP rises AVC falls, and when AP falls AVC rises, so AVC is also U-shaped, with its minimum at Q_2, the output where AP is at its maximum.

Because MP = AP when AP is at its maximum, MC = AVC when AVC is at its minimum: the MC curve cuts the AVC curve at its lowest point. When MC is below

Question number

AVC it pulls the average down, and when MC is above AVC it pulls the average up.



So the law of diminishing returns explains why short run MC and AVC curves are U-shaped and why MC cuts AVC at its minimum point. In practice firms may experience a range of constant returns, giving flatter cost curves, and if wages rise as more labour is hired costs would rise faster.

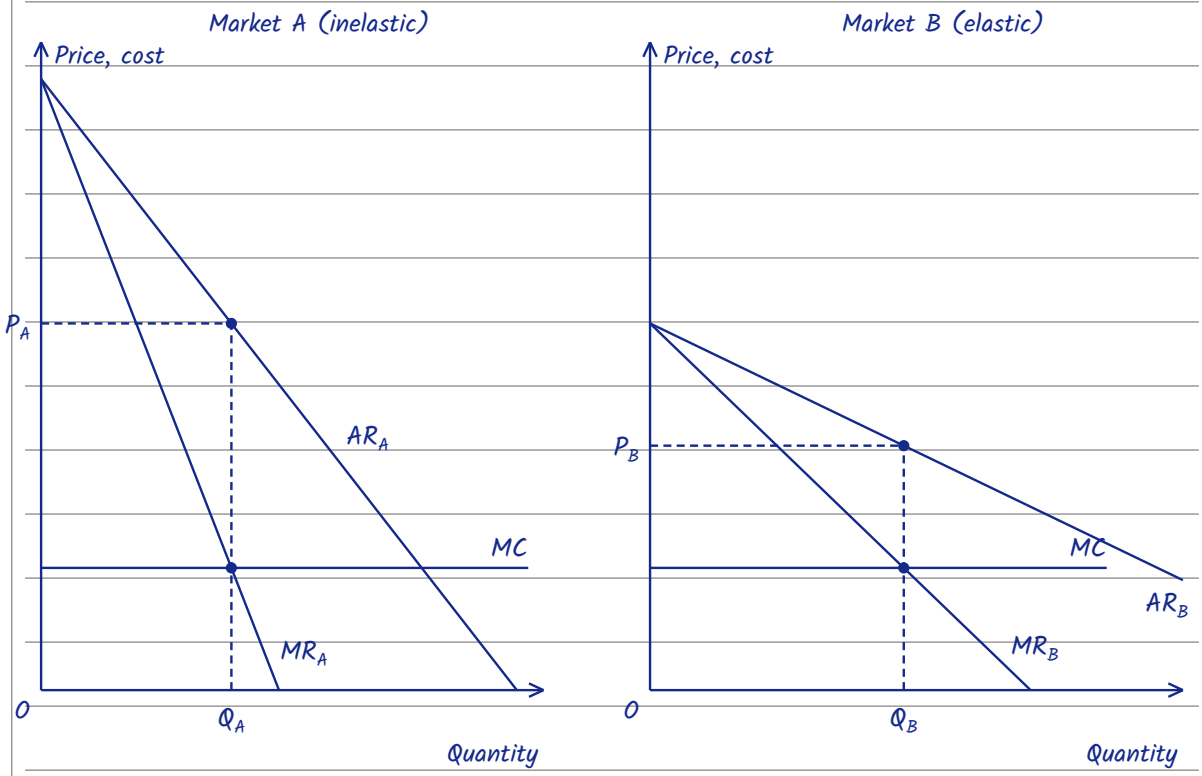
3(b) Price discrimination is when a firm sells the same product to different consumers or groups at different prices, where the difference is not due to differences in costs. Examples are peak and off-peak rail fares, student discounts and different prices in different countries.

Three conditions are necessary. Firstly, the firm must be a price maker, with some monopoly power to set prices. Secondly, the markets must be separated, so that consumers cannot buy in the cheap market and resell in the expensive one (no arbitrage), for example by time, age or location. Thirdly, the price elasticity of demand must differ between the markets.

The profit maximising firm sets MC = MR in each market. In the diagram, market A has inelastic demand, so it is charged the higher price P_A; market B has elastic demand and is charged the lower price P_B. Output is where MR is the same in

Question number

both markets and equal to MC. The firm gains revenue and profit by turning consumer surplus into producer surplus. With first degree discrimination, each consumer pays the most they are willing to pay.



Market structure clearly matters for the first condition. In perfect competition firms are price takers facing a perfectly elastic demand curve, so if a firm charged one group more, they would buy from rivals; price discrimination is impossible. In monopolistic competition firms have a little price making power, so limited discrimination is possible, for example a hairdresser's discount for pensioners. In oligopoly, firms such as airlines and mobile phone networks have significant market power and commonly discriminate. A monopoly has the most market power, so it is best placed, for example railway companies or utilities.

However, market structure is not the only factor. Even a monopolist cannot discriminate if markets cannot be separated, for example if goods can easily be resold, or if elasticities are the same. The ability also depends on information about consumers (modern data allows online firms to vary prices), on the cost of separating markets, and on the law, since some forms of price discrimination are

Question number

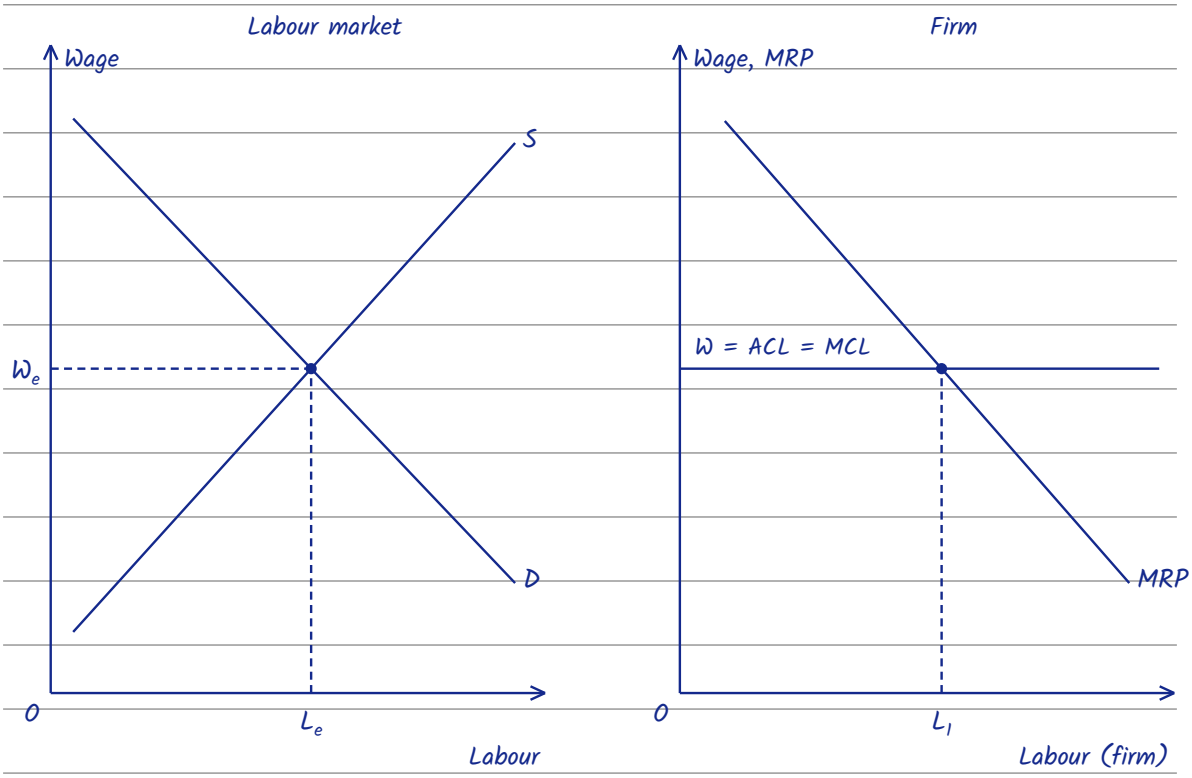
illegal.

In conclusion, market structure is an important determinant, because some degree of market power is essential and the ability to discriminate increases as competition falls, from impossible in perfect competition to most effective in monopoly. However, it is not the only one: the ability to separate markets and differences in elasticity are also necessary.

4 Marginal revenue product (MRP) theory explains the demand for labour. MRP is the extra revenue from employing one more worker: MRP = MPP × MR, the marginal physical product of the worker multiplied by the marginal revenue from selling the extra output. Because of diminishing returns, MRP falls as more workers are employed. A profit maximising firm employs workers up to the point where MRP equals the marginal cost of labour, so the MRP curve is the firm's demand curve for labour. Demand for labour is a derived demand: it depends on demand for the product.

In a perfectly competitive labour market, the wage is set by the market demand for and supply of labour, at W_e in the first panel. Each firm is a wage taker: it can hire as many workers as it wants at W_e, so the wage equals the average and marginal cost of labour (ACL = MCL). The firm employs L_1 workers, where MRP = W. So wages equal the MRP of the last worker employed, and differences in wages reflect differences in productivity and in the value of the product.

Question number



The wage also depends on the elasticities of demand and supply. Demand for labour is more elastic when labour costs are a high proportion of total costs, when capital can easily be substituted for labour, and when demand for the product is elastic. Supply is more elastic when skills and training needed are low. Where supply is inelastic, as for surgeons, an increase in demand raises wages a lot; where it is elastic, as for unskilled workers, wages change little.

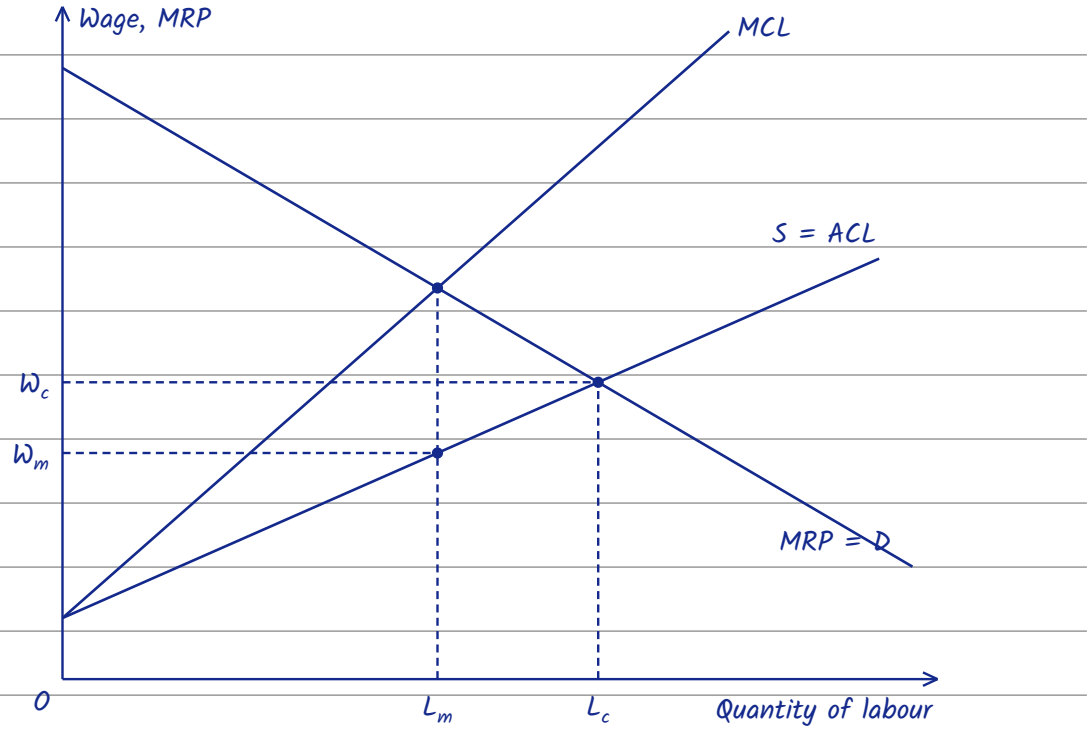
The theory helps explain why wages rise when productivity rises (MRP shifts right) and why workers producing high value products, such as footballers or financial traders, earn more. However, it has serious limitations.

Firstly, the assumptions are unrealistic: it is very difficult to measure the MPP of many workers, such as teachers, nurses or managers, or anyone working in a team, and public sector workers produce output with no market price. Firms may not aim to maximise profits, and labour markets are rarely perfectly competitive, with perfect information and perfect mobility.

Secondly, monopsony: if there is a single dominant employer, the supply curve is upward sloping and the marginal cost of labour is above the wage. The

Question number

monopsonist employs where MCL = MRP but pays only the wage on the supply curve, W_m, which is below MRP, so wages are not equal to MRP and employment is lower than in a competitive market.



Thirdly, trade unions can raise wages above the competitive level through collective bargaining, and against a monopsonist (bilateral monopoly) the wage depends on bargaining power, not only MRP. Fourthly, government intervention, such as a national minimum wage or public sector pay scales, sets wages directly. Fifthly, discrimination, custom and tradition, and non-monetary factors (job satisfaction, holidays, security) all influence wages, and wage differences may reflect compensating differentials for unpleasant or risky work.

In conclusion, MRP theory provides a useful explanation of the demand for labour and of the long run forces behind wage differences, especially productivity. But it explains only part of wage determination: in reality wages are determined by both demand and supply, and by market imperfections such as monopsony, trade unions, government regulation and discrimination. It is most useful for competitive markets where output can be measured, and least useful in the public sector.

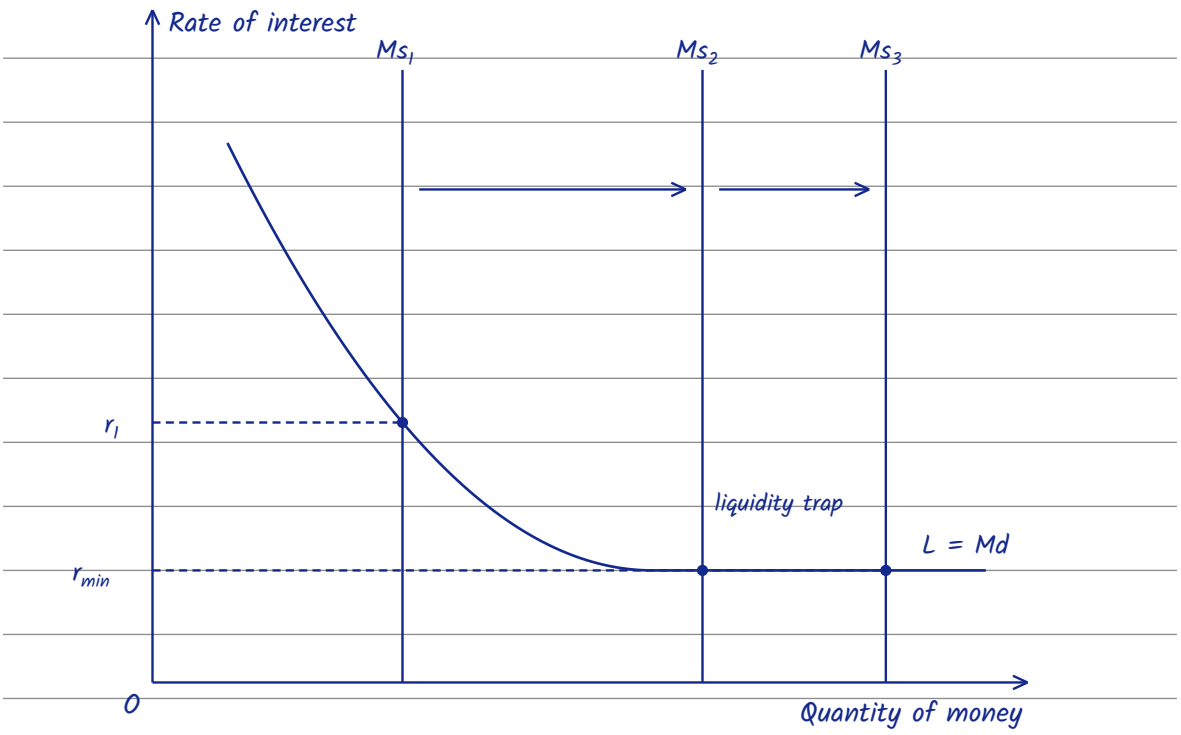
Question number

5(a)

In Keynesian theory the rate of interest is the price of money, determined by the demand for money (liquidity preference) and the supply of money.

There are three motives for holding money. The transactions demand is money held to pay for everyday spending; it depends on income. The precautionary demand is money held for unexpected expenses; it also depends mainly on income. These are active balances and are interest inelastic. The speculative demand is money held as idle balances instead of bonds. Bond prices and interest rates are inversely related. When interest rates are high, bond prices are low and expected to rise, so people buy bonds and hold little speculative money. When interest rates are low, bond prices are high and expected to fall, so people hold money to avoid capital losses. So the demand for money curve (L) slopes downwards.

The money supply is set by the central bank and is perfectly inelastic. Equilibrium is where they are equal; an increase in the money supply from Ms_1 to Ms_2 lowers the interest rate from r_1 to r_{min}.



Interest rates can therefore be very low for several reasons. Firstly, the central

Question number

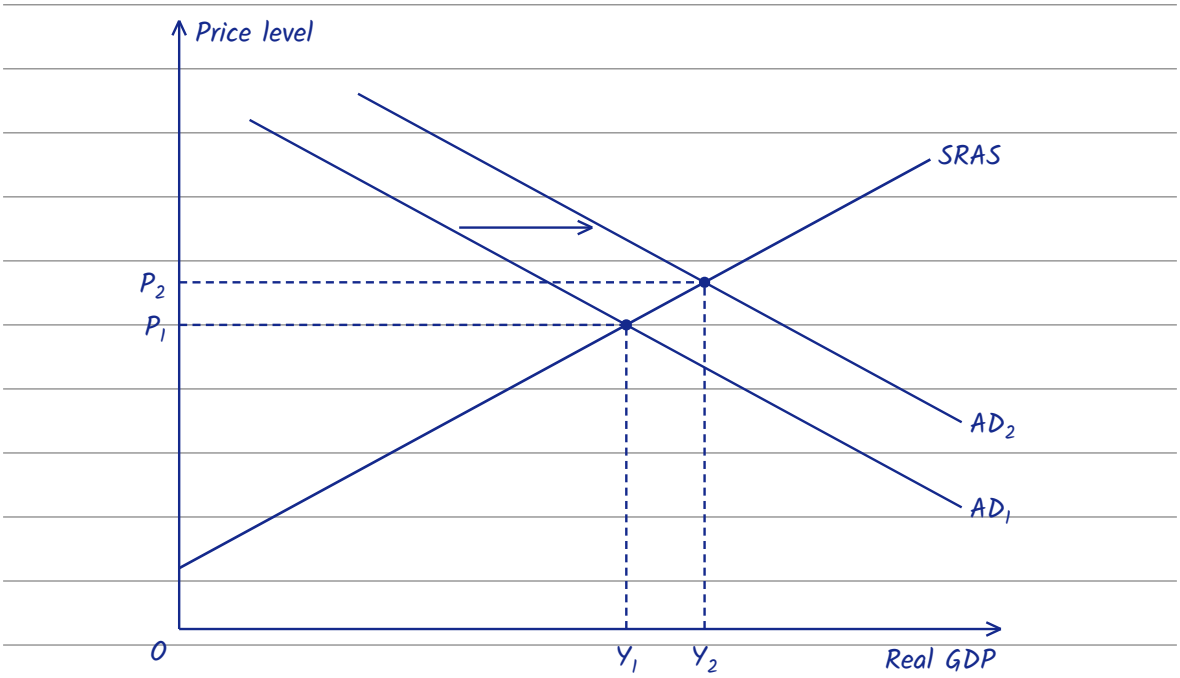
bank may greatly increase the money supply, for example by quantitative easing as after 2008, which pushes the rate down. Secondly, in a recession incomes fall, so transactions and precautionary demand fall, shifting the demand for money left and reducing the rate. Thirdly, at a very low rate everyone expects bond prices to fall, so the speculative demand becomes perfectly elastic: the liquidity trap. Any further increase in the money supply, to Ms_3, is held as idle balances and the rate stays at its minimum, r_{min}. Interest rates then remain very low for a long time.

5(b) Cyclical (demand-deficient) unemployment is caused by a lack of aggregate demand, typically in the downturn or recession phase of the business cycle.

Monetary policy changes interest rates, the money supply and credit to influence AD. To reduce cyclical unemployment the central bank would lower interest rates or increase the money supply.

Through the transmission mechanism, lower rates reduce the cost of borrowing and the reward for saving, so consumption on credit and investment rise; mortgage payments fall, raising disposable income; asset prices rise, creating a wealth effect; and the exchange rate tends to depreciate, raising net exports. AD shifts right from AD_1 to AD_2, real output rises from Y_1 to Y_2, and the derived demand for labour rises, reducing cyclical unemployment.

Question number



However, when interest rates are already very low, monetary policy alone has limits. The rate cannot be cut much below zero, and in a liquidity trap extra money is held idle. Confidence is low in a recession, so firms may not invest however cheap borrowing is, because the expected return is low, and consumers may save to repay debt. Banks may be unwilling to lend. Quantitative easing can help, but it may mainly raise asset prices, benefiting the wealthy, rather than spending. There are also time lags of up to two years.

Fiscal policy is therefore needed as well. Increasing government spending, for example on infrastructure, directly raises AD and creates jobs, and through the multiplier income rises by more than the initial spending. Tax cuts raise disposable income. When interest rates are very low, crowding out is unlikely and government borrowing is cheap, so fiscal policy is especially effective. Its problems are that it increases the budget deficit and national debt, it is difficult to judge the right size and timing of intervention, and there are time lags in planning projects.

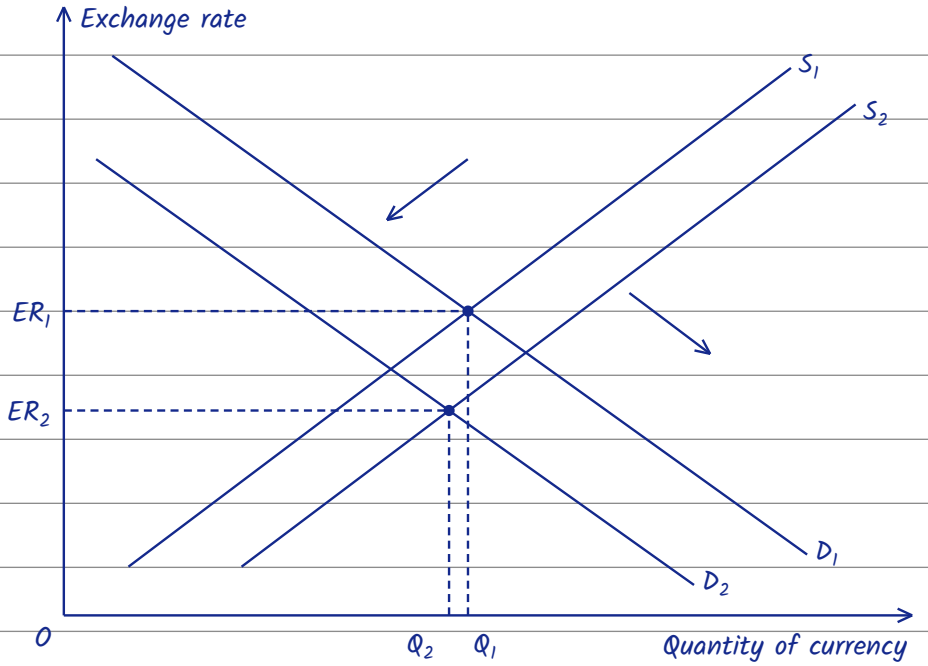
In conclusion, in a period of very low interest rates monetary policy alone is unlikely to solve cyclical unemployment, because it cannot reduce interest rates much further and low confidence weakens its effect. A combination with

Question number

expansionary fiscal policy is more effective, although the best mix depends on the depth of the recession and the level of government debt.

6(a) The internal value of a currency is its purchasing power within the country, the quantity of goods and services it can buy. It falls when there is inflation: a rise in the general price level. The external value is the exchange rate, the price of one currency in terms of another, for example $1 = 4.2 Malaysian ringgit.

If a country has a higher rate of inflation than its trading partners, its internal value falls relative to theirs. Its exports become less price competitive abroad, so foreign demand for its exports, and therefore the demand for its currency, falls (D_1 to D_2). At the same time imports become relatively cheaper, so residents buy more imports and supply more of their currency to buy foreign currency (S_1 to S_2). In a floating system the exchange rate falls from ER_1 to ER_2: the external value falls.



This is the purchasing power parity idea: in the long run exchange rates tend to adjust so that the same goods cost the same in different countries, so a country whose currency loses internal value faster will see its external value fall. Higher inflation may also cause speculators to expect a depreciation and sell the currency,

Question number

making it fall faster. However, if the central bank raises interest rates to fight inflation, hot money inflows may increase demand for the currency and offset the fall, at least in the short run.

Conversely, if inflation is lower than in other countries, the internal value is relatively stable, exports are more competitive, demand for the currency rises and it appreciates.

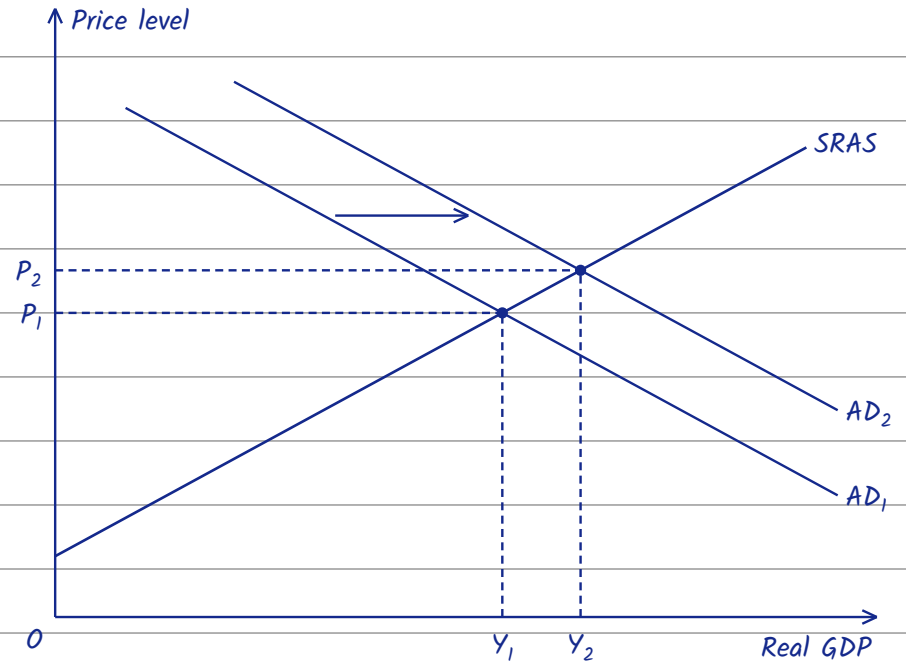
The link also works in reverse: a fall in the external value raises import prices, causing cost-push inflation and reducing the internal value. Under a fixed exchange rate, a fall in internal value puts pressure on the exchange rate, so the central bank must use reserves to buy the currency, raise interest rates, or eventually devalue.

6(b)

A government's key macroeconomic aims are steady economic growth, low unemployment, low and stable inflation (for example 2%), and a sustainable balance of payments position on the current account. Achieving them together is difficult because policies that help one aim often harm another.

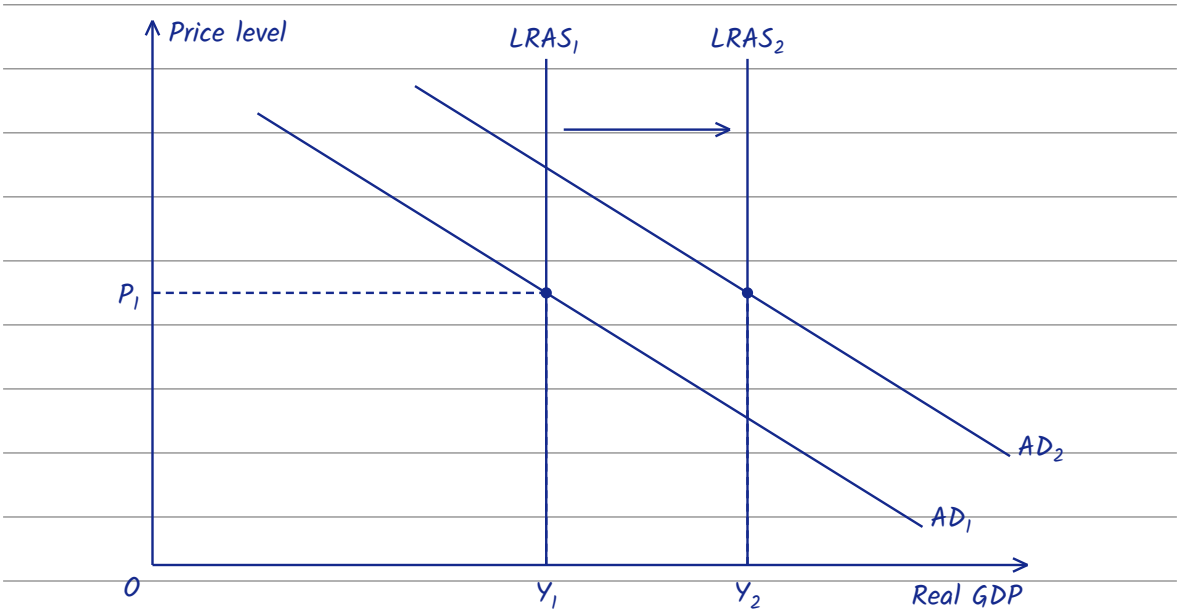
Conflict 1: unemployment and inflation. Expansionary demand-side policy shifts AD from AD_1 to AD_2, raising real output from Y_1 to Y_2 so growth increases and unemployment falls, but the price level rises from P_1 to P_2. As the economy nears full capacity, the SRAS curve becomes steeper, so further rises in AD cause mainly inflation. This is the trade-off shown by the short-run Phillips curve: lower unemployment is associated with higher inflation.

Question number



Conflict 2: growth and the balance of payments. Rapid growth raises incomes, so spending on imports rises, and if inflation rises exports become less competitive, so the current account deficit widens. Conversely, reducing a deficit by deflationary policy reduces growth and raises unemployment. Conflict 3: growth and the environment or inequality, although these are not always counted as key aims. However, the aims can sometimes be achieved together. Supply-side policies such as education and training, investment in infrastructure, deregulation and lower taxes on enterprise shift LRAS to the right, as in the second diagram, raising output and employment while reducing inflationary pressure and improving international competitiveness, so the current account can improve too. Export-led growth can increase output and employment and improve the balance of payments together. Also, when the economy has a large negative output gap, AD can rise with little effect on inflation, so growth and lower unemployment can be achieved without inflation.

Question number



In practice supply-side policies take a long time to work and are costly; external shocks such as rising oil prices can cause stagflation, with higher inflation and unemployment at the same time; and governments face time lags and imperfect information. Monetarists argue that in the long run the Phillips curve is vertical, so there is no lasting trade-off.

In conclusion, a government is unlikely to achieve all its aims simultaneously in the short run using demand-side policies, because of the conflicts between them. It is more likely in the long run if it uses a mix of policies with an emphasis on supply-side improvements, but there will usually be a need to prioritise one aim, typically low inflation, at any given time.

7

A multinational corporation (MNC) is a firm that has its headquarters in one country (the home country) and owns or controls production or service operations in at least one other country (the host country), for example Toyota, Unilever or Apple. The standard of living refers to the economic welfare of the population, measured partly by real GDP per capita and more broadly by indicators such as the HDI, including health, education, housing and the environment.

Effects on host countries, especially developing economies. Positive: foreign direct

Question number

investment is an injection that raises AD and, through the multiplier, national income. MNCs create jobs, often paying higher wages than local firms, which raises incomes and reduces poverty. They bring new technology, management skills and training that spill over to local firms and raise productivity. They pay taxes that the government can spend on schools, healthcare and infrastructure, and they often build infrastructure themselves. Their exports earn foreign currency, improving the balance of payments, and local suppliers benefit from extra demand. Consumers gain access to a wider choice of cheaper goods.

Negative: profits are often repatriated to the home country, so much of the income leaves the host country. MNCs may use transfer pricing to pay little tax and may receive tax breaks to attract them. Jobs may be low-skilled and low-paid, with poor working conditions, and senior jobs may go to foreign staff. MNCs may cause negative externalities such as pollution and deforestation, and exploit natural resources unsustainably. They may drive local firms out of business, and rapid urbanisation around their factories can cause overcrowding. Large MNCs can have political influence over governments, and they may leave quickly (footloose) if costs rise elsewhere.

Effects on the home country. Positive: profits repatriated from overseas operations raise national income (GNI) and pay dividends to shareholders, including pension funds; producing in low-cost countries reduces prices for home consumers, raising real incomes; and growth of the firm creates high-skilled jobs at headquarters in research, design and finance, as well as tax revenue. Negative: moving production abroad can cause structural unemployment in manufacturing regions of the home country, as when car or textile production moved from Europe to Asia, and investment abroad means less domestic investment. Tax avoidance reduces revenue for public services, and the gains may go mostly to shareholders, widening inequality.

The overall effect depends on several factors: the type of activity (high value

Question number

production with training versus extraction of raw materials); how much of the profit is reinvested locally; the strength of host government regulation of wages, the environment and tax; and how the home country supports workers who lose their jobs, for example through retraining. China and Ireland, for example, have benefited greatly from MNC investment, while some resource-rich countries have gained little.

In conclusion, MNCs have considerable ability to increase living standards in both home and host countries, through investment, jobs, technology, lower prices and tax revenue. However, the benefits are not automatic and are unevenly shared: workers in declining industries at home and communities affected by pollution or exploitation abroad may lose. With effective government policy the net effect is likely to be positive, especially for host developing economies.

Cambridge Assessment International Education

Cambridge International AS & A Level

ECONOMICS **9708/43**

Paper 4 Data Response and Essays **October/November 2022**

2 hours 15 minutes

1257536940

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.

© UCLES 2022

[Turn over

stemup.co.uk

Section A

Answer **this** question.

1 The Hidden Cost of Palm Oil

Worldwide production of palm oil has been increasing for many years. Between 1995 and 2015, annual production quadrupled. The amount of land taken to produce palm oil is vast. It accounts for 10% of all global cropland.

Over 3 billion people in 150 countries now use products containing palm oil. The worldwide demand has raised incomes, especially in the rural areas of Malaysia and Indonesia that produce 85% of the output of palm oil. After the global economic crisis of 1998, the region had been suffering from a significant decline in the exports of manufactured goods. This had a detrimental effect on the balance of payments and resulted in external debt.

Nations producing palm oil view it as a means of reducing poverty, while international finance organisations regard it as an engine of growth for developing economies. The International Monetary Fund (IMF) encouraged Malaysia and Indonesia to cultivate natural resources and to produce more palm oil in spite of an awareness of high external costs. Dutch banks provided more than US$12 billion in loans to Indonesian producers. Palm oil is Indonesia's main export earner.

Widespread adoption of palm oil began when, in 1995, one of the world's major multinational companies decided to use it in its global food manufacturing industries instead of animal fats and other vegetable oils, which were then said to be unhealthy. It invested heavily in expanding palm oil plantations in Malaysia and achieved considerable cost savings because palm oil has a much higher yield per hectare than other vegetable oils.

Palm oil's versatility is not limited to food. It is used in 70% of personal care products (toiletries) such as soap, shampoo and make-up. It is also increasingly used as biodiesel fuel.

As the palm oil industry expanded, conservationists began to raise the alarm about the devastating effects from carbon emissions and on wildlife habitats. Fires set to clear forests and create land for more palm plantations are the major source of greenhouse gas emissions in Indonesia. The financial incentive to produce more palm oil is helping to warm the planet, while destroying the only habitat of some rare animals.

In 2019, one supermarket promised to remove palm oil from all its own-brand foods. Norway banned imports for biodiesel production. The European Parliament proposed that public subsidies for biodiesel should be removed by 2021. If this proposal is enacted it will affect the demand for biodiesel and may force palm oil producing countries to reduce deforestation programmes, leading to improved environmental sustainability.

© UCLES 2022

stemup.co.uk

Fig. 1.1 illustrates the palm oil uses in Europe.

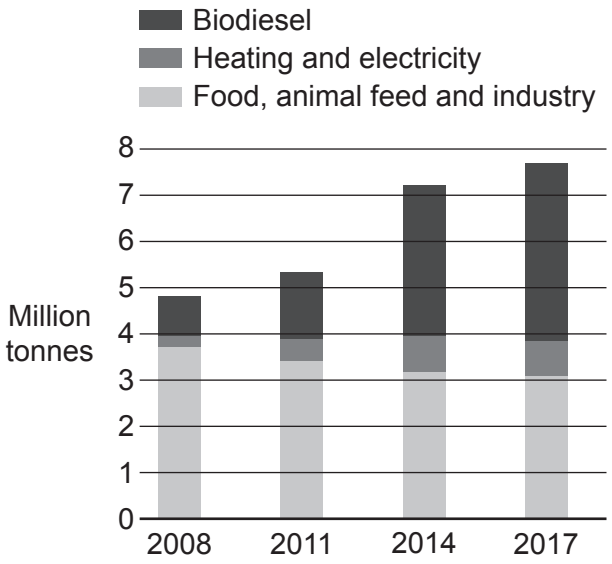


Fig. 1.1: Palm oil uses in Europe

Sources: 1. Article: The Hidden Cost of Palm Oil by Paul Tullis: The Guardian 19 Feb 2019
2. www.tranpsortenvironment.org/what-we-do/biofuels

(a) Identify the trends in demand for different uses of palm oil as shown in Fig. 1.1. [3]

(b) Analyse why developing countries that produce palm oil view it as a means of poverty reduction. [4]

(c) Explain how a change in fiscal policy proposed by the European Parliament for 2021 regarding biodiesel could affect the economies of palm oil producing countries such as Malaysia and Indonesia. [5]

(d) To what extent do you agree with the advice of the IMF to encourage Indonesia to expand its production of palm oil? [8]

© UCLES 2022

stemup.co.uk

Section B

Answer **two** questions.

2 **(a)** Consider why it is important for a government to use cost benefit analysis when deciding how much of a public good to provide. [12]

(b) Pareto optimality can only be achieved when an economy is both productively and allocatively efficient. This will create a more equitable society.

Discuss the extent to which you agree with this statement. [13]

3 **(a)** High market concentration ratios are closely linked to oligopoly market structures.

Explain what this means and consider its importance in relation to the pricing policy of an oligopoly firm. [12]

(b) Limit pricing may sometimes be used by a monopoly. It creates a barrier to entry which benefits consumers in the short run but increases costs to the consumer in the long run.

Discuss this statement. [13]

4 **(a)** Discuss the effectiveness of government policies which increase the net advantage of labour on the long–term supply of labour in an economy. [12]

(b) Compare the impact of an increase in labour productivity on a firm in a monopsony labour market with an increase in labour productivity on a firm operating in a perfectly competitive labour market. [13]

5 **(a)** Consider, with the help of a circular flow diagram, why an export-led growth policy is likely to be successful when a developed economy is in a recession. [12]

(b) The introduction of new technology will increase efficiency but will also cause an increase in unemployment.

Discuss the extent to which you agree with this statement. [13]

6 Developing economies have a high proportion of economically inactive people relative to the size of the labour force (a high dependency ratio). This is the main reason why the standard of living is low in developing economies.

Evaluate this statement. [25]

7 A government's decision to move from a fixed exchange rate to a free market floating exchange rate will solve the problem of unemployment in the short run but will cause higher rates of inflation in the long run.

Evaluate this statement. [25]

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.

© UCLES 2022

stemup.co.uk

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 9708/43

1(a) Biodiesel: demand increased throughout the period, from about 0.8 million tonnes in 2008 to about 3.8 million tonnes in 2017, becoming the largest use. Heating and electricity: demand rose from about 0.3 to about 0.8 million tonnes by 2014 and then stabilised. Food, animal feed and industry: demand fell steadily, from about 3.7 to about 3.1 million tonnes. Total use rose from about 4.8 to 7.7 million tonnes.

1(b) Palm oil is produced in rural areas, which traditionally suffer from underemployment and low, seasonal incomes. High world demand (over 3 billion people use products containing palm oil) means expanding plantations creates jobs and raises the incomes of rural workers and smallholders, which removes many people from absolute poverty. It is the main export earner for Indonesia, earning foreign exchange that promotes economic growth and helped deal with the balance of payments problems and external debt after 1998. Multinationals and foreign banks invest (Dutch banks lent over US$12 billion), which sustains rural economies, and higher tax revenue can fund health and education.

1(c) The proposal is to remove public subsidies for biodiesel by 2021. Removing the subsidy raises the cost of producing biodiesel, so its price to European consumers rises and the quantity demanded falls. Since biodiesel was the fastest growing use of palm oil in Europe, the derived demand for imported palm oil falls. Malaysia and Indonesia, which produce 85% of palm oil, would export less, so their export earnings fall and the current account of the balance of payments worsens.

Question number

Lower exports reduce AD, so through the negative multiplier national income and growth fall, rural incomes fall and unemployment rises on plantations. Lower palm oil prices and profits may also cause multinationals to reduce their direct investment. On the other hand, it may reduce deforestation and improve environmental sustainability.

1(d) In support of the IMF's advice: after the 1998 crisis Indonesia suffered a decline in manufactured exports, a balance of payments deficit and external debt. Palm oil is its main export earner, so expanding production earns foreign currency to repay debt and improve the current account. It raises rural incomes and employment and reduces poverty, and it attracts investment from multinationals and foreign banks. Palm oil has a much higher yield per hectare than other vegetable oils, so Indonesia has a comparative advantage, and world demand for food, toiletries and biodiesel is high.

Against the advice: the expansion has very high external costs. Forests are cleared by fires, the major source of greenhouse gas emissions in Indonesia, contributing to global warming, and destroying the only habitat of rare animals. These social costs exceed the private costs to plantation owners, so there is over-production and market failure, and the growth is not sustainable. Relying on one primary product (monoculture) makes the economy vulnerable to falling world prices and to decisions by foreign buyers, such as Norway's ban on imports for biodiesel, the EU proposal to end biodiesel subsidies and the supermarket removing palm oil, which could cause job losses.

Conclusion: I partly agree. The advice brought clear economic gains in growth, export earnings and poverty reduction, and demand from countries such as India and China will remain high even if Europe reduces its demand. However, at the present rate of expansion production is environmentally unsustainable, so the IMF should have encouraged expansion only with strict regulation of deforestation, for

Question number

example certification of sustainable palm oil, and diversification of the economy.

2(a) Public goods have two characteristics. They are non-excludable: once provided, it is impossible to stop people who have not paid from benefiting. They are non-rival: one person's consumption does not reduce the amount available to others, so the marginal cost of an extra user is zero. Examples are street lighting, national defence, flood defences and lighthouses. Because of non-excludability, people have an incentive to be free riders, so private firms cannot charge and will not supply them: a missing market, a form of market failure. The government must therefore decide whether, and how much, to provide, financed by taxes.

Since there is no market price, the government cannot use consumers' willingness to pay in a market to decide the quantity, and public goods are often very expensive. With limited funds, each decision has a large opportunity cost, so it is important to make a rational choice. Cost benefit analysis (CBA) identifies all the private and external costs and benefits of a project, puts a monetary value on them (using shadow prices where there is no market price), discounts future values to present values, and compares them. The government should provide the public good up to the point where marginal social benefit equals marginal social cost, and should only undertake a project if the social benefits exceed the social costs.

For example, when deciding how many street lights or how big a flood defence to build, CBA would include the construction and maintenance costs, external costs such as light pollution or the loss of land, and benefits such as fewer accidents and crimes, or the value of property and lives protected from floods. This allows the government to compare alternative schemes and to choose the level of provision that maximises net social benefit, avoiding both under-provision and wasteful over-provision. It also makes the decision more transparent and accountable to taxpayers.

Question number

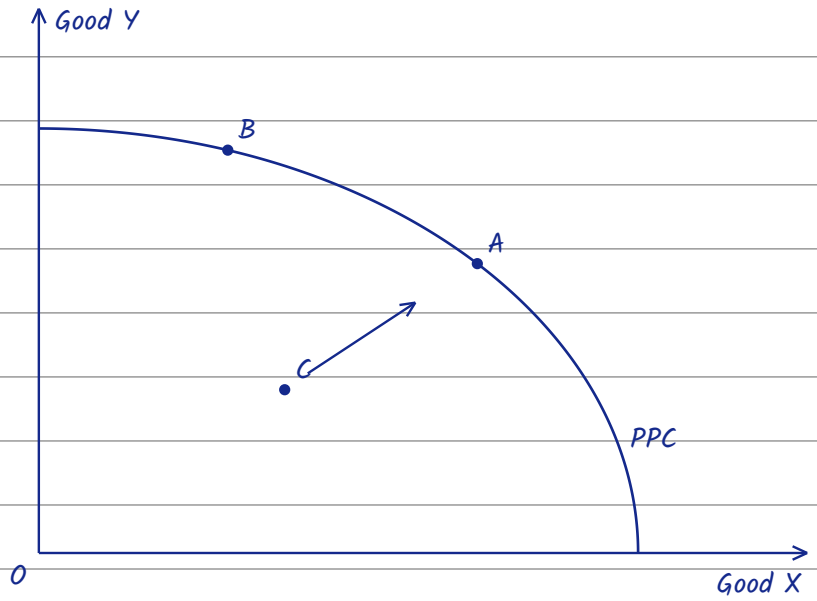
However, CBA has problems. Valuing intangible items, such as safety, a life saved or environmental damage, is very difficult and subjective; it is hard to find out how much people value a public good because they may understate their preferences if they think they will have to pay, or overstate them if they will not. The choice of discount rate and forecasts of future benefits greatly affect the result, and CBA ignores the distribution of costs and benefits. It is also expensive and time consuming.

In conclusion, CBA is important because public goods have no market price and are costly, so a systematic way of comparing social costs and benefits helps allocate scarce public funds efficiently. But its results depend on uncertain valuations, so it should guide rather than replace the government's judgement.

2(b) Productive efficiency is achieved when goods are produced at the lowest possible average cost, at the minimum point of the AC curve; for the economy as a whole it means producing on the production possibility curve (PPC), so that more of one good cannot be produced without producing less of another. Allocative efficiency is achieved when resources are allocated so that the goods produced are those consumers most want: price equals marginal cost (P = MC) in every market, so consumer welfare is maximised. For the economy, it is one particular point on the PPC that reflects consumer preferences.

Pareto optimality is a situation in which it is impossible to make anyone better off without making someone else worse off. In the diagram, point C inside the PPC is not productively efficient; moving to a point on the curve could give more of both goods, making some people better off and no one worse off, so C is not Pareto optimal. Points A and B are both productively efficient, but if consumers' preferences mean that A is the combination that maximises welfare, then only A is also allocatively efficient. At A, resources cannot be reallocated to make someone better off without harming someone else.

Question number



So the first part of the statement is correct: Pareto optimality requires both productive and allocative efficiency throughout the economy, and in theory it is achieved when all markets are perfectly competitive, with no externalities or other market failures.

However, the second part is not necessarily correct. Equity means fairness in the distribution of income and wealth, which is a normative issue involving value judgements. Pareto optimality says nothing about distribution: there are many Pareto optimal outcomes, one for each distribution of income. An economy in which a few people own almost everything can still be Pareto optimal, because making the poor better off would require making the rich worse off. Efficiency and equity are different objectives.

In fact there may be a trade-off: redistributive policies such as progressive income taxes and welfare benefits can make society more equitable but may reduce incentives to work and invest, causing some inefficiency. On the other hand, efficiency raises total output, so it creates more resources that could be redistributed, and some policies, such as education, may improve both efficiency and equity. Also, in the real world, market failures mean Pareto optimality is rarely achieved.

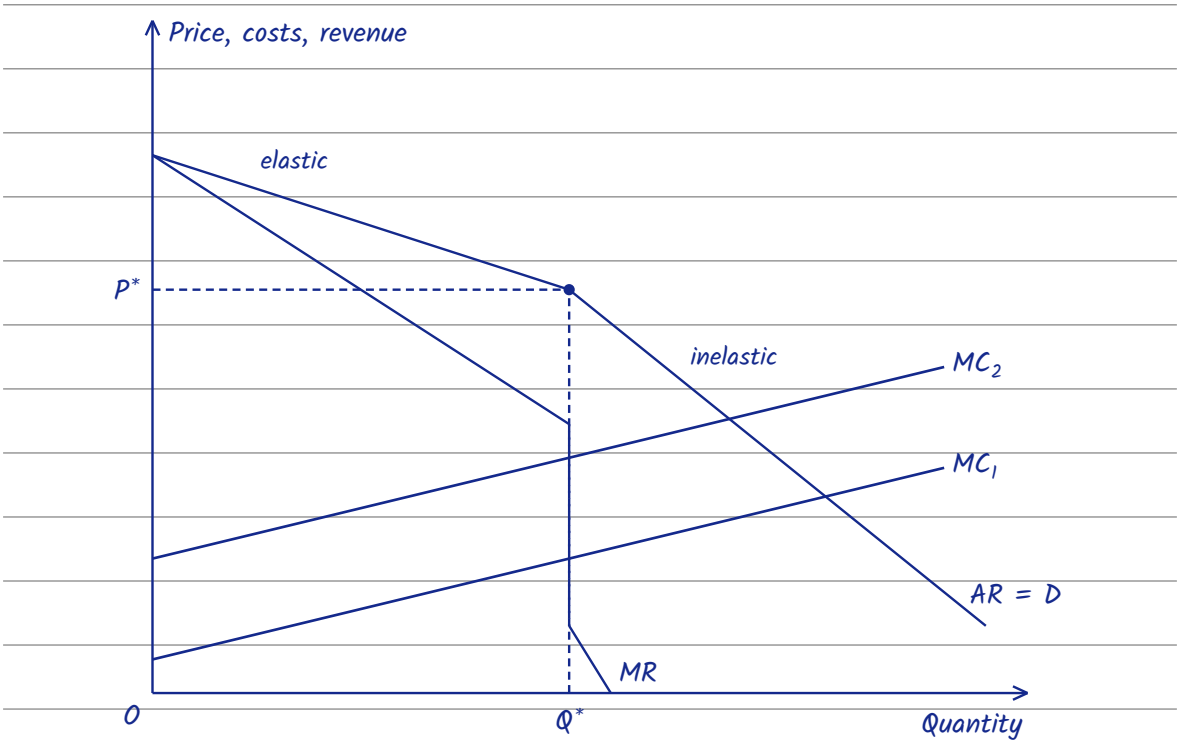
Question number

In conclusion, I agree that Pareto optimality requires both productive and allocative efficiency, but I disagree that it will create a more equitable society: equity depends on the distribution of income, which requires government intervention through taxes, benefits and the provision of merit goods.

3(a) A concentration ratio measures the share of total market sales (or output) of the largest firms in an industry. For example, a four-firm concentration ratio of 80% means the four largest firms account for 80% of the market, with many small firms sharing the remaining 20%. A high concentration ratio means the market is dominated by a few large firms, which is the defining feature of oligopoly, as in supermarkets, banking, mobile networks or soft drinks. Oligopolies are also characterised by high barriers to entry, which maintain the high concentration, and often by differentiated products.

Because there are only a few dominant firms, they are interdependent: each firm must take into account the likely reactions of its rivals when setting its price. This is important for pricing policy. The kinked demand curve model assumes that if one firm raises its price, rivals will not follow, so it loses many customers: demand is elastic above the current price P^*. If it cuts its price, rivals follow to protect market share, so it gains few customers: demand is inelastic below P^*. There is a gap (vertical discontinuity) in the MR curve, so MC can rise from MC_1 to MC_2 without changing the profit maximising price and output. Prices therefore tend to be rigid.

Question number



Interdependence leads to other pricing strategies. A price war, where firms keep undercutting each other, reduces all firms' profits, although consumers gain. To avoid this, firms may collude, forming a cartel to fix prices and act like a monopoly, though this is usually illegal and cartels may break down through cheating. Alternatively, there may be tacit collusion through price leadership, where a dominant firm sets the price and others follow. Game theory, such as the prisoners' dilemma, shows that firms acting alone may choose low prices even though a high price would give higher joint profits. Firms may also use limit pricing or predatory pricing to deter entry.

Because price competition is risky, oligopolies often prefer non-price competition, such as advertising, branding, loyalty schemes and product development, to increase market share.

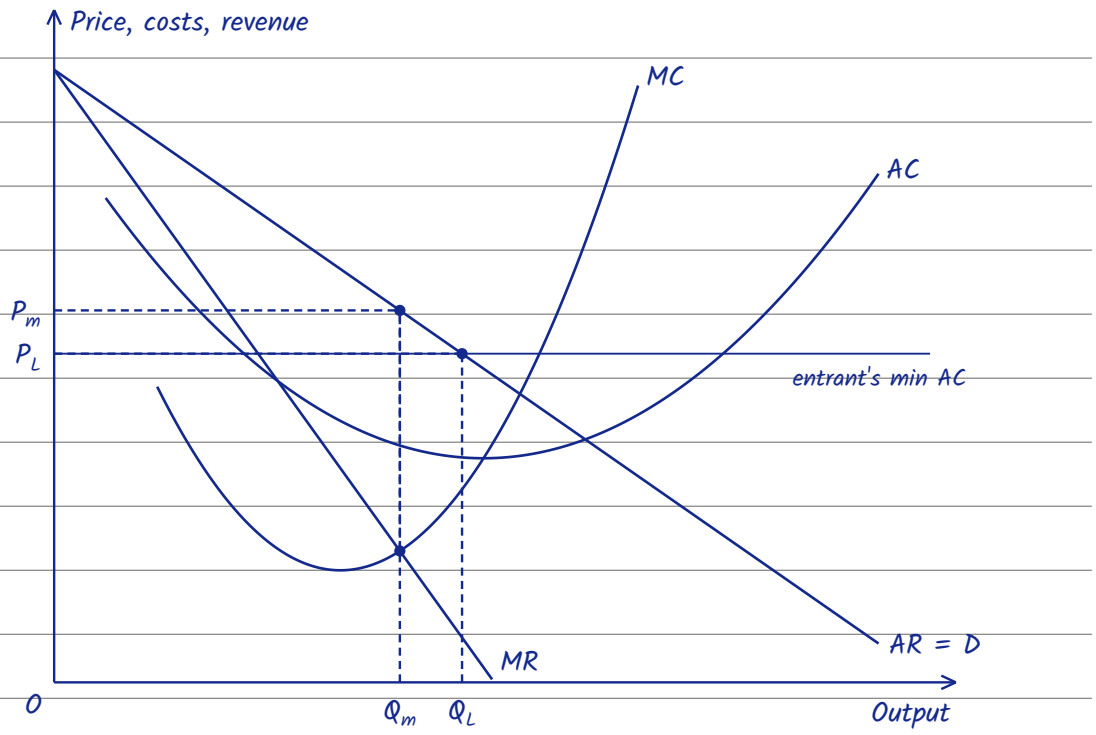
In conclusion, high concentration ratios indicate oligopoly, and the resulting interdependence is the key influence on pricing policy, usually leading to stable prices, collusion or price leadership. However, a concentration ratio does not show how competitive the firms actually are, and in contestable markets the threat of

Question number

entry may keep prices low even with high concentration.

3(b) A monopoly is a single seller (or a firm with at least 25% of the market) protected by barriers to entry. A profit maximising monopolist produces where MC = MR, at Q_m and P_m in the diagram, earning supernormal profit. These profits attract potential entrants, which threatens the monopoly's market share.

Limit pricing means setting a price below the profit maximising price, at P_L, just below the minimum average cost of a potential entrant, so a new firm could not cover its costs. The monopolist can do this because economies of scale and dynamic efficiency (from investment in research and new technology) give it lower average costs than a new small firm. So limit pricing acts as a barrier to entry.



In the short run consumers benefit: the price falls from P_m to P_L and output rises from Q_m to Q_L, so consumer surplus increases and allocative inefficiency is reduced, as P is closer to MC.

In the long run, however, the statement may be correct. Once potential competitors have been deterred, the monopoly may return to its profit maximising

Question number

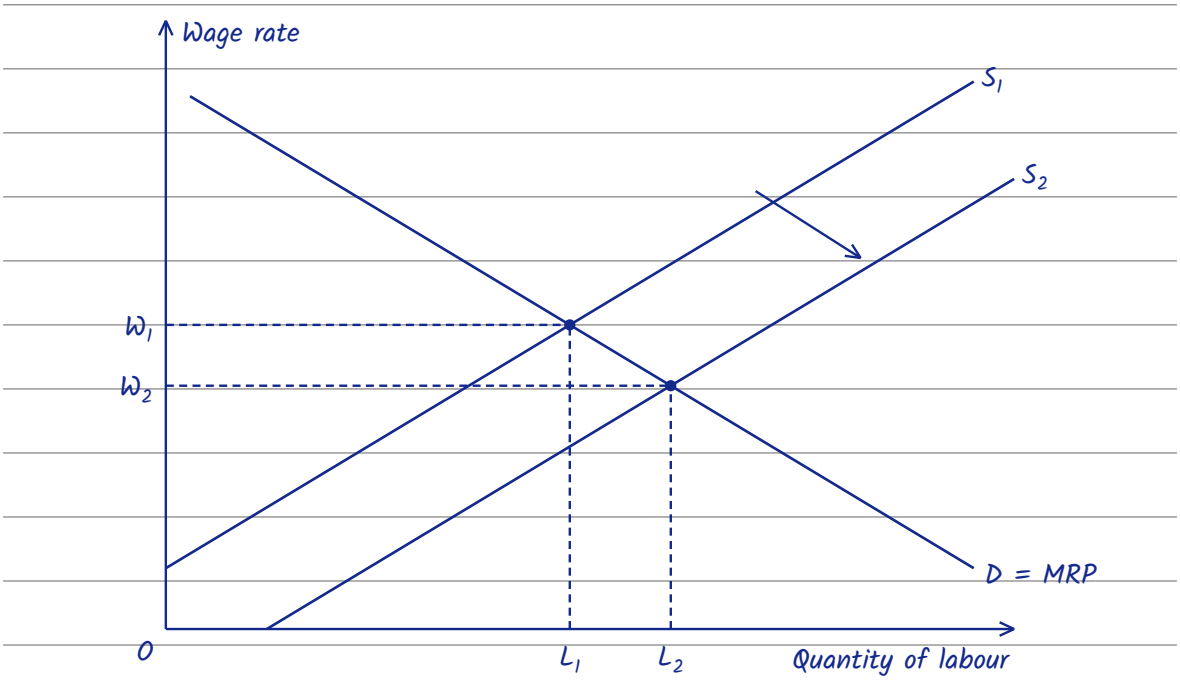
price P_m and output Q_m, so consumers pay higher prices, have less choice and lose consumer surplus. With no competition, the firm may become X-inefficient, letting costs rise, so prices are higher still and quality may fall. The monopoly power may be maintained for a long time because entry was prevented.

But this is not certain. If the market is contestable, with low sunk costs, raising prices again would attract hit and run entry, so the monopoly may have to keep prices low permanently. The monopolist may also use its supernormal profits for research and development, achieving dynamic efficiency, so its costs fall further and lower prices or better products can be maintained in the long run. A government competition authority or regulator may prevent the firm from raising prices, for example by price caps. Also, the statement assumes the monopoly wants to maximise profit; it may pursue sales or revenue maximisation.

In conclusion, the statement is partly correct: limit pricing benefits consumers in the short run and can lead to higher prices in the long run once entry is deterred. Whether consumers lose in the long run depends on contestability, government regulation and whether the monopoly uses its profits to become dynamically efficient.

4(a) The net advantage of a job is the total of its pecuniary (monetary) and non-pecuniary benefits. Pecuniary advantages include wages, salaries, overtime and bonuses; non-pecuniary advantages include hours of work, working conditions, job security, holidays, promotion prospects, training and job satisfaction. The supply of labour depends on the net advantage, so policies that increase it shift the long-term supply of labour to the right, from S_1 to S_2: more workers are willing to work at every wage. With given demand, employment rises from L_1 to L_2.

Question number



Pecuniary policies. Cutting income tax raises take-home pay, increasing the reward for working, which may encourage people to join the labour force or work more hours (substitution effect). But the income effect may mean some workers choose more leisure because they can reach their target income with fewer hours, so the effect on supply is uncertain, and tax cuts reduce government revenue. A higher national minimum wage increases the incentive to work, but if it is above equilibrium firms demand fewer workers, creating unemployment. Cutting welfare benefits increases the incentive to work but may increase poverty.

Non-pecuniary policies. Government can provide or subsidise education and training, which raises skills, promotion prospects and occupational mobility, increasing the supply of skilled labour in the long run; but it is costly, has a high opportunity cost and takes years to have an effect. Regulations on working hours, health and safety, parental leave, flexible working and job security improve conditions and encourage groups such as parents and older workers to enter the labour force. Subsidised childcare raises female participation. However, these regulations raise firms' costs, which may reduce profitability and the demand for labour, offsetting the benefit.

Question number

In conclusion, policies that raise net advantage can increase the long-term supply of labour, with training and childcare often the most effective because they increase both participation and skills. Their effectiveness depends on workers' responses, the cost to the government and firms, and the time taken, and supply will only lead to more employment if there is demand for the extra workers.

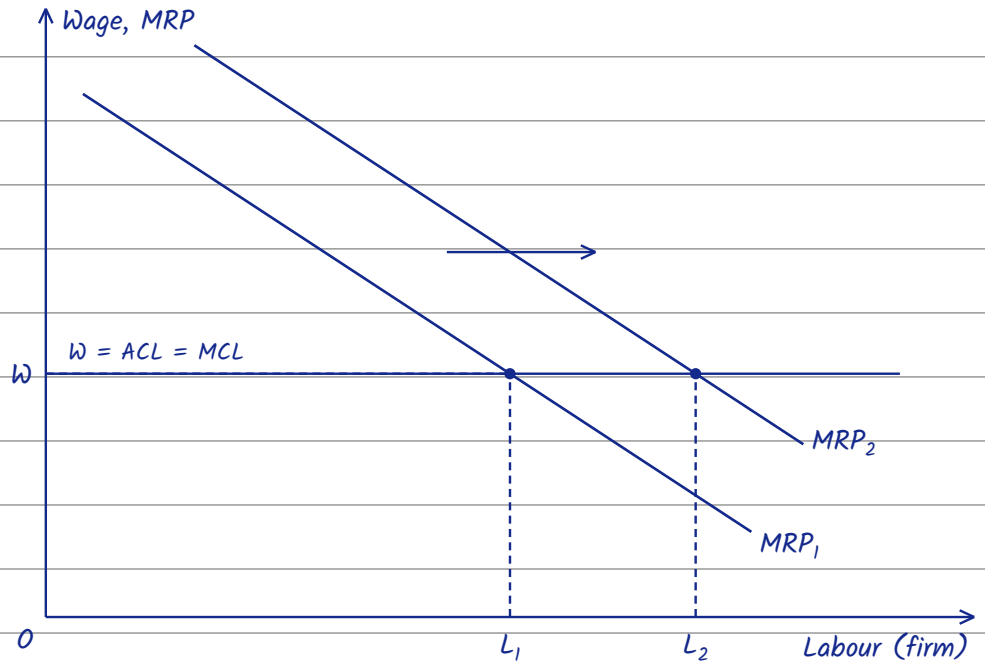
4(b)

A perfectly competitive labour market has many small firms and many workers, perfect information and mobility. The wage is set by market demand and supply, and each firm is a wage taker: it faces a perfectly elastic supply of labour at the market wage, so W = ACL = MCL. A monopsony labour market has a single employer, such as the main employer in a mining town or a state health service. The firm faces the upward sloping market supply curve (ACL); to hire an extra worker it must raise the wage for all workers, so the marginal cost of labour (MCL) is above the supply curve.

In both cases a profit maximising firm employs workers where MRP = MCL. Labour productivity is output per worker; an increase, for example from better training or technology, raises the marginal physical product (MPP). Since MRP = MPP × MR, the MRP curve, the demand curve for labour, shifts right from MRP_1 to MRP_2.

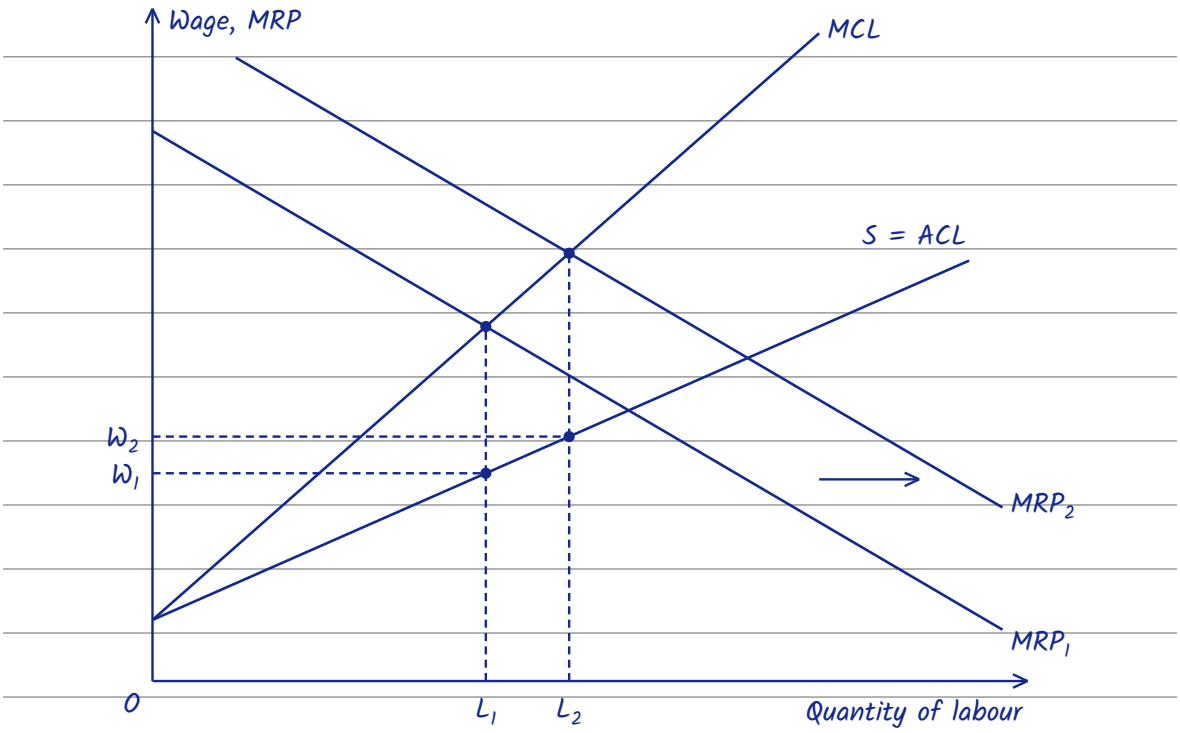
Perfectly competitive firm: the firm's MRP shifts right but the wage, set by the whole market, stays at W. The firm employs more workers, from L_1 to L_2, where the new MRP equals W. Its output and profits rise, but the wage does not rise unless productivity rises across the whole market, shifting market demand.

Question number



Monopsony: the monopsonist employs where MCL = MRP. When MRP shifts right, employment rises from L_1 to L_2, and because the firm must move up the supply curve to attract more workers, the wage rises from W_1 to W_2. So both wages and employment rise. However, the wage remains below MRP, the monopsonist keeps a gap between wage and MRP as extra profit, and employment is still lower than it would be in a competitive market. The size of the changes depends on the size of the productivity increase and on the elasticity of labour supply: the more inelastic supply is, the more the wage rises and the less employment rises.

Question number



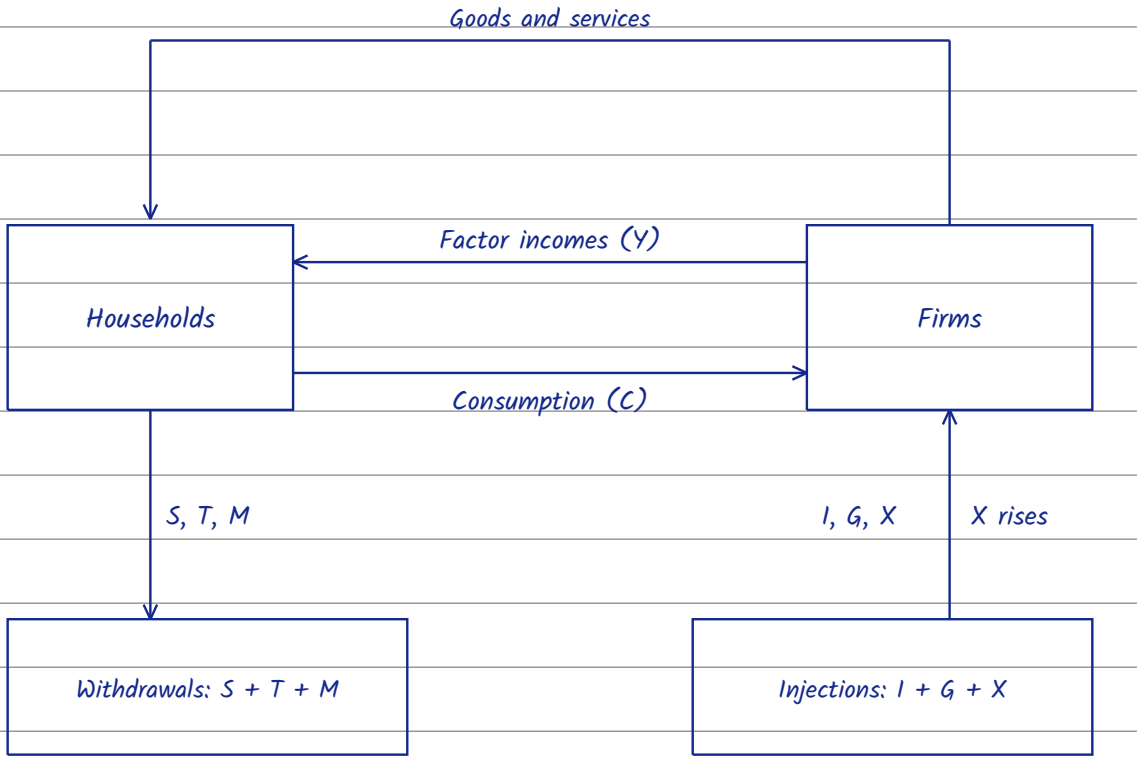
Comparison: in both markets higher productivity increases employment by the firm. The key difference is the wage: in perfect competition it is unchanged for a single firm, while under monopsony it rises because the firm faces an upward sloping supply curve. A monopsonist's employment response may be smaller than a competitive firm's because MCL rises faster than the wage. In both cases, if demand for the product is limited, higher productivity could instead allow the same output with fewer workers.

5(a) A recession is a fall in real GDP for two consecutive quarters. It is usually caused by a fall in aggregate demand, and is accompanied by rising cyclical unemployment, falling incomes and low confidence. Export-led growth is a strategy of increasing output and incomes mainly by expanding exports, relying on openness to international trade.

The circular flow of income shows households supplying factors to firms in return for incomes, and spending on firms' output. Withdrawals (savings, taxes and imports) leave the flow and injections (investment, government spending and

Question number

exports) enter it. National income is in equilibrium when withdrawals equal injections. An increase in exports is an injection: foreign spending enters the flow, firms raise output and employ more workers, households receive more income and spend part of it, which raises income again. Through the multiplier, k = 1 ÷ (mps + mrt + mpm), national income rises by more than the increase in exports until withdrawals rise to equal the higher injections.



Export-led growth is likely to be successful in a recession for several reasons. In a recession there are unemployed resources, so extra demand raises output and employment rather than prices. Domestic consumption and investment are weak because of low confidence, so foreign demand is an alternative source of demand. Other policies may be limited: interest rates may already be very low, and firms may not borrow even if they fall; and high national debt may make expansionary fiscal policy difficult. Export growth also improves the current account and protects the value of the currency, rather than widening a budget deficit. A developed

Question number

economy usually has high value, high quality products, such as German cars, which are in demand abroad.

However, success depends on several factors. If the recession is global, demand from trading partners will also be weak, so exports may not rise. Exports must be price competitive: under a floating exchange rate, lower interest rates can cause a depreciation that makes exports cheaper, but with a fixed rate or a single currency this is not possible. The effect depends on the price elasticity of demand for exports (the Marshall-Lerner condition) and on time lags (the J-curve). Other countries may retaliate with protectionism. Also, a high marginal propensity to import means a smaller multiplier.

In conclusion, an export-led policy can be very effective in moving a developed economy out of recession when the rest of the world is growing and the currency can depreciate, but it is less likely to succeed in a global recession, so it may need to be combined with fiscal and monetary policy.

5(b) Efficiency here mainly means productive efficiency: producing more output per unit of input, at the lowest average cost. Labour productivity is output per worker per hour. New technology, such as robots, automated machinery, computer software and artificial intelligence, increases productivity, lowers average costs and allows firms to produce more with the same or fewer workers, which also shifts LRAS to the right.

In the short run the statement is often correct. Firms introduce new technology to substitute capital for labour, for example self-service checkouts in supermarkets or robots in car factories. If demand for the product does not rise, the same output needs fewer workers, so some are made redundant. Their skills may not be needed elsewhere, causing structural (technological) unemployment, and it can be concentrated in particular regions and industries. Workers may also be geographically and occupationally immobile, so it may last a long time.

Question number

However, in the long run new technology may increase employment. Lower costs lead to lower prices, raising real incomes and the demand for goods, so firms expand output and may need more workers. Lower prices also make exports more competitive, raising net exports and AD. The firms producing, installing and maintaining the new technology need workers, and entirely new industries and jobs are created, as with the internet and app development. Higher productivity raises MRP and so the demand for labour and wages. Historically, technological progress has raised living standards without causing mass unemployment.

Also, not all unemployment is caused by technology: cyclical unemployment results from a lack of AD, frictional unemployment from people moving between jobs, and these are not linked to technology. Whether unemployment rises also depends on government policy: retraining and education help workers move into new jobs, and expansionary policies maintain demand. Technology may complement labour rather than replace it, making workers more productive, especially skilled workers.

In conclusion, I agree that new technology increases efficiency, and it is likely to cause some structural unemployment in the short run in particular industries. However, I disagree that it must increase unemployment overall, because in the long run higher productivity can raise demand, incomes and employment, provided workers are retrained and the economy is flexible.

6 The dependency ratio compares the number of economically inactive people who depend on others, mainly children under 15 and people over 64, with the number of people of working age in the labour force: dependency ratio = (dependants ÷ working population) × 100. A high ratio means each worker has to produce enough goods and services to support themselves and a large number of dependants.

In developing economies the ratio is high mainly because birth rates are high, so a large proportion of the population is young; in developed economies a high ratio is usually caused by ageing populations. Birth rates are high because children are

Question number

seen as a source of labour and support in old age, infant mortality is high, contraception is limited, and women have less access to education and work.

There are strong reasons why a high dependency ratio lowers living standards. The standard of living is commonly measured by real GDP per capita: if a large part of the population does not work, output is shared among more people, so output per head is low. Families with many children have less income per person, leading to poor nutrition, and children may leave school early to work, reducing human capital. Households save less, so there are fewer funds for investment, which keeps productivity low. With a small working population the tax base is small, so the government cannot afford to provide enough schools, healthcare, sanitation and infrastructure, which are needed for development. Rapid population growth also puts pressure on land, housing and the environment. This creates a vicious circle of poverty.

However, there are many other causes of low living standards. Firstly, low levels of capital investment and technology mean low productivity per worker, which is the main determinant of output per head. Secondly, dependence on primary products with low and volatile prices, and declining terms of trade, limit export earnings. Thirdly, poor education and health reduce the quality of the labour force. Fourthly, poor infrastructure, weak institutions, corruption, political instability and conflict discourage investment. Fifthly, high external debt means interest payments use up government revenue. Also, unemployment and underemployment are high in many developing countries, so the problem is often a lack of jobs rather than too few people of working age; and a large informal sector means many people classed as inactive do in fact produce goods and services. Inequality also means some groups have very low living standards even where average income is higher.

In addition, a high dependency ratio of young people need not be permanent: as birth rates fall, the large young population becomes a large working population, giving a demographic dividend, as happened in East Asia. And some countries with

Question number

high dependency ratios, such as Japan and Italy with ageing populations, still have high living standards, showing that productivity matters more.

It is also difficult to define and measure the standard of living. GDP per capita ignores the distribution of income, the informal economy, unpaid work, leisure and the environment. Broader measures such as the HDI include life expectancy and education, which are affected by many factors besides the dependency ratio, such as government spending priorities and access to clean water.

In conclusion, a high dependency ratio contributes to low living standards in developing economies, mainly by reducing output and tax revenue per person and limiting investment in human capital. However, it is difficult to accept that it is the main reason. Low productivity due to a lack of capital, education and technology, dependence on primary products, and weak institutions are at least as important, and the dependency ratio is itself partly a result of poverty. Policies should therefore address productivity and development, not only population growth.

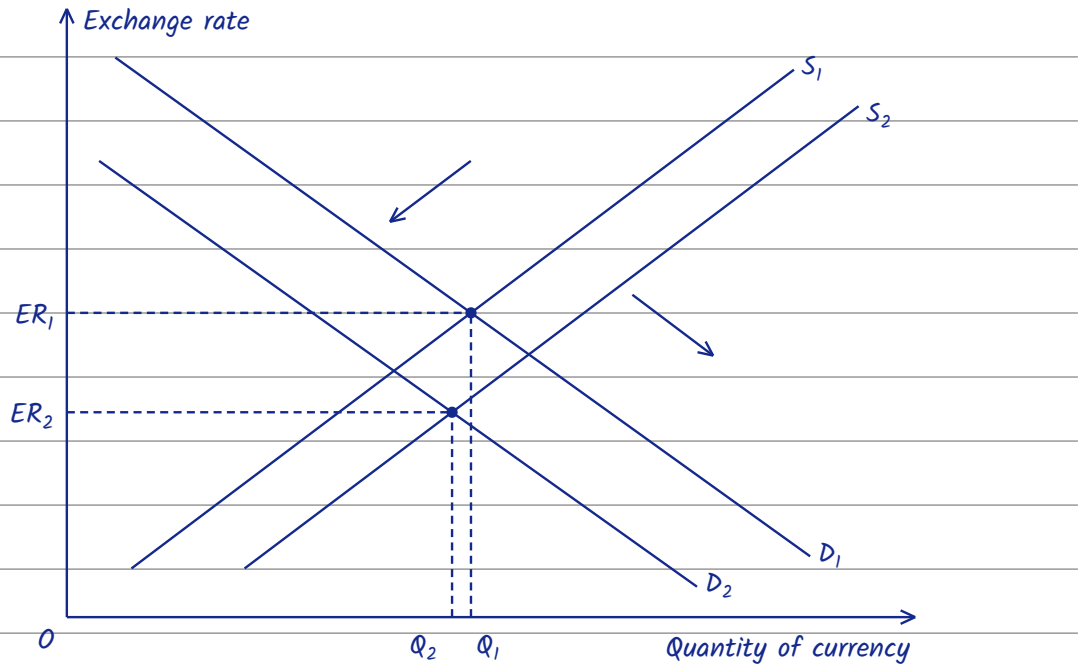
7

Under a fixed exchange rate the government and central bank set the value of the currency against another currency, and maintain it by buying or selling the currency using foreign exchange reserves, or by changing interest rates. Under a free floating exchange rate, the value is determined only by market demand for and supply of the currency, with no intervention.

Unemployment in the short run: under a fixed rate, monetary policy is tied to defending the exchange rate. If the government cuts interest rates to boost AD and reduce unemployment, hot money flows out, putting downward pressure on the currency, so the central bank must buy its own currency with reserves or raise interest rates again, which undermines the policy. Under a floating rate, the government is free to use monetary policy for domestic aims. Lower interest rates raise consumption and investment, and also cause the currency to depreciate, from ER_1 to ER_2 in the diagram, as demand for it falls and supply rises. Exports become

Question number

cheaper and imports dearer, so net exports increase. AD rises and, through the multiplier, output and employment rise, reducing cyclical unemployment. If the fixed rate was over-valued, floating removes a major cause of uncompetitive exports.



However, floating will not solve all unemployment. It helps only demand-deficient (cyclical) unemployment, not structural or frictional unemployment, which need supply-side policies. The effect of a depreciation depends on the price elasticities of demand for exports and imports (the Marshall-Lerner condition) and, because of the J-curve, the current account may worsen at first, so it may not even help in the short run. Floating also brings uncertainty, which may discourage trade and investment.

Inflation in the long run: a depreciating currency raises the price of imported raw materials, components and fuel, causing cost-push inflation, and higher demand for exports adds demand-pull inflation, especially if the economy is near full employment. Higher prices may lead to wage demands and a wage-price spiral, making exports uncompetitive again, causing further depreciation. Under a fixed rate the government must keep inflation low to defend the currency, which acts as

Question number

a discipline; floating removes this discipline, and if the central bank no longer needs to control the money supply to protect the exchange rate, the money supply may grow faster, which monetarists argue causes inflation in the long run.

But higher inflation is not inevitable. The currency may appreciate rather than depreciate, reducing import prices and inflation. An independent central bank with an inflation target, such as 2%, can use interest rates to control inflation, and many countries with floating rates, such as the UK, have had low inflation.

Inflation also depends on other factors such as world commodity prices and global growth, productivity and expectations. Floating rates also adjust automatically to correct current account imbalances without the need for deflationary policies that raise unemployment.

In conclusion, the statement is only partly correct. Floating can help reduce cyclical unemployment in the short run by freeing monetary policy and allowing a depreciation, but its effect is limited and uncertain. It can cause inflation in the long run through higher import prices and loss of discipline, but this depends on the direction of the exchange rate and on whether the central bank controls inflation. The outcome depends more on the policies used than on the exchange rate system alone.