Cambridge Assessment International Education

# Cambridge International AS & A Level

**ECONOMICS** **9708/41**

Paper 4 A Level Data Response and Essays **May/June 2023**

**2 hours**

*0021071659*

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

**INFORMATION**

- The total mark for this paper is 60.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **4** pages. Any blank pages are indicated.

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## Section A

Answer all parts of Question 1.

**1 Competition, monopoly and the market**

Firms are sometimes thought of as machines: inputs go in, products come out. However, it matters how powerful these firms are allowed to become.

Competition law – the law that governs how firms compete in the market, how they may exert their power and how and when they may join forces – has not prevented high concentration ratios in many industries.

Global monopolies have been created in the name of 'free market' capitalism. Mergers have been approved and monopolies tolerated under the assumption that they are efficient. Their ability to enable innovation is relied upon to justify these monopolised industries.

Competition law is being used to protect a narrow set of public interests based on the idea of 'consumer welfare'. The test applied by the law is whether any change will result in lower prices for consumers and thus is beneficial. This is regardless of how monopolised the resulting market structure becomes.

The logic that focuses on consumer prices is flawed. This can be seen in the impacts of firms on the environment. Prices do not capture the negative externalities of production, for which neither the producer nor the consumer pays.

Low consumer prices are not an adequate indicator for consumer welfare. The low price/low wage spiral keeps pushing for cheaper goods and services to increase the profitability of the firm. The result is that workers are paid less. Low prices cause unequal bargaining positions between powerful employers and workers, and between powerful buyers and small independent suppliers.

Regulation has a role to play in protecting consumers from the worst abuses of market power by firms. There needs, however, to be new competition law that promotes the free market rather than the desires of the monopoly firms. It needs to consider the balance of power between the public sector and private enterprise.

*Source: RSA Journal. Issue 3, 2020 p 32.*

**(a)** The article refers to concentration ratios. Explain what is meant by a concentration ratio and how it is calculated. [4]

**(b)** Explain, with an example, whether the article is correct in saying that neither the producer nor the consumer pays for negative externalities. [4]

**(c)** Apart from negative externalities, describe **two** reasons why the article says increased concentration in an industry may not improve consumer welfare. [4]

**(d)** The article says that monopolies are tolerated because they are efficient.

Assess, with the help of a diagram, whether economic theory supports the idea that monopolies are efficient. [8]

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## Section B

Answer **one** question.

**EITHER**

**2** To improve allocative efficiency economists frequently advise governments to remove existing subsidies to the private sector providers of education.

With the help of a diagram, evaluate this advice. [20]

**OR**

**3** Some firms frequently use price discrimination.

Assess the view that when this occurs, price discrimination will always benefit the producer at the expense of the consumer and society. [20]

## Section C

Answer **one** question.

**EITHER**

**4** An increase in a government's budget surplus will increase unemployment in the short run but it will make it easier to control a balance of payments deficit on the current account in the long run.

Evaluate this statement. [20]

**OR**

**5** To what extent do you agree that an increase in productivity will lead to a higher standard of living in low-income countries? [20]

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

Question number

Answers for paper 9708/41

1(a) A concentration ratio measures the combined market share of the largest firms in an industry, for example the 4-firm or 5-firm concentration ratio. It ranges from close to 0% to 100% and shows the degree of competition: a low ratio means many firms compete, while a high ratio means the market is dominated by a few firms, as in oligopoly or monopoly.

To calculate it, add together the sales (or output) of the specified number of largest firms, divide this total by the total sales of the whole industry and multiply by 100. For example, if the four largest firms sell $60m out of industry sales of $80m, the 4-firm concentration ratio is 60 ÷ 80 × 100 = 75%.

1(b) A negative externality is a cost of production or consumption that falls on a third party, someone who is neither the producer nor the consumer and who had no say in the decision. Because the cost is external, it is not included in the firm's private costs or in the market price.

For example, a chemical factory that dumps waste into a river does not pay for the damage. Local fishermen lose their catch and nearby residents suffer health problems and pay medical bills. So the article is largely correct: the social cost is greater than the private cost, and the third parties bear the difference.

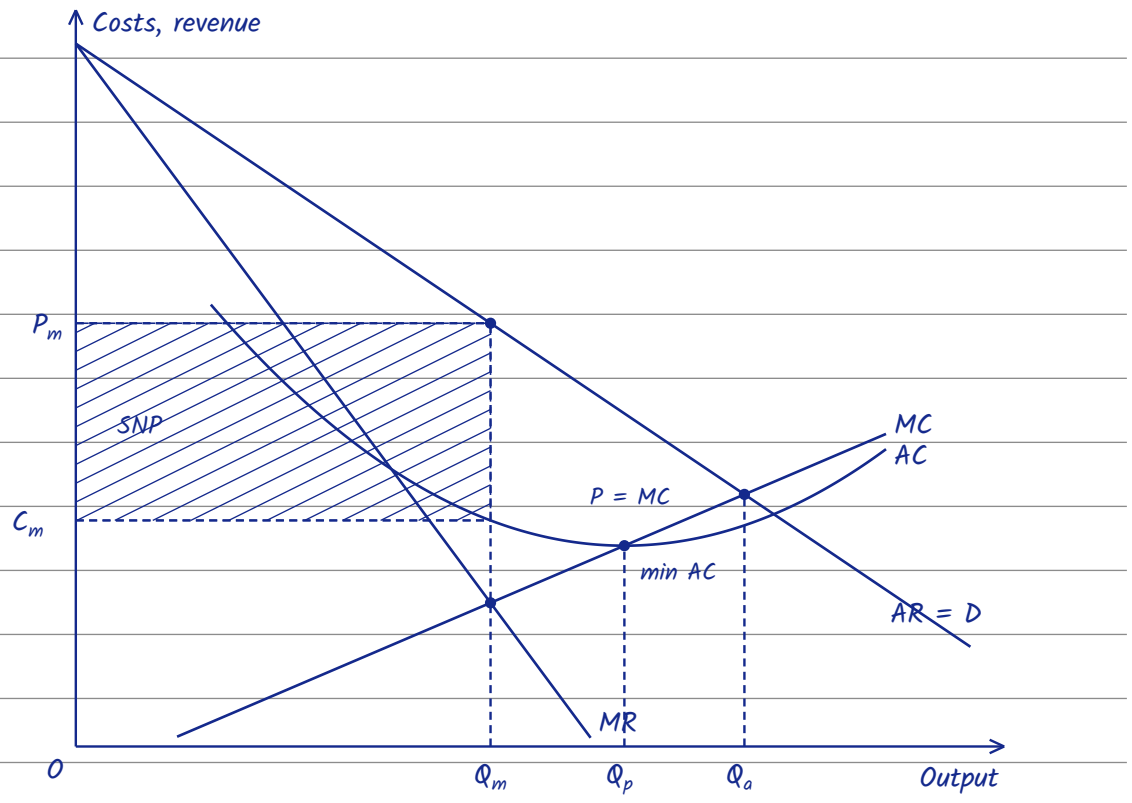
However, it is not completely correct. If the government imposes a pollution tax or fines, the producer pays part of the external cost and passes some of it on to consumers in higher prices, so the externality is partly internalised. Producers and consumers may also suffer the pollution themselves as local residents.

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1(c) First, increased concentration gives firms more monopoly power. They can restrict output and raise prices, earning higher supernormal profits that benefit shareholders and managers rather than consumers.

Second, it creates unequal bargaining power. Powerful employers can pay workers less (the low price/low wage spiral), so workers have little scope to win pay rises, and powerful buyers such as large supermarkets can force small independent suppliers, such as farmers, to accept very low prices. Consumers, who are also workers and suppliers, lose income, so their welfare does not improve even if prices are low.

1(d) Productive efficiency is producing a given output at the lowest possible average cost, the minimum point of the AC curve. Allocative efficiency is producing where price (the marginal benefit to consumers) equals the marginal cost of producing the last unit, P = MC, so resources are allocated to the goods consumers value most.



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In the diagram a profit-maximising monopolist produces where MC = MR, at output $Q_m$, and charges price $P_m$, read from the AR curve. At $Q_m$ price is far above marginal cost, so it is allocatively inefficient: consumers value extra units more than they cost to make, but output is restricted below $Q_a$ where P = MC. Average cost at $Q_m$ is $C_m$, above the minimum AC at $Q_p$, so it is also productively inefficient. Barriers to entry let it keep the supernormal profit (shaded) in the long run, and lack of competition may cause X-inefficiency.

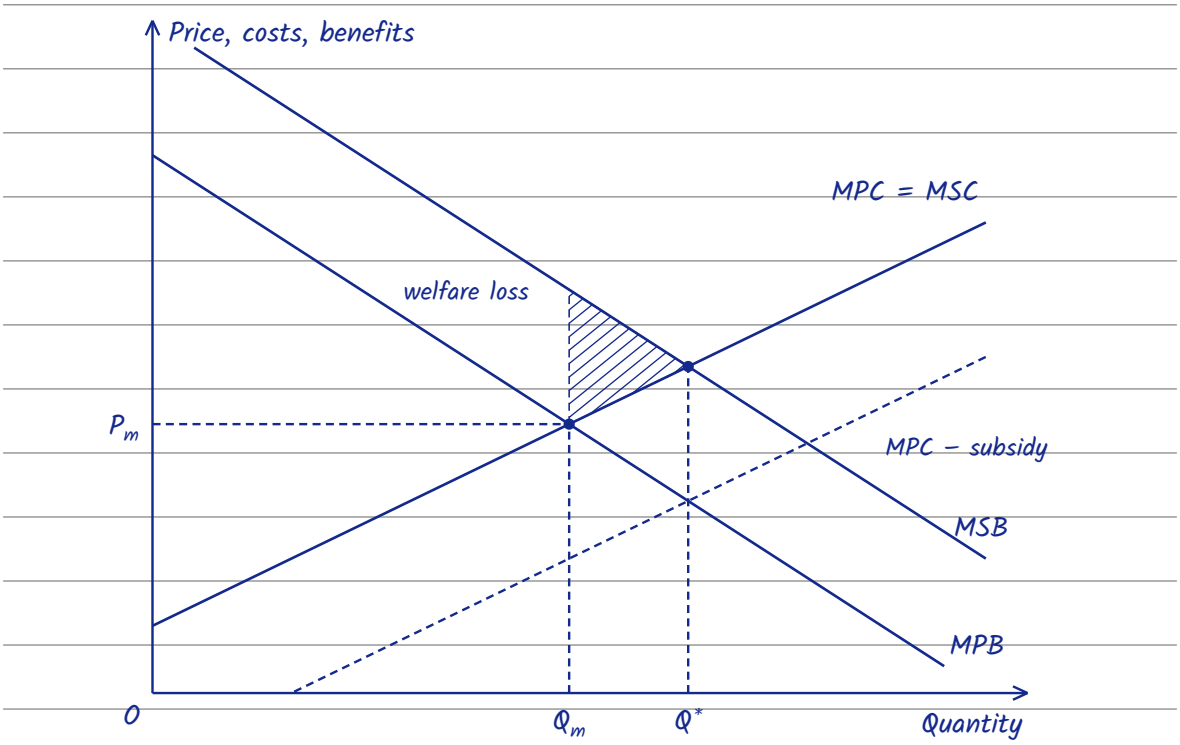
However, a monopoly may be dynamically efficient: supernormal profit can fund research and development, which the article calls its ability to enable innovation, and may lower costs over time. A natural monopoly with large economies of scale may produce at a lower average cost than many small competing firms.

Overall, static economic theory does not support the idea that monopolies are efficient, since they are neither allocatively nor productively efficient. Only dynamic efficiency and economies of scale might justify them, and these benefits are not guaranteed.

2

Education is a merit good: it is more beneficial than consumers realise because of imperfect information, so it would be under-consumed in a free market. It also creates positive externalities: a better educated workforce is more productive, raises tax revenue, reduces crime and benefits society, so the marginal social benefit (MSB) is greater than the marginal private benefit (MPB). Allocative efficiency occurs where MSB = MSC. Private sector providers are schools and colleges owned by individuals or firms and run for profit, unlike public sector schools owned and funded by the state.

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In the diagram, without a subsidy, students and parents consider only private benefits, so the market equilibrium is where MPB = MPC at $Q_m$. The socially optimum output is $Q^*$, where MSB = MSC, so $Q_m$ is under-provision and the shaded triangle shows the welfare loss. A subsidy to private providers lowers their costs, shifting the cost curve down to MPC – subsidy, so fees fall and enrolment rises to $Q^*$. The subsidy corrects the market failure and improves allocative efficiency.

This means removing existing subsidies would normally reduce allocative efficiency. Fees would rise, output would fall back from $Q^*$ towards $Q_m$, and the welfare loss would return. The advice therefore seems to contradict the theory of positive externalities.

However, the advice may be correct in some cases. The size of the external benefit is very hard to measure, so the government may set the subsidy too high, pushing output beyond $Q^*$ and over-allocating resources to education, which is also allocatively inefficient. Subsidies also have an opportunity cost: the money could be spent on health care or infrastructure, or used to reduce taxes. They may also

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cause government failure: private firms may keep the subsidy as profit rather than cutting fees or improving quality.

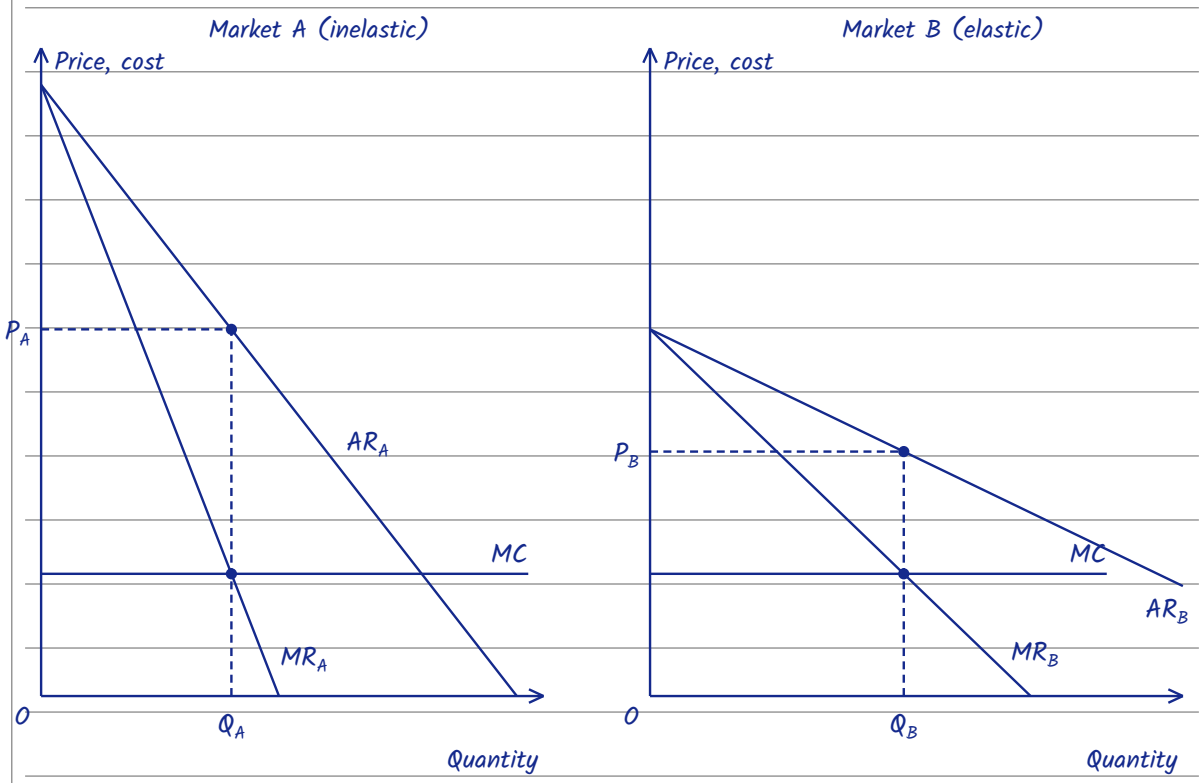
Equity also matters. Even with a subsidy, access to private education still depends on ability to pay, so subsidies may mainly benefit richer families. The government could instead spend the money on direct state provision, free at the point of use, which may be more equitable. On the other hand, the profit motive gives private providers an incentive to cut costs and bureaucracy, so state provision may be less efficient. Alternatives such as vouchers given to low-income families might target the external benefit better.

In conclusion, the advice is not generally correct. Because education has positive externalities, a well-targeted subsidy moves output towards the allocatively efficient level, so removing it would increase market failure. Removing subsidies only improves allocative efficiency if they are larger than the external benefit or are badly targeted. The best decision depends on the net benefits of private and public provision, the accuracy of the subsidy and how much the government values equity.

3

Price discrimination occurs when a firm charges different prices to different consumers for the same product, for reasons not related to differences in cost. It requires three conditions: the firm must have market power to set prices, the markets must be separable so that resale (arbitrage) is not possible, and the groups must have different price elasticities of demand (PED). Examples include peak and off-peak rail fares, student discounts and airline tickets bought at different times.

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The diagram shows third-degree price discrimination. With the same MC in both markets, the firm sets MR = MC in each market. In market A demand is price inelastic, so it charges a high price $P_A$; in market B demand is price elastic, so it charges a lower price $P_B$. Total revenue and profit are higher than with a single price, so the producer benefits, which is what a rational profit maximiser expects.

Under first-degree price discrimination each consumer pays the maximum they are willing to pay, so all consumer surplus is turned into producer surplus.

Consumers in the inelastic market lose: they pay more than under a single price and lose consumer surplus, which is transferred to the producer. This supports the view.

However, it is not always at the expense of consumers. Consumers in the elastic market, such as students or pensioners, often pay a lower price than they would under a single price and some who were priced out can now buy, so they gain.

With first-degree discrimination output rises to where P = MC, which is the allocatively efficient level, so society may be better off in terms of output than under single-price monopoly. Price discrimination can also make a service viable: a

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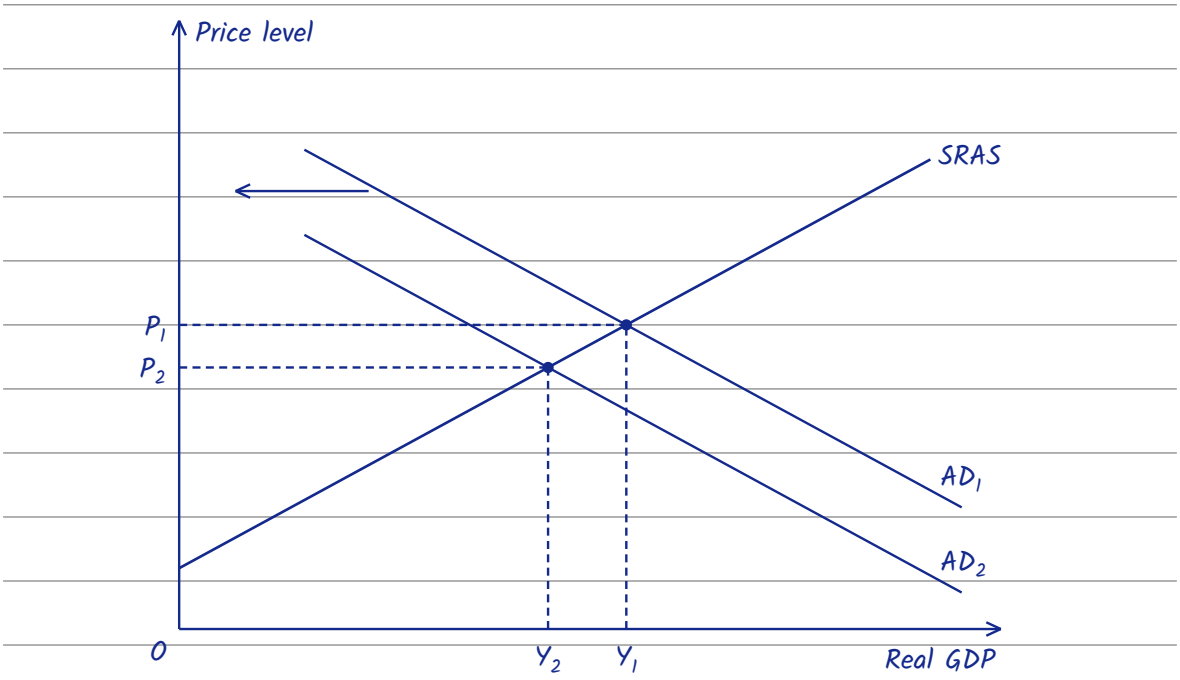
rural bus route or a hospital may only cover its costs if it can charge different groups different prices, so without it the product would not exist.

Higher profits may also be used for research and development, giving dynamic efficiency, new products and lower long-run costs that are passed on to consumers. If a firm charges higher prices at home and lower prices abroad, it may increase exports and improve the balance of payments, which helps society, although if foreign prices are below cost this is dumping and harms foreign producers.

In conclusion, the view is correct that price discrimination will always benefit the producer, since a rational firm would not use it otherwise. But it is not always at the expense of consumers and society: the outcome depends on the type of discrimination, which consumers are in which market, whether output rises and how the extra profit is used. Some consumers lose, but others and society may gain.

4 A budget surplus occurs when government revenue, mainly from taxation, is greater than government spending in a year. An increase in the surplus means contractionary (deflationary) fiscal policy: higher taxes, lower government spending, or both. The current account of the balance of payments records trade in goods and services, primary income and secondary income; a deficit means more is paid out than received.

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Higher taxes reduce disposable income, so consumption falls, and lower government spending directly reduces aggregate demand. Through the multiplier, national income falls by more than the initial change. In the diagram AD shifts left from $AD_1$ to $AD_2$, real GDP falls from $Y_1$ to $Y_2$ and the price level falls from $P_1$ to $P_2$.

Firms need fewer workers because labour is a derived demand, so cyclical (demand-deficient) unemployment rises in the short run. This supports the first part of the statement.

In the long run the surplus may help control a current account deficit. Lower incomes reduce spending on imports, depending on the marginal propensity to import (expenditure reducing). Lower inflation than trading partners makes exports more price competitive and imports relatively dearer (expenditure switching), so the deficit narrows. Also, a surplus means the government borrows less, so interest rates may fall, which can lower firms' costs and encourage investment, improving productivity and long-run competitiveness.

However, the statement needs evaluating. The rise in unemployment depends on the existing state of the economy: if the economy is close to full capacity, a fall in AD mainly reduces inflation and has little effect on unemployment, but if there

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is already a lot of spare capacity, unemployment will rise sharply. If unemployment is mainly structural or frictional, it is not caused by AD at all, and supply-side policies such as training would be more effective. The size of the effect also depends on the multiplier.

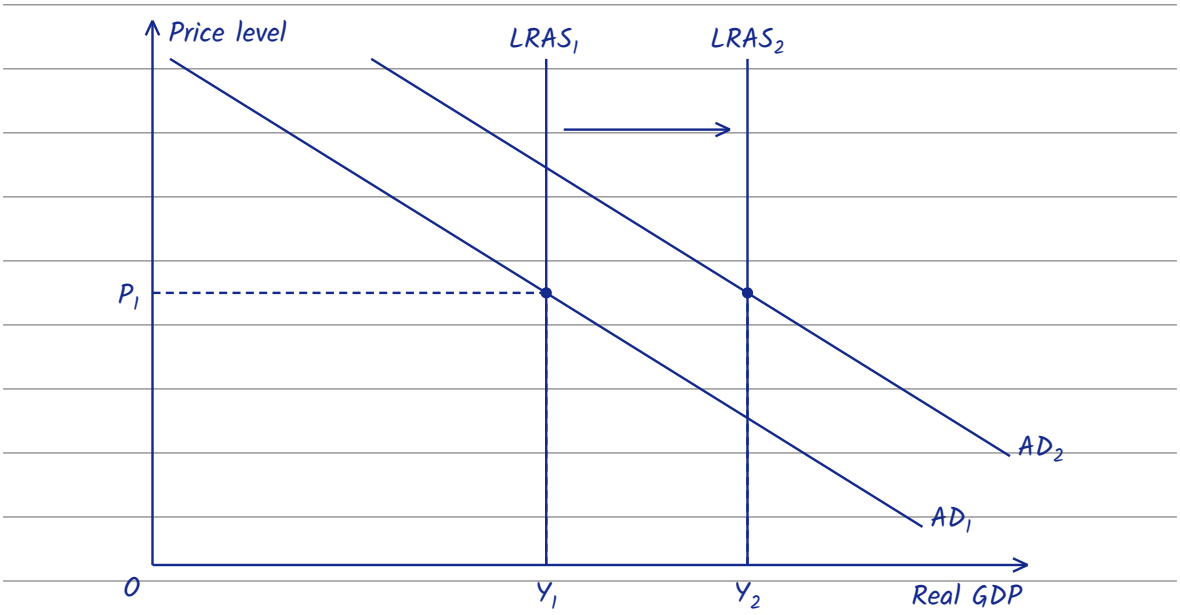
The long-run effect is also uncertain. If the surplus leads to lower interest rates, hot money may flow out and the currency depreciate, which makes exports cheaper, but it may also cause a boom in the housing market and higher consumer borrowing, which increases imports and makes the deficit harder to control. Whether exports and imports respond depends on their price elasticities (the Marshall-Lerner condition) and on non-price factors such as quality. Higher unemployment can also become long-term as workers lose skills, reducing productive capacity and long-run competitiveness.

In conclusion, the statement is broadly correct in the short run if the economy has spare capacity and unemployment is demand-deficient. But it is only partly correct in the long run: a budget surplus reduces the deficit mainly by reducing incomes and imports, which is costly in jobs. Supply-side policies that raise productivity and competitiveness, or exchange rate policy, may control a current account deficit more effectively and at a lower cost in unemployment.

5

Productivity is output per unit of input, usually labour productivity, output per worker per hour. The standard of living is the material and non-material well-being of people, often measured by real GDP per capita and by the Human Development Index (HDI), which also includes life expectancy and education. Low-income countries have low real GDP per capita and often low productivity because of a lack of capital, skills and technology.

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An increase in productivity, from better education and training, more capital, new technology or foreign direct investment (FDI), increases the productive capacity of the economy. In the diagram LRAS shifts right from $LRAS_1$ to $LRAS_2$ and real GDP can rise from $Y_1$ to $Y_2$ without inflation. With higher productivity, firms' unit costs fall, so exports become more competitive and prices for consumers may fall. Higher marginal revenue product of labour should lead to higher wages, so real incomes rise. Higher incomes raise tax revenue, which the government can spend on health care, education and infrastructure, improving non-material living standards too. So productivity can raise living standards.

However, the effect depends on several factors. Higher productivity may come from new technology transferred from high-income countries, which may substitute capital for labour and increase unemployment, so some people become worse off. If productivity growth comes from FDI by multinational companies, much of the profit may be repatriated rather than reinvested, so GNI rises less than GDP. Multinationals may exploit cheap labour, keep skilled jobs for their own staff so local workers are not trained, or extract natural resources and then leave, causing long-run resource depletion.

Distribution also matters. Increases in output may not be shared equally, so

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inequality, shown by a higher Gini coefficient, may rise and the poorest may gain little. It depends on whether the government uses the extra tax revenue to invest in health, education and infrastructure, and on levels of corruption. Higher production may also cause pollution and congestion, which are negative externalities that reduce the quality of life. Finally, it is easier to measure productivity in producing goods than in services such as health and education, and real GDP per capita is an incomplete measure of living standards.

In conclusion, I agree to a large extent that an increase in productivity is necessary for a sustained rise in living standards in low-income countries, because it is the main source of long-run growth in real incomes. But it is not sufficient. Whether living standards actually rise depends on how the gains are distributed, how the government uses the extra revenue, the effects on employment and the environment, and whether an appropriate measure of living standards, not only material goods, is used.

Cambridge Assessment International Education

# Cambridge International AS & A Level

**ECONOMICS** **9708/42**

Paper 4 A Level Data Response and Essays **May/June 2023**

**2 hours**



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## Section A

Answer all parts of Question 1.

**1 Pakistan and the Belt and Roads Initiative (BRI)**

The BRI is a strategy initiated by China in 2013 that seeks to connect Asia with Africa and Europe via land and sea networks. Its aim is to improve regional integration, increase trade and stimulate economic growth. It involves major investment in infrastructure projects. Under the BRI China is looking for markets with growth potential for their exports, in particular openings for profitable infrastructure and industrial investment. Profits in China are falling and over-capacity is widespread.

Better direct transport links will encourage growth for China's inland provinces, for example, the China-Pakistan Economic Corridor (CPEC). This is a US$50 billion road building scheme linking an inland province in western China to a newly developed Pakistani port on the Arabian Sea. The development offers a shorter and cheaper route for China's exports to Africa, the Middle East and Europe. Additionally, the port development includes plans for investment in Pakistan's railways and industrial zones.

Other projects are focused on energy supply including coal-fired and nuclear-powered electricity generation and the development of Pakistan's electricity grid. Pakistan's economy is affected by power cuts which lead to many firms having their own inefficient diesel generators that increase their costs of production. The generators are also highly polluting. A more reliable electricity supply will also benefit households as cooking can be done without using unhealthy solid fuels, such as straw, and students can study for longer in the evening.

The construction machinery used for these infrastructure projects is supplied mainly by China and the projects are supervised by Chinese managers. To pay for these projects Pakistan takes loans provided by Chinese banks and institutions. Pakistan already has outstanding foreign debt of approximately 25% of gross domestic product (GDP).

**Table 1.1 Selected Comparative Data for China and Pakistan**

| | GDP per capita adjusted for purchasing power parity (US$) | | Unemployment Rate (%) | | Gini Coefficient | |
|---|---|---|---|---|---|---|
| | 2014 | 2018 | 2014 | 2018 | 2014 | 2018 |
| China | 11 917 | 15 243 | 4.1 | 3.8 | 43.7 | 38.5 |
| Pakistan | 4171 | 4740 | 5.8 | 5.5 | 29.8 | 33.5 |

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**(a)** Explain what is meant by purchasing power parity (PPP). [2]

**(b)** Explain, with the help of a diagram, the likely impact of the BRI on both the potential economic growth and the actual economic growth of Pakistan. [4]

**(c)** Consider, with reference to Table 1.1, the change in the standard of living in Pakistan and China between 2014 and 2018. [6]

**(d)** Evaluate, using the article, the likely impact of the BRI on the economies of Pakistan and China in the long run. [8]

## Section B

Answer **one** question.

**EITHER**

**2** The increased use of electric vehicles (EVs) is encouraged as part of governments' climate change policies because they create fewer negative externalities than diesel and petrol (gas) vehicles.

Evaluate, with the help of a diagram(s), **two** policies that a government may use to encourage the use of EVs. [20]

**OR**

**3** Evaluate, with the help of a diagram(s) how total market demand and minimum efficient scale may determine the form of market structure in an industry. [20]

## Section C

Answer **one** question.

**EITHER**

**4** Consider the extent to which the depreciation of its foreign exchange rate contributes to the economic growth of a low-income country. [20]

**OR**

**5** Evaluate the effectiveness of using monetary policy to reduce the rate of inflation and how this policy may affect a government's ability to achieve its other macroeconomic aims. [20]

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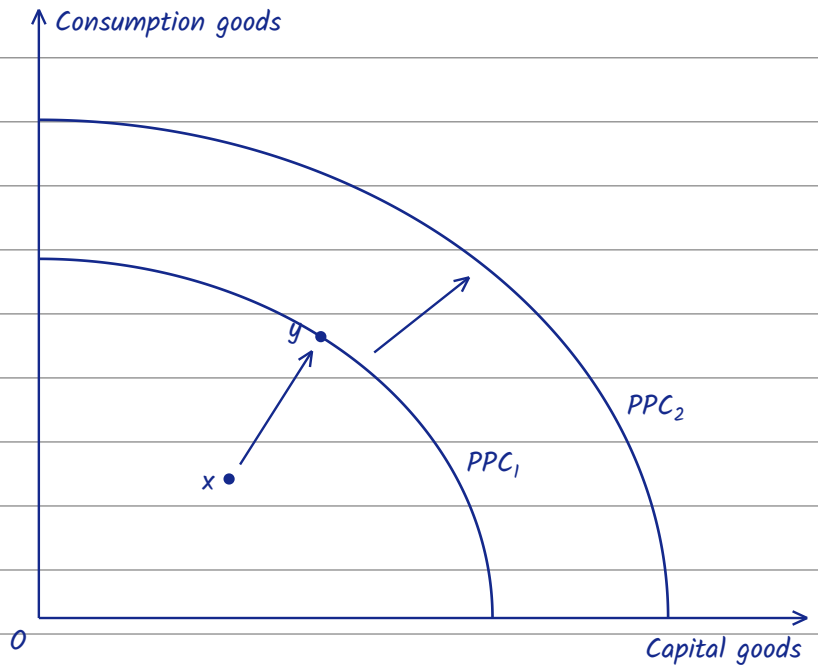
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Question number

Answers for paper 9708/42

1(a) Purchasing power parity compares the cost of the same bundle of goods and services bought in the local currency with its cost in another currency, so that incomes can be compared in terms of what they actually buy. For example, if a bundle costs 500 Pakistani rupees in Pakistan and $2 in the USA, the PPP exchange rate is 250 rupees = $1.

1(b)




Actual economic growth is an increase in Pakistan's real GDP using existing, previously unemployed resources, shown by a movement from point x inside $PPC_1$ towards point y on it. The BRI's construction spending and investment raise aggregate demand and use spare resources. Potential economic growth is an increase in productive capacity, shown by an outward shift from $PPC_1$ to $PPC_2$: the new port, railways, industrial zones and more reliable electricity supply increase the

| Question number | |
|---|---|
| | quantity and productivity of capital. |
| 1(c) | The standard of living is the level of material and non-material well-being of people. Real GDP per capita at PPP is a measure of material living standards. GDP per capita (PPP) rose in China by (15 243 – 11 917) ÷ 11 917 × 100 = 27.9%, and in Pakistan by (4740 – 4171) ÷ 4171 × 100 = 13.6%. So material living standards rose in both, but much faster in China. Unemployment fell in both countries, China from 4.1% to 3.8% and Pakistan from 5.8% to 5.5%. More people earning incomes suggests living standards improved in both. The Gini coefficient fell in China from 43.7 to 38.5, so the higher income has become more evenly spread and the typical household is likely to be better off. In Pakistan it rose from 29.8 to 33.5, so income became less evenly spread and many poorer people may have gained little or even become worse off. However, there is no data on non-material aspects such as pollution, working hours, health or education, so we cannot be sure. Overall, living standards rose clearly in China, but only slightly and less certainly in Pakistan. |
| 1(d) | For Pakistan, the BRI brings inward investment in the Arabian Sea port, railways and industrial zones. This increases both AD and AS, giving higher non-inflationary growth. A reliable electricity supply means firms no longer need inefficient diesel generators, so costs and pollution fall, and households benefit from cooking without unhealthy solid fuels and students studying longer, which builds human capital. For China, the BRI provides markets for its exports of construction machinery and its excess capacity, raising profits that are currently falling. The corridor gives a shorter, cheaper route for exports to Africa, the Middle East and Europe, helping inland provinces develop, and it creates a market for Chinese bank loans. |

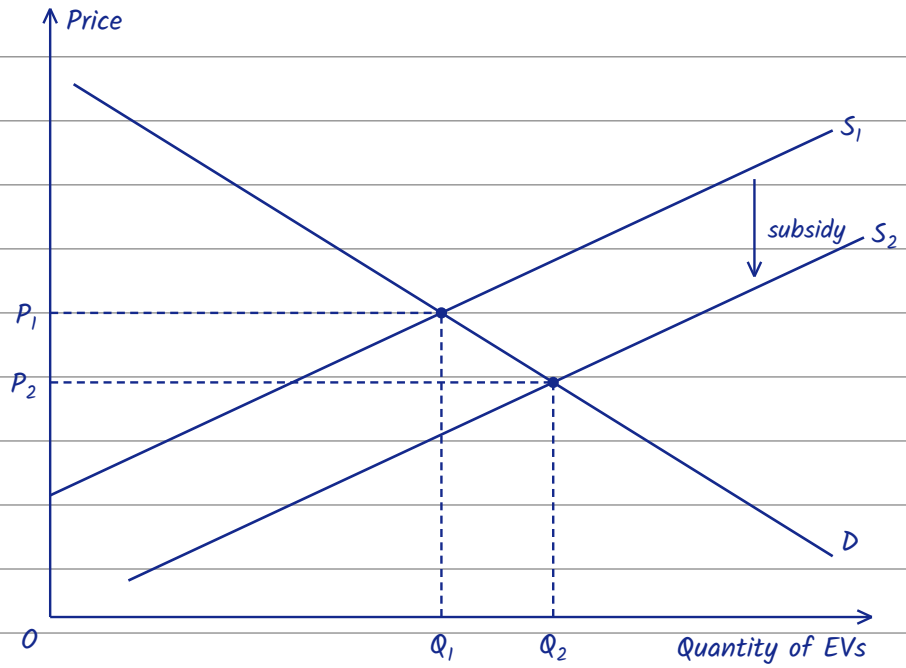
Question number

However, there are disadvantages. The coal-fired power stations add to pollution and global warming, and nuclear power has risks. The machinery is supplied by China and projects are supervised by Chinese managers, so employment and multiplier benefits for Pakistan may be small and much of the spending leaks out as imports. Pakistan already has foreign debt of about 25% of GDP and the new loans add to this, so repayments could become a burden. If Pakistan defaults, China also loses, and there is no clear evidence that the projects will be profitable for Pakistan.

Overall, China seems likely to gain more in the long run, since it gains exports, profits and interest. Pakistan could gain from better infrastructure and energy, but only if growth is large enough to repay the loans; otherwise the debt burden may outweigh the benefits.

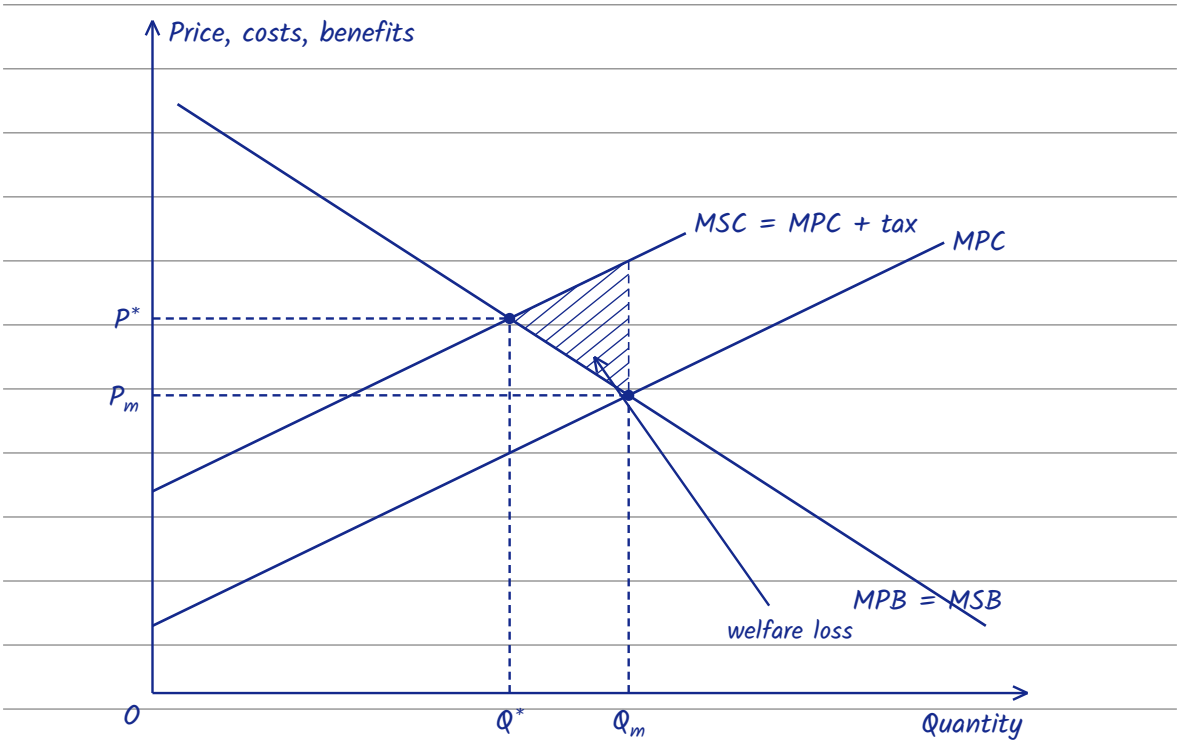
2 Negative externalities are costs that fall on third parties. Petrol and diesel vehicles create pollution, greenhouse gas emissions and health problems, so the marginal social cost (MSC) of their use is greater than the marginal private cost (MPC). The free market ignores these external costs, so too many such vehicles are used, and allocative efficiency, where MSB = MSC, is not achieved. This is market failure. Switching to EVs reduces these external costs, so the government may intervene to encourage it.

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Policy 1 is a subsidy on EVs, paid to producers or as a grant to buyers. In the diagram the subsidy lowers costs and shifts supply down by the amount of the subsidy, from $S_1$ to $S_2$. The price of EVs falls from $P_1$ to $P_2$ and the quantity bought rises from $Q_1$ to $Q_2$. As EVs become cheaper relative to petrol cars, which are substitutes, consumers switch, so emissions fall. Subsidies can also fund charging points, which are complements to EVs.

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Policy 2 is an indirect tax on petrol and diesel vehicles or their fuel. In the diagram the free market output of petrol vehicle use is $Q_m$, where MPB = MPC, but the social optimum is $Q^*$, where MSB = MSC. The shaded triangle is the welfare loss. A tax equal to the external cost raises the MPC to MSC, so the price rises to $P^*$ and use falls to $Q^*$. The externality is internalised, the polluter pays and the welfare loss is removed, and the higher cost of petrol vehicles also increases demand for EVs.

Evaluation: it is very difficult to measure the value of the external costs, so the correct tax or subsidy is hard to set. A subsidy has an opportunity cost, since the money could have been spent on health or education, and it may mainly benefit richer households who can afford new EVs. Its effect depends on the price elasticity of demand for EVs: if demand is inelastic, or if there are not enough charging points, the quantity may rise only a little, and the impact on price and output can take a long time.

A tax raises revenue that can fund the subsidy or charging points, so the two policies work well together. However, if demand for petrol vehicles and fuel is price

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inelastic, as people need to travel, use falls only a little. The tax is regressive and raises costs for transport firms, which may cause cost-push inflation. Other policies, such as regulation banning sales of new petrol cars or information campaigns, may be used. Also, EVs are not free of externalities: battery production and electricity from coal also pollute.

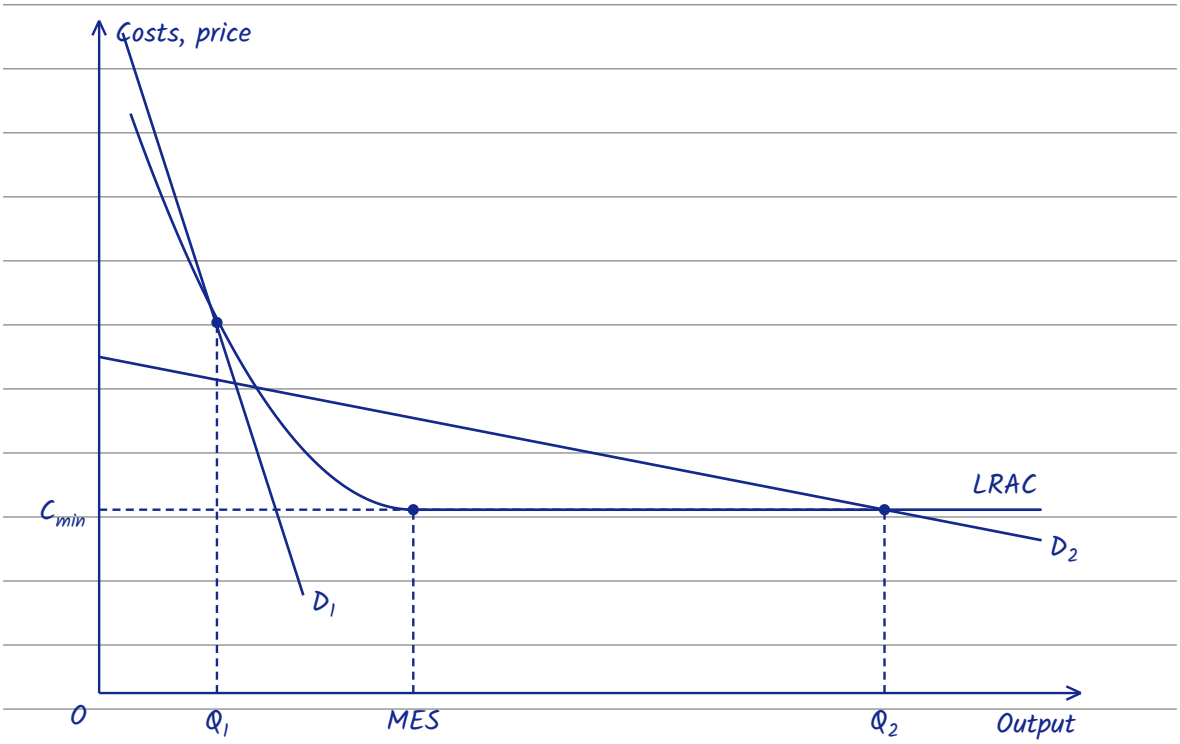
In conclusion, both policies can reduce the misallocation of resources. The tax is more effective in correcting the externality directly and raises revenue, while the subsidy is more popular. The best approach is likely to be a combination, with the tax revenue funding EV subsidies and charging infrastructure, but its success depends on accurate information, the price elasticities involved and how the electricity is generated.

3

Economies of scale are the falling long-run average costs (LRAC) a firm gets as it increases its scale of production, for example technical economies from large machinery, the division of labour, bulk-buying, financial and marketing economies. The minimum efficient scale (MES) is the lowest output at which LRAC is minimised. After the MES there may be constant returns, and at very large outputs diseconomies of scale.

Market structure depends on the number of firms. Perfect competition has very many small firms, monopolistic competition many firms with differentiated products, oligopoly a few large firms and monopoly one firm. The number of firms able to produce at lowest cost is roughly total market demand ÷ MES.

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In the diagram, when market demand is $D_1$, demand cuts the LRAC curve at $Q_1$, before the MES is reached. Only one firm can cover its costs and exploit economies of scale; if two firms shared the market, each would have higher average costs. This is a natural monopoly, such as water or rail networks. When market demand is $D_2$, the market at minimum cost $C_{min}$ is $Q_2$, about two and a half times the MES, so there is room for only two or three firms producing at lowest cost, giving an oligopoly, for example car or aircraft manufacturing. If the MES were only 2% of the market, about 50 firms could operate efficiently, giving perfect or monopolistic competition, as in hairdressing or restaurants where the MES is small.

Evaluation: MES and demand are only part of the explanation. The MES is not fixed: technological change, such as automation, can increase it, and digital technology can reduce it. Total market demand also changes over time, for example as incomes grow or the market becomes global through trade, which allows more firms. The result depends on how the market is defined: a village shop operates at a small scale and has a local monopoly, even though the national grocery market is

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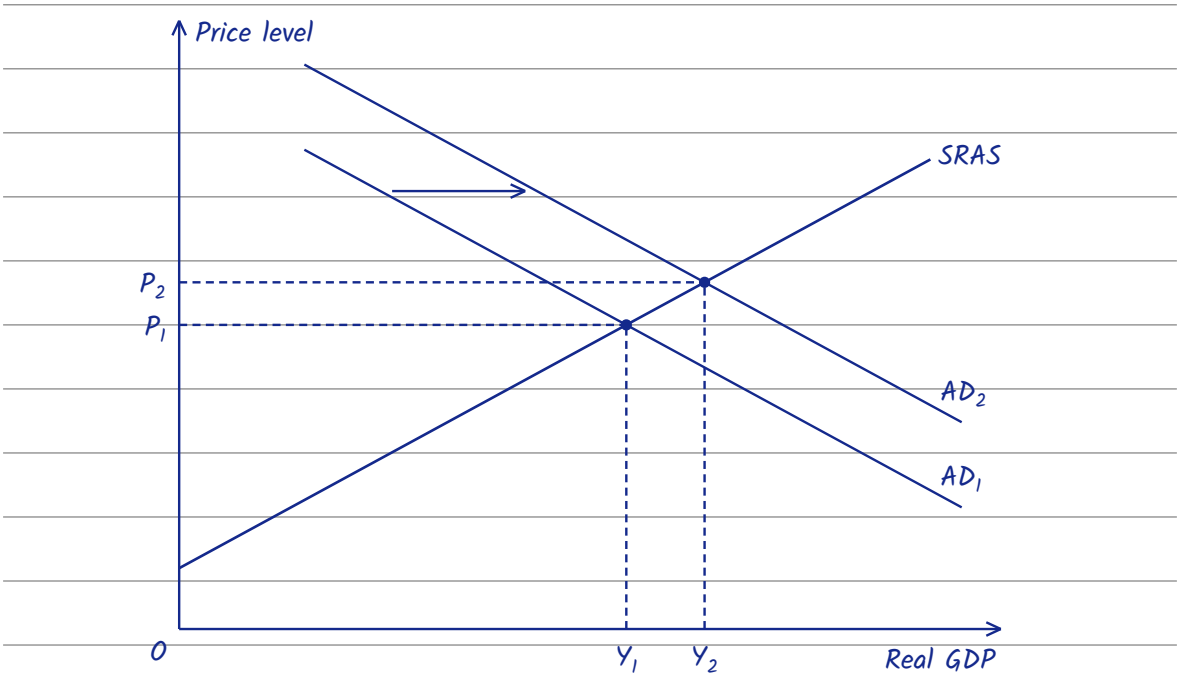
an oligopoly.

Other factors also determine market structure. Barriers to entry such as patents, brand loyalty, legal barriers and high sunk costs can keep the number of firms low even if the MES is small. Mergers and takeovers may create monopolies beyond the efficient size, and government competition policy may prevent this. Niche markets mean small, high-cost firms still survive, such as makers of luxury cars or designer clothes, because consumers will pay a higher price for differentiated products.

In conclusion, the relationship between total market demand and the MES is an important determinant of the maximum number of firms that can produce efficiently, and it explains natural monopolies well. However, it does not fully determine market structure, because barriers to entry, firm behaviour, government policy, product differentiation and changes in technology also matter.

4 A depreciation is a fall in the value of a currency in a floating exchange rate system. Economic growth is an increase in real GDP: actual growth uses spare capacity, while potential growth is an increase in productive capacity. Low-income countries have low GDP per capita and often export primary products.

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A depreciation makes exports cheaper in foreign currency and imports more expensive in domestic currency. If demand for exports and imports is price elastic, export volumes rise and import spending falls, so net exports (X – M) increase. Exports are an injection and imports a leakage, so aggregate demand rises and, through the multiplier, national income rises by more than the initial increase. In the diagram AD shifts from $AD_1$ to $AD_2$ and real GDP rises from $Y_1$ to $Y_2$: actual economic growth. Firms need more workers, so unemployment falls, and higher profits from exporting may encourage investment, which could increase potential growth in the long run.

However, the effect depends on several factors. First, the Marshall-Lerner condition: the current account only improves if the sum of the PEDs for exports and imports is greater than one. In the short run demand is often inelastic, so the J-curve effect means the current account may first worsen. Many low-income countries export agricultural commodities, which are price inelastic in supply, so output cannot respond quickly; growth depends on whether there is spare capacity, unlike oil exporters who can raise output.

Second, depreciation causes cost-push inflation. Low-income countries often

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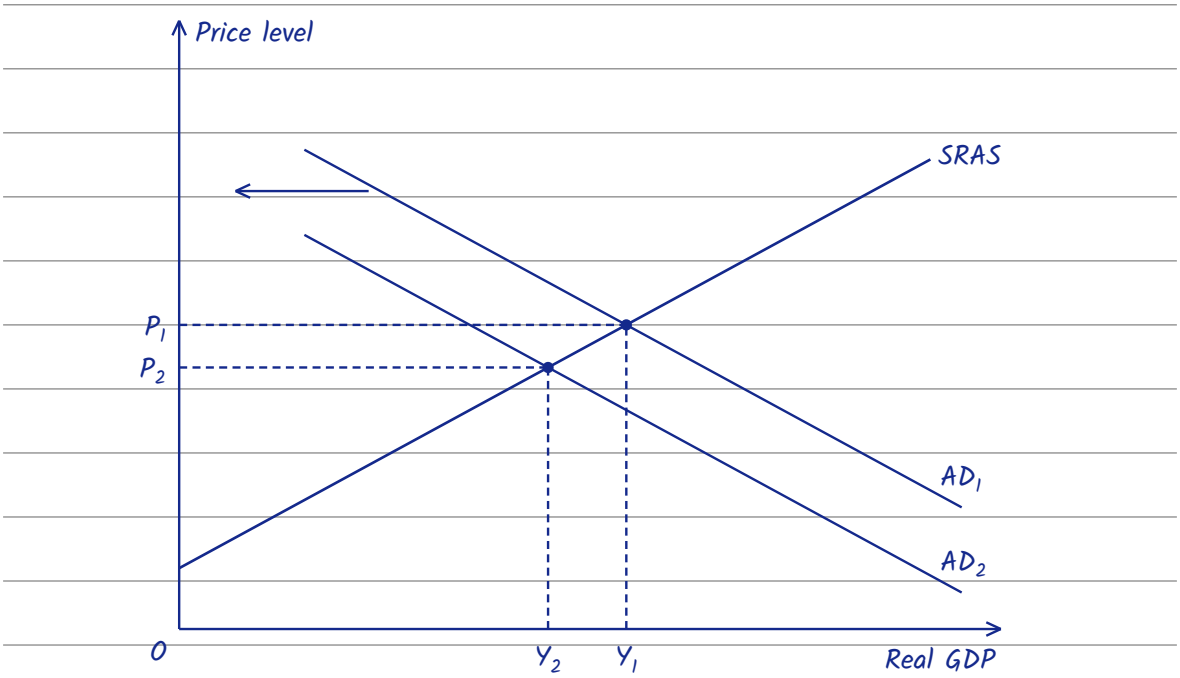
depend on imported oil, machinery and food, so firms' costs rise and SRAS may shift left, offsetting the rise in output and reducing real incomes, especially for the poor. Imported capital goods become dearer, which may reduce investment and long-run growth. Third, if the country's international debt is denominated in foreign currency, such as US dollars, the cost of servicing it rises in domestic currency, which is a serious burden for many low-income countries; it is beneficial only if debt is in domestic currency.

It also depends on world demand: if trading partners are in recession, cheaper exports may not sell, and quality, reliability and trade barriers matter as well as price. Rising prices may also cause wage demands, eroding the competitive advantage over time.

In conclusion, a depreciation can contribute to actual economic growth in the short run, but only to a limited extent in most low-income countries, because exports are often price inelastic, imports are essential and debts are in foreign currency. Its contribution is greatest where there is spare capacity, exports are price elastic and inflation is controlled. Long-run growth depends more on investment in capital, education and infrastructure.

5 Inflation is a sustained increase in the general price level. Monetary policy is the use of interest rates, the money supply, the exchange rate and the reserve ratio by the central bank to influence the economy. The government's other macroeconomic aims are economic growth, low unemployment and a stable balance of payments.

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To reduce demand-pull inflation, the central bank raises interest rates. Borrowing becomes more expensive and saving more attractive, so consumption on credit falls and mortgage costs rise. Investment falls because fewer projects earn a return above the interest rate. Higher rates also attract hot money, so the exchange rate appreciates, making imports cheaper and exports dearer. AD shifts left from $AD_1$ to $AD_2$ and the price level falls from $P_1$ to $P_2$, so the rate of inflation falls. Raising the reserve ratio or reducing the money supply has a similar effect by limiting bank lending.

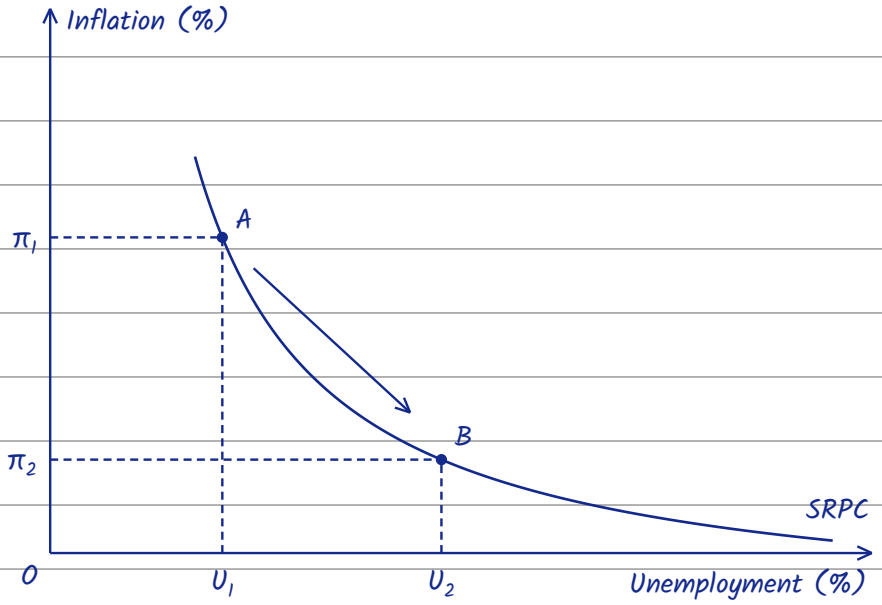
However, its effectiveness depends on several things. There are long time lags, often 18 months to two years, so the central bank may act too late. It is hard to judge the exact rise in interest rates needed. If consumers and firms are confident, or rates are already low, they may not respond much. Monetary policy works mainly on demand-pull inflation; if inflation is cost-push, for example from higher oil prices, higher interest rates reduce output but do little to the causes.

Expectations are important: if the central bank is credible, people expect low inflation and wage demands fall, making the policy more effective.

The policy may also conflict with other aims. In the diagram real GDP falls from

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$Y_1$ to $Y_2$, so economic growth slows and, because labour is a derived demand, unemployment rises.




The short-run Phillips curve shows this trade-off: reducing inflation from $\pi_1$ to $\pi_2$ means a movement from A to B, with unemployment rising from $U_1$ to $U_2$. Lower investment also reduces potential growth in the long run. For the balance of payments, lower incomes reduce imports, which helps the current account, but the appreciation makes exports less competitive, which may worsen it, depending on the Marshall-Lerner condition.

On the other hand, the monetarist and rational expectations view is that the long-run Phillips curve is vertical at the natural rate of unemployment, so the rise in unemployment is only temporary. Low and stable inflation reduces uncertainty, encouraging long-run investment and growth, and keeps exports competitive.

In conclusion, monetary policy is fairly effective in reducing demand-pull inflation, especially when the central bank is credible, but less effective against cost-push inflation and only after time lags. In the short run it makes it harder to achieve growth and low unemployment and has mixed effects on the balance of payments, although these conflicts may be smaller in the long run. Combining it with supply-side policies would reduce the conflicts.

Cambridge Assessment International Education

# Cambridge International AS & A Level

**ECONOMICS** **9708/43**

Paper 4 A Level Data Response and Essays **May/June 2023**

**2 hours**

*2336877616*

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

**INFORMATION**

- The total mark for this paper is 60.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **4** pages. Any blank pages are indicated.

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## Section A

Answer all parts of Question 1.

**1 Competition, monopoly and the market**

Firms are sometimes thought of as machines: inputs go in, products come out. However, it matters how powerful these firms are allowed to become.

Competition law – the law that governs how firms compete in the market, how they may exert their power and how and when they may join forces – has not prevented high concentration ratios in many industries.

Global monopolies have been created in the name of 'free market' capitalism. Mergers have been approved and monopolies tolerated under the assumption that they are efficient. Their ability to enable innovation is relied upon to justify these monopolised industries.

Competition law is being used to protect a narrow set of public interests based on the idea of 'consumer welfare'. The test applied by the law is whether any change will result in lower prices for consumers and thus is beneficial. This is regardless of how monopolised the resulting market structure becomes.

The logic that focuses on consumer prices is flawed. This can be seen in the impacts of firms on the environment. Prices do not capture the negative externalities of production, for which neither the producer nor the consumer pays.

Low consumer prices are not an adequate indicator for consumer welfare. The low price/low wage spiral keeps pushing for cheaper goods and services to increase the profitability of the firm. The result is that workers are paid less. Low prices cause unequal bargaining positions between powerful employers and workers, and between powerful buyers and small independent suppliers.

Regulation has a role to play in protecting consumers from the worst abuses of market power by firms. There needs, however, to be new competition law that promotes the free market rather than the desires of the monopoly firms. It needs to consider the balance of power between the public sector and private enterprise.

*Source: RSA Journal. Issue 3, 2020 p 32.*

**(a)** The article refers to concentration ratios. Explain what is meant by a concentration ratio and how it is calculated. [4]

**(b)** Explain, with an example, whether the article is correct in saying that neither the producer nor the consumer pays for negative externalities. [4]

**(c)** Apart from negative externalities, describe **two** reasons why the article says increased concentration in an industry may not improve consumer welfare. [4]

**(d)** The article says that monopolies are tolerated because they are efficient.

Assess, with the help of a diagram, whether economic theory supports the idea that monopolies are efficient. [8]

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## Section B

Answer **one** question.

**EITHER**

**2** To improve allocative efficiency economists frequently advise governments to remove existing subsidies to the private sector providers of education.

With the help of a diagram, evaluate this advice. [20]

**OR**

**3** Some firms frequently use price discrimination.

Assess the view that when this occurs, price discrimination will always benefit the producer at the expense of the consumer and society. [20]

## Section C

Answer **one** question.

**EITHER**

**4** An increase in a government's budget surplus will increase unemployment in the short run but it will make it easier to control a balance of payments deficit on the current account in the long run.

Evaluate this statement. [20]

**OR**

**5** To what extent do you agree that an increase in productivity will lead to a higher standard of living in low-income countries? [20]

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

Question number

Answers for paper 9708/43

1(a) A concentration ratio measures the combined market share of the largest firms in an industry, for example the 4-firm or 5-firm concentration ratio. It ranges from close to 0% to 100% and shows the degree of competition: a low ratio means many firms compete, while a high ratio means the market is dominated by a few firms, as in oligopoly or monopoly.

To calculate it, add together the sales (or output) of the specified number of largest firms, divide this total by the total sales of the whole industry and multiply by 100. For example, if the four largest firms sell $60m out of industry sales of $80m, the 4-firm concentration ratio is 60 ÷ 80 × 100 = 75%.

1(b) A negative externality is a cost of production or consumption that falls on a third party, someone who is neither the producer nor the consumer and who had no say in the decision. Because the cost is external, it is not included in the firm's private costs or in the market price.

For example, a chemical factory that dumps waste into a river does not pay for the damage. Local fishermen lose their catch and nearby residents suffer health problems and pay medical bills. So the article is largely correct: the social cost is greater than the private cost, and the third parties bear the difference.

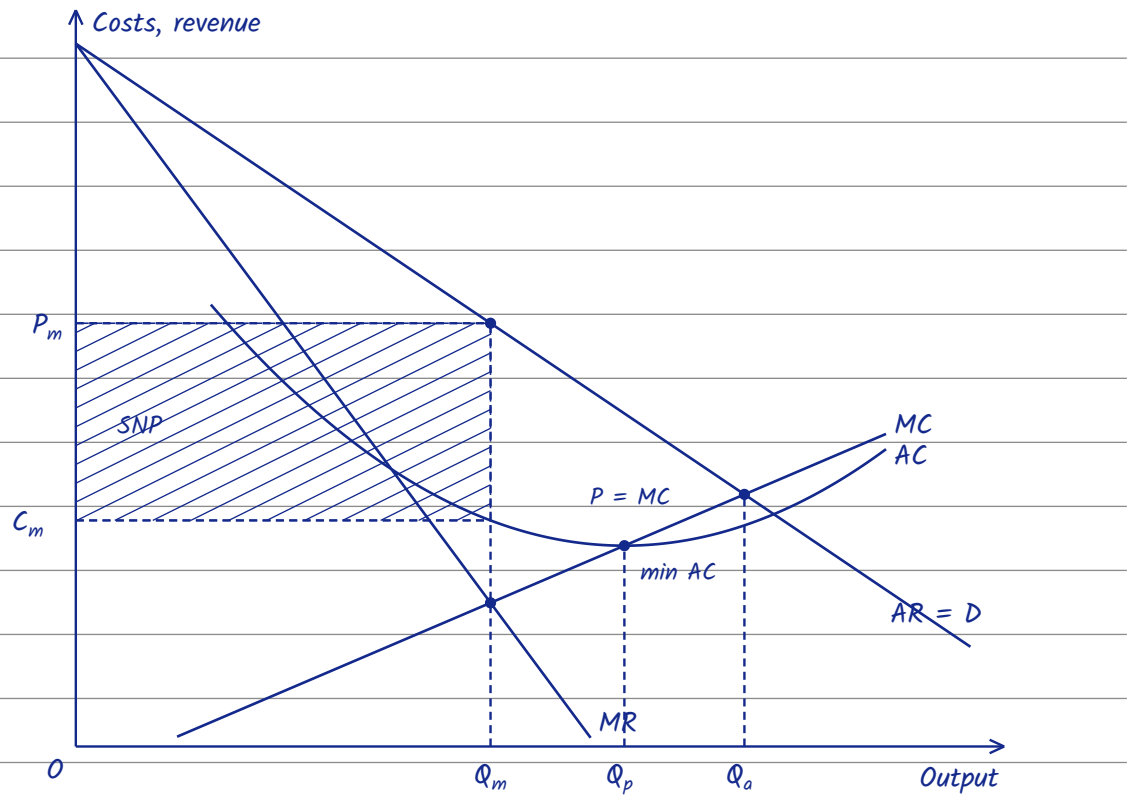
However, it is not completely correct. If the government imposes a pollution tax or fines, the producer pays part of the external cost and passes some of it on to consumers in higher prices, so the externality is partly internalised. Producers and consumers may also suffer the pollution themselves as local residents.

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1(c) First, increased concentration gives firms more monopoly power. They can restrict output and raise prices, earning higher supernormal profits that benefit shareholders and managers rather than consumers.

Second, it creates unequal bargaining power. Powerful employers can pay workers less (the low price/low wage spiral), so workers have little scope to win pay rises, and powerful buyers such as large supermarkets can force small independent suppliers, such as farmers, to accept very low prices. Consumers, who are also workers and suppliers, lose income, so their welfare does not improve even if prices are low.

1(d) Productive efficiency is producing a given output at the lowest possible average cost, the minimum point of the AC curve. Allocative efficiency is producing where price (the marginal benefit to consumers) equals the marginal cost of producing the last unit, P = MC, so resources are allocated to the goods consumers value most.



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In the diagram a profit-maximising monopolist produces where MC = MR, at output $Q_m$, and charges price $P_m$, read from the AR curve. At $Q_m$ price is far above marginal cost, so it is allocatively inefficient: consumers value extra units more than they cost to make, but output is restricted below $Q_a$ where P = MC. Average cost at $Q_m$ is $C_m$, above the minimum AC at $Q_p$, so it is also productively inefficient. Barriers to entry let it keep the supernormal profit (shaded) in the long run, and lack of competition may cause X-inefficiency.

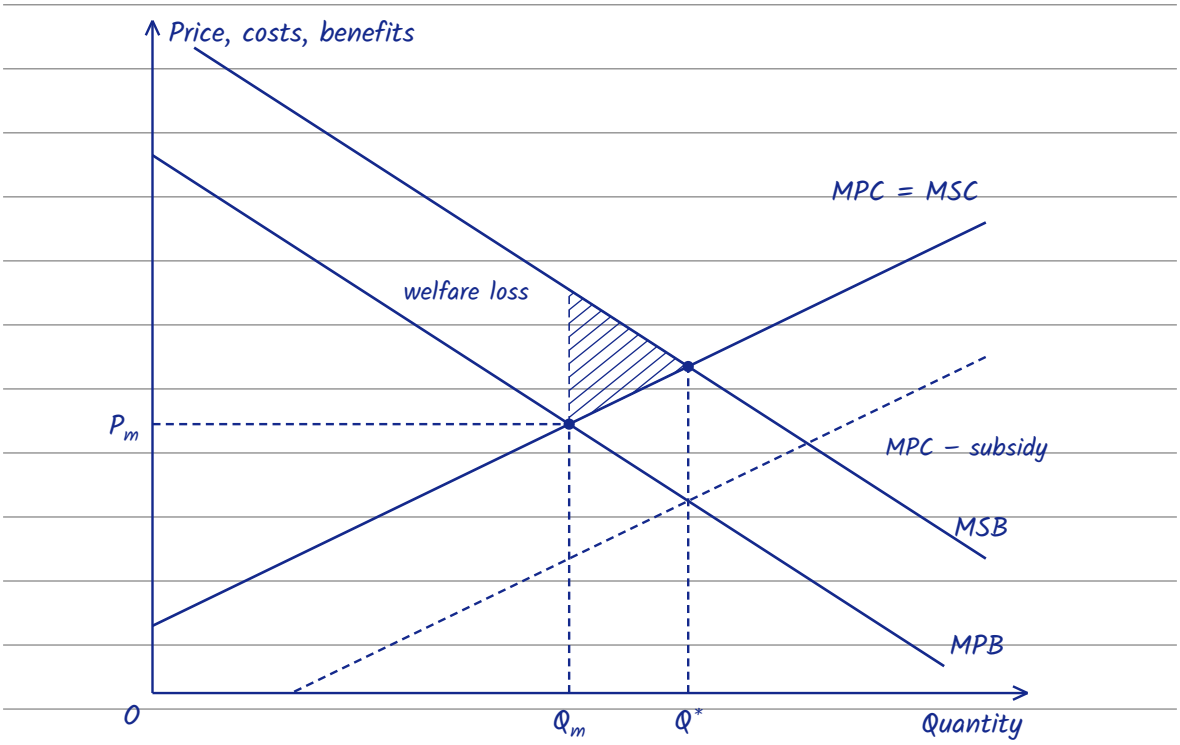
However, a monopoly may be dynamically efficient: supernormal profit can fund research and development, which the article calls its ability to enable innovation, and may lower costs over time. A natural monopoly with large economies of scale may produce at a lower average cost than many small competing firms.

Overall, static economic theory does not support the idea that monopolies are efficient, since they are neither allocatively nor productively efficient. Only dynamic efficiency and economies of scale might justify them, and these benefits are not guaranteed.

2

Education is a merit good: it is more beneficial than consumers realise because of imperfect information, so it would be under-consumed in a free market. It also creates positive externalities: a better educated workforce is more productive, raises tax revenue, reduces crime and benefits society, so the marginal social benefit (MSB) is greater than the marginal private benefit (MPB). Allocative efficiency occurs where MSB = MSC. Private sector providers are schools and colleges owned by individuals or firms and run for profit, unlike public sector schools owned and funded by the state.

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In the diagram, without a subsidy, students and parents consider only private benefits, so the market equilibrium is where MPB = MPC at $Q_m$. The socially optimum output is $Q^*$, where MSB = MSC, so $Q_m$ is under-provision and the shaded triangle shows the welfare loss. A subsidy to private providers lowers their costs, shifting the cost curve down to MPC – subsidy, so fees fall and enrolment rises to $Q^*$. The subsidy corrects the market failure and improves allocative efficiency.

This means removing existing subsidies would normally reduce allocative efficiency. Fees would rise, output would fall back from $Q^*$ towards $Q_m$, and the welfare loss would return. The advice therefore seems to contradict the theory of positive externalities.

However, the advice may be correct in some cases. The size of the external benefit is very hard to measure, so the government may set the subsidy too high, pushing output beyond $Q^*$ and over-allocating resources to education, which is also allocatively inefficient. Subsidies also have an opportunity cost: the money could be spent on health care or infrastructure, or used to reduce taxes. They may also

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cause government failure: private firms may keep the subsidy as profit rather than cutting fees or improving quality.

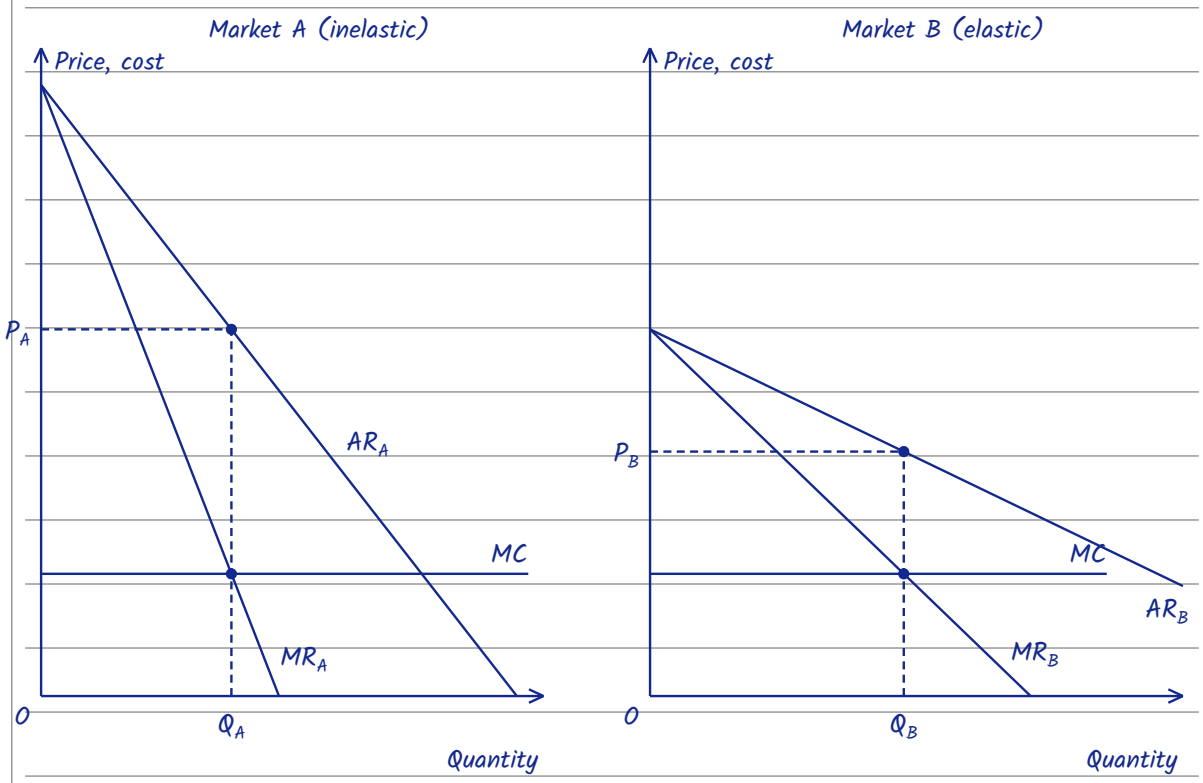
Equity also matters. Even with a subsidy, access to private education still depends on ability to pay, so subsidies may mainly benefit richer families. The government could instead spend the money on direct state provision, free at the point of use, which may be more equitable. On the other hand, the profit motive gives private providers an incentive to cut costs and bureaucracy, so state provision may be less efficient. Alternatives such as vouchers given to low-income families might target the external benefit better.

In conclusion, the advice is not generally correct. Because education has positive externalities, a well-targeted subsidy moves output towards the allocatively efficient level, so removing it would increase market failure. Removing subsidies only improves allocative efficiency if they are larger than the external benefit or are badly targeted. The best decision depends on the net benefits of private and public provision, the accuracy of the subsidy and how much the government values equity.

3

Price discrimination occurs when a firm charges different prices to different consumers for the same product, for reasons not related to differences in cost. It requires three conditions: the firm must have market power to set prices, the markets must be separable so that resale (arbitrage) is not possible, and the groups must have different price elasticities of demand (PED). Examples include peak and off-peak rail fares, student discounts and airline tickets bought at different times.

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The diagram shows third-degree price discrimination. With the same MC in both markets, the firm sets MR = MC in each market. In market A demand is price inelastic, so it charges a high price $P_A$; in market B demand is price elastic, so it charges a lower price $P_B$. Total revenue and profit are higher than with a single price, so the producer benefits, which is what a rational profit maximiser expects.

Under first-degree price discrimination each consumer pays the maximum they are willing to pay, so all consumer surplus is turned into producer surplus.

Consumers in the inelastic market lose: they pay more than under a single price and lose consumer surplus, which is transferred to the producer. This supports the view.

However, it is not always at the expense of consumers. Consumers in the elastic market, such as students or pensioners, often pay a lower price than they would under a single price and some who were priced out can now buy, so they gain.

With first-degree discrimination output rises to where P = MC, which is the allocatively efficient level, so society may be better off in terms of output than under single-price monopoly. Price discrimination can also make a service viable: a

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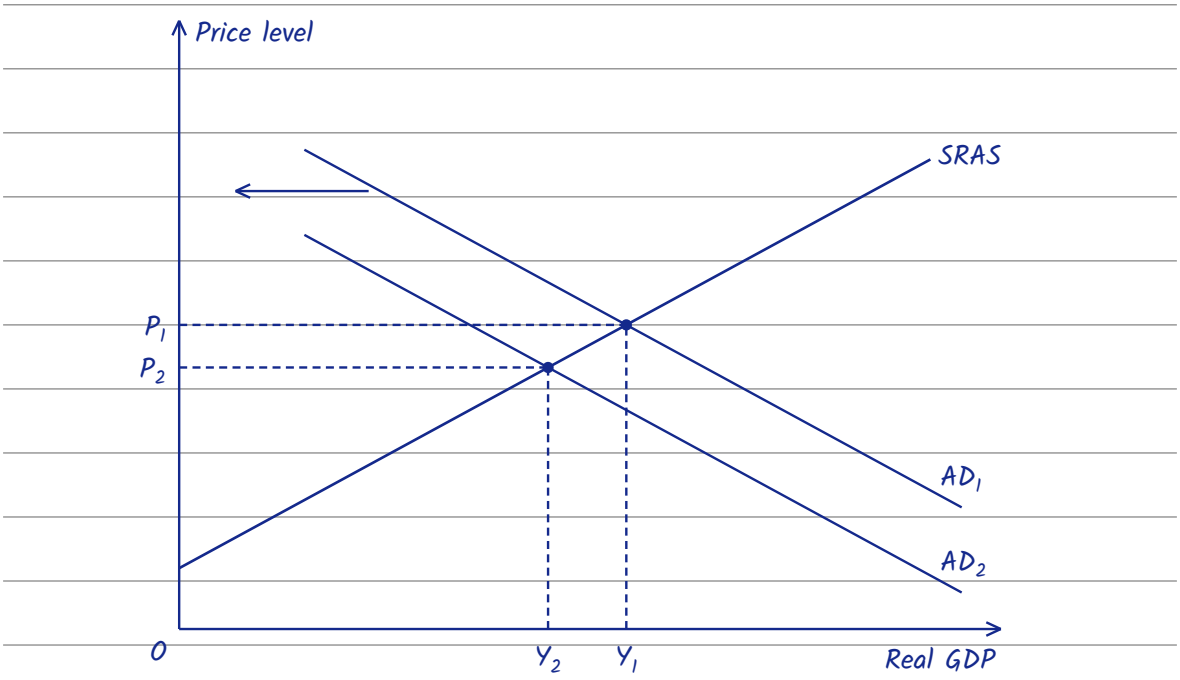
rural bus route or a hospital may only cover its costs if it can charge different groups different prices, so without it the product would not exist.

Higher profits may also be used for research and development, giving dynamic efficiency, new products and lower long-run costs that are passed on to consumers. If a firm charges higher prices at home and lower prices abroad, it may increase exports and improve the balance of payments, which helps society, although if foreign prices are below cost this is dumping and harms foreign producers.

In conclusion, the view is correct that price discrimination will always benefit the producer, since a rational firm would not use it otherwise. But it is not always at the expense of consumers and society: the outcome depends on the type of discrimination, which consumers are in which market, whether output rises and how the extra profit is used. Some consumers lose, but others and society may gain.

4 A budget surplus occurs when government revenue, mainly from taxation, is greater than government spending in a year. An increase in the surplus means contractionary (deflationary) fiscal policy: higher taxes, lower government spending, or both. The current account of the balance of payments records trade in goods and services, primary income and secondary income; a deficit means more is paid out than received.

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Higher taxes reduce disposable income, so consumption falls, and lower government spending directly reduces aggregate demand. Through the multiplier, national income falls by more than the initial change. In the diagram AD shifts left from $AD_1$ to $AD_2$, real GDP falls from $Y_1$ to $Y_2$ and the price level falls from $P_1$ to $P_2$.

Firms need fewer workers because labour is a derived demand, so cyclical (demand-deficient) unemployment rises in the short run. This supports the first part of the statement.

In the long run the surplus may help control a current account deficit. Lower incomes reduce spending on imports, depending on the marginal propensity to import (expenditure reducing). Lower inflation than trading partners makes exports more price competitive and imports relatively dearer (expenditure switching), so the deficit narrows. Also, a surplus means the government borrows less, so interest rates may fall, which can lower firms' costs and encourage investment, improving productivity and long-run competitiveness.

However, the statement needs evaluating. The rise in unemployment depends on the existing state of the economy: if the economy is close to full capacity, a fall in AD mainly reduces inflation and has little effect on unemployment, but if there

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is already a lot of spare capacity, unemployment will rise sharply. If unemployment is mainly structural or frictional, it is not caused by AD at all, and supply-side policies such as training would be more effective. The size of the effect also depends on the multiplier.

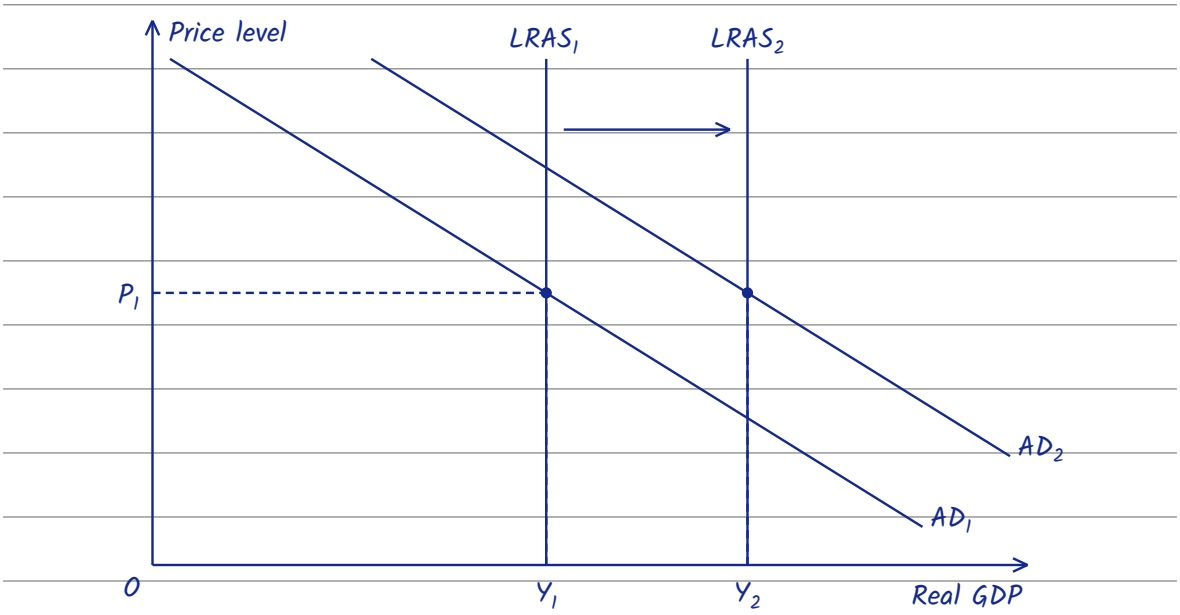
The long-run effect is also uncertain. If the surplus leads to lower interest rates, hot money may flow out and the currency depreciate, which makes exports cheaper, but it may also cause a boom in the housing market and higher consumer borrowing, which increases imports and makes the deficit harder to control. Whether exports and imports respond depends on their price elasticities (the Marshall-Lerner condition) and on non-price factors such as quality. Higher unemployment can also become long-term as workers lose skills, reducing productive capacity and long-run competitiveness.

In conclusion, the statement is broadly correct in the short run if the economy has spare capacity and unemployment is demand-deficient. But it is only partly correct in the long run: a budget surplus reduces the deficit mainly by reducing incomes and imports, which is costly in jobs. Supply-side policies that raise productivity and competitiveness, or exchange rate policy, may control a current account deficit more effectively and at a lower cost in unemployment.

5

Productivity is output per unit of input, usually labour productivity, output per worker per hour. The standard of living is the material and non-material well-being of people, often measured by real GDP per capita and by the Human Development Index (HDI), which also includes life expectancy and education. Low-income countries have low real GDP per capita and often low productivity because of a lack of capital, skills and technology.

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An increase in productivity, from better education and training, more capital, new technology or foreign direct investment (FDI), increases the productive capacity of the economy. In the diagram LRAS shifts right from $LRAS_1$ to $LRAS_2$ and real GDP can rise from $Y_1$ to $Y_2$ without inflation. With higher productivity, firms' unit costs fall, so exports become more competitive and prices for consumers may fall. Higher marginal revenue product of labour should lead to higher wages, so real incomes rise. Higher incomes raise tax revenue, which the government can spend on health care, education and infrastructure, improving non-material living standards too. So productivity can raise living standards.

However, the effect depends on several factors. Higher productivity may come from new technology transferred from high-income countries, which may substitute capital for labour and increase unemployment, so some people become worse off. If productivity growth comes from FDI by multinational companies, much of the profit may be repatriated rather than reinvested, so GNI rises less than GDP. Multinationals may exploit cheap labour, keep skilled jobs for their own staff so local workers are not trained, or extract natural resources and then leave, causing long-run resource depletion.

Distribution also matters. Increases in output may not be shared equally, so

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inequality, shown by a higher Gini coefficient, may rise and the poorest may gain little. It depends on whether the government uses the extra tax revenue to invest in health, education and infrastructure, and on levels of corruption. Higher production may also cause pollution and congestion, which are negative externalities that reduce the quality of life. Finally, it is easier to measure productivity in producing goods than in services such as health and education, and real GDP per capita is an incomplete measure of living standards.

In conclusion, I agree to a large extent that an increase in productivity is necessary for a sustained rise in living standards in low-income countries, because it is the main source of long-run growth in real incomes. But it is not sufficient. Whether living standards actually rise depends on how the gains are distributed, how the government uses the extra revenue, the effects on employment and the environment, and whether an appropriate measure of living standards, not only material goods, is used.