

Please write clearly in block capitals.

Centre number

Candidate number

Surname StemUp Model Solution

Forename(s) _____

Candidate signature _____

I declare this is my own work.

INTERNATIONAL AS ECONOMICS

Unit 1 The Operation of Markets, Market Failure and the Role of Government

Friday 10 May 2024

07:00 GMT

Time allowed: 1 hour 45 minutes

Materials

For this paper you must have:

- the Source Booklet, provided as an insert (enclosed)
- a calculator, which you are expected to use where appropriate.

Instructions

- Use black ink or black ball-point pen. Pencil should only be used for drawing.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do **not** write outside the box around each page or on blank pages.
- Do **not** write in the Source Booklet.
- If you need extra space for your answer(s), use the lined pages at the end of this book. Write the question number against your answer(s).
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 80.
- You may use a bilingual dictionary for this exam.
- You may **not** use an English dictionary.

For Examiner's Use	
Question	Mark
1–15	
16	
17	
18	
19	
20	
21	
TOTAL	



J U N 2 4 E C O 1 0 1

Section A

Answer **all** questions in the spaces provided.

Only **one** answer per question is allowed.

For each question completely fill in the circle alongside the appropriate answer.

CORRECT METHOD



WRONG METHODS



If you want to change your answer you must cross out your original answer as shown.



If you wish to return to an answer previously crossed out, ring the answer you now wish to select as shown.



0 1

Which one of the following is a normative statement?

[1 mark]

A Advertising normally increases demand



B Firms should always aim to increase profit



C Government subsidies increase supply

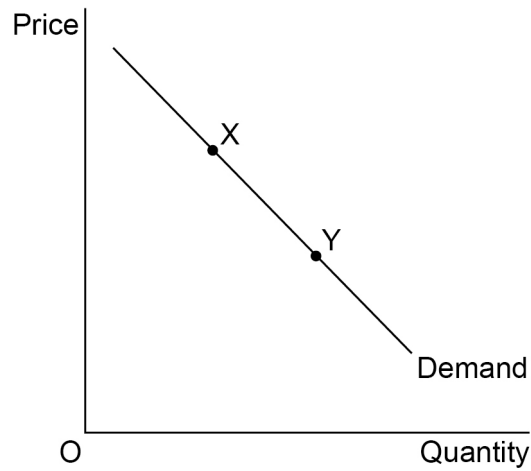


D Monopoly power will lead to increased output



0 2 Figure 1 shows the demand curve for a good.

Figure 1



A decrease in which one of the following would cause a movement from point X to point Y?
[1 mark]

A The level of indirect tax paid by firms

☒

B The level of subsidy paid to firms

☐

C The price of a complementary good

☐

D The price of a substitute good

☐

Turn over for the next question

Turn over ►



0 3

Table 1 shows the quantity demanded of two goods, good X and good Y, and the price of good X in euros (€).

Table 1

Price of good X (€)	Quantity demanded of good X	Quantity demanded of good Y
20	40	60
18	48	84

The price of good X falls from €20 to €18. What is the cross elasticity of demand for good Y with respect to the price of good X?

[1 mark]

A -4 ☒

B -2 ☐

C +2 ☐

D +4 ☐

0 4

Which one of the following combinations includes a correct reason for that type of market failure?

[1 mark]

	Type of market failure	Reason for market failure	
A	Demerit goods	Too few of these are produced	☐
B	Monopoly	Lower prices are charged than in a competitive market	☐
C	Negative consumption externalities	Private costs are greater than social costs	☐
D	Public goods	Firms cannot prevent non-payers from using the good	☒



0 5**Table 2** shows a firm's total cost and profit in pounds (£) for different levels of output.**Table 2**

Output	Total cost (£)	Profit (£)
100	2000	2200
200	3600	4400
300	5300	5200

Which one of the following is correct?

When the firm increases its output

[1 mark]**A** from 100 to 200, the price falls by £3.☐**B** from 100 to 200, the price falls by £5.☐**C** from 200 to 300, the price falls by £3.☐**D** from 200 to 300, the price falls by £5.☒**0 6**

Which one of the following explains why the natural environment is a scarce resource?

[1 mark]**A** The natural environment can be damaged by producing externalities.☐**B** The natural environment can be replaced over time.☐**C** The natural environment is limited in supply and cannot satisfy all our wants.☒**D** The natural environment is unlimited in supply.☐**Turn over ►**

0 7

Table 3 shows estimated costs and benefits of a proposed government transport project in millions of dollars (\$m).

Table 3

Private cost (\$m)	Social cost (\$m)	Private benefit (\$m)	External benefit (\$m)
60	80	65	90

What is the net social benefit of the project?

[1 mark]

- A** \$5m ☐
- B** \$10m ☐
- C** \$15m ☐
- D** \$75m ☒

0 8

Which one of the following is most likely to be a benefit of a monopoly to consumers?

[1 mark]

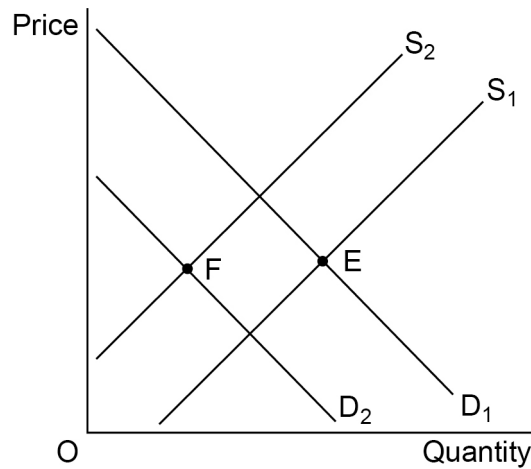
- A** Barriers to entry are high ☐
- B** Lower output may be produced ☐
- C** Profits may be spent on innovation ☒
- D** There is a high concentration ratio ☐



0 9

Figure 2 shows initial demand (D_1) and supply (S_1) curves for an inferior good.

Figure 2



Which one of the following would result in the market equilibrium moving from point E to point F?

[1 mark]

- A A fall in raw material prices and a decrease in income
- B A fall in raw material prices and an increase in income
- C A rise in raw material prices and a decrease in income
- D A rise in raw material prices and an increase in income

☐
☐
☐
☒

1 0

Which one of the following statements best describes why a demand curve usually slopes down to the right?

[1 mark]

- A A higher price results in higher demand
- B A lower price results in higher demand
- C Higher demand results in a lower price
- D Lower demand results in a higher price

☐
☒
☐
☐

Turn over ►



1 1**Table 4** shows the costs of production for an electronics firm in yen (¥).**Table 4**

Total fixed costs (¥)	Average variable costs (¥)	Average total costs (¥)
7200	20	100

Which one of the following is the output of the firm?

[1 mark]

- A** 60 ☐
- B** 72 ☐
- C** 90 ☒
- D** 92 ☐

1 2

Which one of the following combinations of characteristics is most likely to occur in a competitive market?

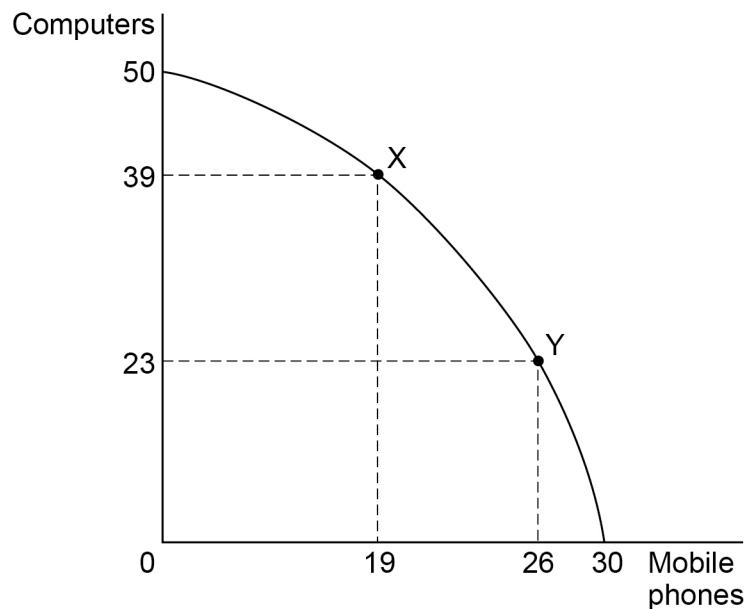
[1 mark]

	Monopoly power	Price elasticity of demand	
A	High	High	☐
B	High	Low	☐
C	Low	High	☒
D	Low	Low	☐



1 3

Which one of the following could be an example of an internal economy of scale?

[1 mark]**A** Access to a cheaper loan from a bank after a firm expands☒**B** Improvements in the transport network☐**C** Increased availability of skilled labour in the town☐**D** New research facilities provided by a local university☐**1 4****Figure 3** shows the production possibility boundary for a firm that produces computers and mobile phones.**Figure 3**

If a firm is originally producing at point X, the opportunity cost of moving to point Y is

[1 mark]**A** 7 mobile phones.☐**B** 11 mobile phones.☐**C** 16 computers.☒**D** 27 computers.☐**Turn over ►**

1 5

Table 5 shows the total income and wealth in billions of dollars (\$bn), and the population in millions, for an economy in 2020 and 2023.

Table 5

Year	Income (\$bn)	Wealth (\$bn)	Population (m)
2020	270	500	30
2023	300	530	34

It can be concluded from **Table 5** that between 2020 and 2023

[1 mark]

- A** income per person decreased and wealth per person decreased.
- B** income per person decreased and wealth per person increased.
- C** income per person increased and wealth per person decreased.
- D** income per person increased and wealth per person increased.

☒
☐
☐
☐
15

Section B

Look at the Source Booklet and answer **all** questions in the spaces provided.

Do **not** write in the Source Booklet.

1 6 . 1 Define 'Income elasticity of demand' (**Extract C**, line 3).

[3 marks]

Income elasticity of demand (YED) measures the responsiveness of the quantity demanded of a good to a change in consumers' income. It is calculated as the percentage change in quantity demanded divided by the percentage change in income. It is positive for normal goods and negative for inferior goods.

1 6 . 2 Define 'labour productivity' (**Extract C**, line 1).

[3 marks]

Labour productivity is the output produced per worker over a given period of time, for example the number of units produced per worker per hour. It is calculated as total output divided by the number of workers (or worker hours) used to produce it.

Turn over ►



1 7

Extract A shows health expenditure per person and life expectancy in selected countries in 2020.

You are advised to show your working for the calculations below.

1 7 . 1

Use **Extract A (i)** to calculate the median health expenditure per person in the six countries shown.

[3 marks]

In order: \$1227 (Mexico), \$1618 (Costa Rica), \$2123 (Bulgaria), \$4666 (Japan),

\$6939 (Germany), \$11 859 (US)

Median = $(2123 + 4666) \div 2 = 6789 \div 2$

Median health expenditure per person = \$3394.5

1 7 . 2

Use **Extract A (ii)** to calculate how much **higher** life expectancy is in Japan compared to life expectancy in Mexico.

Give your answer as a percentage to **two** decimal places.

[3 marks]

% higher = $(85 - 70) \div 70 \times 100$

= $15 \div 70 \times 100 = 21.42857\%$

Life expectancy in Japan is 21.43% higher than in Mexico.



1 8

Extract A shows health expenditure per person and life expectancy in selected countries in 2020.

1 8 . 1

Explain why the amount of health expenditure per person might affect life expectancy. **[6 marks]**

Health expenditure per person is the total amount spent on health care in a country, by the government and by individuals directly or through health insurance, divided by the population. Life expectancy is the average number of years a person can expect to live.

Higher health expenditure per person means more resources are available for each person: more doctors, nurses and hospital beds, better hospital treatment and access to newer, more effective medicines. Illnesses that would otherwise be fatal can therefore be treated, so people live longer and life expectancy rises. Conversely, low spending per person is likely to mean long waiting times and limited treatment, so life expectancy is lower.

Higher spending also allows more preventative care, such as vaccinations, screening and more frequent visits to the doctor. People with health insurance are more likely to see a doctor early, so illnesses are diagnosed earlier when they are easier to treat, increasing life expectancy.

Health care is also a merit good with positive externalities. A healthier population is more productive and takes fewer days off work, so people earn higher incomes and

Extra space can afford better food and housing, which further helps them live longer. As the extracts suggest, demand for health care is rising, and countries that are able to spend more per person to meet this demand are likely to have a higher average life expectancy.

Turn over ►



1 8 . 2

To what extent do the data suggest that the amount of health expenditure per person affects life expectancy?

Use the data in **Extract A** to support your answer.

[6 marks]

The data partly support the view that health expenditure per person affects life expectancy. Mexico has the lowest health expenditure per person (\$1227) and the lowest life expectancy (70 years). Bulgaria has the third lowest expenditure (\$2123) and the second lowest life expectancy (74), while Germany has the second highest expenditure (\$6939) and the second highest life expectancy (81). For these countries the rank orders suggest a direct relationship. However, other countries do not fit. Costa Rica has the second lowest expenditure (\$1618) but the third highest life expectancy (79). The USA has by far the highest expenditure (\$11 859) but only the fourth highest life expectancy (77), while Japan spends only \$4666 per person but has the highest life expectancy (85).

There is also much more variation in spending than in life expectancy: life expectancy in Japan is 21.43% higher than in Mexico, but spending per person in the USA is about 867% higher than in Mexico, which weakens the relationship.

The USA may have a less healthy population, so it has to spend more.

Correlation does not prove causation. Other factors such as diet, nutrition and

Extra space exercise affect life expectancy, and the relationship may work the other way, as richer countries can afford to spend more. The data cover only six countries in one year (2020).

Overall, the data suggest that higher health expenditure per person tends to raise life expectancy, but only to a limited extent, as it is clearly not the only factor.

12



1 9

Extract C (lines 6–8) states: ‘when governments provide health care for free or at low prices, supply is determined by how much governments are willing to spend. This often leads to excess demand’.

With the help of a diagram, explain why there is likely to be excess demand when governments provide health care for free.

[9 marks]

Excess demand occurs when, at a given price, quantity demanded is greater than quantity supplied. When the government provides health care free, supply is not set by price but by the budget the government is willing to spend, which is limited by other priorities such as education and defence (opportunity cost) and by rising costs such as higher medicine prices. Supply is therefore fixed at Q_s and perfectly price inelastic, shown by the vertical S curve in the diagram overleaf.

In a free market the price would rise to P_e , where demand equals supply, rationing the limited care. However, health care is provided at a zero price, which is below P_e . At a price of zero, patients face no cost, so they demand health care up to Q_{d1} , where the demand curve meets the quantity axis. Excess demand is therefore $Q_{d1} - Q_s$.

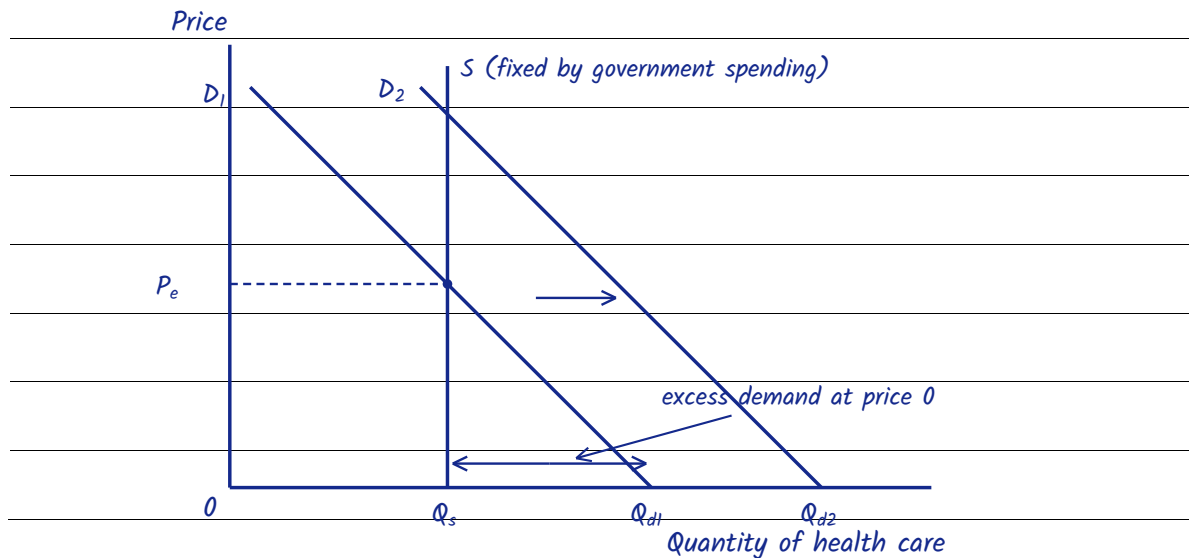
Because the price cannot rise, the price mechanism cannot act as a rationing or signalling device to choke off demand or encourage more supply, so the shortage persists and care is rationed instead by waiting lists and queues.

This problem is made worse because demand for health care is rising over time, for example due to ageing populations, increased consumption of unhealthy foods and a lack of exercise. Demand shifts from D_1 to D_2 , so excess demand at zero price grows to $Q_{d2} - Q_s$ unless the government increases its spending.

Extra space

Turn over ►





2 0

Extract B (lines 17–18) states: ‘people are offered a range of ways to improve their health in the long term. This includes subsidised gym sessions’.

Analyse the effects that subsidised gym sessions could have on the market for health care.

[12 marks]

A subsidy is a payment by the government to producers (or consumers) to reduce the cost of producing a good and encourage its production and consumption. The government subsidises gym sessions because exercise is a merit good with positive externalities: people who exercise are less likely to become ill, so the whole of society benefits from lower health care costs and a more productive workforce. Without a subsidy too few gym sessions are consumed, partly because of information failure, as people underestimate the long-term benefits of exercise.

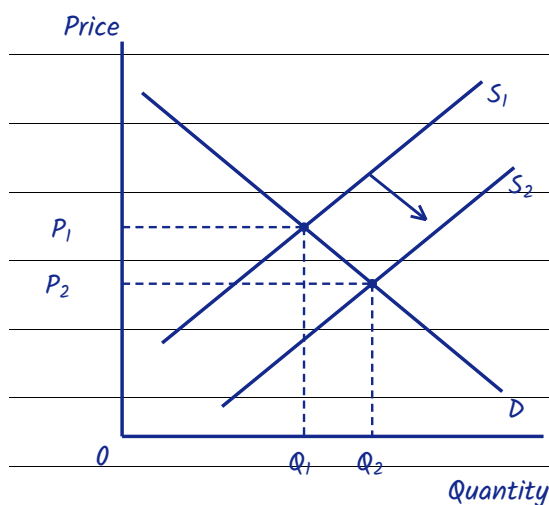
The subsidy lowers the gyms' costs of production, so supply of gym sessions shifts to the right from S_1 to S_2 . The price falls from P_1 to P_2 and the quantity of gym sessions rises from Q_1 to Q_2 . The size of the increase depends on the price elasticity of demand: if demand is price elastic, for example for people on low incomes who see gym membership as a luxury, the lower price leads to a large rise in use. If demand is price inelastic, most people who use the gym would have gone anyway, so the subsidy mainly benefits existing users and the gyms, and the effect on health is small.

The benefit of the subsidy is shared between consumers, through lower prices, and

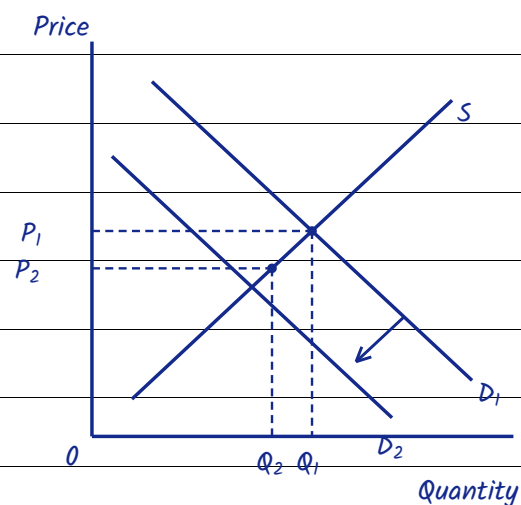


producers, through higher revenue and profit. It may especially help lower income groups, who are often less healthy and could not otherwise afford the gym, making access more equal.

In the long run, more regular exercise reduces illnesses such as heart disease, obesity and diabetes. This reduces the demand for health care, so the demand curve for health care shifts to the left from D_1 to D_2 , reducing the price of private health care and the quantity needed, and reducing waiting lists where health care is provided free. The government can then use the savings on other priorities. However, in the short run the effect on the market for health care is likely to be small, as it takes years for health to improve. Gym use may also cause some sports injuries, increasing demand for some treatments, and the subsidy has an opportunity cost.



Market for gym sessions



Market for health care



2 1

Extract C (line 6) states: 'In a free market, scarce resources are allocated by price.'

Use the extracts and your knowledge of economics to assess whether health care should be left to market forces.

[20 marks]

In a free market, health care is allocated by the price mechanism: the interaction of demand and supply determines the price, which rations scarce doctors, hospitals and medicines among those willing and able to pay. Prices signal where demand is high and give producers an incentive to supply more, so resources move to where consumers value them most. Market forces can therefore lead to allocative efficiency.

There are arguments for leaving health care to market forces. Competition between private hospitals and clinics gives an incentive to keep costs down, improve quality and innovate, avoiding the X-inefficiency that can occur in state providers. Consumers have more choice, and charging individuals a price reduces unnecessary use of health care, so the excess demand and long waiting lists that occur when governments provide health care free, as Extract C explains, are avoided. Many people can buy health insurance to cover the cost of treatment, and state provision has an opportunity cost, as the tax revenue used could instead fund education or infrastructure, or allow lower taxes, which improve incentives to work.

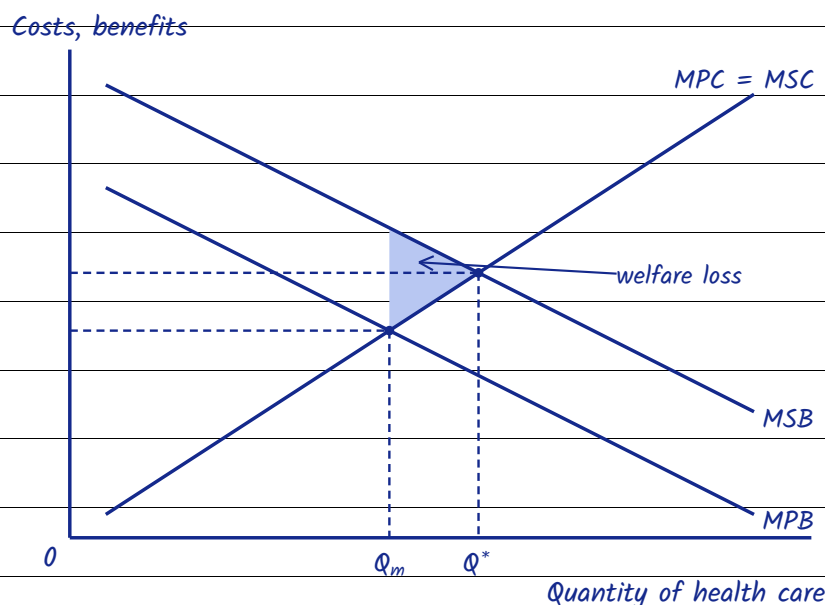
However, health care markets are subject to significant market failures. First, health care is a merit good with positive externalities in consumption. When a person is vaccinated or treated, others benefit from reduced spread of disease, and a healthier workforce is more productive and takes fewer days off work. Consumers base their decisions only on their marginal private benefit (MPB), ignoring the external benefit, so marginal social benefit (MSB) is greater than MPB. As the diagram shows, the free market produces Q_m , where $MPB = MSC$, below the socially optimal level Q^* , where $MSB = MSC$. Health care is under-consumed and there is a welfare loss, shown by the shaded triangle.



Second, there is information failure. Patients do not have the knowledge to judge which treatments they need, and they rely on doctors who may also be the sellers, so they may be persuaded to buy unnecessary treatments or may underestimate the benefits of preventative care. Third, some markets are dominated by a small number of hospitals or drug companies with monopoly power, which can charge high prices and restrict output. Fourth, market forces lead to inequality of access: the poorest, the elderly and those with long-term illnesses, who often need health care most, may be unable to afford treatment or health insurance. Insurance premiums can be very expensive and many people are left without cover. The extracts' discussion of the high price of private health care supports this.

The data in Extract A also suggest that the outcome depends on how health care is organised, not only on how much is spent. The USA, where health care relies heavily on private markets and insurance, spends \$11 859 per person, the highest of the six countries, yet has a life expectancy of only 77 years, while Japan spends \$4666 per person and has a life expectancy of 85 years. This suggests that market-based systems can be costly and may not achieve the best health outcomes.

The government can correct these market failures in several ways. It can provide health care free at the point of use through state provision financed by taxation, giving



Turn over ►



Extra space *everyone access according to need rather than ability to pay. It could*

subsidise health care, or activities that reduce the need for it, such as the subsidised gym sessions in Extract B, to raise consumption towards Q^* . It could set maximum prices for medicines, regulate private providers to protect patients, and provide information through health campaigns to reduce information failure.

However, intervention can lead to government failure. As Extract C explains, when health care is free, supply is determined by how much the government is willing to spend, so there is excess demand, and care is rationed by waiting lists rather than price. Demand is rising because of ageing populations, unhealthy diets and a lack of exercise, so the cost to taxpayers keeps increasing and has a large opportunity cost. The government also lacks the information to know how much health care to provide, may be influenced by political pressures and has little incentive to control costs.

Whether health care should be left to market forces therefore depends on several factors. It depends on the price elasticity of demand: much health care, such as emergency treatment, is price inelastic, so private providers can charge high prices and consumers have little choice, which strengthens the case for intervention. It depends on the level of income per person and the tax revenue a country has, as lower-income countries may be unable to fund full state provision. It depends on the type of care: cosmetic treatments or minor services can be left to the market, but emergency care and vaccinations, with large externalities, cannot. Finally, it depends on value judgements about equity and whether access to health care is a right.

In conclusion, I do not think health care should be left entirely to market forces. The positive externalities, information failure, monopoly power and inequality of access mean that a free market would under-provide health care and leave many people without treatment, as the US example suggests. However, completely free state provision causes excess demand and government failure. The best approach is likely to be a mixed system, where the government guarantees access to essential care and funds



preventative measures such as subsidised gym sessions, while private providers and insurance compete to supply other services, improving efficiency and choice.

END OF QUESTIONS



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outside the
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ANSWER IN THE SPACES PROVIDED**



