

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

Thursday 8 May 2025

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 5 E C 0 1 0 1

Section AAnswer **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 function of the price mechanism?

[1 mark]

- A** To allocate resources equitably in all types of economic system
- B** To create incentives for economic activity in a centrally planned economy
- C** To ensure that all resources are fully employed in a mixed economy
- D** To resolve the basic economic problem in a market economy

**0 2**

Which one of the following is the correct definition and example of a factor of production?

[1 mark]

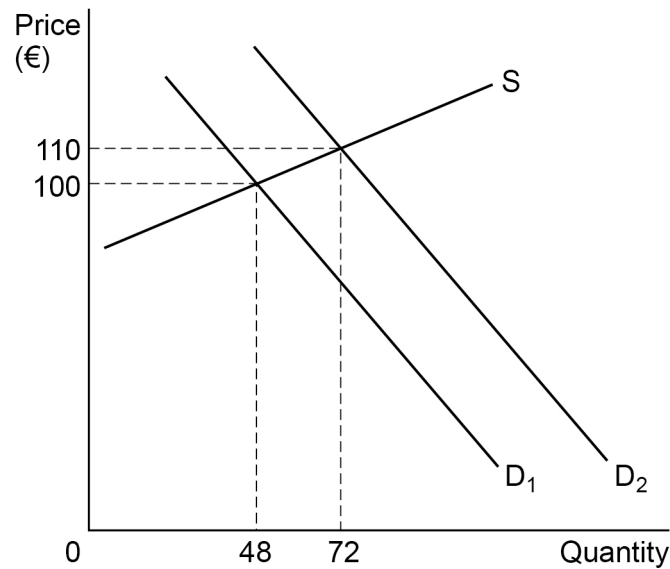
	Factor of production	Definition	Example
A	Capital	Human-made resource	Money in a bank
B	Enterprise	Risk-taking resource	Decision maker in a firm
C	Labour	Natural resource	Teacher in a school
D	Land	Human resource	Water in a lake



0 3

Figure 1 shows the initial demand (D_1) and supply (S) curves for coats. A successful advertising campaign shifts the demand curve from D_1 to D_2 .

Figure 1



When the price rises from €100 to €110, what is the value of price elasticity of supply?

[1 mark]

A 0.2

☐

B 2.4

☐

C 3.3

☐

D 5.0

☒

0 4

A demerit good, such as a cigarette, is most likely to be

[1 mark]

A non-rival with negative externalities in consumption.

☐

B non-rival with negative externalities in production.

☐

C rival with negative externalities in consumption.

☒

D rival with negative externalities in production.

☐

Turn over ►



0 5

Table 1 shows the costs for a firm, in British pounds (£), when it produces four units of output.

Table 1

Output (units)	Average variable cost (£)	Total cost (£)
4	8	72

What is the average fixed cost of producing four units of output?

[1 mark]

- A** £10 ☒
- B** £16 ☐
- C** £18 ☐
- D** £40 ☐

0 6

Which one of the following best describes a market failure?

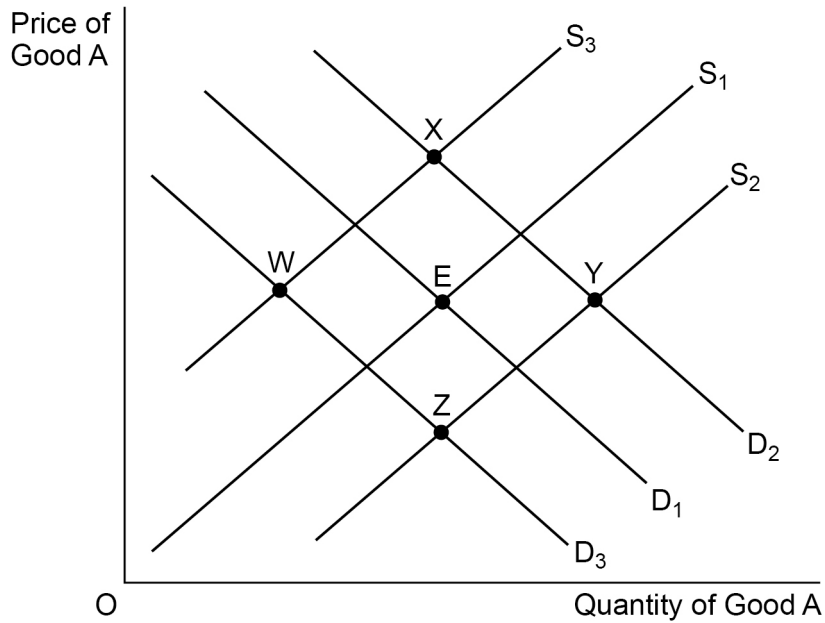
[1 mark]

- A** Consumers are charged for the external costs they create. ☐
- B** Consumers buy fewer goods due to higher prices. ☐
- C** Producers do not consider the external benefits they create. ☒
- D** Producers enter a market in response to higher prices. ☐



0 7

Figure 2 shows the initial demand (D_1) and supply (S_1) curves for **Good A**. **Good A** has a negative cross elasticity of demand in response to a change in the price of **Good B**, and **Good A** is in joint supply with **Good C**. The original equilibrium point is at E.

Figure 2

When the price of **Good B** falls **and** the demand for **Good C** rises, which one of the following is the new equilibrium point?

[1 mark]

- | | |
|------------|----------------------------------|
| A W | ☐ |
| B X | ☐ |
| C Y | ☒ |
| D Z | ☐ |

Turn over for the next question

Turn over ►



0 8

Table 2 shows the market share for firms in the mobile phone market, in Quarter 1 (Q1) and Quarter 4 (Q4), 2022.

Table 2

Firm	Market share (%)	
	Q1, 2022	Q4, 2022
Apple	18	15
Honor	5	4
OPPO	9	10
Samsung	23	23
Vivo	8	8
Xiaomi	12	11
Others	25	29

What is the change in the three-firm concentration ratio between Quarter 1 and Quarter 4 of 2022?

[1 mark]**A** Decreased by 1 percentage point☐**B** Decreased by 4 percentage points☒**C** Increased by 1 percentage point☐**D** Increased by 4 percentage points☐

0 9

Immobility of labour may exist because

[1 mark]**A** individuals have perfect information about the jobs market.☐**B** public transport is reliable and has large government subsidies.☐**C** some workers cannot afford to live in other parts of a country.☒**D** unemployed workers have the skills to change to new jobs.☐**1 0**

Sumarni's parents gave her a piano that cost \$2200. Sumarni sees the same model of piano in a shop now selling for \$3400. She could sell her piano for \$1500.

What is the opportunity cost to Sumarni if she decides to keep the piano?

[1 mark]**A** \$1500☒**B** \$1900☐**C** \$2200☐**D** \$3400☐**1 1**

The competitive market process suggests that

[1 mark]**A** firms that compete only on price will not survive in a market.☐**B** firms try to reduce average costs to reduce price competitiveness.☐**C** firms with competitors are likely to differentiate their goods.☒**D** firms with monopoly power do not need to improve the quality of their service.☐**Turn over ►**

1 2

Table 3 shows the private benefits and costs and the social benefits and costs of building a bridge and a tunnel in billions of Japanese Yen (¥bn).

Table 3

	Bridge (¥bn)	Tunnel (¥bn)
Private benefit	10	10
Private cost	15	27
Social benefit	30	42
Social cost	48	53

Which one of the following can be concluded from the data in **Table 3**?

[1 mark]

- A** The external benefits of building the bridge are less than the external benefits of building the tunnel.
- B** The external benefits of building the tunnel are ¥52bn.
- C** The external costs of building the bridge are ¥18bn.
- D** The external costs of building the bridge are less than the external costs of building the tunnel.

☒☐☐☐

1 3

Specialisation requires

[1 mark]

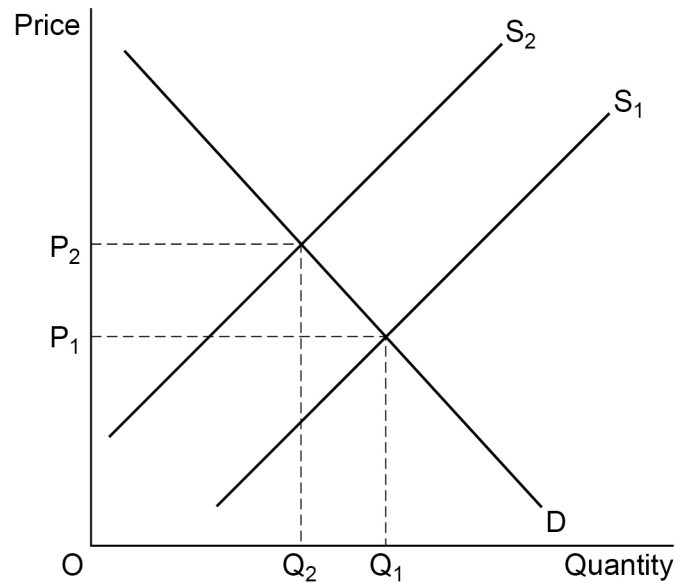
- A** an efficient means of exchange.
- B** benefits from economies of scale.
- C** high labour productivity.
- D** improvements in technology.

☒☐☐☐

1 4

Figure 3 shows the initial demand (D) and supply (S_1) curves for rice in a country.

Figure 3



Which one of the following would cause the supply curve for rice to shift from S_1 to S_2 ?

[1 mark]

- A** An improvement in the machines used to pick the rice
- B** An increase in the price of rice on world markets
- C** Poor weather conditions in regions where rice is grown
- D** The sale of rice from the government's buffer stock

☐
☐
☒
☐

1 5

Each year the government in Country Z allocates pollution permits at zero price to its 5000 largest firms. This year the government decides to reduce the number of permits it allocates by 20%.

Which one of the following is the most likely outcome?

[1 mark]

- A** 1000 firms have an incentive to buy new technology.
- B** Government revenue from pollution permits will fall.
- C** Pollution in Country Z will reduce by 20%.
- D** The average market price of pollution permits will rise.

☐
☐
☐
☒

15

Turn over ►



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 'perfect competition' (**Extract B**, line 6).

[3 marks]

Perfect competition is a market structure in which there are a large number of buyers and sellers, the products sold are identical (homogeneous), there is perfect information, and there are no barriers to entry into or exit from the industry. As a result, each firm is a price taker and is unable to influence the market price.

1 6 . 2 Define 'internal economies of scale' (**Extract B**, line 13).

[3 marks]

Internal economies of scale are the fall in long-run average costs (unit costs of production) that a firm experiences as it grows and increases its scale of production, for example from bulk-buying, specialisation of labour or using larger, more efficient machinery. They arise from within the firm itself.



1 7

The extracts provide information on income per person and EU funding for flood damage in selected EU countries.

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

1 7 . 1

In 2021, the average income per person in the EU was €28 050. The index for this is 100.

Use this information and **Extract A (i)** to calculate the index of income per person in Latvia to **one** decimal place.

[3 marks]

Index for Latvia = (income per person in Latvia ÷ EU average income per person)

× 100

= (€12 870 ÷ €28 050) × 100 = 45.8824

Index of income per person in Latvia = 45.9 (to 1 d.p.)

1 7 . 2

Extract C (lines 20–21) states: ‘Many other countries have received payments from this fund, including Belgium (€87.84m), Germany (€612.61m), Latvia (€17.70m) and Lithuania (€16.90m).’

Calculate the median payment made to Belgium, Germany, Latvia and Lithuania.

Give your answer to the nearest **million** euros (€m).

[3 marks]

In order: €16.90m, €17.70m, €87.84m, €612.61m

Median = (€17.70m + €87.84m) ÷ 2 = €105.54m ÷ 2 = €52.77m

Median payment = €53m (to the nearest million euros)



1 8

Extract A shows income per person in 2021 and EU funding for flood damage in selected EU countries, between 2017 and 2021.

1 8 . 1

Explain why a higher income per person in a country may lead to less funding for flood damage from international organisations.

[6 marks]

Income per person is the total income of a country divided by its population, so it measures the average living standard. Funding for flood damage from international organisations, such as the EU, is money given to a country to help pay for repairing the damage caused by floods.

A higher income per person means that households and firms have a greater ability to consume goods and services. They are therefore more likely to be able to afford to pay for flood damage themselves, for example by buying insurance, repairing homes and business premises or rebuilding stock, so there is less need for outside help.

Firms in richer countries are also likely to be more profitable, so their objectives may be more likely to include community issues and corporate social responsibility, for example contributing to the cost of local flood repairs.

In addition, a higher income per person means that the government is likely to receive more tax revenue, both from income tax, as incomes are higher, and from indirect taxes such as VAT, as spending is higher. The government can therefore use its own revenue to pay for flood damage and to invest in flood defences and

Extra space *infrastructure that reduce damage in the future.*

International organisations have limited budgets and want to allocate funds to the countries where the need is greatest and where they will add most to welfare. A country with a lower income per person is less able to fund repairs itself, so it is given priority. Therefore, a country with a higher income per person is likely to receive less funding for flood damage from international organisations, as a share of the total cost of the damage.



1 8 . 2

To what extent do the data suggest that a higher income per person in a country leads to less funding for flood damage from international organisations?

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

[6 marks]

The data in Extract A largely support the view that a higher income per person leads to less funding for flood damage. Belgium has the highest income per person, €36 250, and received the least funding, only 1.6% of the total cost of its flood damage. Germany has the second highest income per person, €35 630, and received the second lowest funding, 2.1%. At the other extreme, Latvia has the lowest income per person, €12 870, and received the highest funding, 4.6% of the cost of its flood damage.

However, the relationship is not perfect. Italy has the third highest income per person, €27 120, but received the second highest funding, 4.2%, slightly more than Lithuania, which has the second lowest income per person, €14 870, and received 4.1%. So among the lower and middle income countries the data do not completely support the relationship.

Even so, the countries with significantly higher incomes per person receive significantly less funding: Latvia and Lithuania receive more than double, in percentage terms, the funding received by Belgium.

The evidence is also limited. It covers only five countries, there is only one year's Extra space data (2021) for income per person, and the EU is only one of the international organisations that may provide funding. Funding is also likely to depend on other factors, such as international relations, the quality and quantity of a country's existing flood defences and infrastructure, and the extent of the flood damage in each country.

Overall, the data suggest to a large extent that the higher the income per person in a country, the less funding for flood damage it receives, although the Italy and Lithuania figures and the small sample mean that the relationship is not exact.

12

Turn over ►



1 9

Extract C (lines 4–5) states: ‘...using a minimum price, with the government buying up the excess supply...’.

With the help of a diagram, explain how putting a minimum price on a private good, with the government buying up the excess supply, can increase producers' total revenue.

[9 marks]

A private good is one that is rival and excludable, such as wheat. A minimum price is a legally enforced price floor set above the free market equilibrium price, below which the good cannot be sold. Governments often use one to raise and stabilise producers' incomes. Total revenue is price $\times$ quantity sold.

In the diagram, without intervention the market clears at the equilibrium price P_e and quantity Q_e , where demand equals supply. Producers' original total revenue is $P_e \times Q_e$, the area OP_eAQ_e .

If the government sets a minimum price, Min P, above P_e , consumers face a higher price, so there is a contraction along the demand curve and quantity demanded falls to Q_1 . At the same time, the higher price gives producers an incentive to produce more, so there is an extension along the supply curve and quantity supplied rises to Q_2 . This creates excess supply equal to $Q_2 - Q_1$.

To keep the price at Min P, the government buys up the excess supply ($Q_2 - Q_1$) at the minimum price, for example storing it or selling it abroad. Producers therefore receive $\text{Min P} \times Q_1$ from consumers plus $\text{Min P} \times (Q_2 - Q_1)$ from the government.

Their total revenue becomes $\text{Min P} \times Q_2$, the area $O\text{MinP} B Q_2$, which is greater than the original $P_e \times Q_e$, because both the price received and the quantity sold are higher.

The increase in revenue is the shaded area.

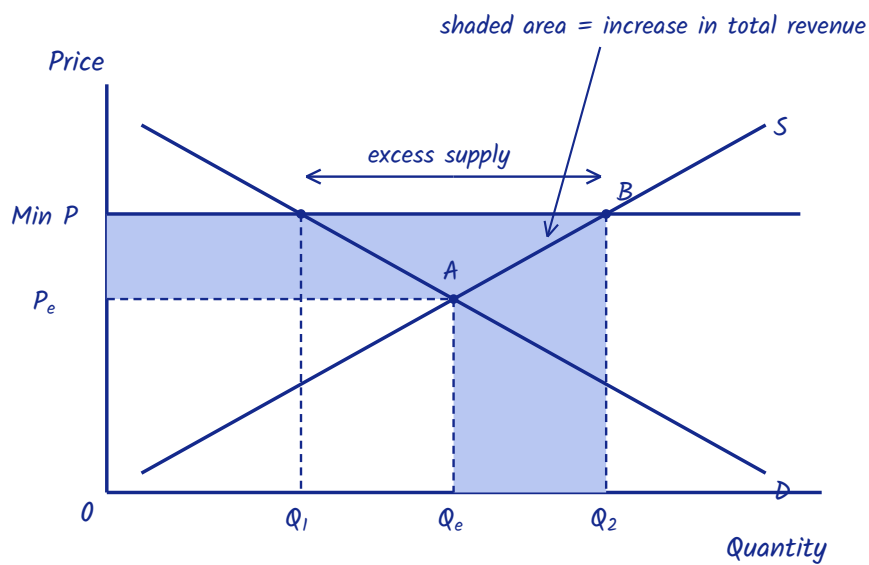
Extra space Because the government buys all the surplus, producers' revenue rises whatever the price elasticity of demand. However, the size of the increase depends on the price elasticity of supply: the more price elastic supply is, the larger the rise in quantity supplied to Q_2 , so the larger the increase in total revenue, but also the larger the excess supply and the higher the cost to the government. Without the buy-up



scheme, if demand were price inelastic revenue from consumers alone would still rise,
but if demand were price elastic it would fall.

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box

9



Turn over for the next question

Turn over ►



2 0

Extract B (lines 8–9) states: ‘There are circumstances when public goods take on some of the characteristics of private goods and become quasi-public goods.’

Analyse the circumstances when a public good may take on some of the characteristics of a private good and become a quasi-public good.

[12 marks]

A public good is non-excludable and non-rival, for example a flood defence or street lighting. Non-excludable means that once it is provided, people who do not pay cannot be stopped from benefiting; non-rival means that one person's consumption does not reduce the amount available to others. This creates the free-rider problem: people can benefit without paying, so a private firm cannot charge a price and make a profit, and the good is not provided by the market (a missing market). A private good, such as a coat, is excludable and rival. A quasi-public good, such as a road, has some but not all of the characteristics of a public good.

The first circumstance is when it becomes possible to exclude non-payers. This often depends on technological change. For example, a road was once non-excludable, but electronic tolls, number-plate recognition cameras and road-pricing technology now allow drivers to be charged for each journey, and those who do not pay can be fined or prevented from using it. Similarly, television broadcasts were non-excludable until encryption and subscription services allowed broadcasters to charge viewers. Once exclusion is possible and cheap, the free-rider problem is reduced, so a price can be charged and private firms have an incentive to supply the good, which then behaves more like a private good.

The ease of charging a price also depends on whether property rights can be assigned. If a beach, park or fishing ground is given to an owner, they can fence it and charge an entry price. However, where exclusion is very costly, for instance a flood defence protecting a whole town, the good stays non-excludable, so how easily a price can be charged determines how close it moves to being a private good.

The second circumstance is when the good becomes rival because of congestion. A road



Extra space

or a public park is non-rival when few people use it, as an extra user costs nothing and does not reduce the benefit to others. However, once usage passes a certain point, for example in rush hour, each extra car slows down every other driver, so consumption becomes rival and the marginal cost of an extra user is no longer zero. The good then has a characteristic of a private good, and charging a price, such as a congestion charge, can be used to ration it.

Where a good is non-excludable but becomes rival, overuse can lead to the tragedy of the commons. For example, a free-to-use fishing ground or common land is depleted because each user ignores the effect of their use on others. Assigning property rights or quotas makes it excludable and reduces overuse.

Therefore a public good becomes quasi-public when technology or property rights make exclusion possible and affordable, or when demand rises enough to cause congestion and make it rival. The more easily exclusion can happen and the more rival it becomes, the more it takes on the characteristics of a private good.

12

Turn over for the next question

Turn over ►



2 1

Extract C (lines 1–3) states: ‘Public goods, like flood defences, provide important benefits to consumers and firms, but who should provide them? Many economists believe that state provision is essential to solve this type of market failure.’

Use the extracts and your knowledge of economics to assess whether it is essential for governments to provide public goods.

[20 marks]

Public goods, such as flood defences and street lighting, are non-excludable and non-rival. Because non-payers cannot be excluded, consumers have an incentive to free ride, so they do not reveal how much they value the good and private firms cannot charge a price that covers costs. As a result the free market does not provide public goods at all, even though their social benefit is greater than their cost. This missing market is a form of market failure, a situation where the market leads to a misallocation of resources. In the diagram (on the final page), the marginal private benefit that any one buyer would pay lies below the marginal cost at every output, so the market provides nothing, whereas the marginal social benefit, the sum of everyone's benefits, equals marginal cost at Q^* . The shaded area is the welfare lost because the good is not provided. State provision means the government provides the good, financing it through taxation, and supplying it free at the point of use.

There are strong arguments that state provision is essential. Flood defences give very large benefits to consumers and firms: they protect homes, businesses, farmland and infrastructure, so they prevent losses of output, income and jobs. Extract B shows that investment in flood defences in India and Bangladesh has produced significant paybacks, as the money spent is far smaller than the future cost of repairing flood damage that it avoids. Without government, these benefits would be lost because no firm would build defences that it cannot charge for. Only the government can overcome the free-rider problem, as it can compel everyone who benefits to contribute through taxes.

State provision also allows the government to plan defences for a whole country or river basin, taking account of all the benefits to society and achieving economies of scale.

Extract C shows that the Netherlands spends around €1bn on flood defences; much of



the country lies below sea level, so the external benefits to the whole economy are huge. Equity is also improved, as poorer households are protected even though they could not pay. Extract A suggests that lower-income countries such as Latvia, with an income per person of €12 870, rely more on outside funding, so state and international provision is especially important where private resources are limited.

However, state provision has costs. The Netherlands' €1bn has an opportunity cost: the same money could have been spent on healthcare, education or lower taxes, and it must be financed by taxation or borrowing, which may reduce incentives to work and invest.

There is also a risk of government failure. Because consumers do not reveal their preferences, the government has imperfect information about how much people value flood defences, so it may provide too much or too little, or put defences in the wrong place. Political pressures may lead to spending in areas that benefit politicians rather than where the need is greatest, and state providers may lack the profit incentive to keep costs down, leading to X-inefficiency.

Moreover, provision by the state is not the only way to solve the market failure. The government can finance a public good without producing it itself, by contracting private firms to build and maintain defences, with competitive tendering keeping costs low.

Extract C describes a Malaysian project on flood defences in which the government works with firms and non-government organisations; this combines public finance with private sector expertise and efficiency and spreads the cost. Charities, local communities and international organisations such as the EU also contribute, as shown by the EU flood fund payments to Belgium (€87.84m), Germany (€612.61m), Latvia (€17.70m) and Lithuania (€16.90m) in Extract C. Large firms and landowners who gain most may also be willing to pay part of the cost, eg a port protecting its own premises.

Technological improvements are also important. As discussed in Extract B, some public goods can take on the characteristics of private goods and become quasi-public goods.

When technology makes exclusion possible, as with toll roads, satellite television or

Turn over ►



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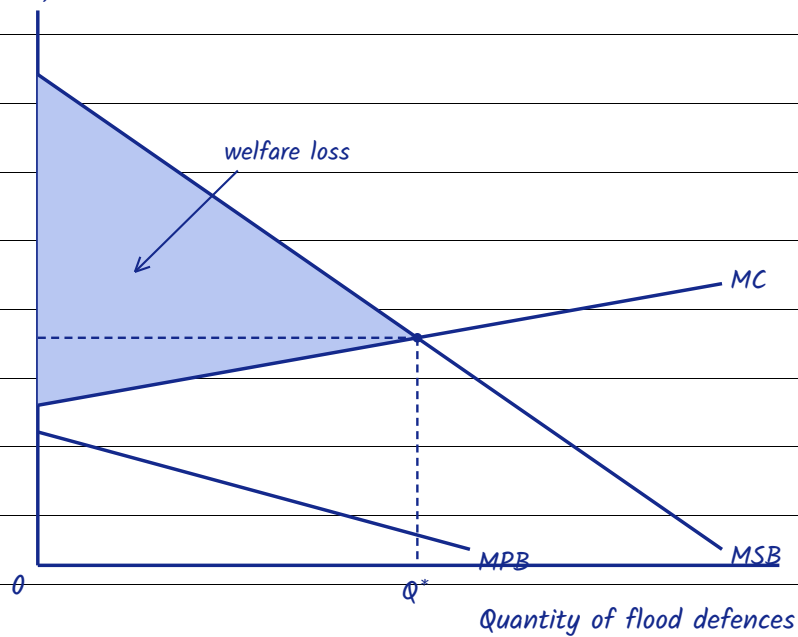
streaming services, a price can be charged and private firms can provide the good profitably, so state provision is no longer essential. Where congestion makes a good rival, charging can ration it efficiently. However, this is much harder for pure public goods such as flood defences, national defence or street lighting, where it is almost impossible to exclude people who live in the area that is protected.

Therefore, whether state provision is essential depends on several factors. First, it depends on how pure the public good is: for goods that are truly non-excludable, such as flood defences protecting a whole town, the free-rider problem means that some government involvement is essential, whereas for quasi-public goods private provision is possible. Second, it depends on the scale and cost of the project compared with the resources of firms and charities; huge projects like those in the Netherlands are unlikely to be funded privately. Third, it depends on the relative risk of market failure versus government failure, and on how efficient the government is in each country. Finally, the experience of different countries matters: higher-income countries have more tax revenue to fund provision, while lower-income countries may depend on international organisations.

In conclusion, I do not think it is essential for governments to produce public goods themselves, but it is essential for them to make sure that public goods are provided and, in most cases, to finance them. Without government involvement, the free-rider problem means that goods with very high social benefits, such as flood defences, would not be supplied at all, and the paybacks shown in India and Bangladesh would be lost. However, partnerships with firms and non-government organisations, as in Malaysia, can lower costs and reduce the risk of government failure, so the best approach is government funding and coordination combined with private sector delivery where possible.



Costs, benefits



Free market output = 0 (missing market)

END OF QUESTIONS



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