1.26 Government Intervention: Indirect Taxes, Subsidies and Price Controls

Total Marks

AQA 7136 · Calculators not allowed · about 80 minutes · Write-in edition

Name: _____ Date: ____ / ____ / _____

Answer all questions in full sentences where required. Show working for calculations. Draw diagrams where asked and label axes and shifts. Time guidance 80 minutes.

1 Explain briefly, with reference to elasticity, why the division of the burden of a specific tax between consumers and producers depends on the relative price elasticities of demand and supply in the taxed market.

(Total for Question 1 is 4 marks)

2 Explain two ways in which indirect taxes may fail to correct a negative production externality in a market such as coal power generation.

(Total for Question 2 is 4 marks)

3 Evaluate the view that an ad valorem tax on single-use plastic bags is the most effective government intervention to correct the negative externality of plastic pollution in a national retail market.

(Total for Question 3 is 15 marks)

4 Explain briefly two advantages of using price controls (maximum or minimum prices) as a policy tool compared with quantity controls or tradable permits in the short run.

(Total for Question 4 is 5 marks)

5 Define, in the context of a goods market such as petrol, what is meant by a specific indirect tax per unit.

(Total for Question 5 is 2 marks)

6 Define, with reference to a product market such as wine, what is meant by an ad valorem indirect tax.

(Total for Question 6 is 2 marks)

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7 Numeric task using a simple market schedule for canned beans. Consumer price (£) 6,7,8,9,10,11,12 with quantity demanded 70,65,60,55,50,45,40 respectively. Quantity supplied per week when sellers receive the producer price Pp (£) is 30,35,40,45,50,55,60 at producer prices 6,7,8,9,10,11,12 respectively. Initial equilibrium has no tax. A specific tax of £2 per can is introduced and paid by sellers. Calculate the initial equilibrium consumer price and quantity, the new equilibrium consumer price and quantity after the tax, and the price received by producers after the tax.

(a) State the initial equilibrium consumer price and equilibrium quantity (no tax). **(2)**

(b) After the £2 per unit tax paid by sellers, state the new equilibrium consumer price and equilibrium quantity. **(2)**

(c) State the price per unit actually received by producers after the tax is imposed. **(1)**

(Total for Question 7 is 5 marks)

8 Explain how a maximum price (price ceiling) set below the free-market equilibrium causes a shortage in a housing rental market. Include the terms 'excess demand', 'shortage', and one consequence for market quality or allocation.

(Total for Question 8 is 3 marks)

9 Explain how a minimum price (price floor) set above the free-market equilibrium creates a surplus using the market for milk as context, and state one policy the government could use to deal with the surplus.

(Total for Question 9 is 3 marks)

10 Explain how a government buffer stock scheme for a staple agricultural product (for example wheat) can stabilise prices. In your prompt include the roles of government buying at a floor price and selling at a ceiling price, and one disadvantage of buffer stocks.

(Total for Question 10 is 4 marks)

11 Calculate tax incidence given the canned beans example in Question 7. Using the initial equilibrium consumer price £10 and new consumer price £11 after a £2 specific tax, calculate the amount of the tax borne by consumers and the amount borne by producers per unit, and express each as a percentage of the £2 tax.

(Total for Question 11 is 4 marks)

Mark scheme · 1.26 Government Intervention: Indirect Taxes, Subsidies and Price Controls

Question 1

states that the more inelastic side of the market bears a larger share of the tax burden	**M1**
explains that if demand is very inelastic consumers reduce quantity little so they accept most of price rise, bearing more of the tax	**A1**
complements with supply elasticity: if supply is inelastic producers cannot easily reduce quantity so they bear more	**M1**
provides concluding statement linking relative elasticities to incidence of tax	**A1**

Answer: Tax incidence falls more on the relatively inelastic side: if demand is inelastic consumers bear more; if supply is inelastic producers bear more, because the less elastic side cannot change quantity easily and so accepts more of the price change.

Question 2

identifies one way: setting the tax at the wrong level because the social cost is hard to measure	**M1**
explains that if the tax is too low pollution continues and if too high it causes excessive contraction or black markets	**A1**
identifies second way: taxes may be regressive or politically difficult, leading to weak enforcement or exemptions	**M1**
explains that regressivity or political resistance can cause partial coverage or loopholes, so externality persists	**A1**

Answer: Taxes may be set at the wrong level because social costs are hard to measure, so pollution remains or markets are distorted, and taxes may be politically regressive or poorly enforced, creating loopholes and exemptions which weaken their corrective effect.

Question 3

Level 1 Basic identification of effects of an ad valorem tax, limited analysis. May include an attempted diagram and simple statements about higher price reducing quantity. Little evaluation or alternative policy comparison.	**1-5**
Level 2 Clear analysis of how an ad valorem tax changes prices and quantities, discussion of behavioural responses and tax incidence, and some comparison with alternatives. Some use of diagrams and relevant evidence, with limited evaluation of strengths and weaknesses.	**6-10**
Level 3 Comprehensive analysis including well-labelled diagrams, discussion of incidence, elasticities, likely behavioural change, administrative and enforcement costs, distributional impacts, and detailed comparison with bans, subsidies or producer responsibility schemes. Balanced evaluation with a supported judgement on overall effectiveness in correcting the externality.	**11-15**

Indicative content:

- ad valorem tax mechanism: percentage levy increases consumer price, reduces quantity demanded and internalises external cost
- diagram: supply curve shifted up proportionally producing higher price and lower quantity, label consumer and producer prices and tax wedge
- incidence: depends on elasticities, may reduce demand significantly if demand elastic, hence reduce pollution
- behavioural responses: potential for reuse, switching to alternatives, or avoidance and black markets for untaxed suppliers
- administration and enforcement: collecting percentage tax at point of sale may be simpler than item taxes but requires monitoring and compliance costs
- measurement problem: tax corrects only at point of sale and may not reflect full social cost per unit if external cost not well known
- alternatives: ban can eliminate use but may encourage substitution to other materials with own costs; subsidies for reusables encourage positive behaviour but cost government money; producer responsibility schemes shift cost to producers and may incentivise redesign
- distributional effects: tax may be regressive on low-income consumers but revenue could be recycled to mitigate impact
- market distortions and unintended consequences: potential for increased use of other single-use items or businesses relocating sales, and enforcement loopholes
- conclusion: weigh speed, effectiveness, political feasibility and administrative cost to reach supported judgement whether ad valorem tax is most effective compared with alternatives

Question 4

identifies advantage 1 such as simplicity and speed of implementation **M1**

explains simplicity: price controls can be set quickly and are easy for consumers and firms to understand compared with setting up permit markets **A1**

identifies advantage 2 such as immediate distributional impact or protection of consumers/producers **M1**

explains how price ceilings protect consumers in crisis or price floors protect producers' incomes without needing complex trading systems **A1**

gives a short caveat or realistic limitation such as risk of shortages/surpluses requiring further policies **B1**

Answer: Advantages: price controls are simple and fast to implement, and can provide immediate consumer or producer protection; however they risk shortages or surpluses and may need complementary measures.

Question 5

a tax charged as a fixed monetary amount on each unit of a good sold, e.g. £3 per litre **B1**

it raises the sellers' cost by the same amount for every unit, so the supply curve shifts vertically by that money amount **B1**

Answer: A fixed monetary charge applied to each unit sold, for example £3 per litre; it increases firms costs by the same amount per unit and shifts supply vertically up by that amount.

Question 6

a tax charged as a percentage of the sale price, e.g. 20% of the price **B1**

it causes supply to become steeper in price-quantity space because the tax amount rises with the price **B1**

Answer: A tax expressed as a percentage of the sale price, for example 20% of the price; the tax paid increases with the price, so the effective supply curve becomes relatively steeper as price rises.

Question 7

(a) identify price where quantity demanded equals quantity supplied from the given schedules **M1**

(a) initial equilibrium is consumer price £10 and quantity 50 units per week **A1**

(a) Answer: Initial equilibrium consumer price = £10, equilibrium quantity = 50 units per week.

(b) shift the supply schedule up by the tax: producers receive Pconsumer - 2, and find where Qd at consumer price equals Qs at producer price received **M1**

(b) new equilibrium consumer price is £11 and quantity is 45 units per week **A1**

(b) Answer: New equilibrium consumer price = £11, equilibrium quantity = 45 units per week.

(c) producers receive £9 per unit after £2 tax is paid (£11 consumer price minus £2 tax) **B1**

(c) Answer: Producers receive £9 per unit after the tax.

Question 8

identifies that a price ceiling below equilibrium increases quantity demanded and reduces quantity supplied **M1**

states this creates excess demand or a shortage, where Qd > Qs at the regulated price **A1**

gives a consequence such as reduced maintenance/quality, rationing by landlords, black markets or discrimination in allocation **A1**

Answer: A below-equilibrium price ceiling raises Qd and lowers Qs, creating excess demand or a shortage; consequences include reduced maintenance, queues, rationing or black markets.

Question 9

identifies that a price floor above equilibrium makes quantity supplied exceed quantity demanded **M1**

states this creates a surplus where Qs > Qd at the minimum price **A1**

states a government policy such as purchasing the excess (buffer stock), subsidising exports, or providing storage to remove surplus from the market **A1**

Answer: A minimum price above equilibrium raises Qs and lowers Qd, creating a surplus, which the government can manage by buying the excess into public stocks, subsidising exports, or encouraging storage.

Question 10

explains that government sets a floor price and a ceiling price and intervenes when market price falls below the floor by buying output into stocks, reducing market supply **M1**

explains that when market price rises above the ceiling the government releases stocks to increase supply and lower price **M1**

links these actions to price stabilisation and more predictable incomes for farmers **A1**

states a disadvantage such as high fiscal cost of storage, spoilage, risk of distorting production incentives or requiring large stock management **A1**

Answer: Government buys when price < floor to reduce supply and raises price, sells when price > ceiling to increase supply and lower price, stabilising prices but incurring storage costs, spoilage risk and potential market distortions.

Question 11

consumer bears £1 per unit (consumer price rose from 10 to 11) **M1**

producer bears £1 per unit (producer price fell from 10 to 9, or receives 9 after tax) **A1**

percentage for consumers = (1/2)*100 = 50% awrt 50% **M1**

percentage for producers = (1/2)*100 = 50% awrt 50% **A1**

Answer: Consumers bear £1 (50% of the tax), producers bear £1 (50% of the tax).