Contents

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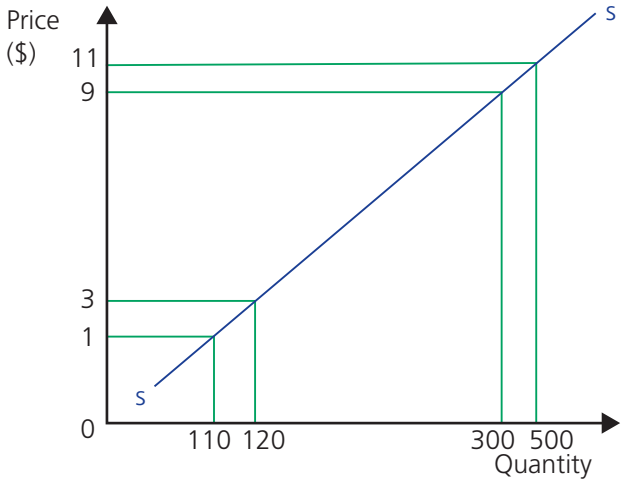
2 Calculate the price elasticity of supply for each question below (show your working). Use the midpoint method.

a



(i) Between $11 and $9:

$$Es = \frac{\left(\frac{200}{400}\right)}{\left(\frac{-2}{10}\right)} = 2.50 \text{ elastic}$$

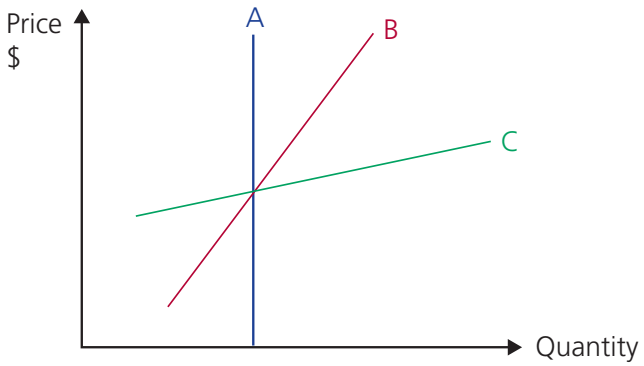
(ii) Between $3 and $1:

$$Es = \frac{\left(\frac{-10}{115}\right)}{\left(\frac{-2}{2}\right)} = 0.09 \text{ inelastic}$$

b Briefly explain why there is a difference in the short-run and long-run supply curves for bottled water.

Idea that supply can adjust in response to situations over a period of time. In the short run there is at least one fixed factor of production and therefore the firm is restricted in its ability to change supply/output levels. In the long run all inputs can be varied, therefore the firms can be more adaptable and more efficient in the production of bottled water.

c Complete the table using the following phrases and ideas; momentary time period, able to alter all factors, the firm has at least one fixed factor, long-run, short-run, a firm is unable to alter any factors, A, B and C.



Supply elasticity	Curve	Features	Time period
Es > 1	C	able to alter all factors	long-run
Es < 1	B	the firm has at least one fixed factor	short-run
Es = 0	A	a firm is unable to alter any factors	momentary time period

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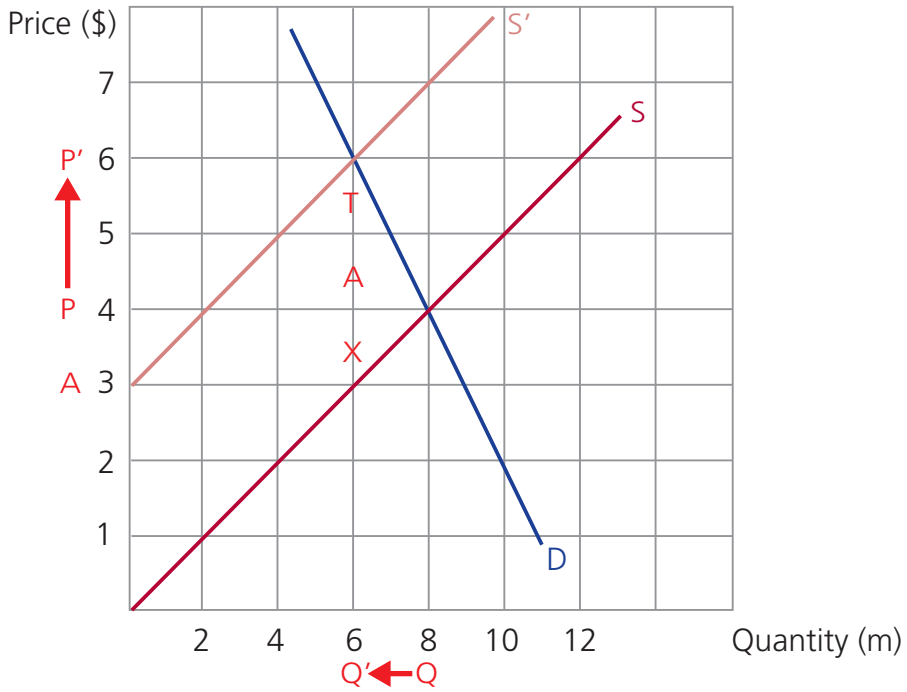
4 Use the diagram to answer the questions in the table.

Sales tax



Question	Working and answer
a What price is paid by consumers before and after?	P = $4 before/P' = $6 after
b What is consumer expenditure before?	P x Q = $4 x 8m = $32m
c What is consumer expenditure after?	P' x Q' = $6 x 6m = $36m
d What is the change in consumer expenditure?	An increase of $4m
e What is the government revenue from the tax?	Tax x Q' = $3 x 6m = $18m
f Work out price elasticity of demand.	Ep = $\frac{\left(\frac{2}{7}\right)}{\left(\frac{2}{5}\right)}$ = 0.71 inelastic
g What is producer revenue before?	P x Q = $4 x 8m = $32m
h What is producer revenue after?	A x Q' = $3 x 6m = $18m
i What is the change in producer revenue?	decrease of $14m
j Work out the value of the deadweight loss.	½ x 2m x $3 = $3m
k What do the parallel lines on the diagram indicate?	A per unit sales tax of $3
l Calculate PS before.	½ x 8m x $4 = $16m
m Calculate PS after.	½ x 6m x $3 = $9m
n Calculate the change in PS.	PS vs PS' = $7m decrease
o Calculate the change in CS.	$\frac{(6m + 8m)}{2}$ x $2 = $14m decrease

P ($)	Q
4	8m
6	6m

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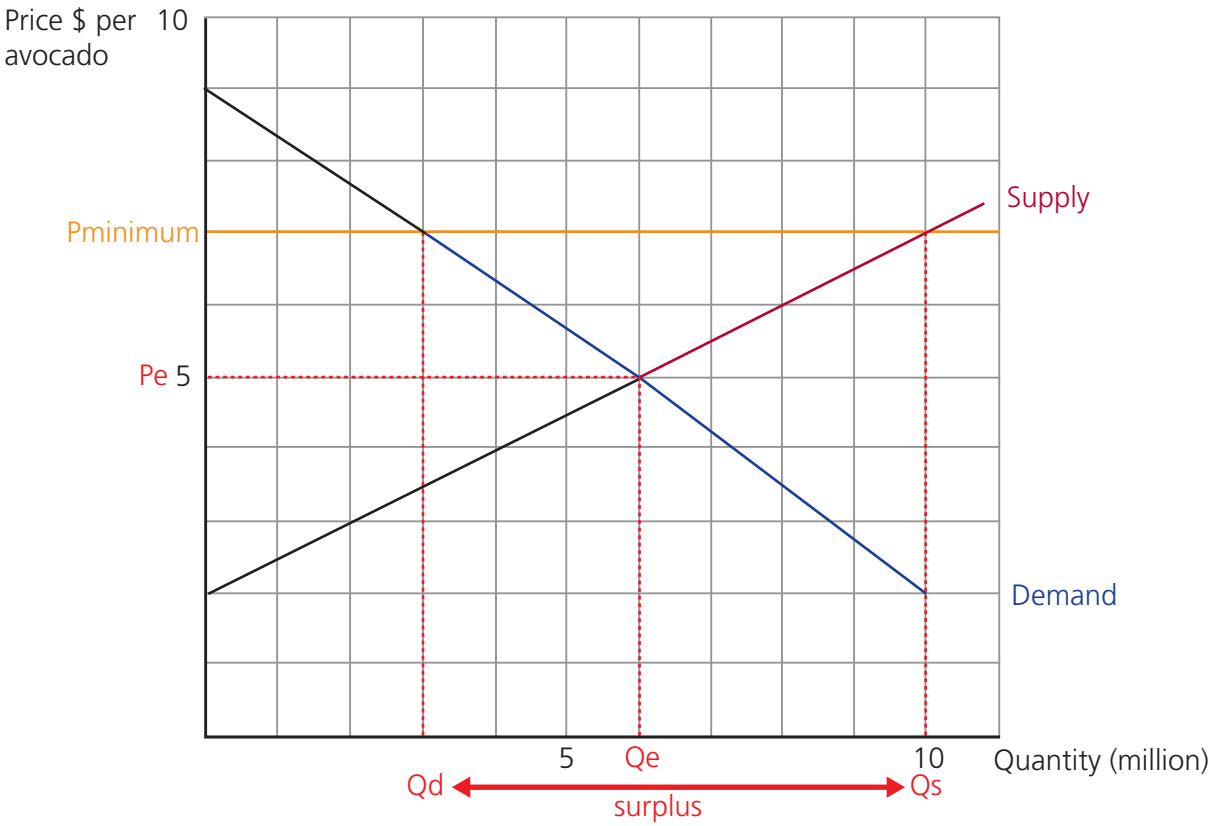
Prices for avocados continue to vary.

3 The graph shows the effects of a minimum price on the market for avocados.



a On the graph above:

(i) use dotted lines to show the original equilibrium price and quantity (label as **Pe** and **Qe**)

(ii) use dotted lines to show the new quantity demanded (**Qd**) and supplied (**Qs**)

(iii) label the resulting **surplus** or **shortage**.

b Referring to the graph above, identify and calculate:

	Before the price control	After the price control
(i) Consumer spending	$5 x 6m = $30m	$7 x 3m = $21m
(ii) Consumer surplus	0.5 x $4 x 6m = $12m	0.5 x $2 x 3m = $3m
(iii) Producer surplus	0.5 x $3 x 6m = $9m	(0.5 x $1.5 x $3m) plus ($3.5 x 3m) = $12.75m
(iv) Deadweight loss	nil (zero)	(0.5 x $3.5 x 3) = $5.25m

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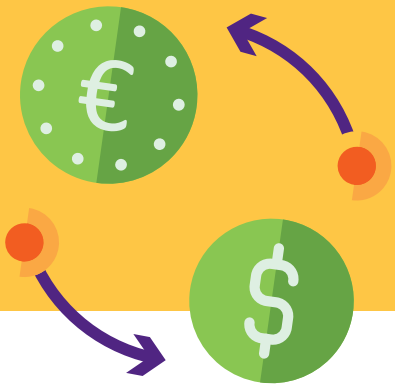
24 NATURAL MONOPOLY



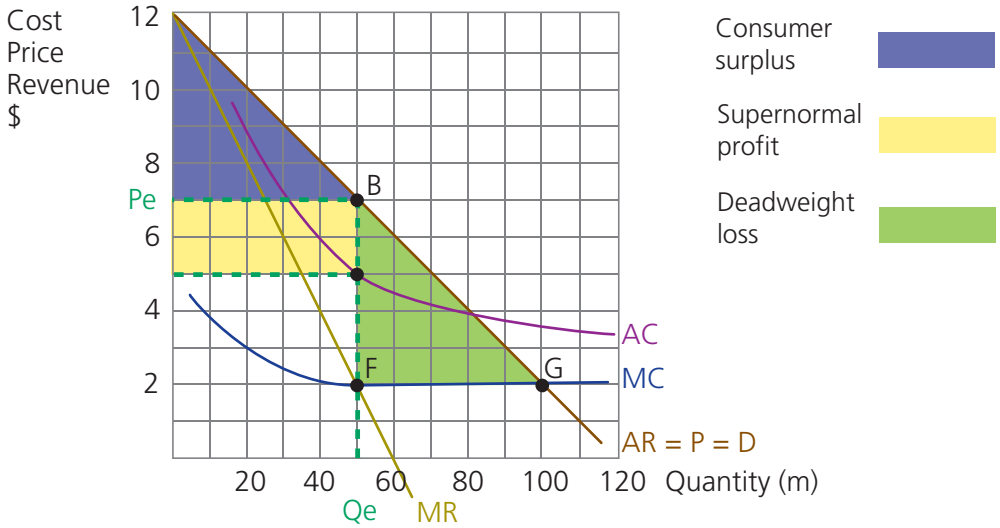
Features of a natural monopoly

A **natural monopoly** is when one firm has the ability to supply the entire market at lower prices than two or more firms.

A natural monopoly faces **downward-sloping average cost (AC)** for the entire range for which demand is applicable. The reason for its downward-sloping AC curve is usually that the initial investment in the infrastructure of the firm is large, but once it is in place, the **marginal cost (MC)** of production is **low**, for example hydro power. This high establishment cost is a strong barrier to entry and a natural monopoly could undercut any would-be competitor so they could not survive.

Natural monopolies often involve some kind of **network**, for example water, gas,phone, rail.

A natural monopoly – equilibrium output



The rule for maximising profit or minimising a loss (the equlibrium) for a natural monopoly is the same as any other firm. The most profitable output or smallest loss is where marginal revenue (MR) equals marginal cost (MC). Any other position will result in a smaller profit or greater loss. Therefore, the **equilibrium output** is at a price of **Pe** and quantity **Qe** (determined from the intersection of the marginal cost and marginal revenue curves).

If output is **below equilibrium Qe (where MR equals MC),** the firm would be **missing out on marginal profits** because the revenue from producing the last article (MR) is greater than its cost of production (MC), implying that the firm could increase output and increase profit.

However, **increasing output beyond Qe** reverses the position. The firm will be **making marginal losses** because the revenue from one additional article (MR) is now less than the cost of its production (MC). If increased output adds more to cost than to revenue, a firm has obviously passed the point of maximum profit (or minimum loss).

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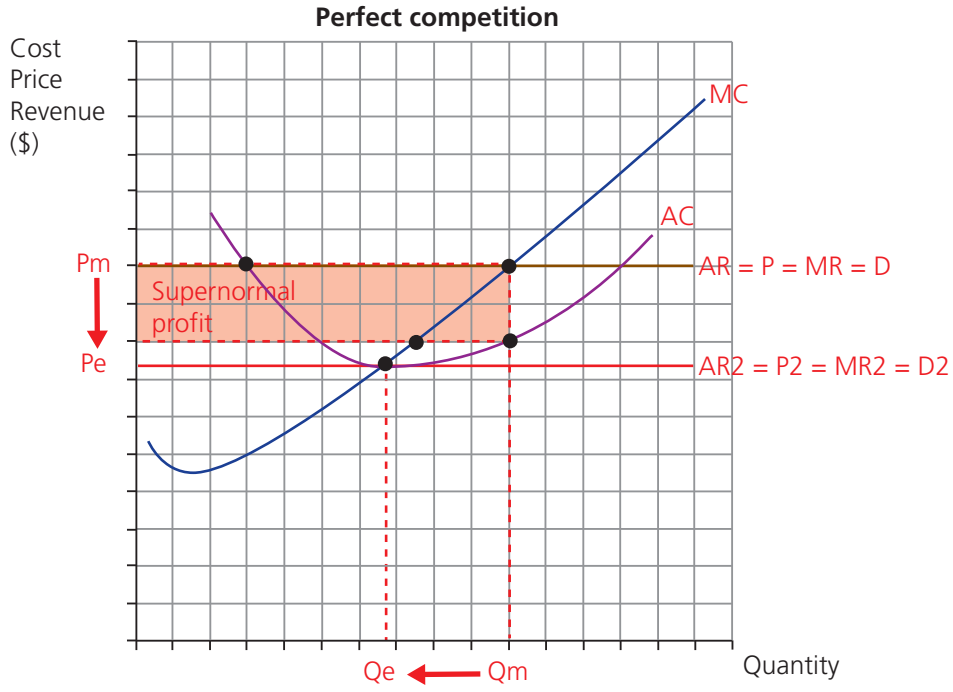
26 REVISION/STUDY TASKS AND ACTIVITIES

Question one: Long-run perfect competition



a **(i)** Label all the curves.

(ii) Show the equilibrium output position on the diagram above, identify the price as **Pm** and quantity as **Qm**. Shade and label the economic profit made.

(iii) Explain in detail why Qm is the equilibrium position.

The rule for maximising profit or minimising a loss (the equilibrium) for a natural monopoly is the same as any other firm. The most profitable output or smallest loss is where marginal revenue (MR) equals marginal cost (MC). Any other position will result in a smaller profit or greater loss. Therefore, the equilibrium output is at a price of Pm and quantity Qm (determined from the intersection of the marginal cost and marginal revenue curves).

If output is below equilibrium Qm (where MR equals MC), the firm would be missing out on marginal profits because the revenue from producing the last article is greater than its cost of production, implying that the firm could increase output and increase profit.

However, increasing output beyond Qm the firm will be making marginal losses because the revenue from one additional article is now less than the cost of its production. If increased output adds more to cost than to revenue, a firm has obviously passed the point of maximum profit (or minimum loss).

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