

3 Monopolies



3



mind-map

Mind-maps are very good revision tools. Our minds learn by making patterns. Mind-maps help you to make these patterns and so makes the content easier to learn and remember.

BEFORE you start this unit (in pencil) ...

- write the key idea of this unit in the centre of the page
- write what you know about this idea around it and draw lines to them.
- try and group the ideas together

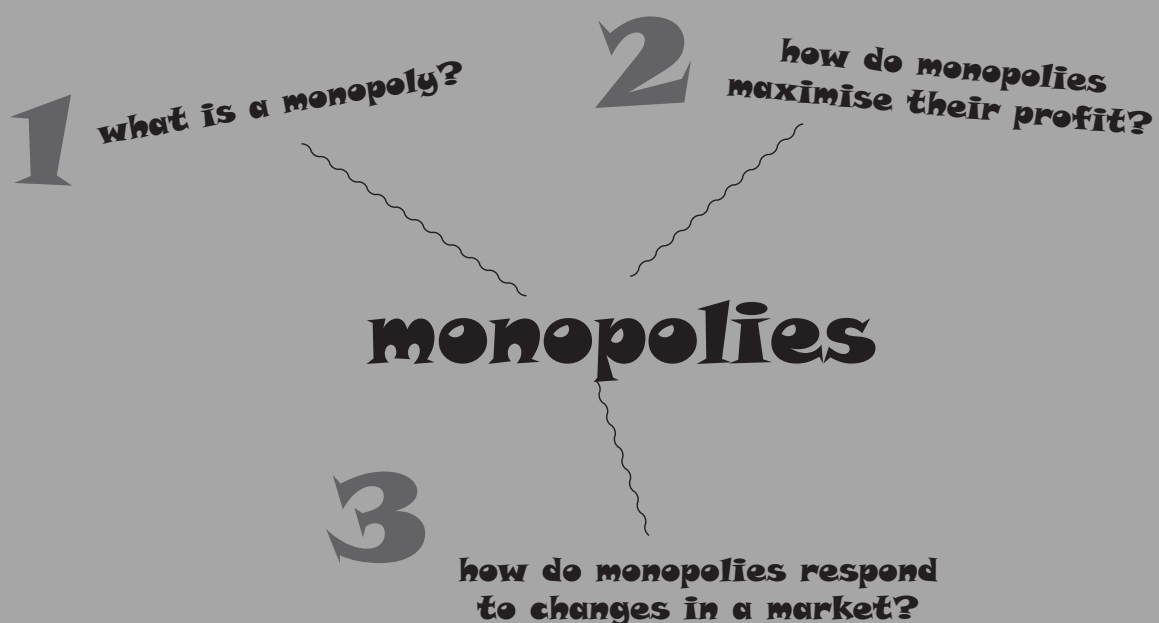
unit overview

the power of one

The opposite of a perfectly competitive market is a **monopoly** - i.e. a market with only one firm.

This unit looks at how monopolies arise, and how the market conditions of a monopoly affect the pricing and output decisions of the monopolist firm.

BY THE END OF THIS UNIT, YOU SHOULD BE ABLE TO ANSWER THESE QUESTIONS...



3

Topic 3.1

What is a monopoly?

one of these things is not like the other one ...

Monopolies arise when one or more of the conditions of a competitive market are broken. The most commonly broken condition is barriers to entry, i.e. a monopoly is able to keep other firms from entering the market.

This topic discusses how monopolies arise and how, in reality, we actually define a monopoly.

BY THE END OF THIS TOPIC, YOU SHOULD BE ABLE TO...

- define a monopoly and explain how one occurs
- describe the advantages and disadvantages of a monopoly

Exercise 3.1 Monopolies

3

Use the Commerce Commission's criteria to determine whether the following firms are monopolies or not.

- For each example, decide whether the firm has a functional monopoly and a geographical monopoly. Then decide whether it is a pure or near monopoly ... or not a monopoly at all.

For each example, you should consider whether the suggested market is accurate or not. You may need to redefine the market before you determine whether the firm is a monopoly or not.

	<i>Functional Monopoly</i>	<i>Geographical Monopoly</i>	<i>Pure Monopoly</i>	<i>Near Monopoly</i>
1. Telecom ... market: <i>home telephone lines</i>				
2. Air New Zealand ... market: <i>international flights to/from NZ</i>				
3. Air New Zealand ... market: <i>plane flights to/from Napier</i> (<i>nb no other commercial airlines fly this route</i>)				
4. NZ Post ... market: <i>mail delivery in NZ</i>				
5. NZ Rail ... market: <i>rail transport in NZ</i>				
6. The Warehouse ... market: <i>bulk retailing in Taupo</i>				
7. Whakapapa Skifield ... market: <i>skiing on north face of Mt Ruapehu</i>				

- In Taupo, there is one shop that hires suits. For school balls it has a (very) near monopoly on suit hire to school students. Explain why this firm could not charge \$1,000 per night for students to hire suits - even though it has almost no competition.

What is a Monopoly?

notes

What is a Monopoly?

A monopoly is any market with only one firm. It's the exact opposite of a perfectly competitive market, where there are lots of firms in the market.

A monopoly will occur when one (or more) of the four assumptions of a perfectly competitive market are broken as shown in figure 3.1 below:

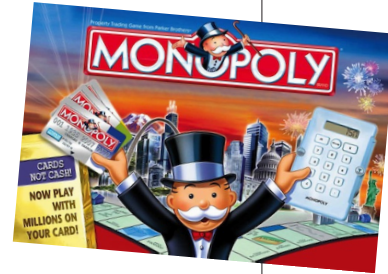


Figure 3.1 ... Broken Assumptions: Monopolies

Perfect Competition Assumption	Monopolist's Situation
1. Identical Product	the firm produces a unique product that has no close substitutes
2. No Barriers to Entry or Exit	other firms are unable to set up in the industry (e.g. high start-up costs, patent or copyright protection, legal barriers)
3. Perfect Knowledge	the firm is able to protect its information (e.g. design process) from other producers
4. Many consumers and producers	there is only one firm in the market

Because at least one of the perfect competition assumptions are broken, we describe a monopoly as an example of "imperfect competition", i.e. something is stopping perfect competition from happening.



Monopoly: A market with only one producer.



Imperfect Competition: A market in which one of the perfect competition assumptions is broken.

Is a Monopoly Good or Bad?

A monopoly is not necessarily bad.

In fact we allow some firms to be a monopoly to reward them for innovating, or providing a good/ service that no-one else does. Patents and copyrights give firms temporary (i.e. a set number of years) protection from other firms copying them.

A monopoly is bad when a monopolist acts 'anti-competitively', i.e. it uses its market position as the only or dominant producer to keep other firms out of the market ... AND ... to disadvantage consumers by reducing further innovation or overcharging consumers.

This is why most countries have 'anti-competition' laws. These laws aim to stop firms from using their position as a dominant producer in a market to reduce competition. They can have wide-ranging powers, including the ability to break a firm up into smaller firms. In New Zealand, these laws are enforced by the Commerce Commission.



Identify Real Monopolies

In theory it should be easy to identify a monopoly – there's only one supplier. But in fact it is quite hard to identify one. The Commerce Commission (see Figure 3.2) focuses on competitive behaviour (or lack thereof), rather than monopolies per se.

For example, there is one national railway provider in New Zealand – KiwiRail. Is it a monopoly? In a pure sense it is. It is only one commercial rail network in the country which is owned and operated by one firm. Customers wanting to travel by rail have no alternative.

But . . . the key question is what exactly is the product and therefore the industry? KiwiRail has the only commercial rail network throughout all of New Zealand, but the product is transport and there are other alternatives. Private travellers could travel by bus or plane (in fact most do). Firms can deliver their goods by road (truck), ship or plane. Because there are plenty of transport substitutes, KiwiRail is not considered to be a monopoly.

Figure 3.2 ... The Commerce Commission

Based on the economic theory you are studying, monopolies are generally considered to be bad for consumers. But identifying monopolies is a real problem faced by governments around the world.

The difficulty can often be proving that a firm is indeed a monopoly. In New Zealand the Commerce Commission monitors markets and ensures that firms do not misuse their monopoly power.

The Commission has monitored Telecom, oil companies, ophthalmologists (eye surgeons), Air New Zealand and Qantas, the Warehouse and many other firms and markets to ensure that sufficient competition exists in these markets and that consumers are not disadvantaged.

Two key criteria are the product and the firm's geography. Does the product produced by a firm have any close substitutes and are there any competing firms in the same geographical area that consumers could realistically go to.



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Functional vs. Geographical Monopoly

It is possible for a firm to gain a monopoly in a small part of a wider market. This might be a functional monopoly or a geographical monopoly. A functional monopoly is one where the firm has control over a particular product such as transport.

A geographical monopoly is where a firm is the only supplier within a particular region. For example, in the small town of Taupo there is only one movie theatre – Starlight Cinema. To go to another movie theatre, people have to drive at least one hour to Rotorua. Therefore it has a geographic or regional monopoly. But you could argue that the market is entertainment not movies. Possible substitutes for going to the movies include getting out a DVD from a local video store.

Pure vs. Near Monopoly

It is rare to find a pure monopoly, i.e. a firm that has 100% of a market with no close substitutes. It is more realistic to find markets that are 'dominated' by one firm, i.e. a near monopoly. Examples of these include Microsoft worldwide or Telecom in New Zealand. Both firms are quick to point out current or potential competitors to avoid the label of being a monopoly, while others argue that they behave like a monopoly, e.g. have high control over the market price, show little innovation, etc.

Topic 3.2

revenue & costs for a monopoly

welcome to my world ...

Because there is only one firm in a monopoly, there are not separate graphs for the market and the firm - as occurs in perfect competition. The monopolist is the market, or at least market supply.

This does not mean a monopolist can do what it likes. As we will see, consumers still have the choice about how much of a good or service they will buy.

This topic analyses how the revenue curves for a monopolist differ from a perfectly competitive market, and how this affects the price and output decisions of the firm.

BY THE END OF THIS TOPIC, YOU SHOULD BE ABLE TO...

- describe a monopolist firm's average and marginal revenue curves ... and explain why they are different to perfect competition
- explain how a monopoly maximises its profit and show this on a graph
- identify economic profit in a monopoly
- identify the shut-down and break-even points for a monopoly
- identify the deadweight loss that occurs in a monopoly
- compare and contrast a monopoly to perfect competition

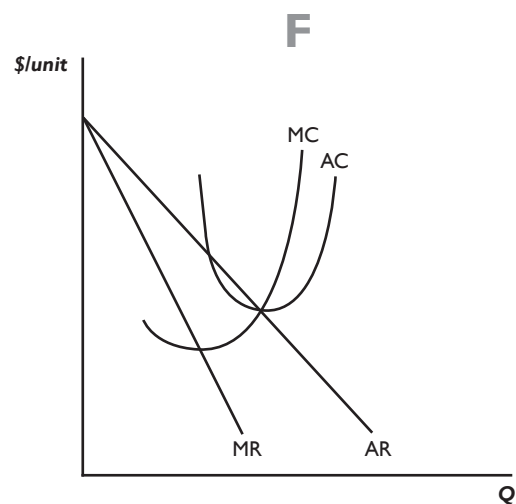
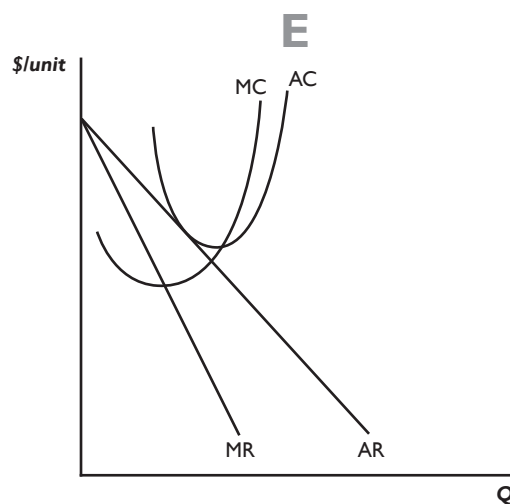
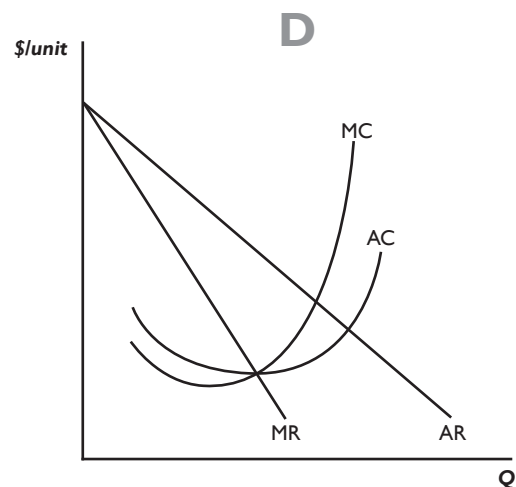
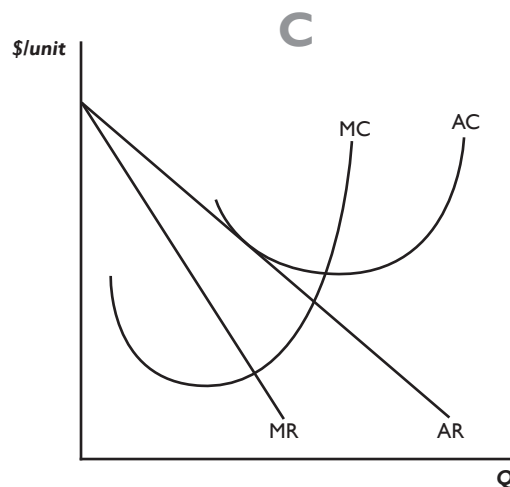
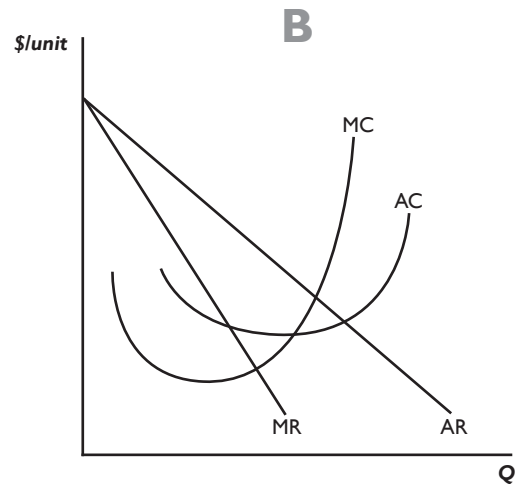
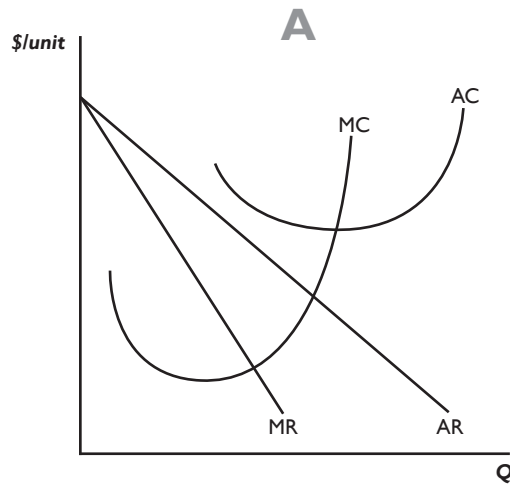
Exercise 3.2 Monopolies

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The graphs below show the situations facing a monopolistic firm.

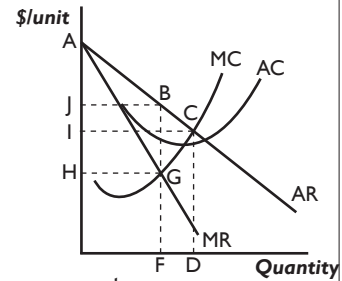
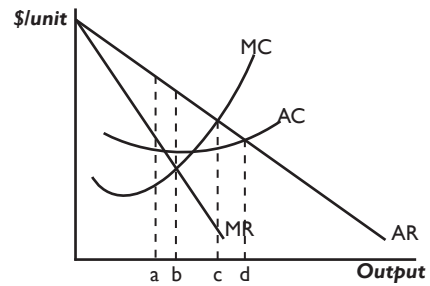
In each of the graphs do the following:

1. Identify the profit-maximising level of output (Q^*).
2. Show the market price set by the firm (P^*).
3. Show the economic profit.



Answer the following questions:

- The graph to the right shows a monopolist maximising profit at which output level?
 - a.
 - b.
 - c.
 - d.
- With marginal revenue of \$10 and marginal cost \$12, the profit-maximising firm should . . .
 - increase output.
 - decrease output.
 - leave the output at the present level.
 - find a more efficient method of production.
- When comparing the perfect competitor with a monopolist in the same market, which of the following is true?
 - The monopolist can only make a normal profit in the long-run.
 - Monopolists are allocatively efficient.
 - A market of perfect competitors tends to produce less at a higher price than a monopoly market.
 - A monopoly market tends to produce less at a higher price than perfect competitors.
- Referring to the graph alongside, if a perfectly competitive market is monopolised and effective barriers to entry exist, there will be an efficiency loss of...
 - ACI.
 - BCG.
 - JBCI.
 - BCDF.



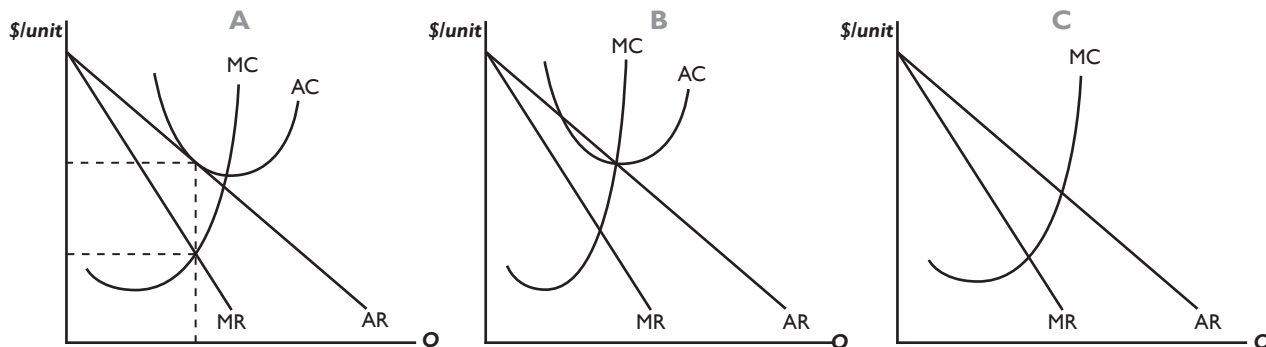
You have been asked to advise some local businesses. Five firms have come to you for your recommendation on their pricing and output decisions.

- Use the information provided to say whether the firm should . . .
 - remain at its current (pricing and output) position.
 - increase price and (consequently) reduce output.
 - decrease price and (consequently) increase output.
 - go back and look at its figures – they don't make sense.



Firm	Price (\$)	MR (\$)	Output	TR (\$)	TC (\$)	AC (\$/unit)	MC (\$/unit)	Recommendations
A	1.50	1.20	3 000	4 500	4 000	1.50	1.20	
B		1.60	5 000	10 000	10 000	2.00	2.00	
C	7.50	6.50	1 000			5.50	5.50	
D	1.00	1.10		4 000	2 500		1.10	
E	0.90	0.75	4 000		3 000	at min. level		

- To help the more visual customers, complete the revenue and cost curve graphs for firms A-C.

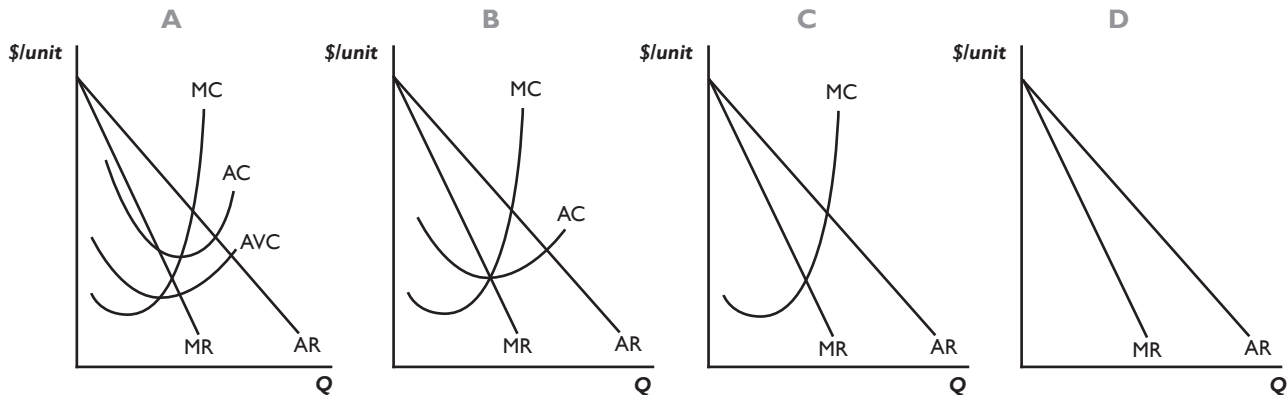


But wait, there's more! What advice will you give the following firms?

- Firm is now at the correct position.
- Firm should increase the price and reduce quantity produced.
- Firm should decrease the price and increase quantity produced.
- Firm should shutdown operations because loss at the best possible operating position exceeds fixed costs.
- This is a nonsense case.

Firm	Price	MR	Output	TR	TC	Total FC	AC	MC	Answer
A	8.00	4.00	2 000			2 000	4.00	3.00	
B	5.00	4.00	1 000		4 000	1 000	at min. level		
C			4 000	8 000		1 000	1.30	2.20	
D	8.00	0.00		32 000	20,000	5 000		4.00	
E	1.00	2.00	10 000			2 000	2.00	2.00	
F	3.00	1.60	2 000			1,800	at min. level	1.60	
G	2.50	2.00	10 000			4 000	3.00	2.00	

2. Draw the graphs for each of the situations above. Be sure to identify any economic profit.



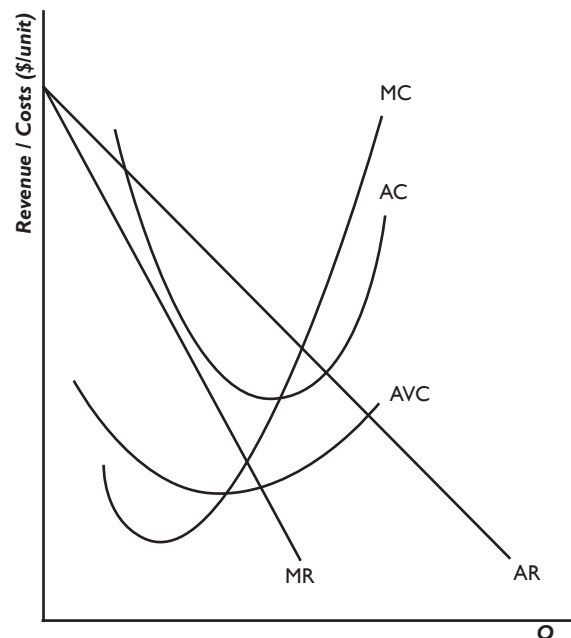
3. The graph on the right shows a monopolistic market.

On the graph, show:

- the profit-maximising **price** (P_{MON})
- the profit-maximising **quantity** (Q_{MON})
- the **supernormal profit**

Also on the graph, show

- the **price** (P_{PC}) and **quantity** (Q_{PC}) that would occur if the market was **perfectly competitive**
- the **deadweight loss** due to the market being monopolistic



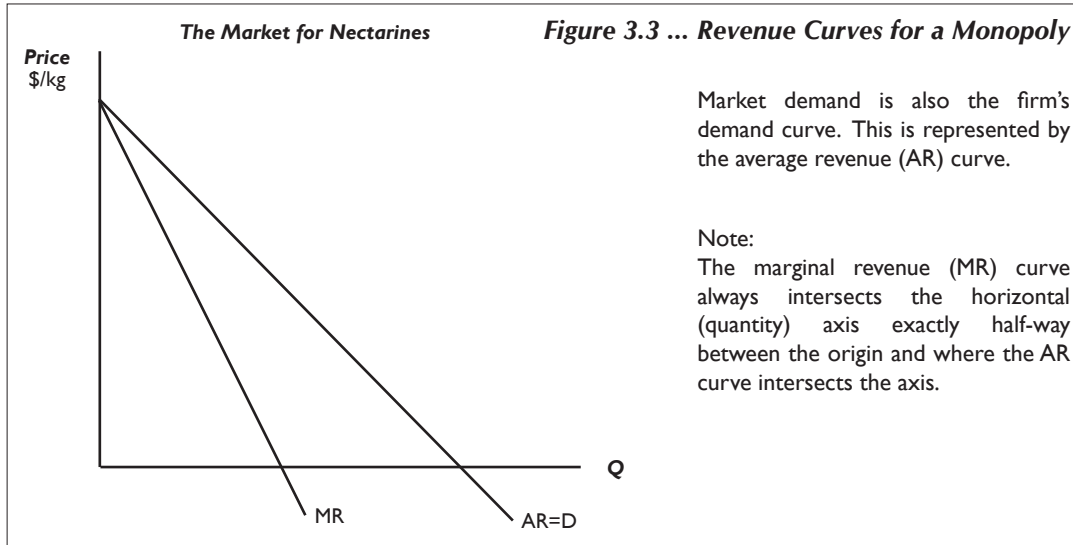
Revenue & Costs for a Monopoly

notes

Identify a Monopolist's Revenue Curves and Demand

The cost curves for an individual firm (see Unit 3) are the same in any type of market – perfectly competitive or imperfectly competitive.

The big difference between the two types of markets is the revenue curves. In a monopoly there is only one firm. This means that the (downward-sloping) market demand curve is also the demand curve for the individual firm. The revenue curves facing a monopolist are shown in Figure 3.3.



Describe a Monopolist's Pricing and Output Decisions

Because there is only one firm in a monopolistic market, it is tempting to think that it can do what it likes, i.e. sell as many (or few) goods as it likes, at any price and in any quality.

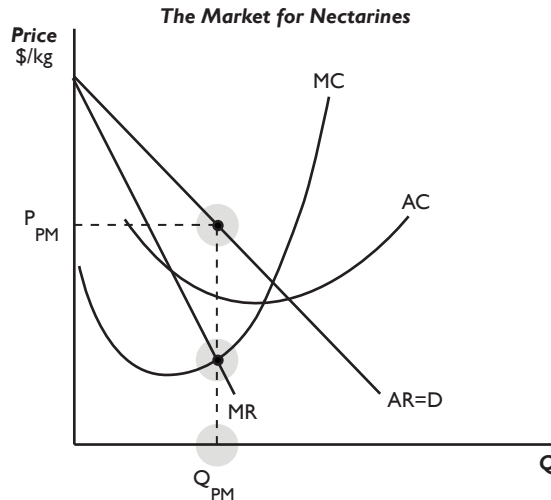
However, this is not accurate. Monopolies, like any firm in any type of market, must still meet the wants and needs of consumers. **Monopolies can't set BOTH price and market output.** In any market, consumers have consumer sovereignty.

If the monopoly determines the price, consumers will choose how much of the good or service they will buy. If it sets the level of output, consumers will determine what price they are willing to pay for that output.

Identify Profit Maximisation for a Monopolist

Remember that we are assuming that the only goal of firms is profit maximisation (or loss-minimisation) regardless of market type. As we saw in perfectly competitive markets, profit is maximised at the level of output where marginal revenue (MR) equals marginal cost (MC). Beyond this level of output, the extra cost of production (MC) exceeds the additional revenue (MR) and so profit would start to fall.

Figure 3.4 ... Finding a Monopolist's Profit Maximisation Level of Output and Price



1. Profit Maximisation

Identify where MR crossed the MC curve.

2. Market Output

Draw a vertical line down from MR = MC to the X-axis to identify profit-maximising output (Q_{PM}).

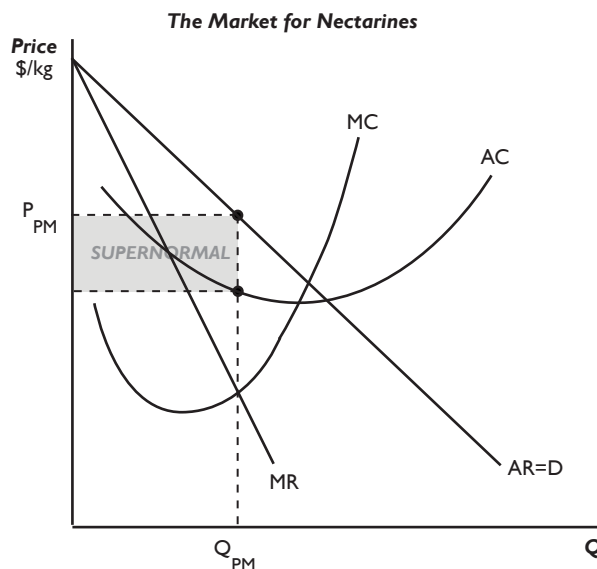
3. Market Price

Draw a line up from Q_{PM} to the AR curve. Draw a line from this point on the AR curve to the y-axis to identify profit maximising price level (P_{PM}).

Identify Normal, Supernormal and Subnormal Profits

Just like perfectly competitive firms, monopolies can earn subnormal, normal or supernormal profit. To find out what kind of profit a monopoly is earning, we find the profit maximising (loss minimising) level of output - i.e. where $MR = MC$, and then compare AR and AC (see figure 3.5).

Figure 3.5 ... Economic Profit for a Monopoly

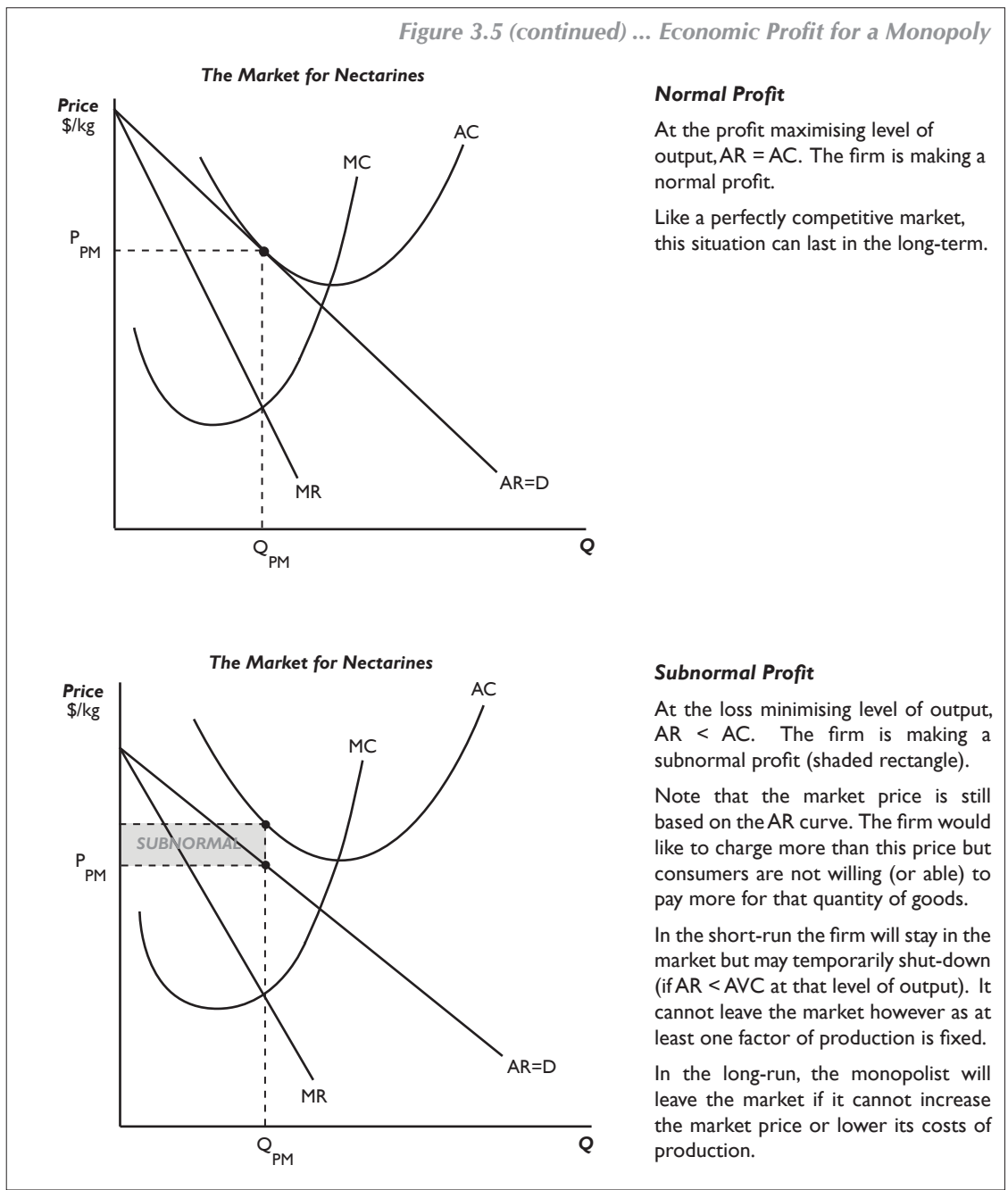


Supernormal Profit

At the profit maximising level of output, $AR > AC$. The firm is making a supernormal profit (shaded rectangle).

Unlike a perfectly competitive market, this situation can last in the long-term, as barriers to entry prevent other firms from entering the market and lowering the price.

Figure 3.5 (continued) ... Economic Profit for a Monopoly



Identify a Monopolist's Shut-Down Point (Short-Run Decision)

In the short-run a monopolistic firm face similar decisions as a perfectly competitive firm, i.e.

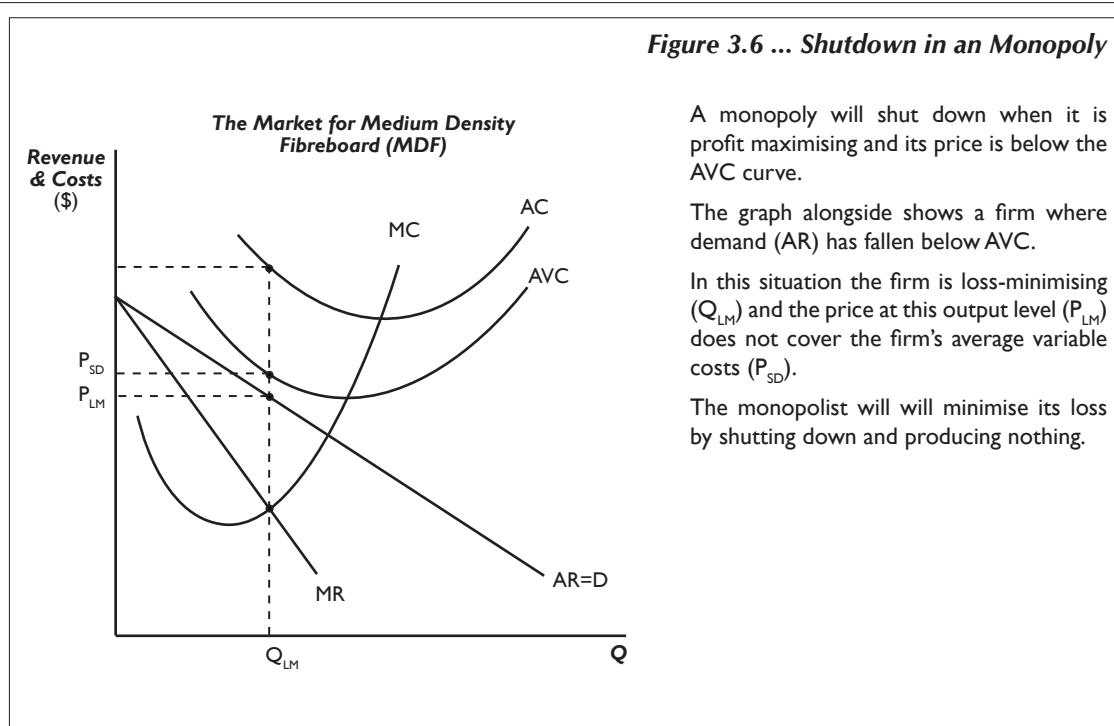
1. how much to produce?
2. stay open or shut down?

The one difference is that a monopolist can also choose what price it will sell it goods at. So it's third choice is:

3. what price to charge consumers?

In the short-run the monopolist can't leave the industry (just like a perfectly competitive firm) because at least one factor of production (resource) is fixed. Therefore it must decide how much to sell or what price to sell at, and whether to stay open or shut down.

Remember ... a monopoly can't decide both the price AND quantity.



Assuming the firm is profit-maximising (loss-minimising) by choosing the appropriate quantity or price, its only choice left is whether to shut down.

Figure 3.6 shows a firm that should shut down. Demand (AR) is so low that the loss-minimising output results in a price below its average variable cost (AVC). Just like a perfectly competitive firm (see page 39), the monopolist will minimise its loss and shutting down.

Remember that shutting down is different to leaving the industry. It means temporarily stopping production, but now selling fixed assets like machines, factories, land, etc. If demand improves in the long-run, the firm will re-open.

Alternatively if demand does not improve and the firm is not breaking even, then it will leave the industry. This is discussed in the next section

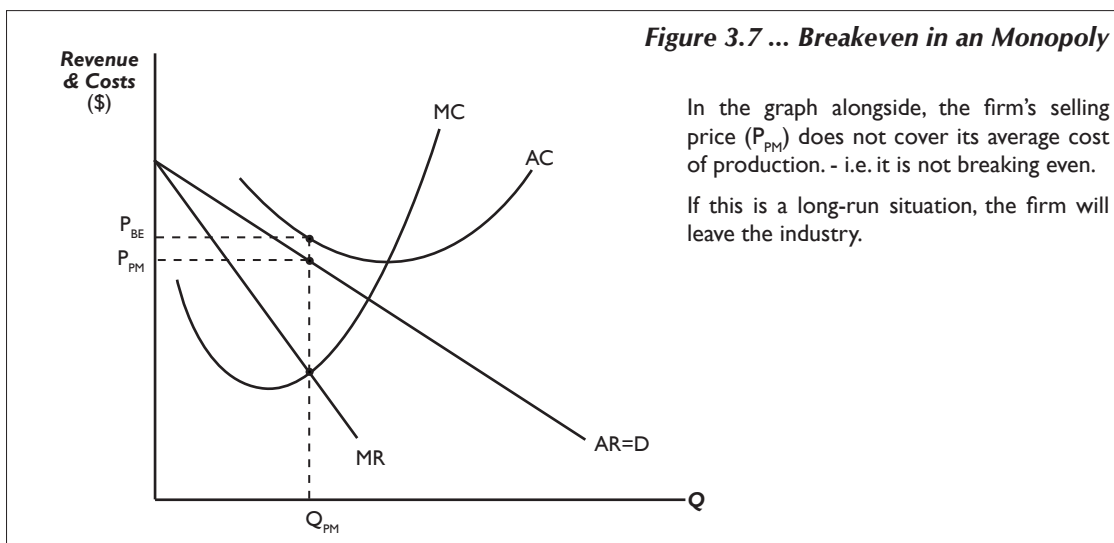
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Identify a Monopolist's Break-Even Point (Long-Run Decision)

In the long-run a monopoly will only stay in the industry if it is breaking even, i.e. its selling point is at or above its average cost of production. Yes, you guessed - just like a perfectly competitive firm.

The difference between a monopoly and a perfectly competitive firm, is that a monopoly can earn supernormal profits in the long-run because there are barriers to other firms entering the market.

Figure 3.7 shows a firm that is not breaking even in the long-run and so will leave the industry.

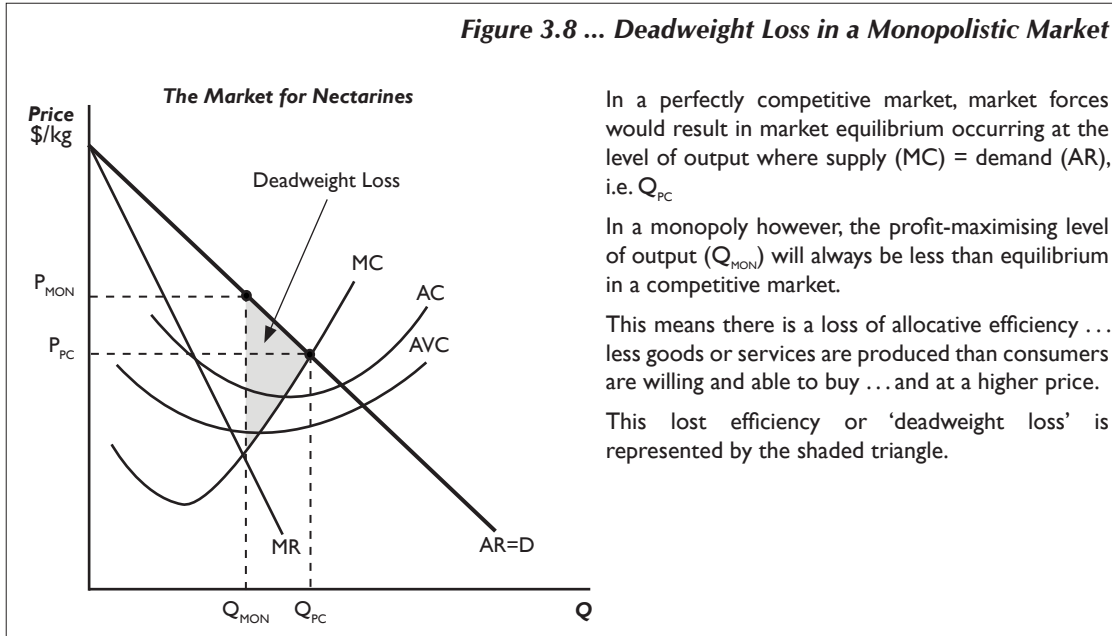


Identify Monopoly Equilibrium and Deadweight Loss

The main problem with monopolies (or any imperfectly competitive market) is that they don't achieve allocative efficiency.

This is because in a monopoly the profit-maximising level of output ($MR=MC$) **never** equals the competitive market equilibrium (i.e. $S=D$... or ... $MC=AR$).

The profit-maximising level of output will always be below market equilibrium (see figure 3.8), resulting in deadweight loss ... i.e. lost consumer and producer surplus.



Compare Market Output in a Monopoly to a Perfectly Competitive Market

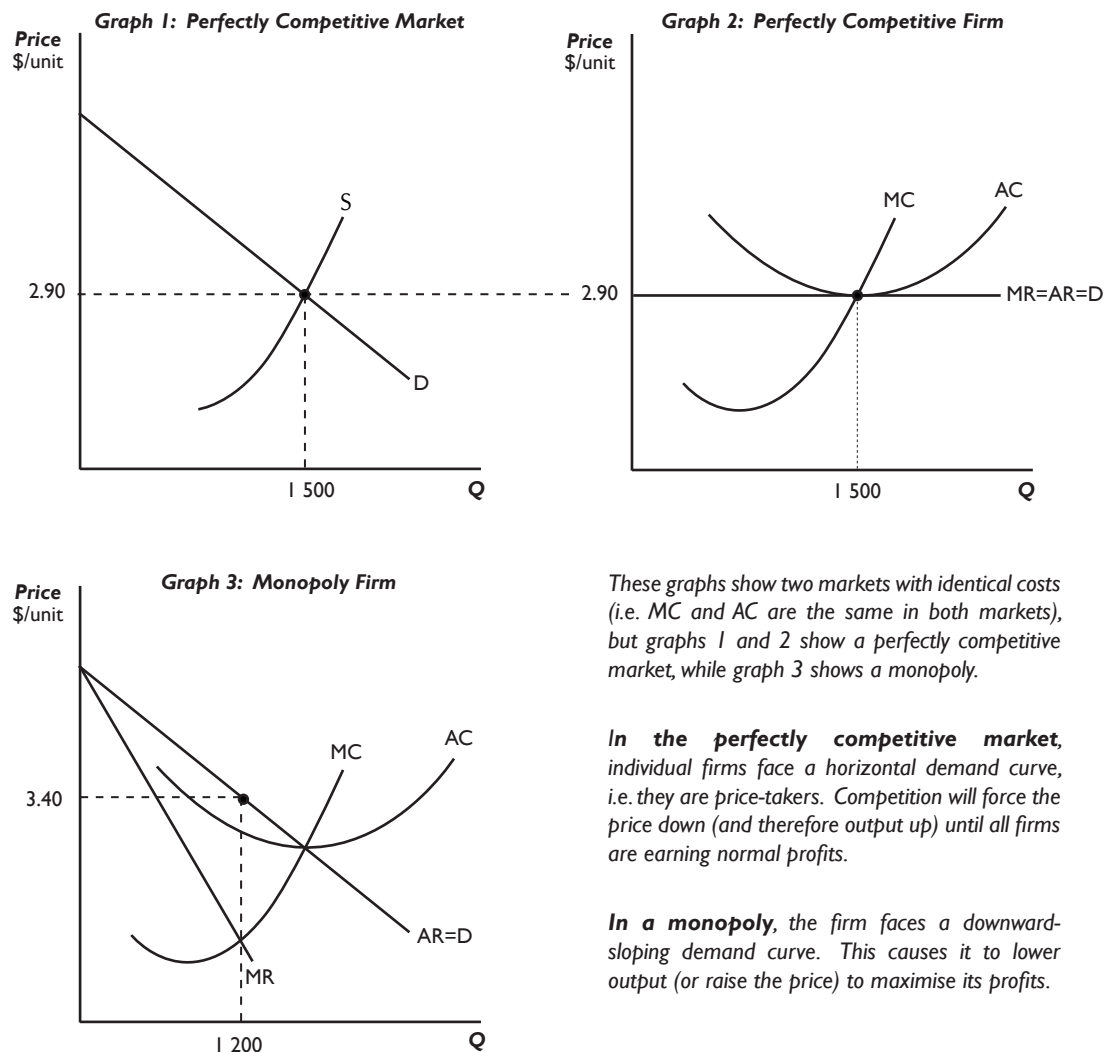
Unless it is regulated (see unit 4), a monopoly will always result in a lower level of market output and a higher market price than a perfectly competitive market (assuming firms face the same cost curves in both markets).

This happens because a monopoly's demand curve is downward-sloping, and therefore its MR and AR curves are separate. Consequently a monopoly will produce at an output level below that of a perfectly competitive market.

Figure 3.9 shows this by taking a market (Graph 1) and comparing how this would look to individual firms if the market was perfectly competitive (Graph 2) or monopolistic (Graph 3). Both firms face exactly the same cost curves. The only difference between the two firms are the revenue curves. Because the monopoly's demand (AR) curve is downward sloping, there is a separate marginal revenue curve. This will cause the firm to reduce output or raise its price to maximise its profit.

This situation won't last in a perfectly competitive market. If firms inside the industry were earning a supernormal profit, other firms would enter the market and lower the price until all firms earn normal profits.

Figure 3.9 ... Output in Different Market Structures

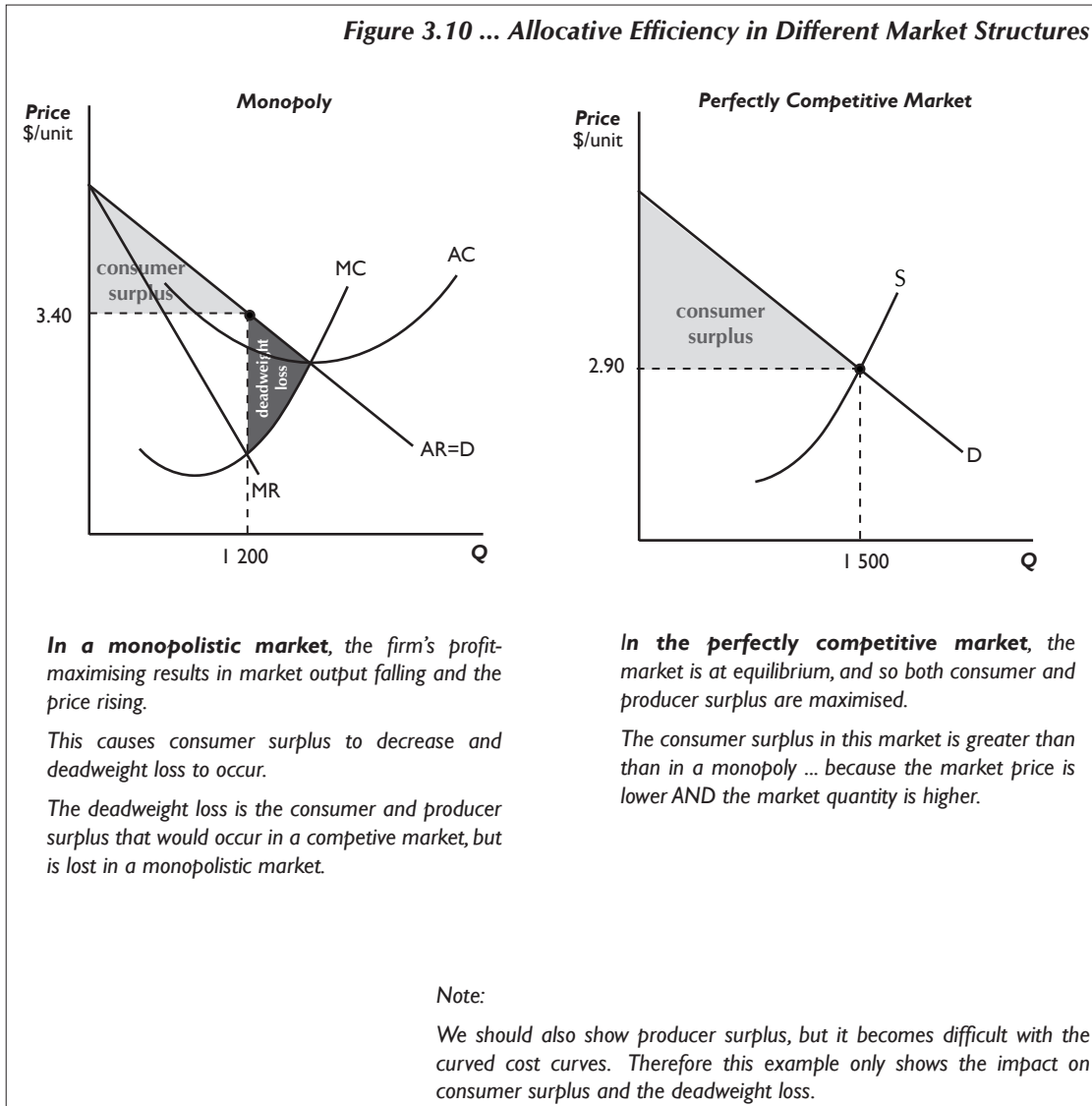


Compare the Efficiency of Monopolistic and Perfectly Competitive Markets

As well as reducing the market output, monopolies also reduce the allocative efficiency in a market, and causes deadweight loss.

As we've seen, a monopoly will profit maximise by reducing the market output and consequently raising the price. Because consumer surplus is the area between the demand curve and market price, an increase in price must reduce consumer surplus.

Figure 3.10 compares the allocative efficiency of two markets - the same two markets as in Figure 3.9. The graph of the monopolistic market shows that the consumer surplus decreases due to the higher price being charged to consumers. It also results in deadweight loss.



Less goods are produced in the monopolistic market. Therefore there is some consumer surplus and producer surplus (not shown in the graph) that would exist if the firm was perfectly competitive, but is not experienced by anyone in the monopolistic market, i.e. deadweight loss.

3

revision

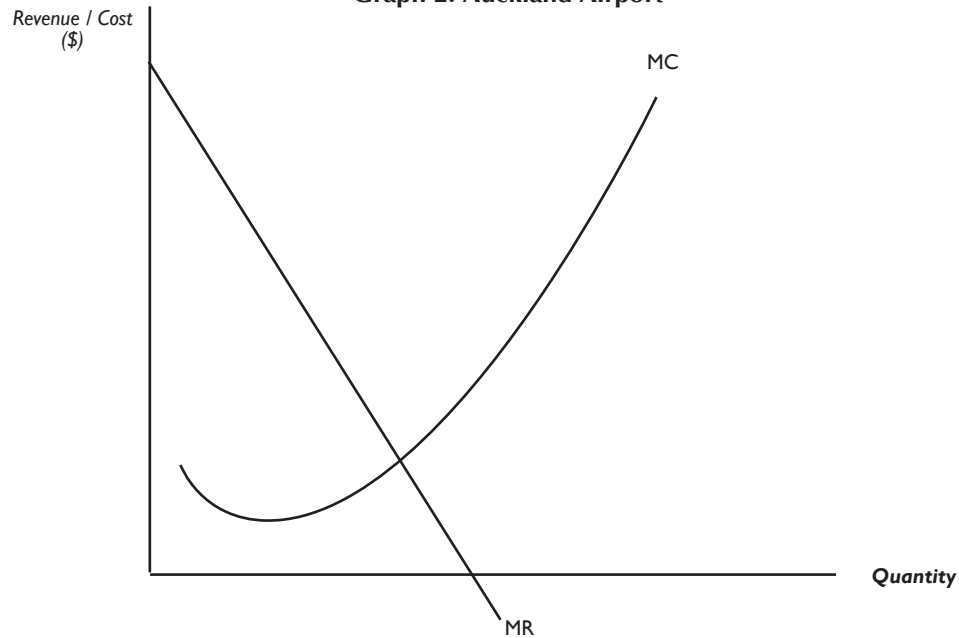
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This question checks that you can:

- describe the characteristics of a monopoly and how they affect its decisions
- identify and explain the profit-maximising price and output for a monopoly
- analyse the impact of changes to a monopolistic market

The significant cost of building a new airport and high level of regulations, means that Auckland Airport operates as a monopoly in the Auckland Market for air travel.

Graph 2: Auckland Airport



1. With reference to at least two characteristics of a monopoly, explain what Auckland Airport can be described as a monopoly.

2. On Graph 2 show and label an average revenue :

- a. draw and label an appropriately placed average revenue (**AR**) curve for Auckland Airport.
- b. draw and label an appropriately placed average cost (**AC**) curve, to show Auckland Airport earning a **supernormal profit**
- c. identify and label the profit-maximising price (P_{MON}) and profit-maximising quantity (Q_{MON}).
- d. shade in the area of supernormal profit.

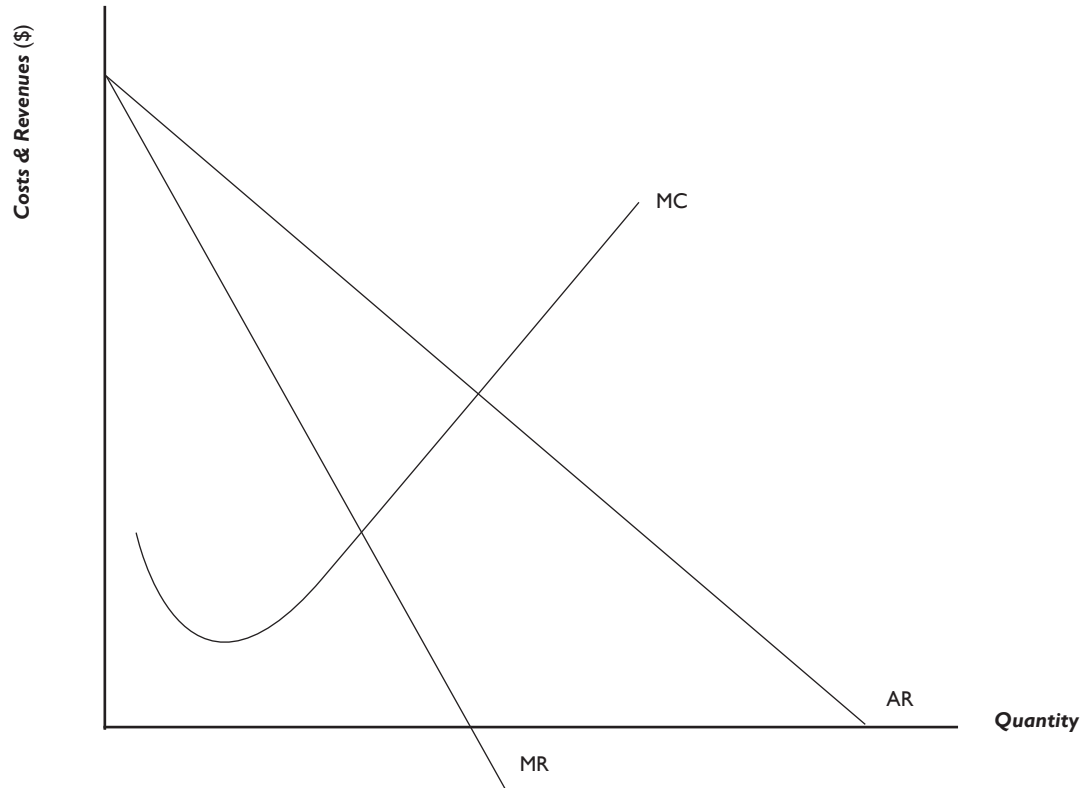
3. On Graph 2, identify the deadweight loss that occurs as a result of Auckland Airport being a monopoly.

4. Explain why deadweight loss occurs in a monopolistic market.

This question checks that you can:

- identify the profit-maximising price and output level for a monopoly
- compare short-run and long-run decisions of a monopolist
- compare the price, output and allocative efficiency of a monopoly to a perfectly competitive market

Graph 3: Monopolistic Market



Revision 3.3 Monopolies



1. On Graph 3 above:
 - a. Identify the profit maximising output as Q_{MON} and the profit-maximising price as P_{MON} .
 - b. Add an **average cost curve (AC)** showing the monopoly earning **normal profits** at the profit maximising output Q_{MON} .
2. Use **marginal analysis** to explain why the firm maximises its profits by producing at Q_{MON} .

UNIT 3 Monopolies

Unit Content:

	Understanding		
	1 (poor)	2	3 (good)
3.1 What is a Monopoly			
• What is a Monopoly?			
• Is a Monopoly Good or Bad?			
• Identify Real Monopolies			
3.2 Revenue and Costs for a Monopoly			
• Identify a Monopolist's Revenue Curves and Demand			
• Describe a Monopolist's Pricing and Output Decisions			
• Identify Profit Maximisation for a Monopolist			
• Identify Normal, Supernormal and Subnormal Profits			
• Identify a Monopolist's Shut-Down Point (Short-Run Decisions)			
• Identify a Monopolist's Break-Even Point (Long-Run Decisions)			
• Identify Market Equilibrium and Deadweight Loss			
• Compare Market Output in a Monopoly to a Perfectly Competitive Market			

checklist:

I have ...

- done a mind-map of the main ideas (before and after I've done the work)
- tried (and marked) all of the exercises
- watched the online videos of this work
- read the notes and summarised the key ideas in the margins of the pages
- made (or downloaded from quizlet) flashcards of the key ideas and definitions

relevant current events and examples:

relevant events and examples for this unit are:

I didn't really get the following parts of this unit ...

... and I'm going to ask _____ to help me with this