

# 3

91400



NEW ZEALAND QUALIFICATIONS AUTHORITY  
MANA TOHU MĀTAURANGA O AOTEAROA

SUPERVISOR'S USE ONLY

## Level 3 Economics, 2014

### 91400 Demonstrate understanding of the efficiency of different market structures using marginal analysis

9.30 am Tuesday 25 November 2014

Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of the efficiency of different market structures using marginal analysis.	Demonstrate in-depth understanding of the efficiency of different market structures using marginal analysis.	Demonstrate comprehensive understanding of the efficiency of different market structures using marginal analysis.

Check that the National Student Number (NSN) on your admission slip is the same as the number at the top of this page.

**You should attempt ALL parts of ALL questions in this booklet.**

If you need more room for any answer, use the extra space provided at the back of this booklet.

Check that this booklet has pages 2–12 in the correct order and that none of these pages is blank.

**YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.**

**TOTAL**

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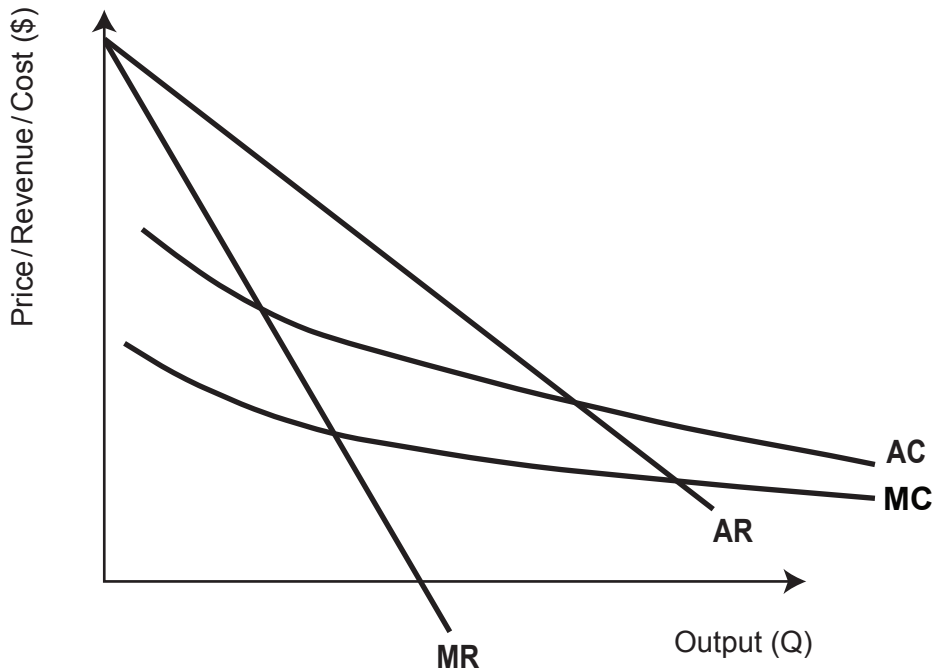
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The examination continues on the following page.**

**QUESTION ONE: Government policies to improve a natural monopoly**

In 2013, the Commerce Commission made a decision to force Chorus to halve its wholesale price for using its copper wires for delivering broadband services. This was in response to concerns that Chorus held monopoly power in the wholesale broadband market.

Chorus could be considered an example of a natural monopoly; examples of pricing regulations include Marginal Cost (MC) pricing and also Average Cost (AC) pricing.

**Graph One: A natural monopoly market**



- (a) (i) Show the profit-maximising equilibrium on Graph One above by identifying the price as  $P_0$  and quantity as  $Q_0$ .
- (ii) Use marginal analysis, and refer to Graph One to explain in detail why  $Q_0$  is the profit-maximising quantity.

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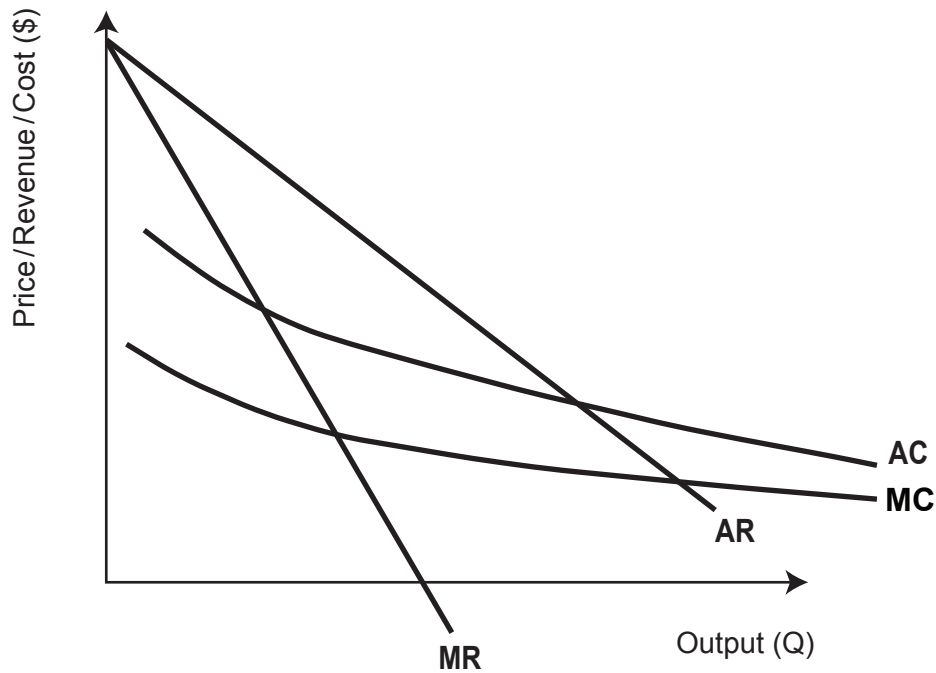
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**Graph Two: A natural monopoly market after Commerce Commission intervention**

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- (b) (i) Show the new equilibrium on Graph Two above after the Commerce Commission decides to enforce a **Marginal Cost (MC)** price regulation. Identify the new price as  $P_{MC}$  and new quantity as  $Q_{MC}$ .
- (ii) Refer to Graph Two to explain in detail the impact on allocative efficiency of  $P_{MC}$ .

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Marginal Cost pricing is likely to create the need for further government intervention. The Commerce Commission could intervene to improve the efficiency of the monopoly market without the need for further government intervention, using Average Cost pricing.

- (c) Compare and contrast the effectiveness of Marginal Cost pricing with Average Cost pricing to improve the efficiency of the monopoly market. In your answer:
- use shading on Graph Two to illustrate the further intervention that may be required if Marginal Cost pricing is used
  - explain in detail why further intervention may be required if Marginal Cost pricing is used
  - label on Graph Two the price that will be charged if Average Cost pricing is used ( $P_{AC}$ )
  - shade in and label on Graph Two the deadweight loss that would occur if Average Cost pricing is used
  - explain in detail why Average Cost pricing could be a more effective form of intervention than Marginal Cost pricing
  - refer to Graph Two in your explanation.

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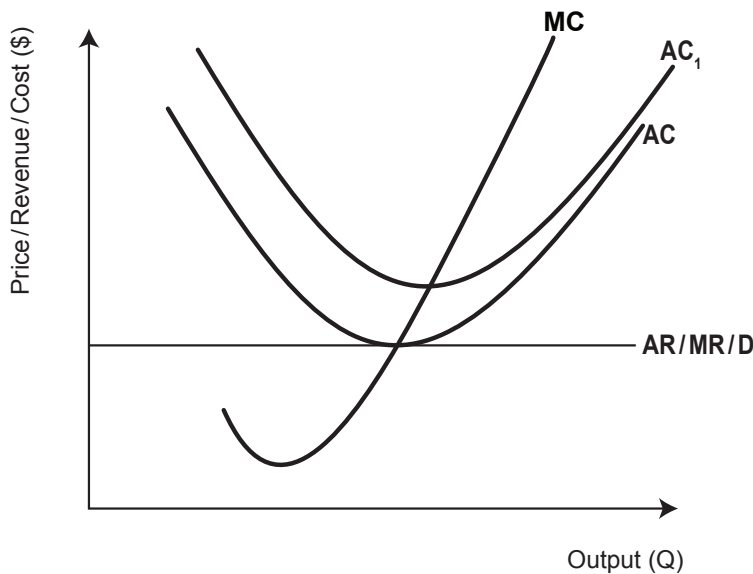
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## QUESTION TWO: The impact of change on a perfectly competitive firm

With increased production costs and land values, many farmers had taken on higher levels of debt, causing fixed costs to rise, reducing profitability. Most of the costs had been fixed costs, and there was very little farmers could do about it. Farmers needed to "keep their eye on the fundamentals". "They need to keep themselves in a good position and not take on too much debt when the times are good ..."

Source (adapted): <http://www.odt.co.nz/news/farming/284085/nz-milk-no-longer-low-cost>

**Graph Three: A beef farm as perfect competitor facing an increase in fixed costs**



- (a) (i) On Graph Three:
- label the profit-maximising price ( $P_0$ ) and quantity ( $Q_0$ ) when average costs are shown by AC
  - show the effect on the profit of the farm after the increase in fixed costs, by shading in AND labelling the new profit made, and indicate if the new profit is a normal, subnormal, or supernormal profit
  - show the effect that increased fixed cost will have on the price and quantity of beef in the **long run**, and clearly label any curve shifts, as well as the new price as  $P_{LR}$  and new quantity as  $Q_{LR}$ .
- (ii) Explain in detail, using distinguishing features of perfectly competitive markets, the change in price from  $P_0$  to  $P_{LR}$ .

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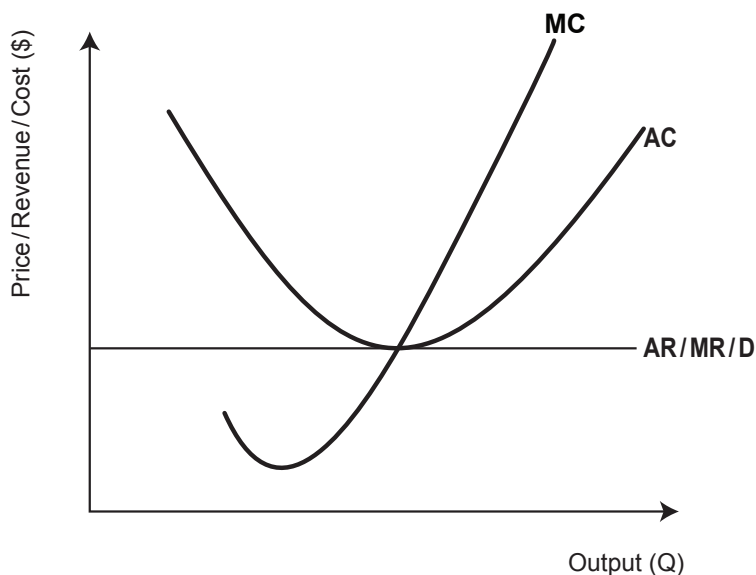


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As well as facing increased fixed costs, farmers have also faced increased variable costs such as feed costs. An increase in variable cost causes both Average Cost and Marginal Cost curves to increase.

- (b) Compare and contrast the impact of an increase in variable costs with an increase in fixed costs on the **short-run** equilibrium of a perfectly competitive firm. In your answer:
- show the impact of an increase in variable costs on Graph Four below, and label the new Average Cost curve as  $AC_2$  and Marginal Cost curve as  $MC_2$
  - on Graph Four, identify the short-run equilibrium price and quantity after the increase in variable costs, and label the price as  $P_{SR}$  and  $Q_{SR}$
  - refer to Graph Three and Graph Four and use marginal analysis, to explain in detail the contrast in the **short-run** equilibrium after an increase in variable costs with the **short-run** equilibrium after an increase in fixed costs.

**Graph Four: A beef farm as perfect competitor facing an increase in variable costs**



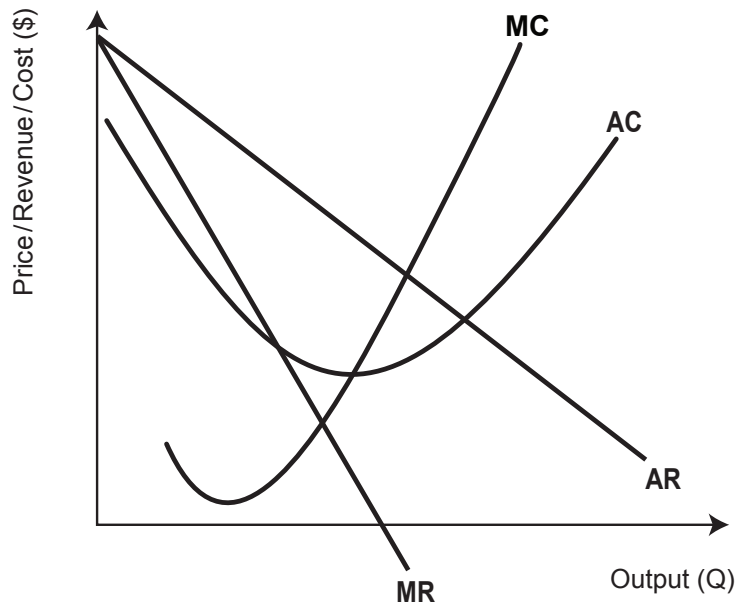
More answer space for this question is available on the next page.





**QUESTION THREE: The efficiency of monopoly and perfectly competitive firms**

Gaining monopoly power in New Zealand markets is discouraged. Competition between firms is encouraged, as it is considered to provide more allocatively efficient outcomes.

**Graph Five: A monopoly firm**

- (a) (i) On Graph Five above, illustrate through labelling and/or shading:
- the profit-maximising equilibrium, labelling the price as  $P_0$  and quantity as  $Q_0$
  - the deadweight loss that exists at  $P_0$  and  $Q_0$ .
- (ii) Explain in detail, using the distinguishing features of a monopoly, why Graph Five is allocatively inefficient.

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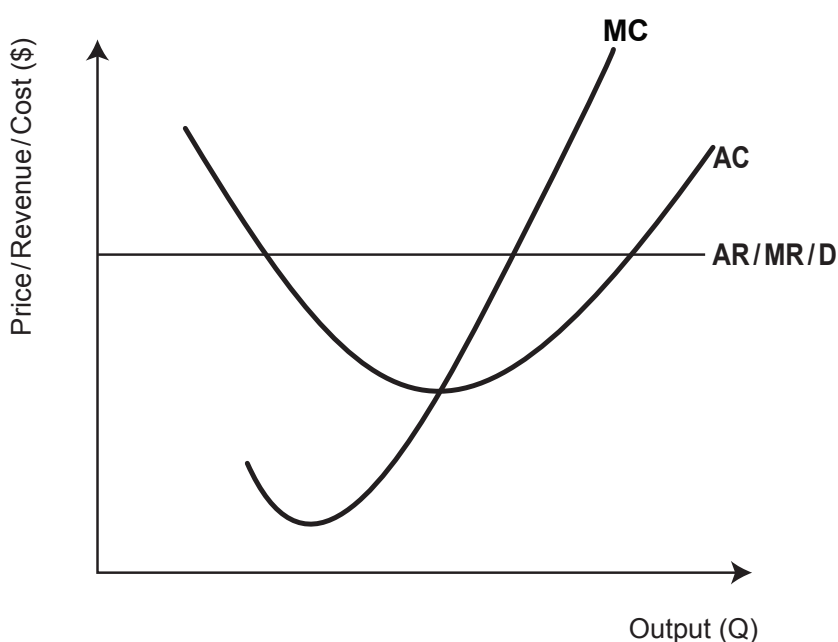
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A perfectly competitive firm is allocatively efficient at the profit-maximising equilibrium.

- (b) Compare and contrast the efficiency of a monopoly firm with that of a perfectly competitive firm. In your answer:
- show on Graph Six the allocatively efficient equilibrium of a perfectly competitive firm, and label the quantity as  $Q_{AE}$  and price as  $P_{AE}$
  - show on Graph Six the profit-maximising equilibrium of a perfectly competitive firm, and label the quantity as  $Q_1$  and price as  $P_1$
  - explain in detail, using the key characteristics of perfectly competitive markets, why a perfectly competitive firm is more allocatively efficient than a monopoly firm.

**Graph Six: A perfectly competitive firm**



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