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# 3

91399



913990



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## Level 3 Economics, 2017

### 91399 Demonstrate understanding of the efficiency of market equilibrium

2.00 p.m. Wednesday 29 November 2017  
Credits: Four

Achievement	Achievement with Merit	Achievement with Excellence
Demonstrate understanding of the efficiency of market equilibrium.	Demonstrate in-depth understanding of the efficiency of market equilibrium.	Demonstrate comprehensive understanding of the efficiency of market equilibrium.

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 the 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 2–10 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.**

**Achievement**

**TOTAL**

**11**

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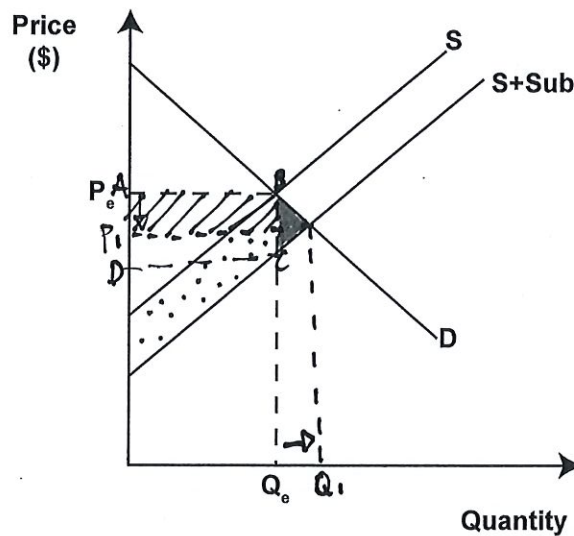
## QUESTION ONE: IMPACT OF A SUBSIDY

An expert in population nutrition at Auckland University, Boyd Swinburn, says that poor diet is now a bigger cause of ill health than smoking in countries like New Zealand. Subsidising fruit and vegetables could improve the country's health.

Source: <http://www.radionz.co.nz/news/national/123254/food-taxes-and-subsidies-'could-improve-health'>

To encourage healthier eating, the government could look to subsidise fruit and vegetables.


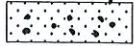

**Graph One: Market for fruit and vegetables – impact of a subsidy**



- (a) (i) On Graph One, the original equilibrium price is  $P_e$  and the original equilibrium quantity is  $Q_e$ . Show the impact of a subsidy on the market for fruit and vegetables by clearly labelling the new equilibrium price  $P_1$  and the new equilibrium quantity  $Q_1$ .
- (ii) Explain in detail, using market forces, how equilibrium in the market for fruit and vegetables would be restored. In your answer, refer to Graph One.

The market for fruits and vegetables has increased in quantity demanded and decreased in price because of the subsidy. The subsidy has forced quantity demanded to shift from  $Q_e$  to  $Q_1$  and the price to shift from  $P_e$  to  $P_1$ . The market is no longer allocatively efficient because the subsidy has caused a deadweight loss. Quantity demanded and price will continue at these points until the market clears at the new equilibrium. These shifts in  $Q$  and  $P$  are shown above on Graph One.

(b) (i) On Graph One, complete the following to show the impact of a subsidy on the fruit and vegetables market:

- Shade in the increase in consumer surplus   
 Shade in the increase in producer surplus   
 Shade in the deadweight loss   
 Label the area of total cost to the government using the letters A, B, C, and E.

(ii) Refer to Graph One to compare and contrast the impact of a subsidy on the New Zealand fruit and vegetables market. In your answer, include the impact on:

- consumer and producer surplus
- government
- allocative efficiency.

Consumer and producer surplus have both increased because of the subsidy. Consumers are happy because they are able to buy ~~a~~ more fruits and vegetables for a lower price compared to the amount they could buy before the subsidy. Producers are happy because they are selling more fruits and vegetables and not losing profits because of the subsidy.

The Government is unhappy because they have to pay for the subsidy. It is shown on graph one that the Government has to pay for part of consumer surplus, and producer surplus plus the dead weight loss. As it was the Government's idea to encourage healthier eating it is fair that they have the burden of paying for the subsidy rather than the consumers and producers.

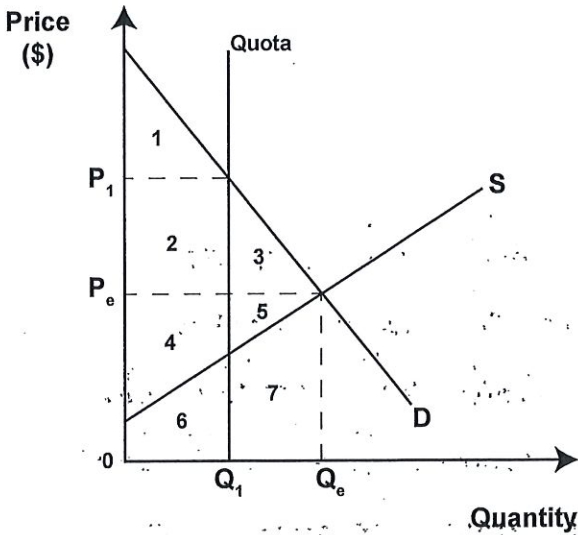
The market is no longer allocatively efficient because there is a deadweight loss. The deadweight loss appears because the market has not yet cleared at the new equilibrium.

**QUESTION TWO: IMPACT OF A QUOTA**

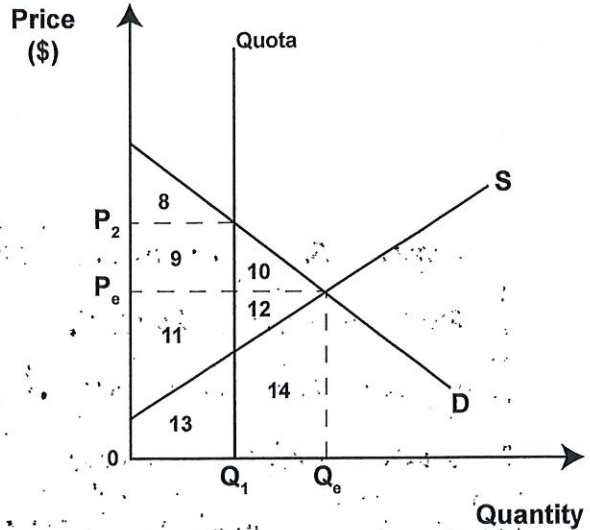
A quota on production limits the amount produced, forcing the price up.

A quota imposed on products with different elasticities can have varying impacts. Graphs Two and Three show a quota that halves the original production of an inelastic good and an elastic good, respectively.

**Graph Two: A good with inelastic demand**



**Graph Three: A good with elastic demand**



- (a) Use Graph Two above to complete Table One, to show the impact of a quota. Use the numbers in the graph to represent the respective areas:

**Table One**

	Numbers from Graph Two – Inelastic Demand
Change in consumer surplus	2, 3
New producer surplus	2, 5
Deadweight loss	3, 5

- (b) (i) Refer to Graph Two and Table One to fully explain the impact of a quota on:
- consumer surplus
  - producer surplus
  - allocative efficiency.

Consumer surplus is lost because of the quota. Before the quota consumer surplus was 1, 2, 3 and after the quota consumer surplus is now only 1. This is a large loss to consumer surplus.

Producer surplus has increased because of the quota. Before the quota producer surplus was 4, 5 and after

The quota producer surplus ~~was~~ is 2,4. This is not a large change in comparison to consumer surplus but is still a noticeable change.

The inelastic good market is no longer allocatively efficient. Because of the quota there is now a deadweight loss. The quota decreased quantity demanded and increased the price by a lot. Increased price generally leads to decreased demand, vice versa ceteris paribus.

- (ii) Use Graphs Two and Three to compare and contrast the impact on consumer surplus and allocative efficiency when goods have different elasticities of demand.

When goods have different elasticities of demand the 'allocative efficiency and ~~surplus~~ surplus' are always different. ~~The~~ With an inelastic demand of a good the loss of allocative efficiency is always greater compared with an elastic demand good. The quota ~~is~~ on graph two gives a greater deadweight loss compared to the quota on graph three. This is because ~~an~~ an inelastic good is a necessity and so consumers will still buy it, if the price goes up, but it will just be in smaller quantities. With elastic goods if the price goes up less people will buy it because it's too expensive. Elastic goods are luxury goods.

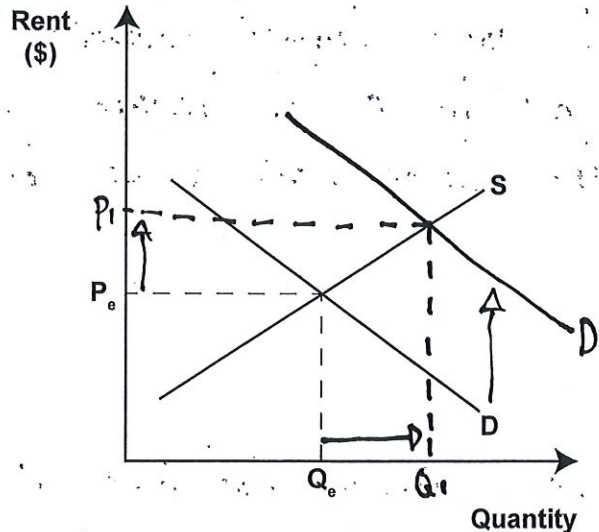
**QUESTION THREE: RISING RENTS**

Rents, particularly in Auckland, are set to increase, with landlords blaming housing shortages and an unprecedented interest in their properties.

Source (adapted): [http://www.nzherald.co.nz/business/news/article.cfm?c\\_id=3&objectid=11779030](http://www.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11779030)

The rising rents have largely been driven by increasing demand.

**Graph Four: Auckland rental housing market – increasing demand**



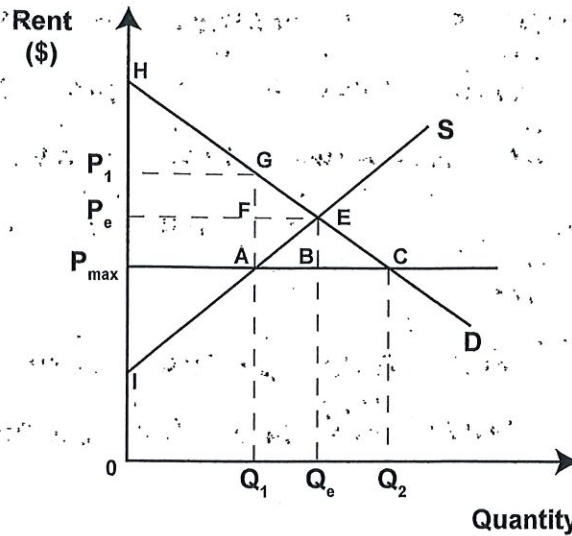
- (a) (i) On Graph Four, show the impact on the market for rental housing in Auckland as a result of increasing demand. Clearly label the new equilibrium price  $P_1$  and the new equilibrium quantity  $Q_1$ .
- (ii) Explain in detail, using market forces, how equilibrium in the Auckland rental housing market would be restored. In your answer, refer to the changes you made to Graph Four.

Because of the increasing demand for rental housing in Auckland the prices of renting will increase too. On graph four the demand <sup>curve</sup> has been shifted to the right, this causes an increase in both quantity demanded and price. In order for the market to be restored it has to clear at the new equilibrium. The new demand curve would be  $D'$ , not  $D$ . This would make the new price  $P_1$  and the new quantity demanded  $Q_1$ . Quantity demanded has increased from  $Q_0$  to  $Q_1$  and the price has increased from  $P_0$  to  $P_1$  as shown on graph four.

A possible intervention to keep rents from rising is a maximum rent control. Graph Five below shows a maximum rent ( $P_{\max}$ ) set below the equilibrium rent of  $P_e$ .

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**Graph Five: Auckland rental housing market – maximum rent control**



- (b) (i) Complete Table Two below by identifying the relevant labels from Graph Five showing the changes as a result of a maximum rent control.

**Table Two**

	Labels from Graph Five
Consumer surplus before maximum rent control	$H, E, P_e$ —
Consumer surplus after maximum rent control	$H, G, A, P_{\max}$ —
Producer surplus before maximum rent control	$P_e, E, I$ —
Producer surplus after maximum rent control	$P_{\max}, A, I$ —
Deadweight loss	$G, E, A$ —

- (ii) Referring to both Graph Five and Table Two, compare and contrast the impact on tenants, landlords, and allocative efficiency in the Auckland rental housing market as a result of a maximum rent control. In your answer, explain the change in:
- consumer and producer surplus for tenants and landlords
  - allocative efficiency.

Consumer surplus has increased because of the price maximum rent control, this makes tenants happy because they can now rent houses for less than before and are able to have more disposable income. Consumer surplus has shifted from  $H, E, P_e$  to  $H, G, A, P_{\max}$  because of the maximum

More answer space is available on the next page.

rent control.

Producers have lost surplus so are unhappy. Landlords have to decrease the price of their rent so do not receive as much income as before the maximum rent control. Producer surplus has shifted from  $P_c, E, I$  to  $P_{max}, A, I$ . This is a larger decrease than the

Tenants are better off and happy because they are paying less rent. Landlords are worse off and sad because they are receiving less rent.

The market is no longer operating at equilibrium and so is no longer allocatively efficient. Because of the maximum rent control there is now a deadweight loss in the market. The deadweight loss is  $G, E, A$ .

Graph five and table two both shows the changes I have mentioned.



**Achievement exemplar 2017**

<b>Subject:</b>		<b>Economics</b>	<b>Standard:</b>		<b>91399</b>	<b>Total score:</b>		<b>11</b>
<b>Q</b>	<b>Grade score</b>	<b>Annotation</b>						
1	A3	The candidate does not identify a surplus in the market from the subsidy, triggering the market forces that change the price. The candidate is close to identifying the consumer surplus change on the graph, but does not complete the graph correctly. The impact of the subsidy on consumer and producer surplus is correctly explained as the candidate identifies a lower price and that more fruit and vegetables will be sold. Also, the candidate identifies a DWL resulting in a loss of allocative efficiency. Overall, this candidate demonstrates the bare minimum of evidence for an A3.						
2	A4	The candidate does not identify the new producer surplus as area 2,4, but accurately identifies the other two areas. The changes to price and quantity are ignored by the candidate in explanations of consumer and producer surplus, but the loss of allocative efficiency is explained by a DWL. The candidate explains that inelastic demand causes a greater loss of allocative efficiency and change in consumer surplus. Overall, this candidate demonstrates the bare minimum of evidence for A4.						
3	A4	The candidate accurately labels both graphs. The shortage from the increase in demand is not identified to trigger market forces. The lower rent is correctly identified for the consumer surplus and producer surplus changes, but no mention is made of quantity changes. Again, the DWL is correctly identified as a loss in allocative efficiency. Overall, this candidate demonstrates the bare minimum of evidence for A4.						