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NZQA | Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

Level 3 Economics 2024

91399 Demonstrate understanding of the efficiency of market equilibrium

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 2–14 in the correct order and that none of these pages is blank.

Do not write in the margins (////). This area will be cut off when the booklet is marked.

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

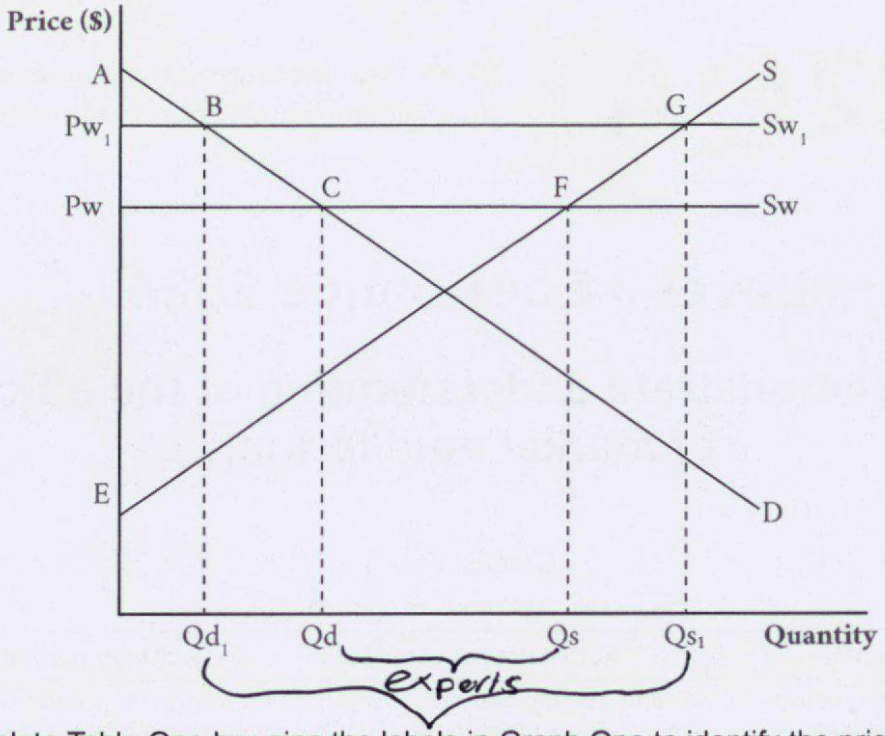
Merit

TOTAL 17

QUESTION ONE: Increase in the world price

Graph One shows the world price increasing for a product that New Zealand exports.

Graph One: The market for a New Zealand export product – impact of an increase in world price



(a) (i) Complete Table One by using the labels in Graph One to identify the prices and quantities.

Table One

	Before world price increase	After world price increase
Price NZ consumers pay	Pw	Pw'
Price NZ producers receive	Pw	Pw'
Quantity consumed by NZ consumers	Qd	Qd'
Quantity sold by NZ producers	QS	Qs'

(ii) Complete Table Two by using the labels in Graph One to identify the surpluses and deadweight loss.

Table Two

	Before world price increase	After world price increase
Consumer surplus	A, C, Pw	A, B, Pw'
Producer surplus	Pw, F, E	Pw', G, E
Deadweight loss (if any)	—	—

(iii) Explain why the world price is a horizontal line.

The world price is a horizontal line as NZ is a price taker, meaning we use the international price for goods/services. This is because NZ is too small of a country to have an influence on the world price. Thus, NZ will sell our goods at the world price at each and every quantity, and wont change price according to NZ demand and supply

Refer to Graph One, Table One, and Table Two in your answer to part (b) below.

(b) Explain in detail the impacts the increase in the world price on a product that New Zealand exports might have on the following:

New Zealand consumers

NZ consumers will be worse off after WP increases from Sw to Sw'. This is because consumer surplus will decrease from A,C,P^w to A,B,$P^{w'}$. This is because price for consumers in NZ increased from P^w to $P^{w'}$, ~~increa~~ decreasing the difference between what they are willing to pay, and what they actually pay. Quantity consumed by NZ consumers will also decrease from QD to QD', meaning there are less units in which to gain a surplus. Thus, as price ↑ increased, and quantity decreased, NZ consumers will be worse off, shown by CS decreasing.

Question One (b) continues on page 4 ➤

New Zealand producers (exporters)

NZ producers will be better off when price increases from Pw to Pw'. This is because NZ producers are now recieving the higher price of Pw' for their product, increasing the difference btwn what price they are willing to recieve and what they actually recieve. The quantity sold by NZ producers will also increase, as the resulting surplus (QS'>Qd') will be exported. ~~Increas~~ As quantity increases from QS to QS', there are more units in which to gain a surplus. Therefore, as price has increased, and quantity has increased, producer surplus will increase from Pw,F,E to Pw',G,E.

Refer to Graph One and Table Two in your answer to part (c) below.

(c) Explain the impact of the increase in the world price on the market for a product that New Zealand exports on allocative efficiency.

At the original price of Pw, the NZ market is AE, and as the world price increases to Pw', the market will still be AE. This is because there is no DWL, and surpluses are maximised. The gains in PS due to the price increase (Pw,Pw', G,F) are enough to offset the losses in CS (Pw,Pw',B,C). Thus, total surpluses are maximised. Therefore, there is no DWL (losses of welfare that is not transferred to a third party) meaning, the NZ market is allocatively efficient

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The assessment continues on the following page.

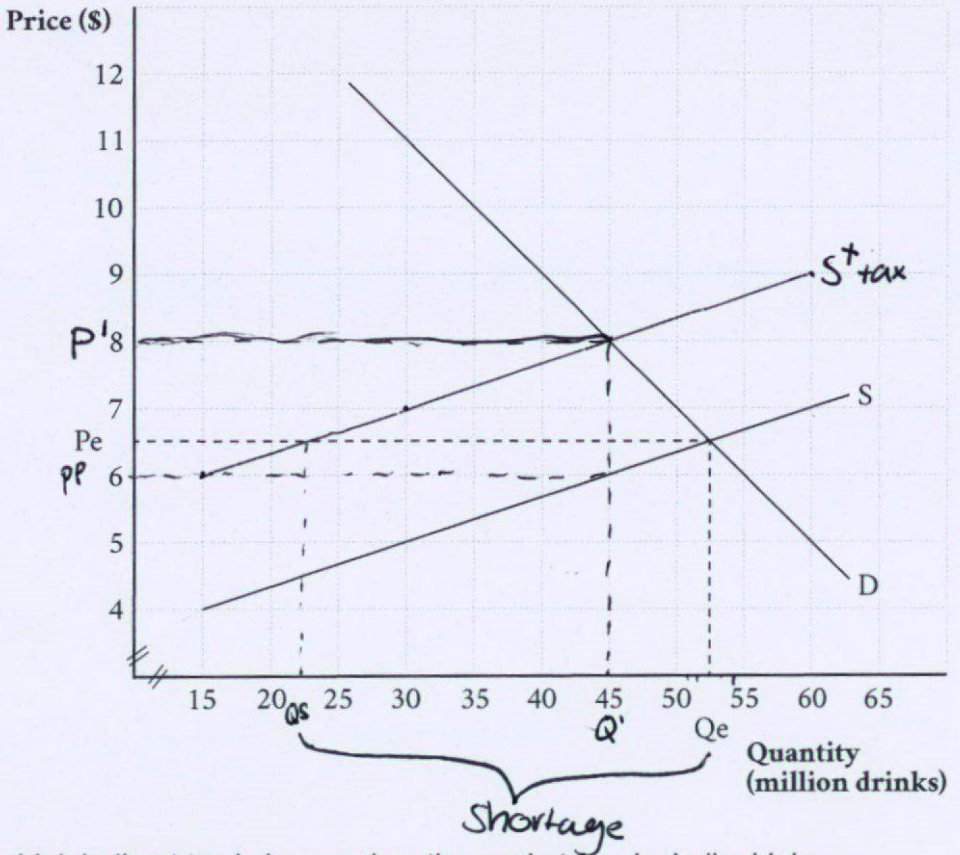
QUESTION TWO: Indirect tax

Source: Taunton, E. (2023, May 31) Here's why your beer and wine will soon cost more. *Stuff*. https://www.stuff.co.nz/business/132192469/heres-why-your-beer-and-wine-will-soon-cost-more

There is more than one reason for increasing the tax on alcohol. One of them is to discourage consumption.

Graph Two shows the market for alcoholic drinks at equilibrium with equilibrium price (P_e) and quantity (Q_e).

Graph Two: The market for alcoholic drinks – impact of an indirect tax



(a) A $2 per drink indirect tax is imposed on the market for alcoholic drinks.

(i) Complete Graph Two above by:

- adding and labelling a new curve showing the increase in indirect tax
- identifying and labelling the new equilibrium price (P_1), and quantity (Q_1)
- identifying and labelling the resulting shortage or surplus at the original price (P_e).

Refer to the relevant figures or labels from Graph Two and the concept of market forces in your answer to (ii) below.

(ii) Explain how equilibrium would be restored in the market for alcoholic drinks following an increase in indirect tax.

At the original price of Pe, there is a shortage as QD > QS = 52.5 mil 22.5 mil. Therefore consumers would bid up the price of alcohol in order to obtain the alcoholic drinks. As price increases from Pe to P' ($6.5 to $8), producers of alcohol will increase their production as its more profitable, thus increasing QS from QS to Q1 (22.5 mil to 45 mil). Consumers of alcohol will decrease their QD as price rises as it is less affordable to purchase alcohol. This will decrease QD from Qe to Q' (52.5 mil to 45 mil). At the new price of $8, equilibrium is restored as the shortage is cleared and QS = QD.

and quantity of 45

(b) Using figures from Graph Two, calculate the values for the following. Circle increase or decrease where appropriate.

- Change in consumer surplus: $ ~~54.375~~ 54.375 million increase or (decrease)
- Change in producer surplus: $ 20.625 million increase or (decrease)
- Total tax revenue: $ 90 million
- Deadweight loss: $ 15 million

144.375

og QS = 144375000

new QS = 90000000

90

65.625

120.625

45

Refer to Graph Two and the calculations in part (b) in your answer to (c) below.

(c) Explain the impact of the indirect tax of $2 per drink on the following in the market for alcoholic drinks.

Consumer surplus

The tax on alchohal will decrease consumer surplus. This is because the price consumers pay will increase from $6S to $8, decreasing the diff btwn what consumers are willing to pay for alcohol and what they actually pay. Quantity of alcohol for consumers has also decreased from 52.5 to 4S, which is less units to gain a surplus from. As both quantity has and price of alcohal of has 4, CS will decrease by $54.375.

Producer surplus

When a $2 indirect ~~tax~~ is pat on alcohal, PS will decrease. This is because the price producers recieve for alcohol has dereased from $6.5 to $6, decreasing the difference between ~~the~~ what price producers are willing to recieve and what they actually recieve. Quantity sold for producers of alcohol will decrease from 52.5mil to 45mil, meaning less units to gain a surplys. Its both price and quantity have decreased, overall PS will decrease by $20.625million

Allocative efficiency

When a $2 tax is put on alcohol, the market is no longer AE. This is because ~~the~~ after the tax, total surpluses are not maximised. This is because the gains in government revenue from the tax (taxes) are not enough to offset the losses in CS and PS due to the tax. This leaves a resulting DWL of $15 million. As total surplus are not maximised, and there is a DWL of $15mill, the alcohol market is not AE.

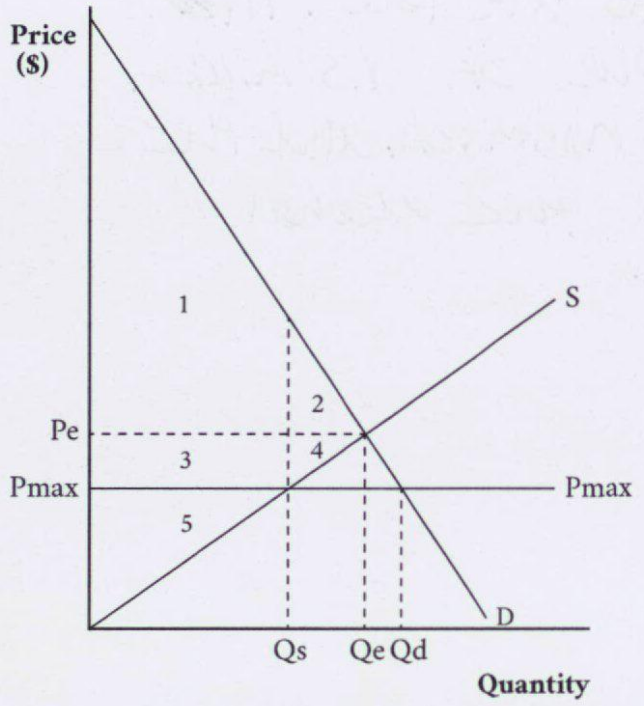
QUESTION THREE: Maximum price control and elasticity

To help ease the impact of the cost of living crisis, the Government could impose a maximum price on some grocery items.

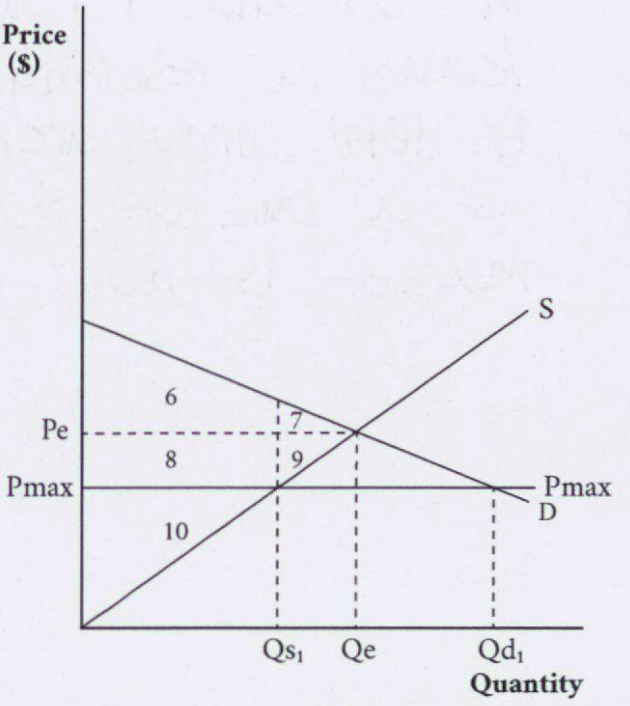
Graph Three shows a maximum price control on an item with an inelastic demand.

Graph Four shows a maximum price control on an item with an elastic demand.

Graph Three: Inelastic



Graph Four: Elastic



(a) (i) Complete Table Three by using the numbers in Graph Three and Graph Four to identify the surpluses and deadweight loss.

Table Three

	Graph Three (inelastic)	Graph Four (elastic)
Consumer surplus before maximum price control	1,2	6,7
Consumer surplus after maximum price control	1,3	6,8
Producer surplus before maximum price control	3,4,5	8,9,10
Producer surplus after maximum price control	5	10
Deadweight loss (if any)	2,4	7,9

(ii) Define price elasticity of demand and explain one reason why an item might be elastic.

Price elasticity of demand is the responsiveness of a good/services demand in relation to price changes. An example or an elastic good would be an apple as it is not a neccesity, and there are many substitutes (oranges, pears etc).

(b) Compare and contrast the impact the maximum price control might have on consumers, producers, and allocative efficiency. Refer to Graph Three and Graph Four in your answer.

For consumers in both the eldstic and inelastic market, Price will decrease from Pe to Pmax, increasing the diff btwn what consumes are willing to pay for groceries and what they actually pay. Although QD increases proportionally larger in elastic (Qe to Qd') than the inelastic market (Qe to QD) quantity supplied will decrease by the same amount in both markets, and as QS is the quantity supplied, both markets will ~~lose~~ have less units to gain a surplus. However due to the slope or the curves, the elastic markets CS will increase overall from 1,2 to 1,3 as the gain of 8 over loss of 7 is proportionally larger than the inelastic markets gain of 3 over loss of 2.

For producers in both elastic and inelastic markets for groceries, PS will decrease. This is because price decreases from Pe to Pmax, decreasing the difference between what they are willing to sell for and what they actually sell for.

Answer space continues on page 12 ➤

Quantity also ↓ from Qe to Qs and Qe to Qs', decreasing amount of units of grocery in which to gain a surplus for producers. Therefore, elastic PS will ↓ from 8, 9, 10 to 10, and inelastic PS will proportionally ↓ from 3, 4, 5 to 5.

After the maximum price, both markets will become not AE. This is because in both markets the gains in CS (3/8) are not enough to fully offset the losses in both CS and PS. This result in a DWL of 2, 4 and 7, 9. As total surpluses are not maximised in either market, both elastic and inelastic are not AE. The inelastic market has a larger DWL, and this is because due to the unresponsiveness of price, the CS lost (2), is a larger area.

and there is a DWL

Subject: Economics

Standard: 91399

Total score: 17

Q	Grade score	Marker commentary
One	M6	The candidate has correctly identified changes to CS and PS with price or quantity and applied the definition. They showed understanding of AE being maintained and why.
Two	M5	The candidate has correctly drawn their graph but has not correctly calculated areas of change. The market forces response mentioned all points as well as including context and data from the graph. For PS and CS, the candidate has covered all points but with the wrong change value.
Three	M6	The candidate needed to identify the mechanism behind change in quantity consumed for CS. A better description of AE would have resulted in an Excellence grade