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93402



Draw a cross through the box (X) if you have NOT written in this booklet

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OUTSTANDING SCHOLARSHIP EXEMPLAR



Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

Scholarship 2025 Economics

Time allowed: Three hours
Total score: 24

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 answer ALL the questions in this booklet.

Pull out Resource Booklet 93402R from the centre of 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 2–28 in the correct order and that none of these pages is blank.

Do not write in the margins (XXXX). 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.**

INSTRUCTIONS: Write an essay in response to EACH of the THREE questions in this paper. Question Two is on page 10, and Question Three is on page 18. There is planning space for each question. Your planning will NOT be marked.

QUESTION ONE: Avocados – a tough season for growers

Use information from **Resource A** and your knowledge of micro-economic theory to answer this question.

Changes in the world market for avocados and in costs for avocado growers directly impact the level of exports and the profitability of New Zealand avocado orchards.

Analyse the impact of changes in the world avocado market on the New Zealand avocado market and on individual avocado growers. Evaluate the short- and long-run effects on avocado growers' output and profitability.

In your answer, using appropriate economic models, you should:

- explain why New Zealand avocado growers can be considered to be an example of perfect competitors rather than monopolistic competitors
- explain the impact of the change in world price on exports, consumer surplus, producer surplus, and allocative efficiency in the New Zealand avocado market
- use marginal analysis to analyse the impact of:
 - the change in avocado prices and input costs on individual perfectly competitive New Zealand avocado growers in the short run
 - ongoing subnormal profits on firms and the New Zealand avocado market in the long run, and evaluate the influence that the world market price may have on this.

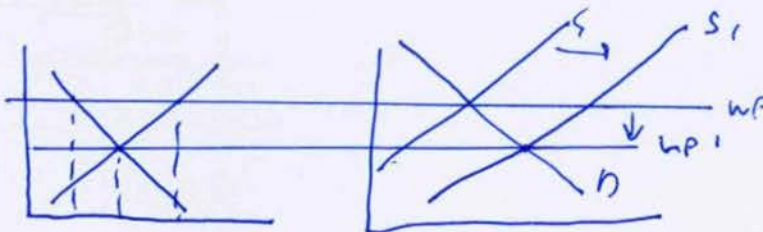
PLANNING

PC

- Homogeneous products
- No barriers to entry
- Large number of competitors
- Price takers

World Price

- Decrease in $w_p \rightarrow \downarrow$ profitability



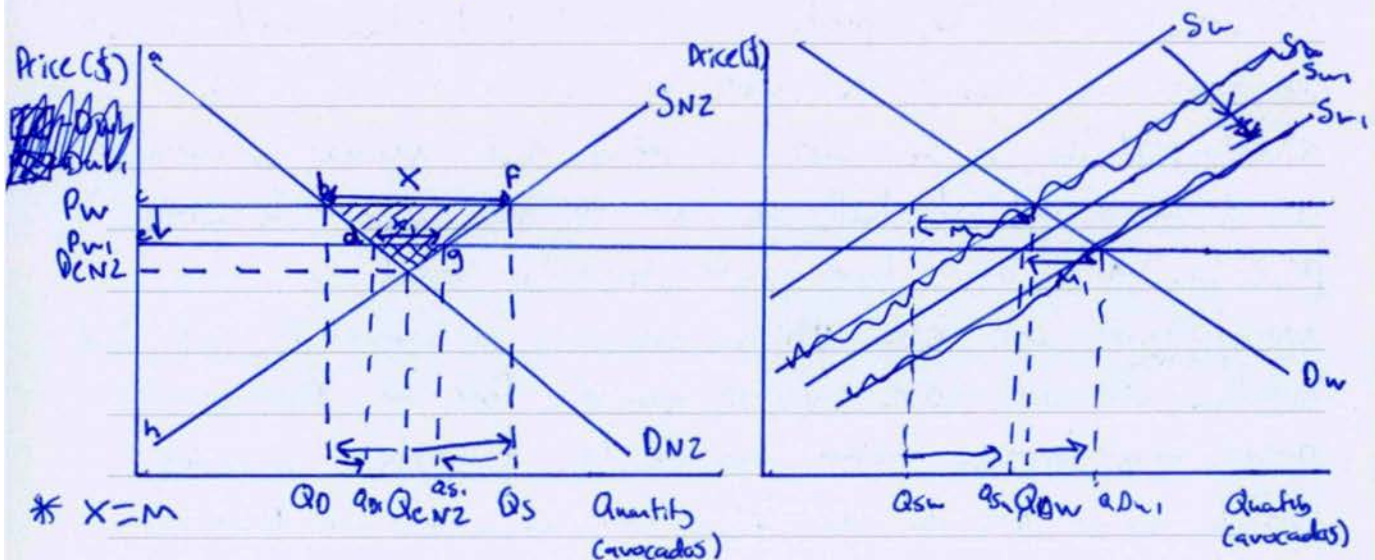
New Zealand Avocado growers can be considered perfect competitors. This is due to the characteristics of the avocado market. Firstly, avocado growers produce homogenous products, or identical products. As all avocados produced are effectively the same product, there is no ability for growers to differentiate their product. Secondly, there are a large number of competitors in the market. The fact that there are many growers in the market also means that ~~grower~~ individual producers are price takers. This is coupled with New Zealand's exportation of avocados. As the production of both individual producers and the market as a whole ~~is~~ makes up just a fraction of the avocado production in the world, it means that avocado growers as a whole and individually ~~are~~ have to take whatever the world price is. Lastly, buyers have perfect knowledge around the product - avocado buyers will know which avocados are 'good' or 'bad', and ^{or marketing} branding will not create imperfect knowledge. There are also no barriers to entry/exit - any farmer who decides to produce avocados can do so or not do so with ease. In conclusion, New Zealand avocado growers can be considered ^{to be} an example of perfect competitors due to these characteristics.

Additionally, it is important to note that avocado growers are not monopolistic competitors. The characteristics of a monopolistic competitor is as follows: Ability to differentiate products, some control over price, ^{and} weak barriers to entry/exit, ~~and usually~~. As avocado growers cannot differentiate their ~~products~~ avocados from other growers' avocados (as all avocados are the same), cannot control the price received for their avocados whatsoever (due to being a price taker), and the fact that there are no barriers to entry/exit whatsoever (consumers do not have any affinity to

a particular grower so can switch firms easily), avocado growers cannot be considered to be an example of monopolistic competitors, and instead meet the characteristics of a perfect competitor.

Due to New Zealand's comparative advantage, we can produce avocados at a lower ^{price} ~~cost~~ than in many other countries. As shown on the two-country model below, New Zealand's domestic equilibrium price is lower than the world price.

Two country model for avocados



This means that NZ producers of avocados would prefer to sell at the higher world price, as this is more profitable, and will increase the quantity supplied ($Q_{NZ} \rightarrow Q_S$). However, avocados are now less affordable for NZ consumers, so they will decrease quantity demanded ($Q_{NZ} \rightarrow Q_0$).

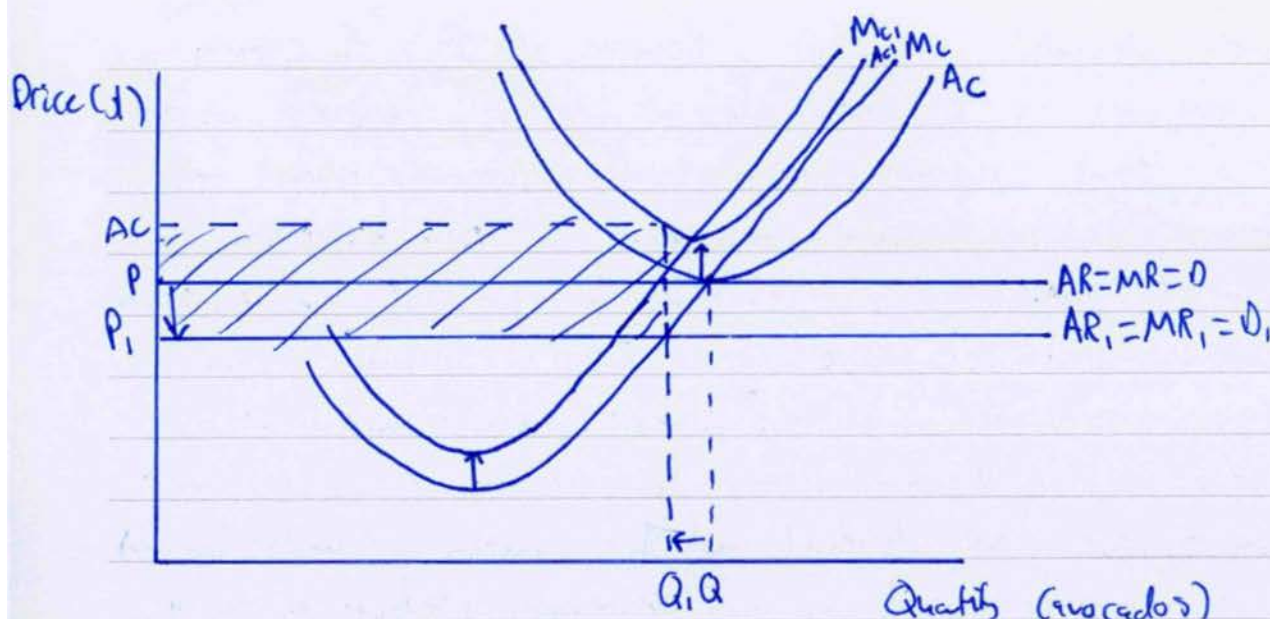
However, as a result of "increased supply and competition from our export markets", ($S_W \rightarrow S_{W1}$), the world price will decrease ($P_W \rightarrow P_{W1}$). This means that NZ producers will decrease their quantity supplied ($Q_S \rightarrow Q_{S1}$), and NZ consumers will increase their

quantity demanded ($Q_D \rightarrow Q_{D_1}$). Because of this, the ^{Surplus} ~~shortage~~ of avocados in NZ will decrease, decreasing exports ($X \rightarrow X_1$). As a result, consumer surplus in the avocado market will increase. This is because consumers are now experiencing a greater difference between the price they pay and are willing to pay, and now have increased the quantity of units on which a surplus can be gained on.* However, producer surplus will decrease as the difference between the price they receive and are willing to receive has decreased, and the quantity of units on which a surplus can be gained on has decreased. Producer surplus has decreased from triangle CFH to triangle egh on graph. Despite this, the change in world price has no impact on allocative efficiency. This is because the market is allocatively efficient both before and after the increase in world price. While total surpluses have decreased, as the loss in PS is greater than the gain in CS, total ~~the~~ surplus is maximised given the market's position, and there is no deadweight loss.

As a result of the rising input costs, the ~~supply~~ marginal cost curves for avocado growers will shift to the left. This is due to rising costs such as ~~the~~ fuel, agri-chemicals, labour, and other services. Therefore, the cost of producing each additional unit of avocados will increase. This is coupled with the lower prices received by growers on the export markets, decreasing from \$2.45 to \$1.75 per avocado on average. This decreases the average revenue (revenue per avocado), marginal revenue (revenue after each additional avocado sold), and the firm's individual demand. These changes are shown on the ~~the~~ graph over the page. Average costs will also increase.

* Consumer surplus has increased from triangle a bc $\rightarrow$ triangle ade on graph.

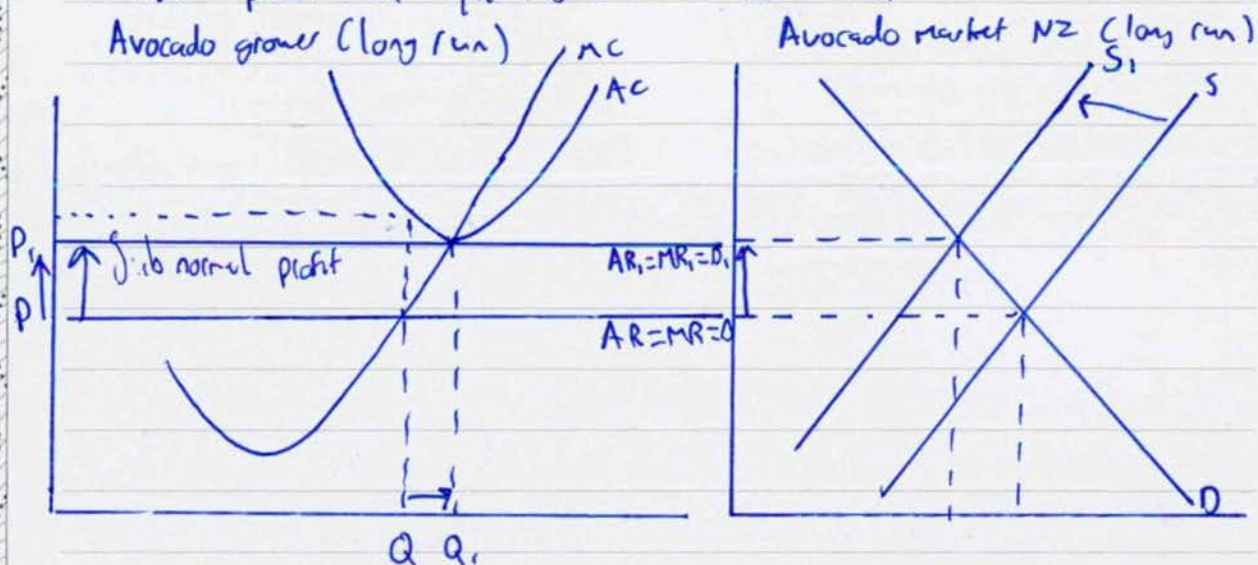
Avocado grower (short run)



As shown on the above graph, a decrease in MR and an increase in MC means that at the previous profit maximising position of Q , $MC > MR$. This means that marginal losses will be made on final units of avocado produced. So, the firm will decrease quantity produced to Q_1 , where $MR_1 = MC_1$. At this output, the losses are minimised. Previously, average costs equalled average revenue, meaning normal profits were made. However, now average costs are greater than average revenue, so subnormal profits will be made (shown by shading on graph). In conclusion, perfectly competitive avocado growers will now be making subnormal profits in the short run as a result of higher costs and lower retail prices.

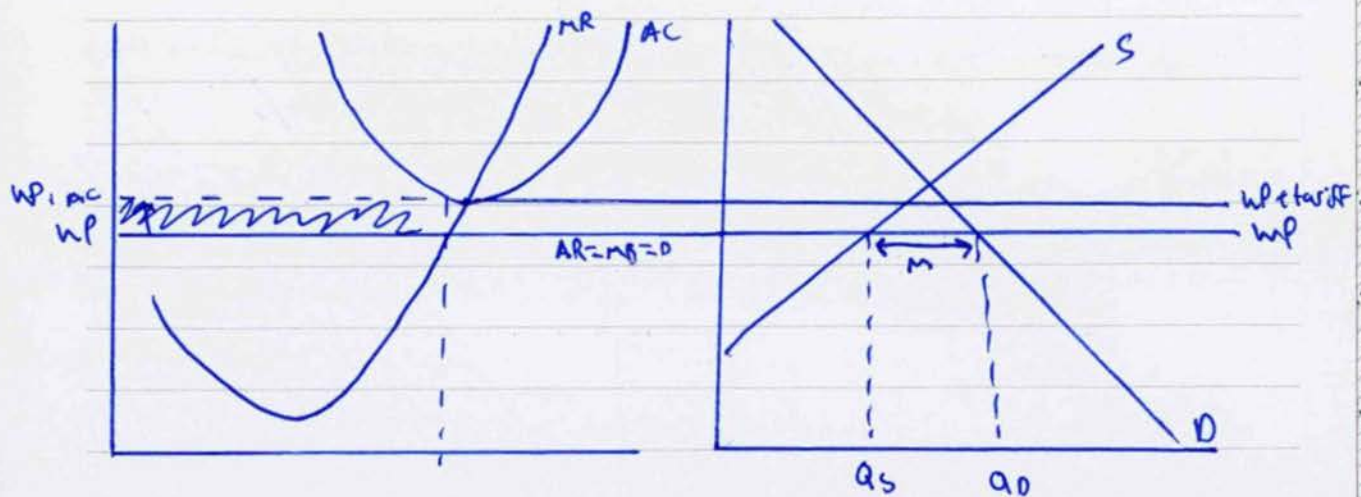
Due to the perfectly competitive nature of the avocado market, there are no barriers to exit. Firms who are making subnormal profits will shut down, as they cannot cover costs. This is easy to do as there are no barriers to exit. As a result, supply of avocados will decrease, which will result in a shortage of avocados. Consumers will bid up the price until equilibrium is restored, at

a higher price and quantity ($P \rightarrow P_1$) ($Q \rightarrow Q_1$).



As seen on the above graph, once the price (and therefore marginal revenue) increases, Firms will increase output ($Q \rightarrow Q_1$) to maximise profits ($MC=MR$). ~~At this~~ The price will continue to rise until $AR=AC$, and normal profits are made, at which point Firms will remain in the market as all costs are being covered. In summary, normal profits will be made in the long run, as the avocado industry is perfectly competitive, and there are no barriers to exit.

Due to the fact that New Zealand exports avocados, this scenario above would only occur if supply decreased significantly enough that New Zealand could no longer produce avocados below the world price. However, if the point was reached where New Zealand could no longer export, the price of the avocado market in NZ may not be able to increase to the point where Firms are making subnormal profits. This is because consumers will import goods if the WP is lower than the domestic price.



If this situation occurred in the long run, firms would not be able to make ongoing subnormal profits in the long run, so would shut down. In order to protect NZ's avocado industry, the government would have to introduce a tariff, ensuring that normal profits could be made. While this would be allocatively inefficient, it would protect the NZ avocado industry, which would be worthwhile if the ~~difficult~~ by tough seasons faced were seen to be a temporary setback to the industry.

QUESTION TWO: Public goods – Auckland roads and allocative efficiency

Use information from **Resources B to F** and your knowledge of micro-economic theory to answer this question.

Auckland's population is projected to increase to at least 2.2 million by 2045, placing pressure on roads, reducing their performance, and increasing congestion. The Auckland Transport Alignment Project (ATAP) concluded that investment in both infrastructure and demand management tools, such as a congestion charge, are needed to reduce congestion in Auckland.

Analyse the impact of a growing population on allocative efficiency in the provision of Auckland roads. Evaluate the effectiveness and impact on allocative efficiency and equity of government policies designed to reduce traffic congestion.

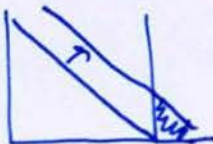
In your answer, using appropriate economic models, you should:

- explain the extent to which Auckland roads meet the characteristics of a public good
- using the public goods model, analyse and illustrate the impact of an increase in population on Auckland roads, and explain how this leads to market failure and allocative inefficiency in road provision
- analyse and evaluate the impact on allocative efficiency and equity of the three recommended policies designed to improve traffic flow (Resource D), and recommend which policy/policies would be most effective in the short and long term, taking into consideration allocative efficiency and equity.

PLANNING

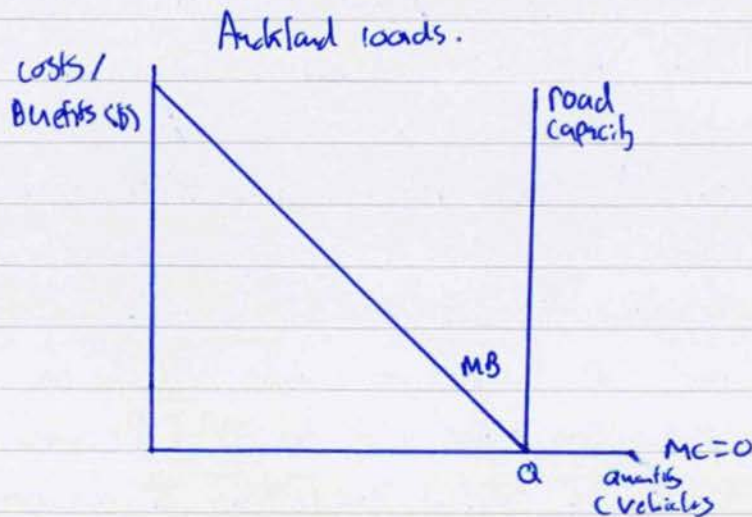
PG

- Non-rival
- Non-exclusion



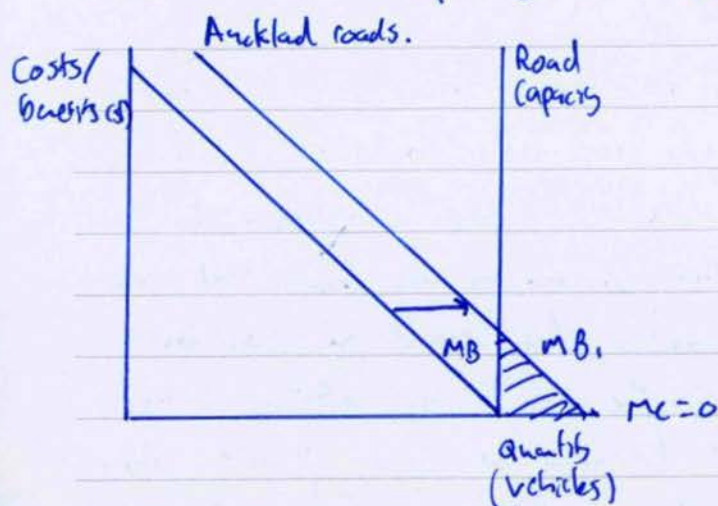
Auckland roads are a public good which are threatened with market failure as a result of increased population. I will evaluate three policies and their effectiveness at addressing the market failure.

A public good is a good or service that is both non-rival and non-excludable. Auckland roads meet both characteristics. This is because the use of Auckland roads by one consumer does not inhibit the ability for another consumer to use these roads, hence the roads are non-rival. Secondly, the roads as consumers cannot be prevented from using the roads by enforcing a fee, hence being non-exclusive. Because of this, private companies will not produce Auckland roads as they are not profitable. If this were to happen, there would be market failure as there would be great demand for the roads but no supply. Because of this, the government steps in to provide the public good.



As seen in the above public good model, the Auckland roads are operating at a quantity of Q vehicles, where $MB = MC$. This is currently at a cost of \$0 to consumers, as this is the equilibrium position, maximising consumer surplus and therefore allocative

efficiency. However, this output is also at the road capacity. This means that if demand / Marginal benefit were to increase, then the market would be operating at beyond capacity.

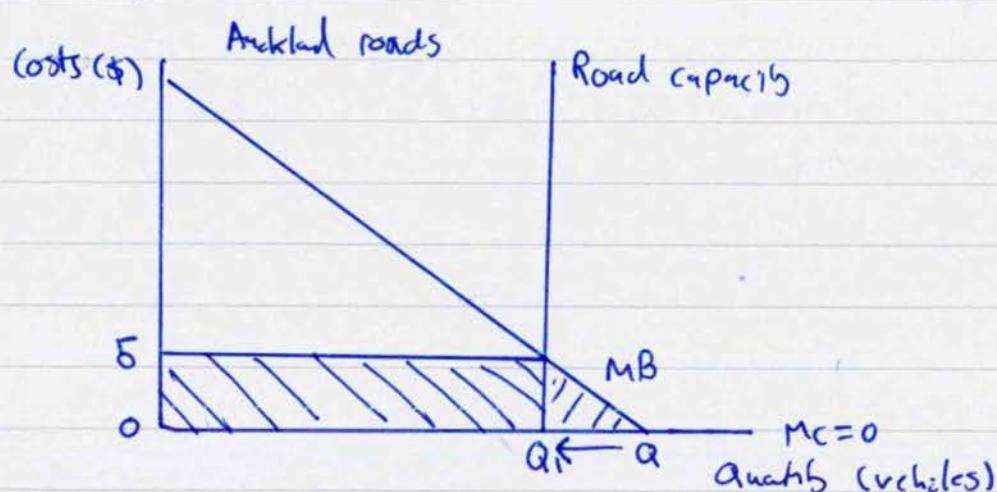


As shown on the graph, an increase in demand would push road use ~~beyond~~ beyond capacity. This is what will happen in the near future, due to Auckland's population increasing to a projected 2.2 million by 2045, increasing demand for road use. However, this will lead to the Auckland road market failing, and resulting in deadweight loss and therefore allocative inefficiency. This is due mainly to congestion. As roads reach capacity, traffic becomes congested. The EMA reports that this congestion has negative spill over effects on the economy. "Aucklanders are losing 22 million hours per year out of their lives while they sit in traffic. That equates to a \$1.3 billion annual hit to GDP". Because of this negative social cost, the Auckland road market is allocatively inefficient, shown by the shaded deadweight loss on the above graph.

In order to correct this market failure, the government must intervene. Three possible policies are: Congestion charges, Improved public transport, and increased infrastructure spending. Let's look

at the effectiveness of each policy.

Firstly, a congestion charge will cost road users to use key roads at peak hours. This will decrease the quantity demanded for roads, as well as generate revenue for the government, which can be used to spend on addressing the market failure further.

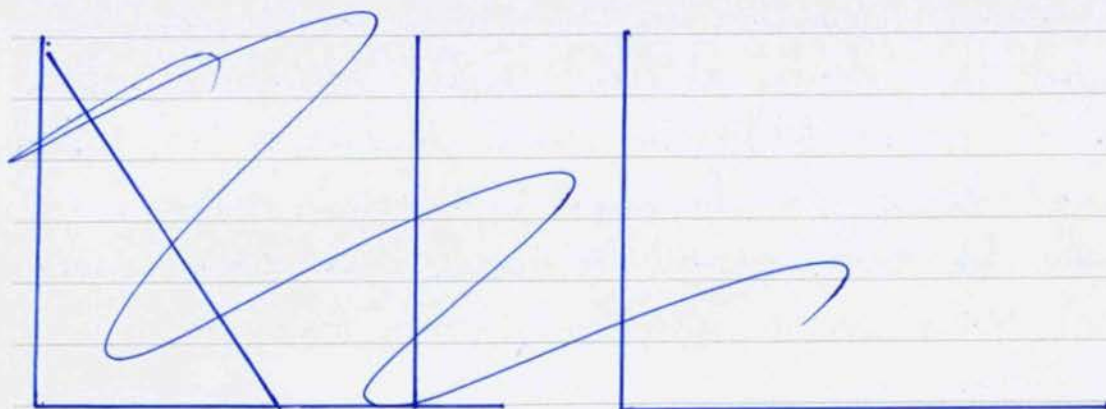


As shown on the above model, increasing the costs of using the roads would decrease affordability for consumers, therefore decreasing quantity demanded ($Q \rightarrow Q_1$). This would mean that the market is operating at the socially desirable equilibrium position of $Q_1, \$5$. ~~Added~~ The social deadweight loss (shaded triangle) is removed, ensuring that the market is allocatively efficient. Additionally, the government will receive $\$$ tax revenue (shaded rectangle), which can be spent on improving road use in Auckland further.

However, a potential con of the congestion charge is the fact that it is regressive. This is because it makes up proportionally less of a wealthy person's income than of a poorer person.

This may mean that poorer people may not be able to use the roads while wealthy people are virtually not affected. In summary, the congestion charge is efficient and will correct the market failure, and generate ^{tax} revenue. However, it is not equitable due to its regressive nature.

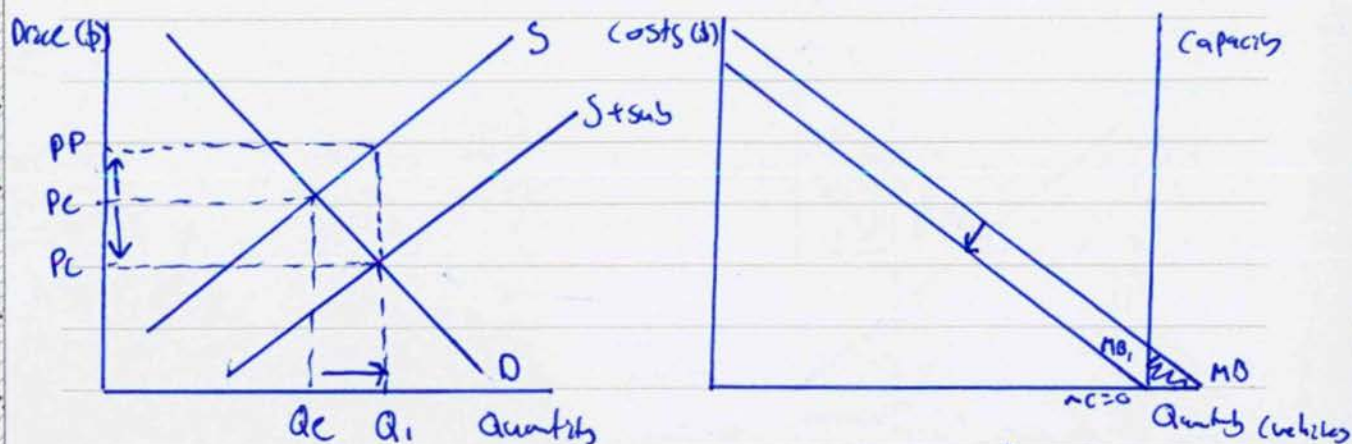
The next possible policy is the improved provision of public transport. Public transport is a substitute good for road use, meaning that a shift in QD for one will ~~decrease~~ ^{shift} demand for the other, inversely.



Auckland public transport

15

Auckland roads

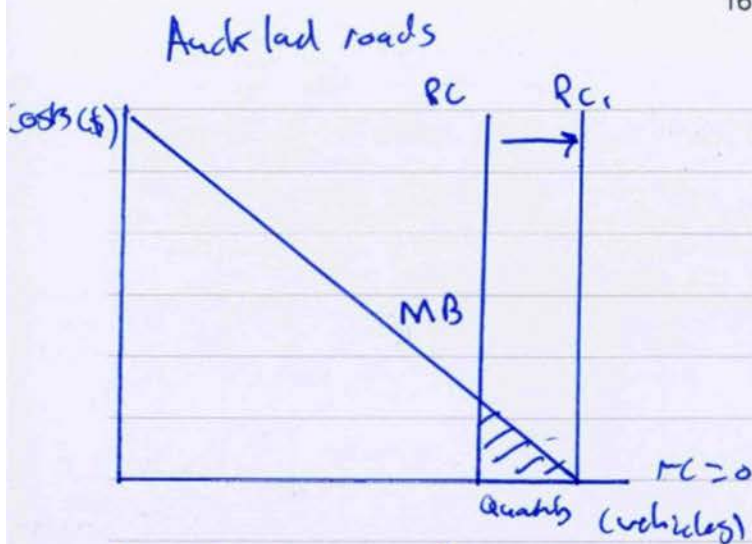


As a result of subsidising public transport, the ~~government~~ ^{demand} will greatly demanded and consumed will increase ($Q_c \rightarrow Q_1$). This will decrease the demand / marginal benefit for Auckland roads ($MB \rightarrow MB_1$). As shown on the graph above, the deadweight loss is removed as the market for Auckland roads is now operating at the allocatively efficient point where $MB = MC$.

However, demand for public transport is known to be relatively inelastic, as it is a necessity. So, while the subsidy would lower the price of public transport, it will elicit a less than proportionate increase in quantity demanded. This will in turn mean that the demand for Auckland roads may not decrease enough to remove the social deadweight loss and become allocatively efficient.

In summary, while the policy is equitable (supports public transport users who are generally less wealthy), it may not be allocatively efficient as public transport ~~is~~ has inelastic demand.

Lastly, the government could increase infrastructure spends on building new routes and dynamic lanes. This would increase the capacity of the roads.



As shown on the graph, this would remove the social deadweight loss as the spillover costs would be minimised. Adding new lanes would help ease congestion, and allow for the increasing demand in the future. This policy is both equitable and efficient as it provides benefits to all road users, and removes social deadweight loss, meaning the market is allocatively efficient.

In evaluation, it is clear to me that the best policy in terms of equity and efficiency in regards to Auckland roads is the increased infrastructure spending. This policy is both equitable and will restore allocative efficiency. The congestion charge policy was efficient but inequitable due to its regressive nature. The public transport subsidy was equitable but it is uncertain whether this policy will actually address the market failure and restore allocative efficiency. Hence, the infrastructure spending is the best policy as it is both efficient and equitable.

QUESTION THREE: Monetary and fiscal policy to reduce inflation

Use information from **Resources G to J** and your knowledge of macro-economic theory to answer this question.

Tighter monetary policy should be the primary tool for containing inflation, but fiscal policy can play a supporting role.

Analyse how monetary and fiscal policies could be used to achieve price stability in the New Zealand economy. Evaluate to what extent a 'fiscally neutral' tax cut policy could support contractionary monetary policy to reduce persistently high inflation rates.

In your answer, using appropriate economic models, you should:

- explain how the implementation of contractionary monetary policy from 2021 to mid-2024 was used to reduce inflation rates
- analyse the combined impact on inflation of implementing a 'fiscally neutral' income tax cut policy with a reduction in government spending, and analyse why this result could be uncertain; use multiplier theory to evaluate the likely impact on inflation
- evaluate the overall effectiveness of using a contractionary monetary policy in conjunction with a 'fiscally neutral' income tax policy to reduce high inflation levels.

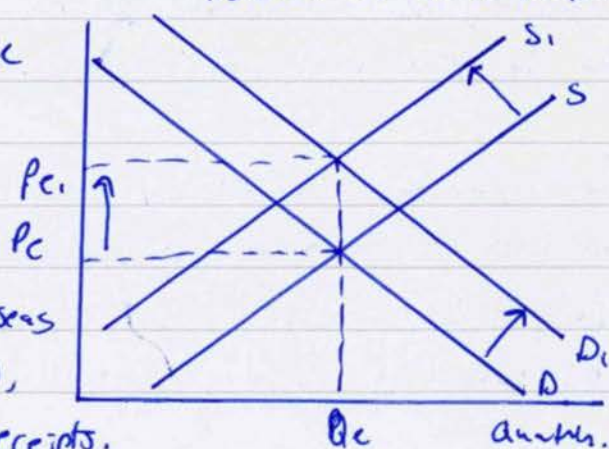
PLANNING

1) Higher OCR $\rightarrow$ high interest rates $\rightarrow \downarrow C \downarrow I \downarrow (x-m),$
 $\uparrow AS$

2) $\frac{1}{1-0.16} = 1.19$

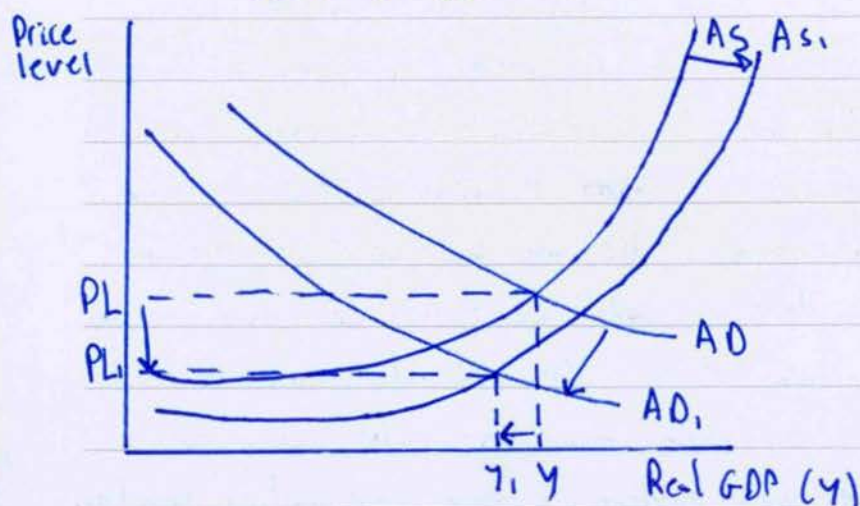
Between 2021 and mid-2024, contractionary monetary policy was used in order to ease inflation. The OCR increased from under 1% to 5.5% in the 3.5 year span. Increasing the OCR increases the amount of interest ~~banks~~ financial institutions charge for borrowing and pay for savings. Because the cost of borrowing increases, investment spending decreases ~~and~~ as firms will have to pay more back, which puts many firms off. Secondly, consumers with loans/mortgages will now be paying more in interest, which will decrease disposable income and therefore decrease consumption spending. Saving is also now more attractive to consumers, discouraging consumption spending further. Lastly, foreign investors will be more incentivised to invest in NZ, due to greater ~~the~~ returns, increasing demand for the NZ dollar. Investors with investments already in NZ will be less willing to transfer out of NZ, decreasing supply for the NZ dollar.

As shown on the graph, this Price will result in the NZ dollar appreciating ($P_c \rightarrow P_{c1}$). This will result in NZ exports becoming less price competitive overseas (as some foreign buyers buy less NZD), which will decrease export receipts.



Additionally, imports are now more affordable as the NZD now buys more foreign dollars. So, assuming that imports have elastic PED, import payments will increase. So, as consumption spending (C), investment spending (I), and net exports ($XC-M$) all decrease, so will aggregate demand. This is because $C, I, \text{ and } (XC-M)$ are all components of aggregate demand.

AD/AS model of the New Zealand economy

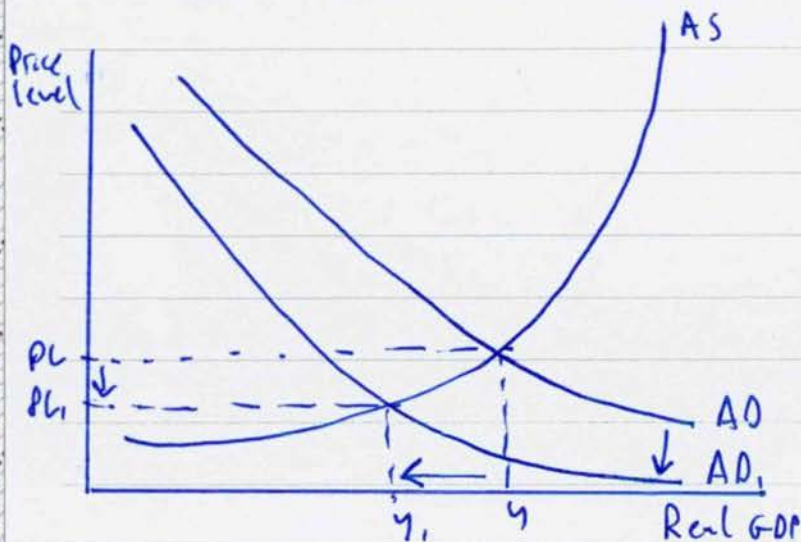


As shown on the graph above, AD will decrease ($AD \rightarrow AD_1$). Aggregate supply will increase slightly as the cost of imported raw materials will decrease due to ~~str~~ appreciating NZD, decreasing costs of production ($AS \rightarrow AS_1$). So, the result is a large decrease in the price level ($PL \rightarrow PL_1$), and a small decrease in Real GDP ($Y \rightarrow Y_1$). Therefore, the contractionary monetary policy will ~~a~~ reduce inflation rates as the price level will decrease.

The Government is proposing a 'fiscally neutral' tax policy where tax cuts are given to households, and government spending is forgone. While this is technically not an increase or decrease in government ^{expenditure} ~~expenditure~~, the ways that this money will be used is different. Due to the cost of living crisis, the marginal propensity to consume is low, just 0.16. This means that for every dollar in tax relief, only 16¢ will be spent. The multiplier effect is just 1.19 ($\frac{1}{1-0.16}$), meaning every dollar of tax relief will 'circulate' just 1.19 times. ~~Because of this,~~ On the other hand, if the government had spent the money set aside for tax cuts, 100% of it would be spent. This means that if the tax cuts were implemented, aggregate demand would decrease, as the forgone government spending (G)

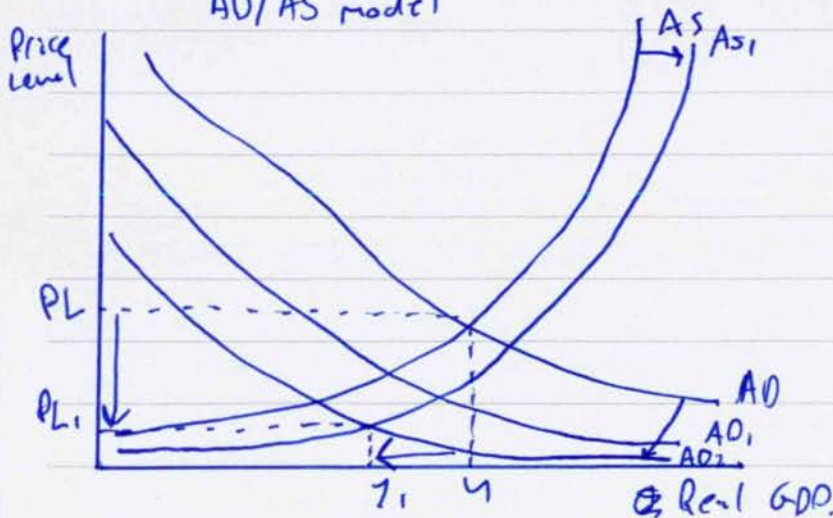
Would result in less than proportionate increases in other components, such as consumption spending. As a result, inflation is likely to decrease, as demand-pull inflationary pressures are eased, but at the expense of growth.

AD/AS model



However, by using this ~~model~~ Fiscal policy in conjunction with contractionary monetary policy, the effects of ~~the~~ on Real GDP will be even more negative. While the main goal of the PTA act is to provide price stability, in 2018 a dual-goal was added to keep unemployment to a minimum.

AD/AS model



As shown on the graph, the combination of both contractionary monetary policy and tax relief in a time of low marginal propensity to consume will result in a decrease in the price level, ($PL \rightarrow PL_1$) which achieves the goal of reducing inflation however it will come at the expense of real GDP ($Y \rightarrow Y_1$) as national income and employment will fall.

**Extra space if required.
Write the question number(s) if applicable.**

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Acknowledgements

Material from the following sources has been adapted for use in this assessment:

Question 2

Ministry of Transport. (2021). *The congestion question*. <https://www.transport.govt.nz/area-of-interest/auckland/the-congestion-question>. CC-by-4.0

Question 3

The Treasury. (2022). *FEU Special Topic – Inflation and fiscal policy*. <https://www.treasury.govt.nz/publications/research-and-commentary/rangitaki-blog/feu-special-topic-inflation-and-fiscal-policy>. CC-BY-4.0

Outstanding Scholarship

Subject: Economics

Standard: 93402

Total score: 21

Q	Score	Marker commentary
1	07	On page 3 the candidate provides an in-depth analysis of the features of the avocado market in relation to perfect competition vs monopolistic competition, integrating the resource material. On page 4 the candidate erroneously uses the two-country model rather than the price taker model in analysing the effect of the decrease in supply and price in the world market and the effect of this on the New Zealand market. However, the subsequent analysis of the changes in New Zealand market for avocados and the impact on consumer and producer surplus are accurate and detailed, including the impact on deadweight loss. On pages 5 and 6 the candidate provides the correct graph to illustrate the changes affecting individual avocado growers. This is supported by a detailed description of the changes and the short and long run impact. This could have been improved further by specific discussion on the difference between the short and long run. The candidate provides a relatively sophisticated discussion of the significance of world price on the ability of New Zealand firms to return to normal profitability though this could have been improved by more explicit and expanded explanation. Overall, the response is relatively sophisticated with a high level of accuracy and detail though with an important error.

2	07	On page 11 the candidate identifies two characteristics of a public good – non excludable and non-rival – and briefly discusses how these apply to Auckland roads. A reason why the free market fails to provide roads is explained. Further insight could be demonstrated by adding that at times of congestion roads do not meet the non-rival characteristic. Economic theory is used to convincingly explain the market failure in the market for Auckland roads. The candidate correctly identifies that equilibrium is where $MC=MB$ at quantity Q and uses the public goods model to identify and explain the deadweight loss. The deadweight loss is linked to evidence from the resource material. On pages 13 and 14 the congestion charge policy is analysed at a Scholarship level. The effectiveness and allocative efficiency of the policy is discussed with reference to the socially efficient equilibrium of Q_1, with an accurate economic model. A brief analysis of the regressive nature of the policy is included but could have been discussed in more depth. The public transport policy is analysed at an outstanding level. Independent reflection is demonstrated by using the inelastic demand for public transport to justify the limited effectiveness and allocative efficiency of the policy. The evaluation compares all three policies regarding effectiveness, equity and allocative efficiency. Overall, this is a low 7. The candidate produced a logical and convincing essay on the allocative efficiency and effectiveness of three policies to reduce congestion. The clarity of economic modelling and integration of sound economic theory were strengths of this response. Whilst equity was discussed this was not at a sophisticated level. For a higher grade the long and short term would also be discussed and evaluated in more detail.
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3	07	The candidate provides a sophisticated economic analysis of the use of monetary and fiscal policies for containing inflation. They explained the impact of contractionary monetary policy as the primary tool with fiscal policy playing a supporting role. To gain a higher grade, the candidate could have more explicitly integrated the resource material. On pages 19 and 20, the candidate provides a thorough analysis of contractionary monetary policy, with reference to both curve shifts on the AS/AD model and the inclusion of the FOREX model when discussing the exchange rate appreciation. On pages 20 and 21 they calculated the multiplier and have shown insight by explaining the multiplier in context. They referred to every dollar of the tax relief circulating 1.19 times and have also considered the impact of the multiplier on the reduction in government spending. On page 22 they have shown perception and insight, acknowledging that the combination of policies results in a decrease in the price level due to the low MPC influencing the amount of spending following tax cuts.
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