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

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SCHOLARSHIP EXEMPLAR

NZQA

Mana Tohu Mātauranga o Aotearoa
New Zealand Qualifications Authority

Scholarship 2023
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 any cross-hatched area (⬚). This area may 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.

QUESTION ONE: Dynamic pricing and market efficiency

Use information from **Resources A** to **C**, and your knowledge of micro-economic theory, to answer this question.
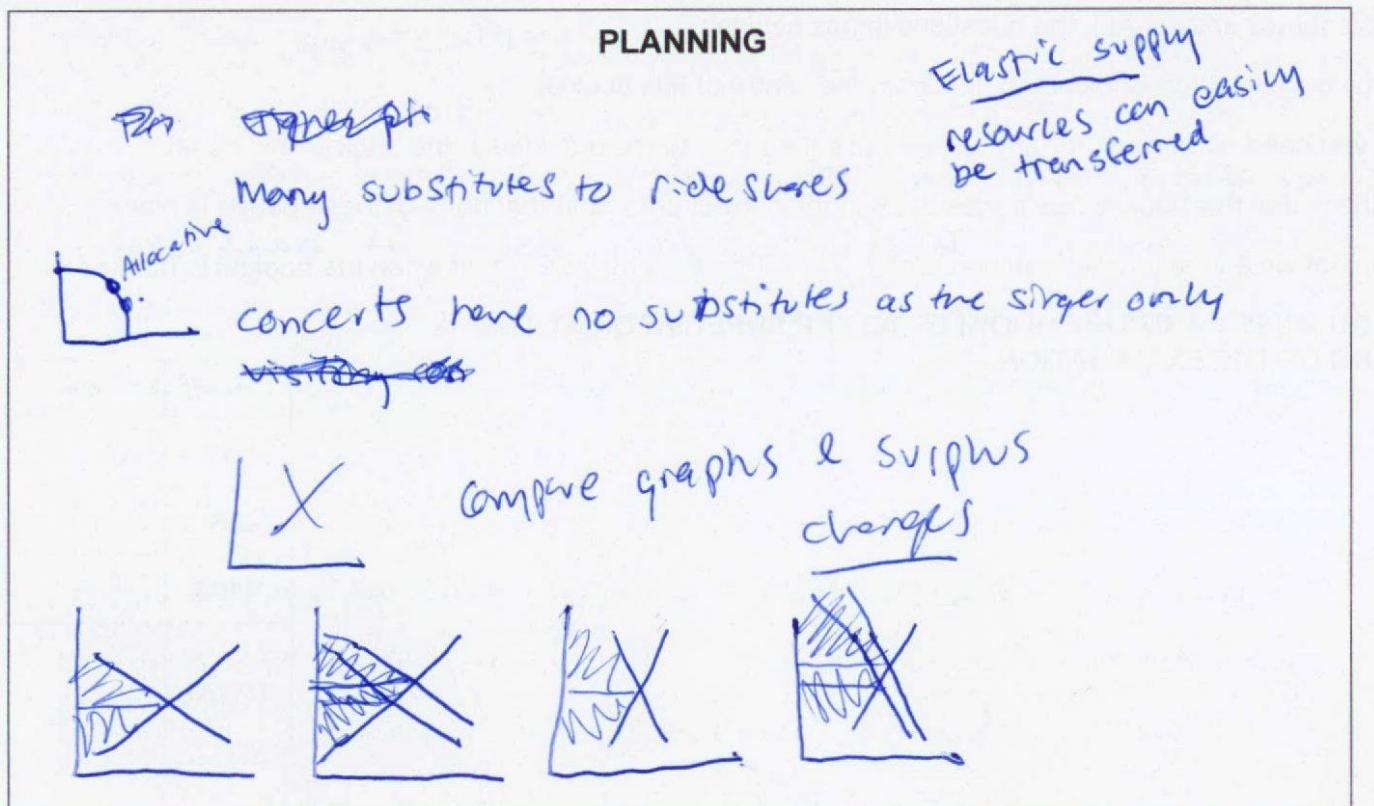
Consumers are becoming increasingly aware that prices for some services are no longer fixed, but can fluctuate at different times according to the level of demand. This is called dynamic or 'surge' pricing. Ride shares and concerts are examples of markets where it occurs.

Using elasticity theory, analyse the impact of dynamic pricing on participants and allocative efficiency in the markets for ride shares and concerts. Evaluate the effect of a government intervention to ban dynamic pricing in each market.
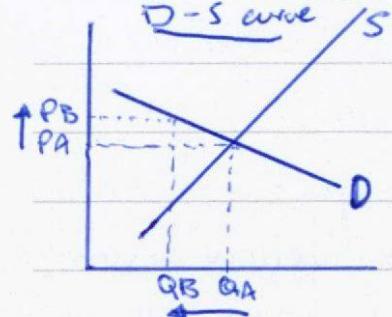
In your answer:

- use appropriate economic models
- use elasticity concepts to explain why ride shares would have more elastic supply and demand than concerts
- for each market, analyse how dynamic pricing impacts consumer surplus, producer surplus, and allocative efficiency at times of increased demand
- evaluate the effect that implementing a fixed or maximum price that bans dynamic pricing would have on consumers, producers, and allocative efficiency at times of increased demand in each market.

Use the space below to plan your essay. This plan will NOT be marked.

PLANNING

Elastic supply
resources can easily be transferred

Par Jagnessph
Many substitutes to ride shares

Allocative

concerts have no substitutes as the singer only

compare graphs & surplus
changes
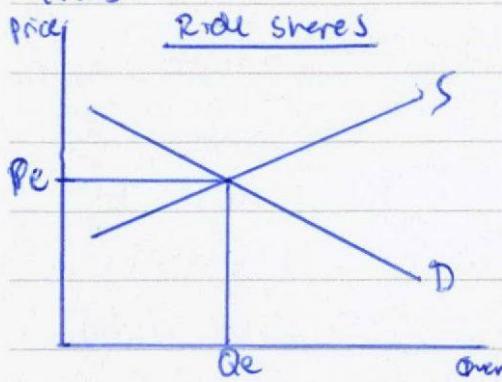
Ride shares ~~are~~ typically ~~have~~ have more elastic demand because there are many substitutes available. Some examples of these substitutes are taxis, single rides at Uber (without other strangers in the ride), public transport and even electric scooters/bikes. Although, transport is a necessity, there are other methods that are available which contributes to ~~#~~ the elasticity of demand. As there are many available substitutes and this particular method of transportation has a low degree of necessity, Ride sharing ~~to~~ should have a more elastic demand curve. This can be shown on a classic Demand-Supply curve as a relatively flatter curve. Elastic demand means that as price changes, there is a more then proportionable change in the quantity. Which

essentially means a small change in price should lead to a larger change in quantity. The supply for shared rides is also more elastic as the resources can be transferred between ~~the~~ potential services with ease. For example, Uber or Zoomy could be producing Ride shares, where ~~many people~~ two or more people catch the same uber. The ~~comp~~ firms can easily switch between shared rides and producing rides where only one ~~#~~ group of passengers can be picked up at once. So seeing as resources can be reallocated with ease, the elasticity of supply for ride shares is likely to be more elastic. The Demand and Supply Graph for shared rides is likely to look like
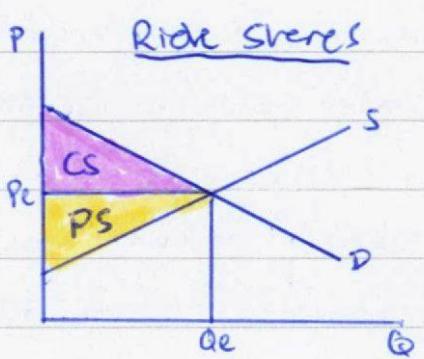
this:

Ride shares

Both curves are modelled with a relatively flat slope. ~~elast~~ Elastic supply means that a change in the price ~~l~~ leads to a greater then proportionate change in the quantity supplied. Firms can easily allocate more resources to ~~anoth~~ the good to boost the quantity as the price changes. The consumer and producer surplus can be modelled on this graph as the shaded areas. The purple area representing the consumer surplus, whilst the producer surplus being represented by the yellow shaded area. The market is operating with its highest allocative efficiency at this point, because the market is operating at the free market equilibrium. If the government were to intervene in any way, the market would no longer be operating at free market equilibrium and so there ~~shall b~~ would be a loss in allocative efficiency. But this is not the case and so resources are being allocated with the maximum possible efficiency. As demand increases for Ride shares there shall be a shift in consumer and producer surpluses. This increase in demand could be caused by bad weather causing people to avoid walking, or special events meaning that there are more consumers going out that need potentially rides. The increase in demand can be shown on a graph, and the surplus
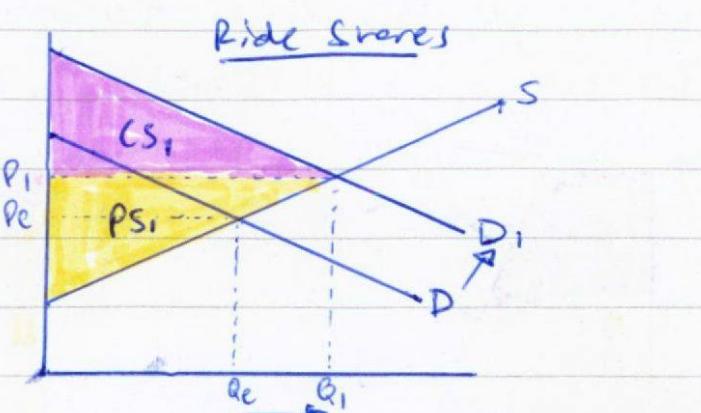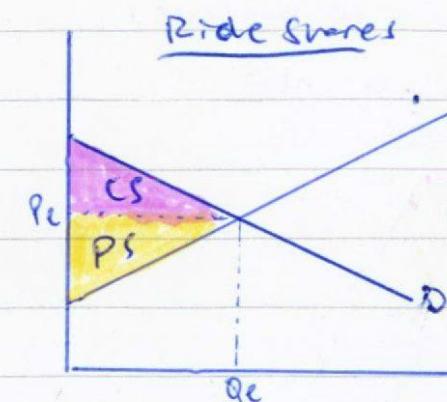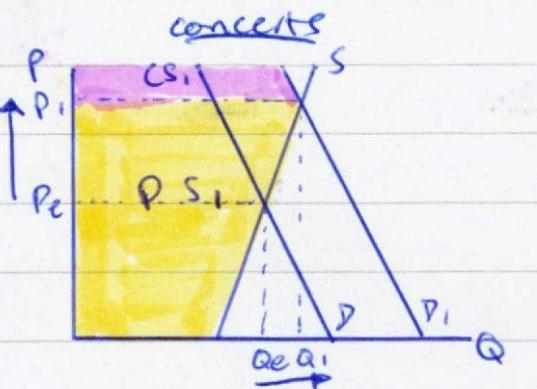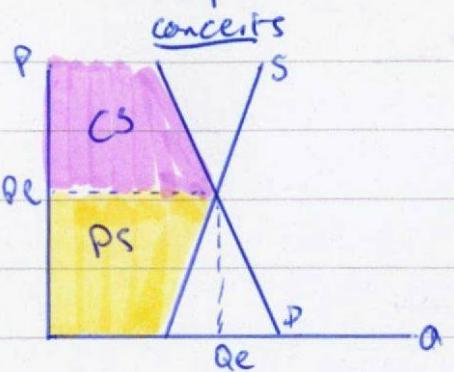
changes can be modelled as well:

As seen above on the graphs above, the surplus areas both increase. Consumer surplus is the difference between the market price and the price that consumers are willing to pay. They are now consuming more units to recieve a surplus from. The consumer surplus has increased because the difference between the market price and the price they are willing to pay has increased. Producer surplus has also increased. Producer surplus is the difference between the market price and the price producers are willing to sell at.

On the other hand, concerts have more inelastic supply and demand curves. The demand for concerts is more inelastic because there are not any substitutes for specific singers / bands to perform, ie there is only one of each person in the world and they cannot be replaced. Also, fans may experience addiction where they 'fangirl' over a singer to the extent where they must see them perform. This would result in a more inelastic demand curve. Supply is also inelastic because the specific band / singer can only perform their own work rather than other
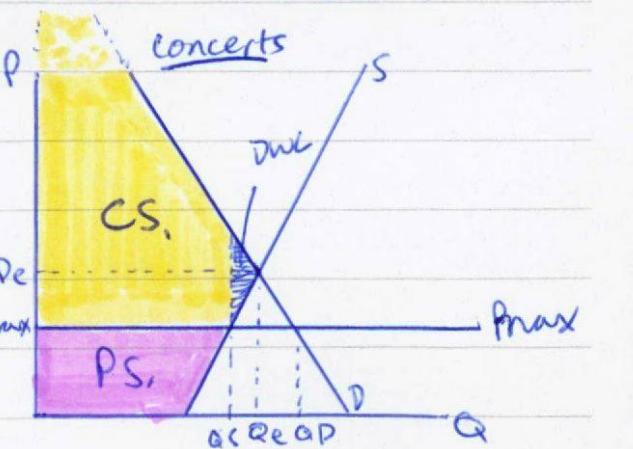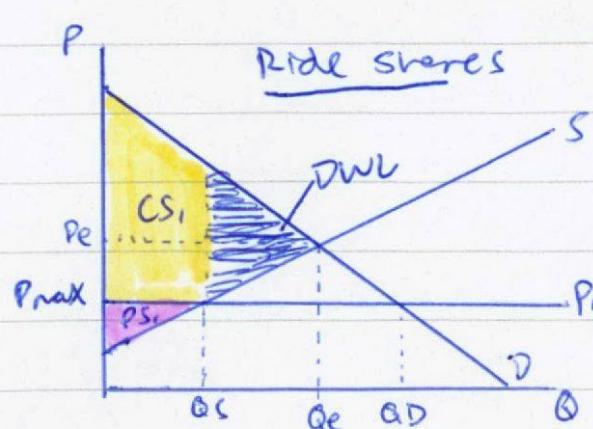
with. So they can only ~~appr~~ produce one service. The increase in demand for ~~the~~ concerts can be modelled, and the change in surpluses can be shown also:

The increase in the consumer and producer surpluses is ~~much~~ larger than ~~that~~ the increase in the previous graphs for Ride shares. This is because the elasticity of concerts causes the difference between the market price and the price ~~they are with~~ the consumer and producers are willing to buy and sell at has increased by a larger amount.

Implementation of a maximum price.

The govt decides to intervene in the market with an imposed maximum price control to reduce the purchase of the price. This maximum price can be modelled:

Consumer surplus is the difference between the market price and the price that consumers are willing to pay. Producer surplus is the difference between the market price and the price that producers are willing to sell at. Both Ride shares and concert graphs result in an increase in consumer surplus. However, ~~they so~~ seeing as concerts have a more inelastic curve, they recieve a larger increase in surplus. This is because they are willing to pay higher prices in the first place, so when a price ceiling is implemented, the difference between the market price and the price they are willing to pay is much larger. Similar with producer surplus, as the producers are less willing to sell at higher prices the difference after the imposed price ceiling is larger. Allocative efficiency has decreased in both cases as the gain in consumer surplus is outweighed by the loss in producer surplus. A dead weight loss is thus formed within the market, proving that the new price and quantities are inefficient. However, the gout did manage to achieve what they were aiming for as the dynamic pricing is banned and a fixed price that is favourable to consumers is imposed.

QUESTION TWO: Market failure in the market for high-emission vehicles

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

The Clean Car Discount scheme, implemented in 2022, focuses on the supply and demand of different types of vehicles coming into New Zealand. The policy is part of a government strategy to reduce the consumption externality of transport emissions, by encouraging the importation of low-emission vehicles.
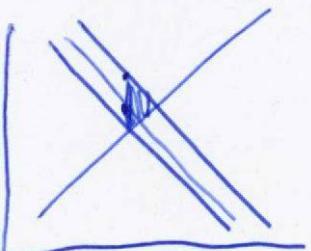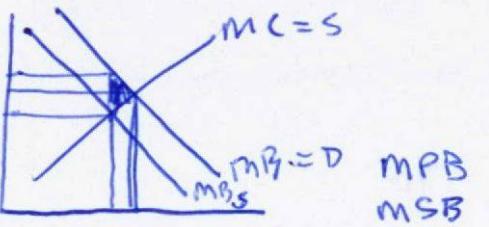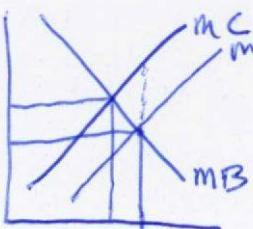

Analyse the market failure in the market for high-emission vehicles. Evaluate the effectiveness and impact on allocative efficiency of the Clean Car Discount scheme in encouraging buyers to switch from high-emission vehicles to cleaner, low-emission vehicles.

In your answer:
- use appropriate economic models
- explain the externality and market failure in the market for high-emission vehicles
- analyse the impact on allocative efficiency in the market for high-emission vehicles of each of the two policies in **Resource D**
- evaluate the overall effectiveness of a combination of both policies in reducing transport emissions and achieving allocative efficiency in the market for high-emission vehicles in the short and long term.

Use the space below to plan your essay. This plan will NOT be marked.
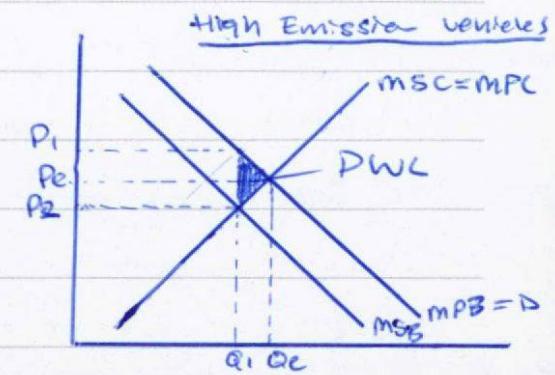
PLANNING
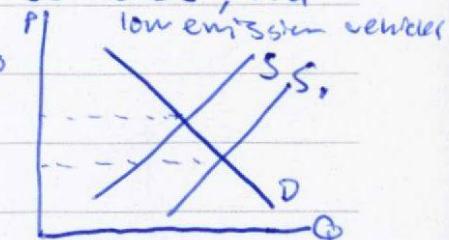
the market for high emission vehicles fails because
the marginal social cost is larger than the marginal
social benefit. This is because there is a negative
~~externality present consumption~~ externality of consumption
present. The private benefit of consuming higher
emission vehicles is larger than the ~~social~~ social
benefit. There is a second hard negative benefit to
public ~~flood~~ when private consumers consume their
high emission vehicle. This graph can be modelled
as:
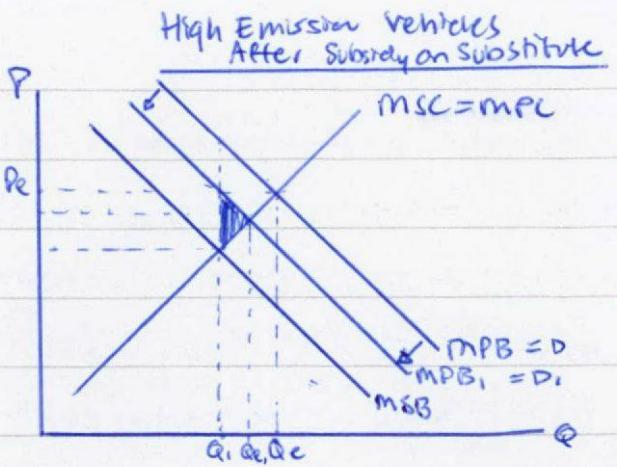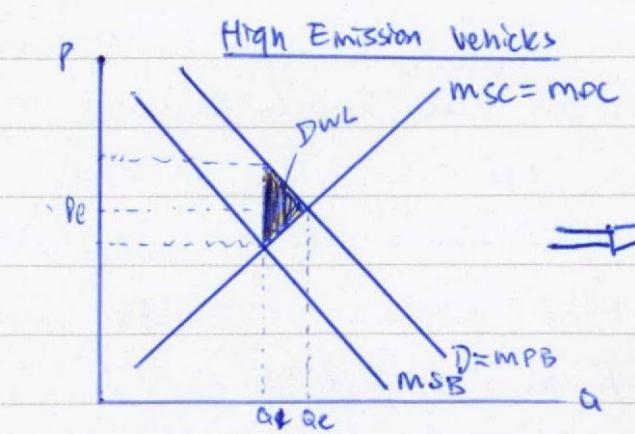
The cost of the consumption
externality can be shown on the
graph as the difference between
P_1 and P_2. A dead weight loss
is formed as the private consumer
does not consider the extra social benefit which is
lower than their own private benefit ($MPB > MSB$).
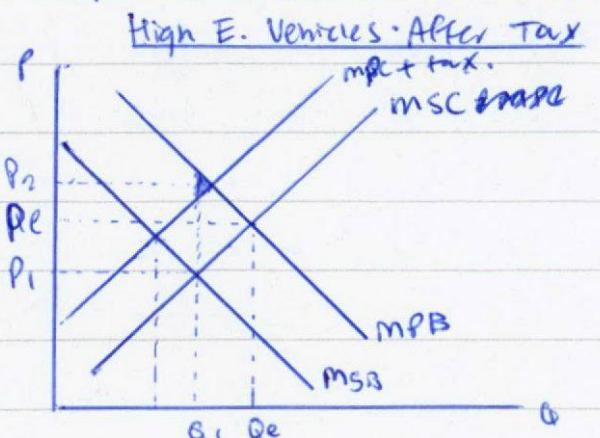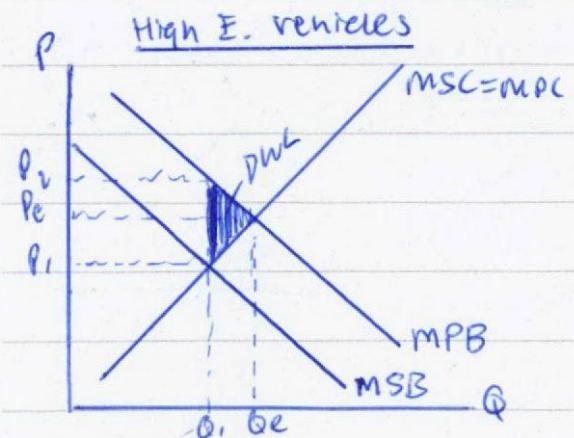
An ~~&~~ imposed subsidy on ~~&~~ low emission vehicles
results in a decrease in the demand for high
emission vehicles. this is because ~~&~~ low emission
vehicles are substitutes to high emission vehicles, and
so as the price for ~~the~~ substitute to
high emission vehicles falls, there
is a resultant ~~increase~~ decrease in demand
that should occur in the market for
vehicles. This can ~~be~~ modelled with the graph:

High Emission Vehicles

High Emission Vehicles After Subsidy on Substitute
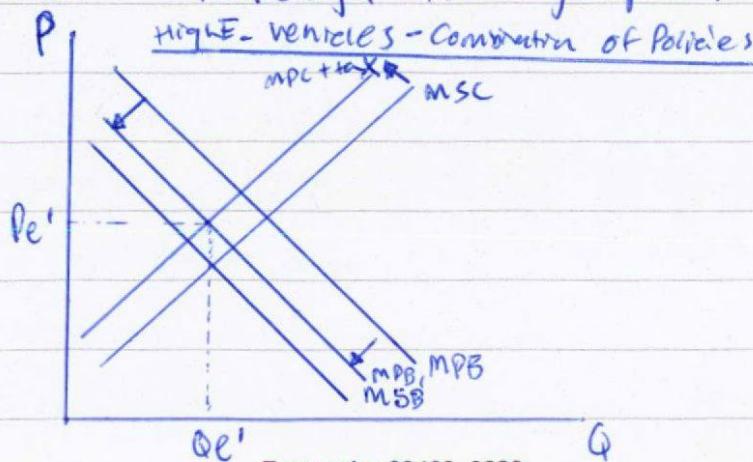
As shown above in the graphs for before and after the subsidy was imposed on low-emission vehicles, the MPB decreases from MPB (=D) to MPB_1 (=D_1). The shift in the marginal private benefit resulted in the reduction in the size of the dead weight loss. This means that allocative efficiency was increased as the externality was partially internalised and MPB is close to equalling MSB. However, the market still continues to fail and it is still allocatively inefficient as the externality of consumption was only partially internalised.

The tax on High emission vehicles on the other hand can be modelled once again on an externality graph:

High E. vehicles

High E. Vehicles · After Tax

As the tax ~~tax~~ is imposed on High emission vehicles, there shall be a resultant decrease in the MPC, from MPC → MPC + tax. This movement occurs because it becomes ~~more~~ expensive ~~for~~ to private consumers of high emission vehicles to pay for their cars. The ~~tax~~ is partially effective as the dead weight loss is reduced, but it is still ~~app~~ existent so the tax was not fully effective. The consumption externality has not been fully internalised. However, allocative efficiency has increased because the dead weight loss has been reduced and also because ~~Bot~~ some of the ~~soci~~ loss in social benefit is reduced due to the rise in price to private consumers.

Both policies are effective at reducing the dead weight loss and ~~both~~ policies ~~part~~ partially internalize the consumption externality. A combination of the two policies may be an even more effective way to reduce the consumption of high emission vehicles and thus ~~fore~~ potentially fully internalize the externality. This combination can be modelled through the graph:

High E. vehicles - Combination of Policies

The combination of the policies results in the Marginal private cost to decrease from $MPC \rightarrow MPC + tax$. This in combination with the decrease in MPB from $MPB \rightarrow MPB_1$ ($(OR)D \rightarrow D_1$). The two shifts of these curves results in the dead weight loss to be fully removed. This means that the consumption externality has been fully internalised. Allocative efficiency has increased back to its maximum efficiency. So, Therefore, in the short term, yes, the combination of the two policies is effective at reducing the consumption of high emission vehicles and internalising the externality.

But, in the long run this may not be the case. Then In order to use both policies to reduce consumption, the government ~~by seed the~~ will need to subsidise the low emission vehicles. As more consumers over the years begin to buy low emission vehicles, the govt will need to pay more on rebates. This means that as years pass, the cost to the government increases. As long as this subsidy cost is made up for by the tax on high emission vehicles, the govt should be fine. Although these payments have to last from 2022 all the way through to 2050. This is a 28 year long payment of rebates. As ~~yes~~ students grow up there should be a change in overall tastes and preferences as younger people tend

to be more informed about the problem with high.
emissions. So there may be a resultant higher
demand over the years, driving up the cost to
the government as more and more rebates are
demanded. So it depends on the ratio of
rebates given and tax recieved, as to whether
it is efficient for the govt to continue the
combination of the two policies.

Also, the fact that transpot only makes
up 47% of domestic CO_2 in NZ, there is
a majority of other emissions that are causing
carbonisation. The govt may need to spend
even more on subsidies to develop a new ~~policy~~
policies that fully reduce CO_2 emissions.

To conclude, yes the combination of the policies
are effective in the short run, but it is
dependent on a couple factors as to whether it
is efficient in the long run.

QUESTION THREE: Relationship between the current account and the exchange rate

Use information from **Resources G** to **J**, and your knowledge of macro-economic theory, to answer this question.
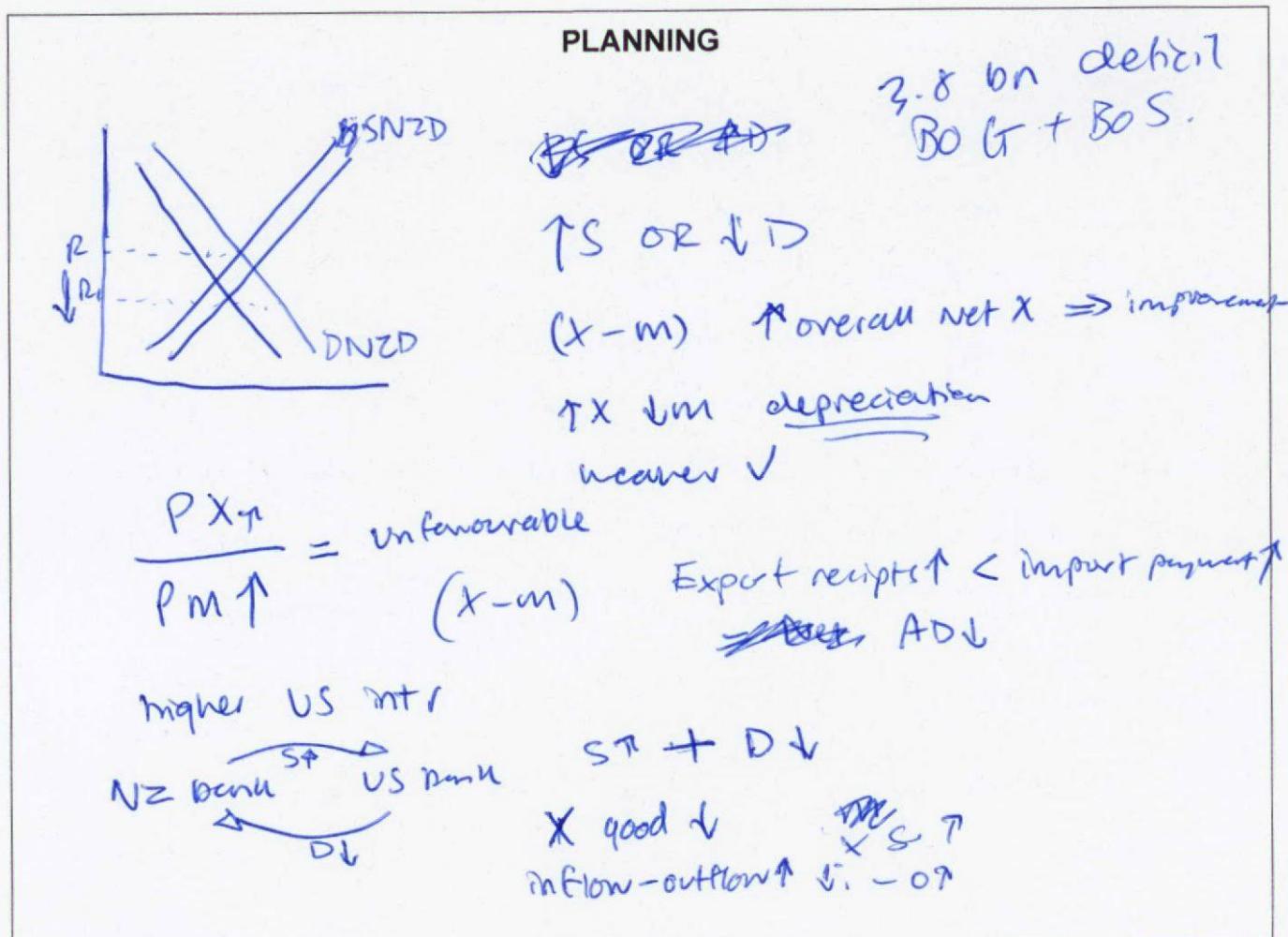
The current account and the exchange rate are interrelated economic issues. The current account has decreased from a surplus in June 2020 to a near record deficit in September 2022. Meanwhile the value of the New Zealand dollar against the US dollar has fluctuated but overall has trended downwards.

Discuss the interrelationship between the current account and the exchange rate within the New Zealand economy. Evaluate whether a strong or a weak exchange rate is most likely to reduce the current account deficit.

In your answer:

- use appropriate economic models
- explain how the current account balance is calculated and, using **Resource G**, explain the factors that caused the current account deficit to increase in the March 2022 quarter
- analyse the combined impact of the increased current account deficit and rising interest rates in the United States on the New Zealand exchange rate
- compare the effect of a depreciation and an appreciation in the exchange rate on the current account. Evaluate which is most likely to reduce the current account deficit.

Use the space below to plan your essay. This plan will NOT be marked.

PLANNING
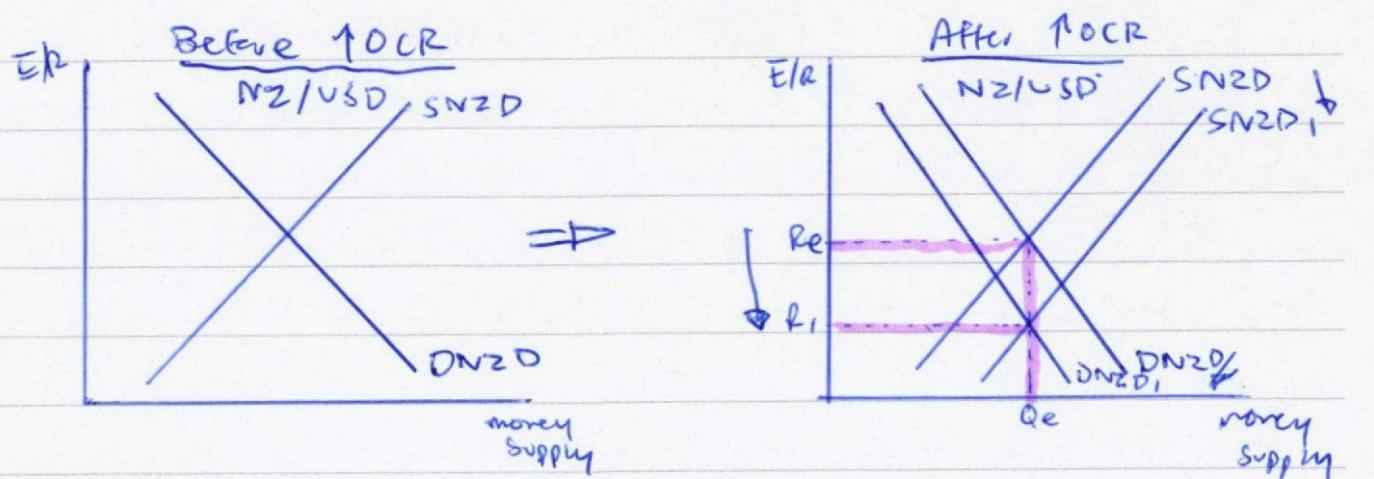
The current account balance is calculated by adding up the balance on goods, balance on services and the balance on primary and secondary incomes. The balance on goods is the total value of goods exported minus the total value of goods imported. As the ~~value~~ price of exported goods rose at a slower rate than that of imported goods, we can say that the increase in inflows was smaller than the increase in outflows. Therefore: $BOG = inflows(\uparrow) - outflows(\Uparrow)$, the balance on goods decreased. Balance on services is the total value of exported services minus the total value of ~~imp~~ imported services. The service exports such as travel and tourism fell because of border restrictions and accompanied with the increase in imported services, such as; freight services, there was an overall decrease in the balance on services. $BoS = inflows(\downarrow) - outflows(\uparrow) = BoS\downarrow$. The total value of the balance on goods was equal to: $16.4 - 18.3 = \$-1.9$ billion, and the total value of the balance on services was equal to $3.4 - 5.4 = \$-2$ billion. Overall this means that purely the Balance on goods and on services portion decreased by $\$-3.9$ billion. This shall have lead to the current account worsening.

The ~~os~~ United States Federal reserve imposed a' tightening monetary policy that ~~forced the~~ increased the official cash rate in the US. This ~~will~~ lead to higher retail interest rates and so the level of

Demand and Supply for the NZD has fluctuated. As the interest rates rose in US, there is a higher incentive to store money in US banks. This means that more NZ investors should have sent their money overseas to take advantage of the higher interest. This is because more money can be earnt annually from saving money in the US banks. As more money is sent for overseas to the US, there is an increase in the supply of NZD. Also, on the other hand, US investors with their money already in NZ banks should take it out of the NZ banks and take it back to the US to enjoy the higher interest. These changes can be modelled on an exchange rate graph:

As the OCR is increased in the US, the demand for NZD decreases from DNZD → DNZD₁. The Supply for the NZD increased from SNZD → SNZD₁. This resulted in the decrease in the Rate, also referred to as a depreciation of the NZD.

The depreciation of the NZD is beneficial for NZ exporters and bad for NZ importers. The depreciation is beneficial for exporters because

the exports are effectively cheaper to foreign buyers. They can buy more NZD for less of their own currency. NZ importers lose however, as they have less purchasing power. This is because it is effectively more expensive to buy imports. More NZD are needed to buy the same amount of a foreign currency. This effect is likely to be large as the US is weighted relatively high on the Trade Weighted Index. This change in exports and imports is good for NZ's current account. As exports become cheaper to foreigners are imports become more expensive for NZ importers, there shall be a positive change in the Net exports. Net Exports = $(X - M)$, $(X\uparrow)(M\downarrow)$ ∴ overall increase.

An appreciation on the other hand ~~net~~ should lead to an increase in imports and a decrease in exports. Imports are effectively cheaper, as more foreign currency can be bought with less NZD. Exporters are worse off as NZ exports become more expensive to foreign buyers. This results in a negative change in the Net exports ~~out the~~ as it experiences a decrease.

Overall, as a depreciation causes the Net Exports to increase, it will be the more favourable change in the exchange rate. As Net Exports increase, more revenue is gained from export reciepts then lost from import payments. Therefore Balance on

Goods shall increase as well as Balance on services.
The increase in both balance on goods and on
services, leads to an increase in the current account.
So, therefore, the depreciation of the NZD is better
for the current account than the appreciation
of the NZD.

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

QUESTION
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Write the question number(s) if applicable.

93402

Scholarship

Subject: Economics

Standard: 93402

Total score: 14

Q	Score	Marker commentary
1	05	On page 3, the candidate provided a sound explanation of elastic demand and supply in the case of ride shares, including an appropriate model for PED (but not PES). However, this would have been enhanced by better integration of the resource material. On page 5, the candidate produced an explanation of the impact of an increase in demand on CS and PS. Providing further details would have resulted in a more complete answer. On pages 5 and 6, the candidate provided a relatively simple explanation of PES and PED in the market for concerts. Again, this would have been enhanced by better integration of the resource material. The economic models for changes in CS and PS were acceptable but would have made for better economic analysis had the change in CS and PS after an increase in demand been shown on a single graph for each market. On pages 6 and 7, the candidate produced a relatively sophisticated explanation of the effect of a maximum price on each market, with models correctly reflecting the differing elasticities. The answer also included evaluation of the impact on allocative efficiency. This essay provides evidence towards a 5 rather than a 4 through the consistent quality of analysis. To gain a higher mark, greater sophistication and detail is needed when explaining and modelling the effect of an increase in demand on each market, with further integration of resource material.
2	05	The candidate defined negative externality correctly by comparing the PMB to SMB and synthesised this with their model through the comparisons of the prices (P_1 v P_2). The DWL was shaded incorrectly, which means a higher grade was not attainable as it has impacted analysis throughout the essay. Also, higher marks could have been awarded for integrating resource material here to integrate the example of

		negative externalities that are bring caused by the consumption of high emission vehicles (HEVs).

The candidate correctly identified that HEVs and LEVs are substitute goods, hence a policy on LEVs will impact the consumption of HEVs indirectly. The subsidy imposed on LEVs was correctly illustrated through the decrease in PMB on the HEV Market, through a decrease in demand of this substitute good. The DWL continued to be drawn incorrectly due to the original error. However, the analysis was correct as it explained that DWL will decrease through the intervention and the allocative efficiency will increase, relating it back to the question. The candidate could have labelled and commented on the new price as well as discussing quantity, to relate back to the fact that fewer HEV cars being consumed, hence less spillover costs to society.

The tax on the HEV Market is drawn correctly through a shift to the left of the MC curve. Price and quantity are also labelled correctly. The DWL continues to be shaded incorrectly, however again the commentary explains that the policy decreases it and improves allocative efficiency, relating it back to the question. Again, a higher grade could be achieved by analysing quantity and relating back to spillover costs being reduced to society from this policy imposition.

The candidate showed that both policies reduced the negative externalities of consumption somewhat. However, the candidate would have been given more credit had they explained why the externality was partially internalised.

The combination model illustrating both policies working together was good. It would be more accurate to have shown the original prices and quantities, as well as the new ones.

The candidate evaluated the short-term and long-term impacts on the market for HEVs of implementing these two policies and integrated resources well into this part of their essay. |
| 3 | 04 | Page 19 contains a valid definition of the current account, including balance of goods and balance of services. The candidate referred to the increase in inflows outweighing the increase in outflows but could have explained in more depth. Data was integrated from the resource to explain the increase in the current account deficit. Further factors could have been extracted from the resource, such as using examples and separately explaining the relative changes in imported and exported goods and services. This would have provided a more sophisticated explanation of the causes of the current account deficit.

Page 20 contains a comprehensive economic explanation of the impact on the New Zealand dollar of an increase in the United States interest rates. The candidate explained the |

reasons for the increase in supply at a sophisticated level, however they did not give a reason for the decrease in demand, although this was shown on the economic model.

The third bullet point asked for the combined impact of the increase in United States interest rates and the current account deficit, on the New Zealand dollar. The opportunity to provide an analysis of the further depreciation caused by the current account deficit was missed. Furthermore, a combined graph illustrating the multiple changes to demand and supply on the New Zealand exchange rate would have contributed towards a higher grade.

Page 21 contains a sophisticated analysis comparing the impact of a depreciation and an appreciation of the New Zealand dollar on the current account deficit. The candidate made a valid evaluation of which would be favourable, referring to both the balance of goods and the balance of services.

Overall, this is a high 4. A comprehensive economic analysis of the interrelationship between the current account and the exchange rate has been demonstrated. Evidence of sophisticated analysis is provided but the response is not complete. To achieve a 5 an analysis of either the impact of current account deficit on the exchange rate, or the combined impact of both scenarios would also be included. Alternatively, a more competent level of integration of the resource material could also have increased the grade to a scholarship level.