National Certificate of Educational Achievement
TAUMATA MĀTAURANGA Ā-MOTU KUA TAEA

Exemplar for Internal Assessment Resource

Economics Level 3

Resource title: Efficiency and Equity

This exemplar supports assessment against:

Achievement Standard 91402

Demonstrate understanding of government interventions to correct market failures

Date version published by   December 2012
Ministry of Education   To support internal assessment from 2013

	Grade Boundary: Low Excellence
1.	The student demonstrates a comprehensive understanding of government interventions to correct market failures, which is required for Excellence. The student's second market failure was on negative production externalities of commercial fishing, done to an Excellence level.

The student explained the market failure using the negative externality of consumption model; linked examples of externalities to explain how the MB differed from the MSB and therefore the private and social equilibriums differ, and explained why a deadweight loss occurred at private equilibrium.

Student explained how the tax affects price for consumers and producers and therefore their decision and allocative efficiency integrating the changes are shown on the model of tax leading to social equilibrium. The need for a tax is clearly identified, as is the impact on society and government using secondary sources of information. Refer to parts A.

Student included accurate graph of a ban leading to social equilibrium, but it was not integrated into the explanation.

How the ban would affect consumers and producers, P and MU and therefore their decision and allocative efficiency was explained in detail. Refer to parts B.

The student has compared the two policies in terms of their efficiency and equity and made a justified recommendation as to which policy would better correct the market failure. Refer to parts C.

A more secure Excellence would be attained if the second model of a ban was integrated into the justified recommendation. For example; *In the market a ban is shown as the altering of both the demand and supply curves to the left, showing a greater cost at the same quantity. There should also be a decrease in gradient, and this should be a dramatic movement, hopefully causing quantity demanded to effectively reach zero. The same goes for producers, now the producer must consider the consequences of producing verses the benefit of producing. Even if the ban of the production of cigarettes was legal while consumption was illegal, the dramatic decrease in quantity demanded would cause the amount produced to also decrease.* |

Cigarette Market Failure in New Zealand

Comparing the two policies and a final decision on overall best policy

(Student included accurate graph of tax leading to social equilibrium and explains how the tax affects price for consumers and producers and therefore their decision and allocative efficiency).

Tax Efficiency: Tax is the current policy used in New Zealand, with the first substantial tax put into place in 1985, with a 54% increase in price. The primary objectives of the tax are; 1. Lower quantity demanded for cigarettes. 2. Raise tax revenue for the government. The New Zealand cigarette tax uses these two objectives in combination to effectively lower the quantity consumed and hence the cost of the externalities. This is shown on the graph by the shaded area illustrating the gains to society of less being consumed. At the same time the government uses the tax revenue gained from the tax to cover the costs of cigarette consumption; the government is able to cover 70% of the estimated costs of cigarettes to society with this tax. (A)

Recently in New Zealand the government announced another 10% increase in the cigarette tax, in order to gain revenue. It is because of cigarettes addictiveness (inelasticity) that the government is able to raise the price and gain more revenue. This inelasticity also means that the incidence of tax is passed onto the consumer meaning they have a larger price increase so it is likely to affect quantity demanded more. At the same time the government uses some of the tax revenue to subsidise better alternatives to cigarettes, such as anti-smoking programs. By subsidising these programs society is able to reduce cigarette consumption more. Cigarette tax accounts for 2% of total tax revenue every year in New Zealand and it can be used by the government to over-all benefit society, even if in unrelated sectors, such as infrastructure. Even though some of the money generated by the tax is put into things other than directly lowering quantity consumed, all government spending can be seen as beneficial to society. This extra spending can be seen as transferring the losses from cigarette externalities into equally positive features to society that can 'make up' from the losses (in a perfect tax).

The current tax however is not perfect. Tax revenue only accounts for 70% of the estimated externalities. Tax is seen as only an intermediate stage to the over-all goal of zero consumption and zero externalities. This is done because of the special nature of cigarettes that the effects can last a person's life, and will mostly be seen in later life, i.e.: a life-long smoker may not cost the government much until they die early in later life, even after 20 or so years of smoking. It is said that the effects of cigarette consumption can last for as long as 75 years. (A)
The government accounts for this by lowering quantity over time, with increasing tax revenue-tax in New Zealand is planned to increase by 10% every year. By doing this, tax revenue can be maximised and costs should be hopefully mostly covered for by the time that the last person dies from smoking. This idea is why young people are so strongly identified in anti-smoking programs- one new smoker means 75 years of costs to society.

(Equity was also discussed).

(Student included a graph of a ban leading to social equilibrium).

Ban efficiency: Currently there are no countries that have completely illegalised smoking. Banning is a very extreme policy and the banning of a widely used product, such as cigarettes usually has many unforeseen consequences for society. An example of this would be the alcohol prohibition in America from 1919 to 1933, this was widely exploited, where black-market alcohol was available and gang activity increased in the illegal production and distribution of alcohol.

A ban's purpose is to reduce quantity produced and demand to zero, effectively eliminating the market. This is done simply by making the consumption and production of cigarettes illegal. This does two things; 1-Makes cigarettes less accessible; 2-The consumer now have to consider the consequences of smoking verses the benefit of doing it. Because there would be fines, or even imprisonment for smoking, this affects the marginal benefit, by either making it so low that it is not possible to purchase it at an equal price, or it is negative, where the over-all benefit of smoking is less than the consequences of doing it. (P>MU for most, if not all prices). Although a ban will eliminate most consumers and producers, due to the new added consequences of smoking, a minority will still, taking into account the consequences, demand and be willing to produce the illegal substance. This creates a new, Black-Market. (B)
A ban works by lowering quantity demanded and the amount produced drastically, and in theory reducing most of the externalities caused by the consumption of the cigarettes. A ban is a much more drastic policy than the current one, tax. In terms of reducing or eliminating the market, a ban is much more effective than a tax, it raises the cost drastically for the consumer and therefore quantity demanded will also drastically reduce in a small period of time (P<=MU). The problem with cigarettes however is that externalities will continue to cost the government for up to 75 years after the longest living consumer of cigarettes dies. This is due to decreased productivity due to lower life-expectancy and healthcare costs of the smoker being especially prevalent in later life. A ban will therefore not account for this prolonged cost to the government due to the loss of revenue from the absence of the currently used tax policy.

A ban however will mostly reduce the instant effects of smoking, due to most of the more severe effects of smoking not subsiding until much later in life, and with costs to the government up until this point a ban will result in a dead-weight loss. This deadweight loss will occur as not all of the losses of surpluses will be transferred to society when the

ban is first implemented, this will mean that the banned market will not be allocatively efficient. It will take up to 75 years for the externalities of cigarettes to stop costing the government with the dead-weight loss being eliminated. Extra benefits to society will occur including a general increased happiness and productivity as well as possible tourism due to New Zealand's positive image. Long term smokers may have trouble overcome their addiction, this could possibly lead to clinical treatment on a small scale with a cost to the government. There would also probably be an increase in crime rates, especially domestic disputes in the first year or two which would also come at a cost to the government, but this would only be temporary. A more serious negative effect which may be seen would be the increase in gang activity due to a black market of tobacco, policing increased gang activity would come at a relatively large price to police nationwide, especially since there is such a large market for cigarettes. Gang activity could also come at a minor human cost as well as decreased tourism for New Zealand. Overall, costs of the ban would be great initially, with decreased costs over time. Some costs may linger and would have to be taken into account when considering the cost/benefit of the policy. *(Equity was also discussed).*

Tax and ban both have their positives and negatives. They both contain efficiencies and inefficiency's. And both have features that could be seen as equitable and perhaps not as equitable. The government must consider both the equity and efficiency of both the policies when deciding on a policy to use. The other main feature that the government must look at when deciding on a policy is the efficiency of the policy. That is how well it covers the cost of the externality in both the long and short run. *(Equity was compared and discussed).*

Efficiency must be considered as well as equity when deciding in an over-all policy. Both policies worked very differently in ways of reducing and covering the externalities caused by the consumption of cigarettes. The tax worked by reducing the costs of cigarettes over a long period of time, while using tax revenue to cover the current costs of cigarette consumption. Some of this tax revenue was used to subsidise programs to reduce smoking as well as using the remaining tax revenue to benefit society. Tax has been so far moderately successful is covering the costs caused by consumption as well as reducing quantity demanded by the market. Even though the revenue is only a secondary effect of the tax, second to lowering consumption, it is still an important part of a long term plan such as tax to cover as much of the losses while quantity consumed is lowered over a period of time.

Due to the elasticity of cigarettes, consumption of cigarettes falls very slowly relative to the price. Consumption has decreased very little from 2003 onwards, compared to larger increases from the 70's and 80's. This slow drop represents to percentage of people whose elasticity of cigarette consumption is very low, and will probably consume cigarettes until they simply cannot afford to live while still buying cigarettes. These consumers represent the problem area in the efficiency of the tax, tax does not reduce quantity demanded as well as a ban would, this is because it still leaves in a choice for consumption, instead of eliminating that choice. It makes up for most of this inefficiency with the tax revenue gained though.

In some ways a ban is far more efficient than a tax; it instantly removes most of the consumption and the instant externalities of cigarette consumption. However the primary costs to the government of cigarette consumption are not short-term, they are long term. These costs include reduced productivity due to early loss of life, including long-term health care. Also, the ban creates its own spill-over effects, mostly including increased crime rates and gang, or illegal activity. These spill-over effects add extra cost to society with increased police costs as well as family support services and addiction services, for people going through withdrawal. Although the ban reduces consumption consumed, it does not cover for the externalities, this means that a large deadweight loss will occur, even if a social quantity has been reached, social equilibrium has not due to costs to society being very similar to before.

Overall, in terms of efficiency, both polices are not perfectly efficient. Tax doesn't reduce quantity demanded by as much as the ban and over a longer period of time as well. However tax accounts for the externalities using tax revenue, and it doesn't create extra substantial externalities as well as the current ones that the ban could possibly create. Due to the inefficiencies of the two policies, neither of them will fully reach social equilibrium and both will result in a dead-weight loss. As the dead weight loss represents a lack of allocatively efficiency, and therefore the wasted resources, and then over-all the ban is less efficient, as it will produce the biggest deadweight loss. This is because of the 70% of the externalities in the tax are covered by from the revenue gained. The ban does not cover these, nor does it take into account for how long the externalities last for, the ban also has a strong possibility to produce extra costs to society. The tax is the most efficient policy. Taking into account efficiency, and the relative fairness of the two policies, tax is clearly the best policy option. Not only is it fairer, affecting only the smokers, with the possible moral issues being minor compared to the spill-over effects of the ban. It is also clearly the most efficient policy covering a lot more of the losses from the externalities than the ban. Even though the ban reduces quantity consumed, it is not practical and does not cover costs in a reasonable time period. Even though a social quantity will be reached, we must remember that the reason we want quantity reduced is because of the externalities, as the externalities of cigarette consumption will affect society for up to 75 years later, then the this instant zero consumption is now what society wants. Not to mention the other negative effects on society mentioned above.
(Student used footnotes and a bibliography).

|	Grade Boundary: High Merit
2.	The student demonstrates an in-depth understanding of government interventions to correct market failures, which is required for Merit. The student's second market failure was done on public goods to a Merit Level. The student has explained the fatty foods market failure in detail using a MC/MB and MSB model to support the explanation and secondary sources of information were also used. Refer to part D. The fat tax policy was explained in detail using secondary sources of information in terms of the policy's efficiency and equity; the MC +Tax/MSB model was also used to support the explanation, but the tax revenue for the government and where it could be spent was not explained here, but was mentioned in the conclusion. Refer to part E. The second policy to remove GST off fruit and vegetables was explained in detail using secondary sources of information in terms of the policy's efficiency and equity; the MC/MSB model was also used to support the explanation, but the dead-weight loss was not explained in terms of changes to allocative efficiency. Refer to part F. The conclusion provided some additional information for the report and a brief explanation of the more efficient or equitable government intervention to use in order to correct the market failure. Refer to part G. To reach Excellence, the student needs to address the points outlined above, and integrate a supporting model(s) into the recommendation, and the recommendation requires more justification.

Market Failure - Fatty Foods

Obesity is a big problem for New Zealanders. Takeaways and other fatty foods are seen in society as a cheap and easy option. One in three NZ Adults are overweight and 1 in 5 is obese. The costs of obesity to New Zealand are estimated at $300 million a year. Obesity leads to many different illnesses like diabetes and health problems, and death because of these.

Fatty Foods has many spillover costs to people and the country *(condensed).* Some of these are…

- Healthcare costs for those with illnesses because of obesity
- Paying people the benefit because they can't work because of obesity and illnesses related to obesity
- Death - loss of potential productivity and the mental states of family/friends
- Low self-esteem/negative mental state because of obesity, and counseling costs for these
- Taxpayers money being spent on the health costs of obesity, so the money can't be used in other areas

Because it's a negative externality, society wants less to be consumed than Qp. If quantity consumed it shifted to Qs (social equilibrium), society gains the shaded area because this is the deadweight loss that occurs at the private market. Society gains more than the consumer and producer's surplus decreases, so total gains increases, so social equilibrium is allocatively efficient and the private market isn't. The private market gets it wrong and it's not allocatively efficient because the private market doesn't consider the impacts on society before consuming fatty foods. By reducing the quantity consumed, society gets the benefits of people not consuming the fatty foods. Ⓓ

Policy 1 - Fat Tax
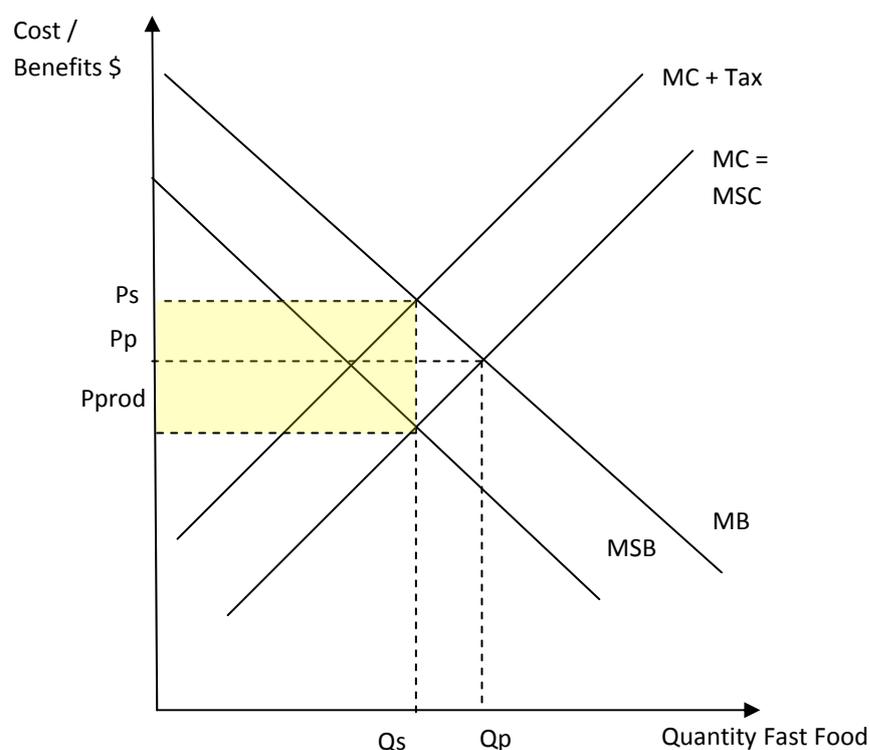
One potential policy that the government is talking about is putting an extra tax on fatty foods. This would mean that foods with a high fat content would be more expensive than healthier foods, which would mean less fatty food is brought and consumed if it works properly. For example, in Denmark, their tax is 16 krone per kilo of saturated fat on any food more than 2.3% saturated fat… *(condensed)*

Effectiveness and efficiency: Consumers would be discouraged from buying fatty foods because of the extra cost as the tax raises the price from Pp to ps, so the impact on society is reduced to a desirable point Qs. Over a long period of time it could change peoples' eating habits and change their view on food. People wouldn't want to pay a higher price for fatty foods if they can't afford it so they would be forced to buy the cheaper food, which would be Ⓔ

healthier. It would be more effective on reducing the consumption of fatty foods by lower income families because they would buy what is cheaper, and currently that is generally the unhealthier food choice, but by making putting the tax on, healthy foods would be the cheaper option. Because of these reasons, this policy is effective and efficient because the decreased consumption of fatty foods shifts the market to Qs, which is the socially desirable equilibrium. It has also been shown from early research in countries with a fat tax, that it does have an effect on the consumption of fatty foods. It may not be effective because for some families where money isn't an issue, it would have no effect on what food they buy, because they don't take how much each product costs into consideration before buying it.

Equity: This policy is fair because it puts the same tax on everyone, so it doesn't favour anyone. However, it isn't fair because low income families who already find food expensive, and it could make food even more expensive for them, so they may not be able to afford enough food. People could find that they don't have as much choice of food, and that the government is restricting their right to choose their own food. Some

research shows that it would take a 20% tax to make a difference in reducing obesity, and this could be too much and affect families negatively.

Cost / Benefits

MC = MSC

Pp

MB

MSB = MB1

Qs   Qp   Quantity Fast Food
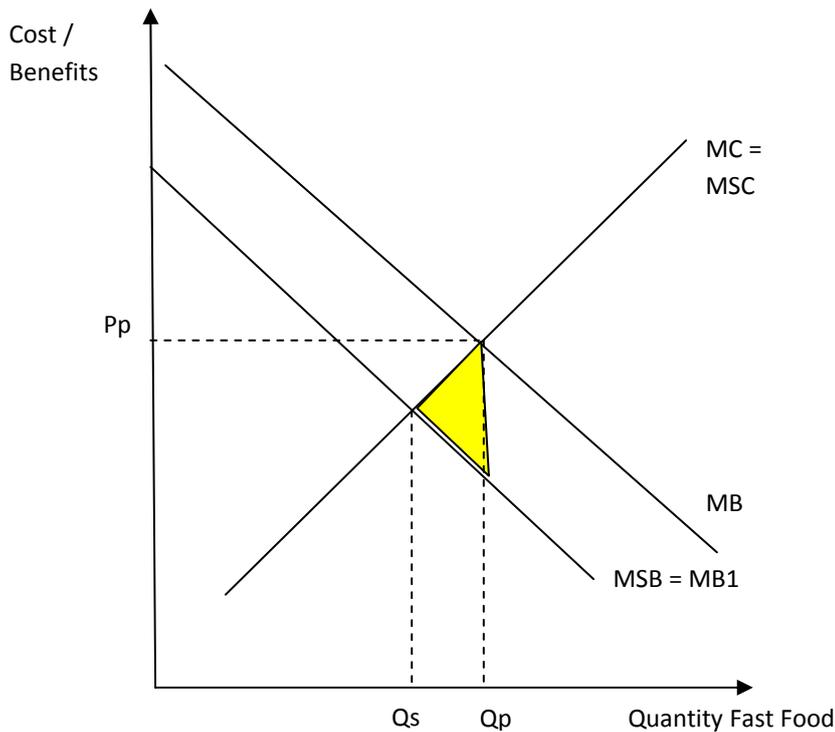
Policy 2 - No GST on Fruit and Vegetables

The second policy is removing GST off fresh fruit and vegetables. This means the cost of these products would be reduced by 15%, and the government wouldn't receive any tax on them, so the government loses income. This could persuade people to buy these products because they are cheaper, and may be cheaper than what they currently buy… *(condensed)*
Effectiveness and efficiency: Lower income families, who would normally choose unhealthy foods, may be more likely to buy fruit and vegetables because they are cheaper, so they save money. The fact that fruit and vegetables are healthier could also influence their decision, not just the cost. Studies have been done that show if just one action was made that this is the most effective, and could lead kiwis to buy half a kilo more per household each week. Because of these reasons, this policy is effective and efficient because it persuades people to buy more fresh fruit and vegetables, so it shifts the market to Qs, the socially desirable level by causing the demand for fast food to fall as people have switched to the relatively cheaper substitute of fresh fruit and vegetables. It may not be effective because it may not have an effect on high income families, where price doesn't affect their food decisions. Prices may also creep back up to what they were, so supermarkets get the benefit not the consumers, and the removal of the GST would be pointless.

(F)

Equity: This policy is fair because it gives the same subsidy to everyone, so it doesn't favour anybody. It also helps lower income families because if they chose to buy the fruit and vegetables, it could make up for the fact that GST increased last year, so the GST raise impacts families less.

Conclusion

Both policies would have an impact on the amount of fatty food consumed, therefore reducing the spillover costs and impacts on society. By introducing a fat tax, it would give the government more money, which they could put back into this health issue or other areas, whereas removing GST off fruit and vegetables would reduce the amount of money the government gets, so it could have a negative effect on the issue or other areas where that money would have been spent.

I think a combination of both policies (remove GST on fruit and vegetables and add a fat tax) is best because studies have shown that a combination of the two is most effective. The fat tax discourages consumers from buying the fatty foods, and the cheaper fresh fruit and vegetables encourage consumers to buy them. For people who still buy the foods affected by the fat tax, the extra tax they pay could make up for the lost income from the government not receiving GST on the fruit and vegetables, so it makes sense for the government to do them together because it could have a smaller impact on their overall income.

(G)

	Grade Boundary: Low Merit
3.	The student demonstrates an in-depth understanding of government interventions to correct market failures, which is required for Merit. The student's second market failure was done on the positive production externalities of community law to a Merit Level. The student has explained the gambling market failure in terms of the cost to society, using secondary sources of information, but has not explained how the market failure arises. The MC/MB and MSB model was used to partly support the explanation. Refer to parts H. The policy to reduce the number of pokie machines has been explained in detail, in terms of its efficiency or equity, and a model used to support this explanation. Refer to parts I. The second policy of a community voting system was not explained in detail, and the information used to support the explanation was more in terms of equity than efficiency. A model was used to show the changes (Svote) but has not been well linked into the explanation. Refer to part J. Comparing the two policies section provides more evidence of explanations in terms of efficiency or equity for both interventions. Refer to part K. A more secure Merit would be attained by addressing the points above in relation to policy 2, and explaining how gambling causes a market failure in the first place and this explanation supported by the model. For example; *Because it is a negative consumption externality the social equilibrium should be less than the private equilibrium Qp. The market fails as too much is consumed (Qp instead of Qs) as the person gambling does not consider the impacts of their gambling on others. The gain society gets from shifting to Qs (not having shaded shape in Graph 1) outweighs the lost consumer and producer surplus of the shift.*

Gambling in New Zealand

There are many issues surrounding gambling most of them are negative, however some of them positive. The definitions for gambling are: 1) problem gambling refers to gambling that significantly interferes with a person's basic occupational, inter-personal and financial functioning. 2) Pathological gambling is one of the most severe forms and is classified as a mental disorder with similarities to drug abuse including features of tolerance, withdrawal, diminished control and relinquishing of important activities.

It starts, there are 1421 gambling venues and 6 casinos in New Zealand, there are 18,309 pokie machines that are non-casino machines, 2818 pokie machines in the New Zealand casinos and 210 s tables in those 6 casinos. Overall in New Zealand there are 21,127 pokie machines. There is 1 machine for every 206 people in New Zealand. New Zealand loses an estimated $5.2million to gambling every day, that's an estimated $1.9billion a year.

The impacts of 1 person gambling are huge. If they get addicted they will gamble every day, they will then start to perform poorly at work resulting in loss of their job, that affects their personal life because they become stressed, they get anxiety or depressed (sometimes leads to death) they won't be able to provide for their family causing poor health, they will start lying to their family and friends about small things causing relationship breakdowns, they can get violent toward people (especially family or friends that question them), leading to neglect of their family, they get loans from banks and then can't pay them back, leading to bankruptcy, theft and if court then JAIL. After all that the community picks up all of the costs out of their own pocket. Some communities that pick up the costs of others breakdown because they don't have the money to cover what happened. That one person who started gambling to see what it was like lost everything they ever cared about!!

Some communities get positives out of people gambling. In the Waikato-based Grassroots the community legally gets 37.12 per cent of gambling proceeds (as a minimum), and they cannot return more than 16 per cent to venues. So the communities often get money back after having one or two gambling venues in the city however in able to get the money back they have to have people gambling at those venues.

H

Stats show that:

- Māori and Pacific adults are3.5 times more likely to have gambling problems
- Youth and young adults have high rates of problem gambling
- Men are about twice as likely as woman to have problem and pathological gambling
- Substance abusers have a 2-10 fold increased risk for problem gambling
- Problem gambling is 2-8 times more common in individuals with major depression, anxiety, and personal disorders.

Graph 1

Market for Pokie machines
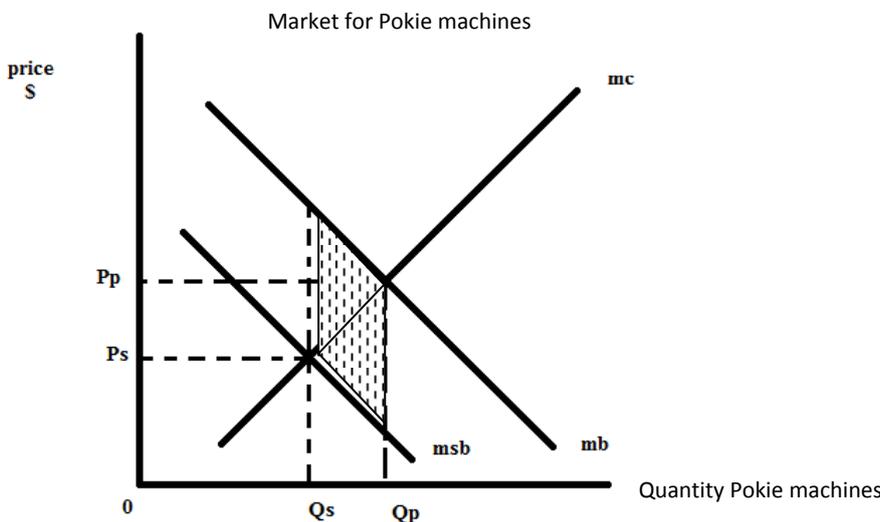
Qs = Social Equilibrium   Marginal social cost to society of being at Qp instead of Qs

H

POLICY 1) The Government is looking at having fewer Pokie machines in New Zealand, despite the government making a deal with Sky City Casino.

This would work by removing gaming machines from casinos and other venues to reduce the amount of opportunity to gamble. It would decrease the amount of gambling done because there is less opportunity to get a Pokie machine and the price of each leaver pull would increase. The supplier would be affected because they can only supply less Pokie machines around New Zealand compared to the 18,309 Pokie machines in New Zealand at the moment. The

I

trouble with this is where to remove the machines from. Do you remove 3-10 from each venue in New Zealand more in some less in others? This could work because the people gambling wouldn't be able to spend as much time gambling as they could previously because they would spend more money each time they 'pull the leaver'. So they will run out of money quicker and won't be able to return as often, or they would have no available funds for longer. This would work because there will be a massive drop in pokie machines in New Zealand and therefore there would be less of an opportunity to gamble, however with the price increase that accompanies this policy there will still be availability of the machines because of the price of each gamble. <mark>This would be fair because the problem gamblers would need to play more and get less time however it is not fair on those who are visiting New Zealand and want to do a little bit of gambling.</mark>

(I)

Market for Pokie machines
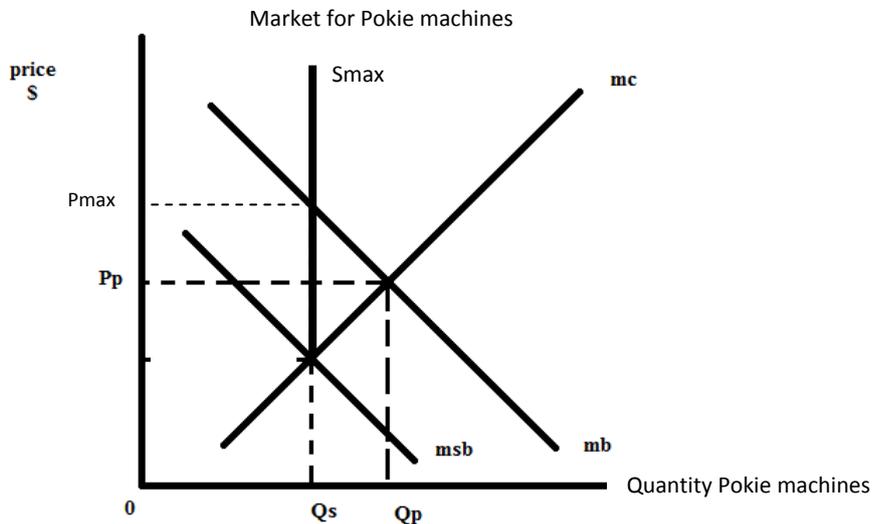
This policy affects the producer / supplier because they can't supply more than Smax throughout NZ, therefore supply curve goes straight up at Qs and price rises to Pmax. The social equilibrium is consumed as it cannot go beyond that. **POLICY 2)** the community having a say whether they have gambling machines in their town/city.

(I)

Market for Pokie machines
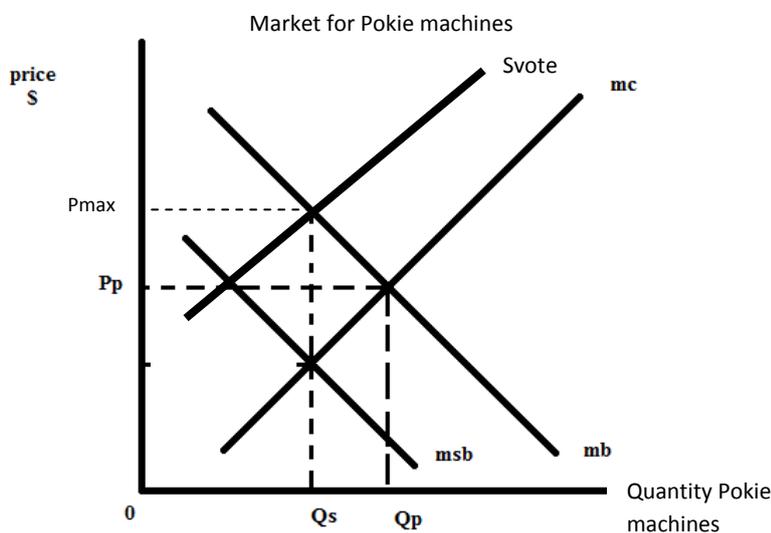
<mark>The overall supply of pokie machines will fall to Svote as communities choose to reduce or ban machines so Qs is consumed and we are at social equilibrium.</mark> This would work like a vote. There would be a piece of paper and you tick YES to having gaming machines or NO. The one with the most votes is what happens. This has the possibility of working well, this happened in Victory Square, Nelson. The community knew that gambling was affecting people and their families, so they had a community vote and the majority vote was to get rid of all Pokie machines in the Victory Square area. There are no longer Pokie machines in the Victory area. <mark>This policy would affect the producer because they are supplying machines to a certain area and they want to remove them, so they lose any profit they would make from that area. This would decrease the amount of Pokie machines available, and increase the distance required to travel to one. This would increase the price of gambling because you would have to spend money or time on transport</mark>

(J)

(J)

This would affect the amount of people who gamble in a community because they would have to spend more on transport and less on their addiction. I think this would be fair because they would start to realise they need money for other things. If they forget then they can't get home the way they had planned on (public transport). This policy would work because it would be up to the community on whether they want them in there or not. The troubles with this policy is being able to define a community e.g. Victory Square, Port hills. And then the people in the community knowing they are able to vote. <mark>But it is fair because the gamblers in that community either get help or stop gambling or they will need to pay more money to go to another area and do the same thing. However it is not fair on those communities that have gambling machines and those places give back to the community, by giving money to sporting clubs, or other things.</mark>

(J)

Comparing the two policies:

- Policy one is fair because it affects those who gamble more than the community, it is easy to set up and with the raise in price you can have this law policed.
- Policy two affects both the community and the people gambling, the profits won't go towards helping the community, it's harder to arrange because you need to be able to say where the community barrier is and then let people know they are able to vote. But with it being in a community they can have it policed by doing it them-self.
- Policy two it affects the communities, if the gambling venue is putting money back into the community they could lose that money. Being able to say where a community is (where the edge of it is) is really hard, and then getting everyone know they are having a vote on it, organising when, where, what the options are for the vote is a lot of hard work.

(K)

- The better policy is policy one because it only affects a handful of people, it won't be hard to organise. There would be a bigger decrease in gambling machines and therefore less problem gamblers throughout New Zealand, the price would increase therefore putting others off trying the Pokie machines.
- For both of the policies the supply graph will be vertical because they are unable to supply any Pokie machines passed a certain number, with policy one the total number of Pokie machines in New Zealand is selected, whereas with policy two the community votes if they want the machines gone or to just get rid of a few. (see graphs for more understanding)

Bibliography:
http://www.pgfnz.org.nz/Uploads/Library/05SocialImpacts.pdf
http://www.pgfnz.org.nz/Uploads/Library/01NZGam.pdf
http://www.pgfnz.org.nz/Uploads/Library/02ProbGam.pdf
http://www.pgfnz.org.nz/Uploads/Library/03Youth.pdf
http://www.pgfnz.org.nz/Uploads/Library/04OnlineGambling.pdf
http://www.pgfnz.org.nz/Uploads/Library/06Self-exclusion.pdf

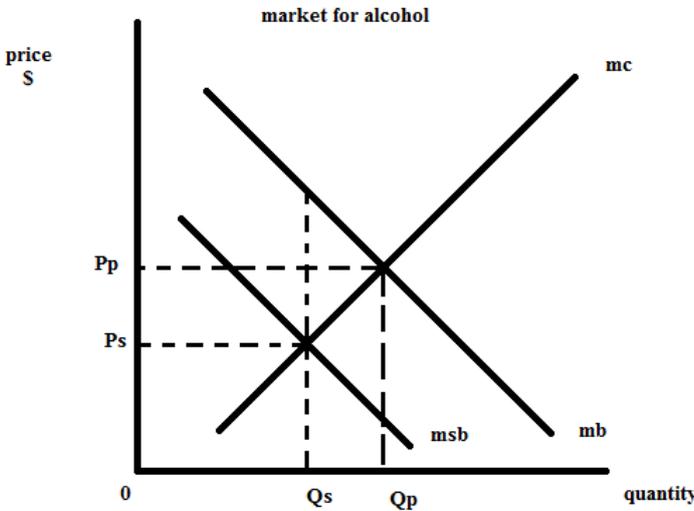|	Grade Boundary: High Achieved
4.	The student demonstrates understanding of government interventions to correct market failures, which is required for Achieved. The student's second market failure was done on public goods to a High Achieved Level.
	The student has explained the market failure (alcohol) in detail in the report, and has used information and a model to support this explanation. Refer to part L.
	The tax policy was explained and supported with a model, and explained in terms of efficiency or equity. Refer to part M.
	The government intervention of increasing the age to drink alcohol was explained, but not in detail, and illustrated using a model. Refer to part N.
	The conclusion largely repeated the same evidence of explanations in terms of efficiency or equity for both interventions. Refer to part O.
	Detailed explanations are required for Merit. Both government interventions would need more discussion and specific information about the efficiency or equity of these options linking it to the secondary sources of information found.

The market for alcohol fails as private consumers consume more than society wants them to consume. The excessive consumption on alcohol has negative effects on the community for example; Injuries, damage done to 3rd parties, alcohol related motor accidents, costs of law enforcement and crime prevention.

Lost output from premature death and illnesses, of which some are 100 % attributable to alcohol use, whilst others are only partly attributable. Alcohol is responsible for nearly 100 conditions, including impotence, psoriasis and heart disease. Excess use of hospital resources for alcohol related incidents.

market for alcohol

price
$

Pp

Ps

0   Qs   Qp

mc

msb   mb

quantity

L

Lower productivity in the workplace, loss of productive efficiency these externalities result in costs to the community rather than costs to the consumer of the alcohol which makes the consumption of alcohol a negative consumption externality. Since it is a negative consumption externality the Marginal Social Benefit is less than the private marginal benefit (MSB = MB – marginal social costs) and society wants less consumed (Qs) as it has an external cost to society. But the actual quantity consumed is Qp as the consumers do not consider the effects of their consumption on society, so the market fails.

Policy1: Tax on alcohol percentage in alcoholic beverages. A tax on the alcohol content of alcoholic beverages would increase the price of the drinks from Pb to Pa, which would decrease the quantity demand for alcohol from Qb (quantity before tax) to Qa (quantity after tax) as consumers are priced out of the market bringing the amount consumed closer to social equilibrium.

Alcohol externalitie with a tax

Price
$

Pa

Pb

0   Qa   Qb

S tax   S

D

Quantity

M

The tax would be efficient as it would be quick and easy to implement. It would be effective at stopping people from causing externalities from alcohol as the alcohol would cost more pricing some of the people who cause the externalities out of the market.
The tax would be unfair to people who don't drink excessively and cause these externalities because their alcohol will also cost more, so people who drink moderately and responsibly will be punished by this tax as well.
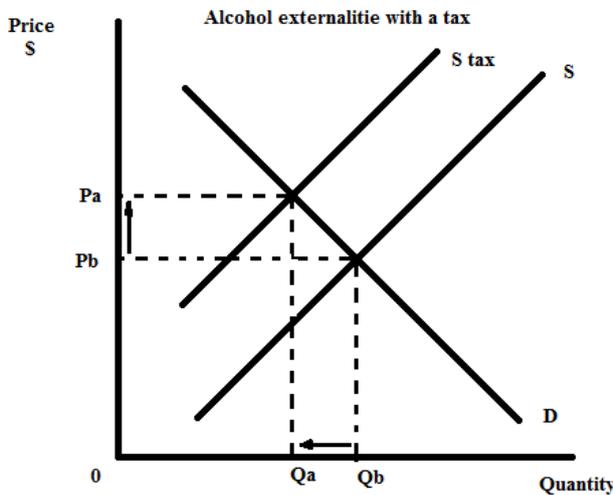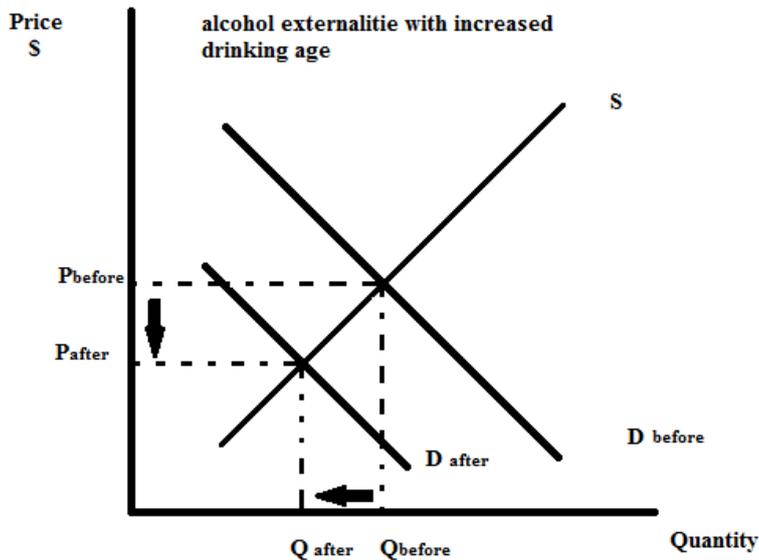
Policy2: Increase the age to purchase alcohol from 18 to 20. Increasing the age to purchase alcohol from 18-20 would decrease the quantity demanded for alcohol from (Q before) to (Q after) as less is consumed, since people under the age of 20 can no longer purchase alcohol. As there is now less quantity demanded the price of alcohol would drop as the sellers of the alcohol would decrease the price to get rid of excess stock.

Increasing the purchase age would not be very effective at stopping people over the age of 20 from excessively consuming alcohol. However it will slightly decrease the amount of 18-20 year olds from causing externalities from drinking, but most of them will still be able to get alcohol from people who are over the age of 20.

This policy is unfair on people between 18 and 20 who can purchase alcohol now but will not be able to if this policy is used as it will be taking something away from them when they might not even be the ones causing these externalities. Also this policy doesn't have any effect on people over the age of 20 which is unfair because it's not just 18-20 year olds causing these externalities.

N

Price $

alcohol externalitie with increased drinking age

Plot labels: S, D before, D after, Pbefore, Pafter, Q after, Qbefore, Quantity

Conclusion:

I believe the tax on the alcohol content of drinks would be a more effective policy to use as it targets everyone who causes the externalities and will most likely decrease the externalities caused by alcohol consumption more than increasing the age to purchase alcohol to 20, I think it will decrease it more because increasing the age only stops 18-20 year olds from causing some of these externalities, where the tax will decrease the amount of externalities caused by people as it effects everyone who purchases alcohol.

I find both policies to be unfair but I think the fairer of the two is increasing the purchase age of alcohol mainly because it effects less people and the people it effects are the ones who do cause some of the externalities as some of them don't drink responsibly and cause externalities. But with the tax it affects everyone who consumes alcohol so it will affect a lot more people who don't cause these externalities than increasing the purchasing age would.

I think the tax on alcohol is the better policy because it will be more effective in decreasing the externalities caused by alcohol than the increase purchasing age, and I think that effectiveness is more important than fairness when trying to decrease the negative externalities from alcohol consumption.

Sources:

http://tutor2u.net/economics/revision-notes/as-marketfailure-negative-externalities.html
http://www.eastonbh.ac.nz/?p=735
http://www.politics.org.nz/webapps/cid/23106/44861/vote/vote-debate.html?questid=226

	Grade Boundary: Low Achieved
5.	The student demonstrates understanding of government interventions to correct market failures, which is required for Achieved. The student's second market failure was done on public goods to an Achieved level. The student has explained the market failure (dental care) in the report, supported by a survey they completed, and presented a model to illustrate the market failure, but the graph has only been briefly mentioned in the explanation. Refer to parts P. The government intervention of fluoridation of water supplies has been explained in terms of equity, using secondary sources of information; a model presented and public goods discussed, but how this relates to the graph is not clearly explained. Refer to parts Q. The subsidy policy was explained and supported with secondary sources of information and a model, and explained in terms of equity. Refer to parts R. A more secure Achieved would be attained if the graphs presented were better explained in relation to the government interventions.

Price

P1

P

MC = MSC

MSB

MB

Q   Q1   Quantity
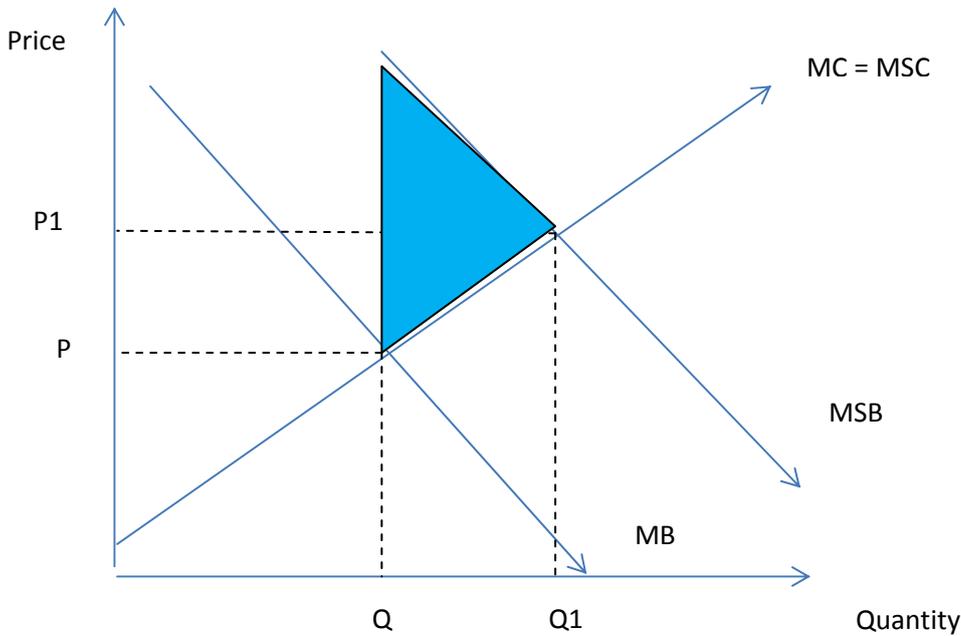
The market fails on dental care because of the excess supply when the free market (S+D) fails to achieve efficiency, despite being at equilibrium. The market may fail due to externalities, externalities occur when the benefits or cost of consuming/ producing goes beyond the consumer/ producer. In New Zealand there is currently basic dental available free for those under the age of 18. However with the price set at zero currently only 50% of those allegeable are taking advantage of the benefit and going to the dentist. In the 20 mixed aged surveys I completed this statistic was reinforced when 40% said they do not go to the dentist

(P)

every year. A main reason was because of the accessibility, some people cannot gain access to a dental facility, and another reason is because of the availability of getting appointments, 44% of adults of adults list the reason for not going to the dentist is not because they don't want to, but because they simply cannot afford the cost. This makes the market fail because the price is set to high which makes the quantity demanded decrease. *" Dental Care is too expensive in New Zealand". --- xxxxx xxxxx He asked his son xxxxx to remove his tooth with a pair of pliers because he could not afford to see a dentist.* The shaded area is the benefits society is missing out on with the benefits that dental care can bring to society.

(P)

Policy 1: Fluoridation of water supplies. If price is imposed then deadweight loss ▲ occurs, at a lower price the

PRICE ($)

FEE

PS

MC

MB

QS   QUANTITY

quantity demanded increases. This will have a positive effect on society, therefore they want more produced for them to consume. Public Good- Non-excludable by price- you can't stop non payers from gaining the benefit. Non-Rival policy means once it's provided for one person then they are providing it for everyone. The chemical fluoride will be added to local water supplies to help prevent the rising number of cavity's and dental problems in the population. By adding fluoride into the water it will help make tooth enamel stronger and more resistant to the acid producing
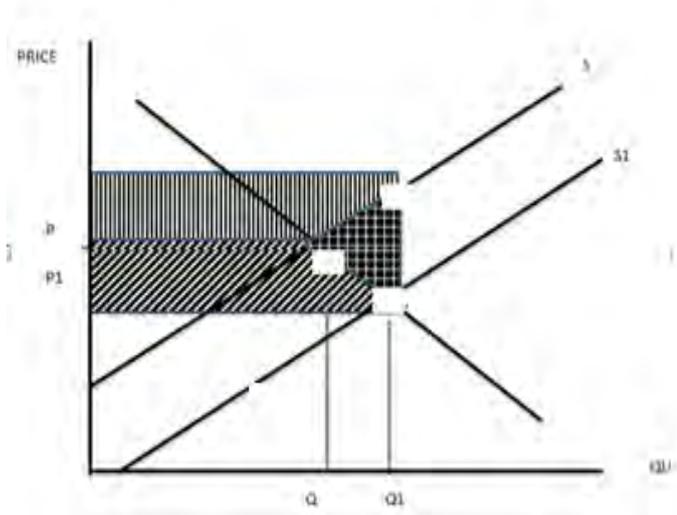
(Q)
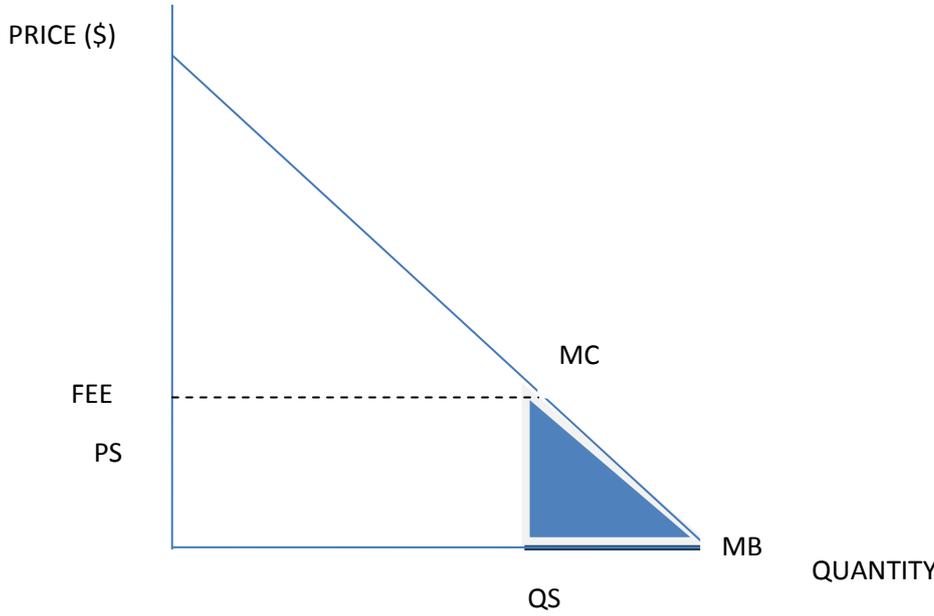
bacteria that creates tooth cavities. In the long term this policy can help make teeth stronger to help reduce cavities and the need to have free dental clinics, services or subsidy's to deal with things such as fillings. Studies show that the fluoridation of drinking water has led to a reduction of up to 60% in cavities during childhood.

The only known side effect of fluoridation in water is Dental Fluorosis. Dental fluorosis is the appearance of tiny white streaks on the teeth, the effect of too much fluoride in drinking water or by swallowing tooth paste for an extended period of time. There has been an accusation linking water fluoridation to cancer but there have been not been scientifically proven. Fluoridation of water supplies would be efficient because of the inexpensive cost to the local communities who will be benefiting from it helping them reduce cavities. With less dental prone diseases in society in the long run the government/council would not have to spend money on dental procedures, this would mean it could

be put into something else benefiting the community. <mark>The equity of this policy would be high because it does not exclude anyone depending on their income, group or part of society from having the benefits.</mark> It is also accessible to get to as it is in your house, you do not have to find your way anywhere to receive it, and this enabled high levels of consumption to take place. An issue of the free dental care for those under 18 was getting access to the facility to receive treatment and gain benefits. The financing of the fluoridation will come from the towns/cities local council or by government intervention. This would be so the prices of rates, water or taxes do not have to increase, at the expense of the public. For this policy to work there will have to be an increase in supply of fluoride that can be produced effectively and cost efficient, in order to be sustainable. With water supply's having fluoride added this will increase the quantity demanded, which may cause the price to increase. The efficiency of this policy is shown in Australia where all states apart from one tried fluoride in the water supply and overall the state which did not have fluoride had worse results in dental care.

Policy 2: Subsidise Dental procedures

<mark>This graph shows that Society wants more consumed, at a lower price. Dental Care is a gain to society and would like the extra benefits, by internalising the externality. With a dental subsidy the quantity increases from Q to Q1 with more being consumed the production increases to a higher price. The subsidy will increase the price per unit (dental procedure) received by a producer to cover their cost. So they will supply more because of the benefits they will be receiving. In cases of large positive consumption externalities or production /consumption externalities' like health the government may choose to intervene and become the provider to ensure the right quantity is produced OR to ensure the right price is set to get the right consumption.</mark> Each year those over the age of 20 will be treated to one subsidised dental procedure per year, this procedure may include; a white filling, tooth

out procedure, or root canal. The subsidy will exclude cosmetic procedures such as; teeth whitening, caps/veneers. This subsidy should encourage those who are willing and want to go to the dentist to go and get there treatment at a discounted price. It is to make dental care affordable and not too expensive that it will stop you going and neglecting health. This subsidy should prevent having to open free clinics nationally and having to fund the equipment and employment. The financing of the subsidy would come from advertising 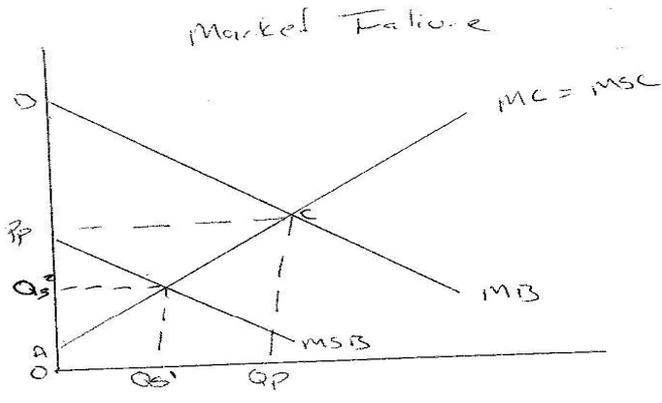and sponsorships; this would work when you are in a waiting room there would be posters, brochures videos or photos advertising business/ companies. This would benefit those such as Colgate, MacLean's, Colgate or Oral B, since they are competitors with their toothpaste, toothbrushes, mouth wash and dental floss. The items that are necessities to the majority of the population that is relevant to the dental system. For this policy to work there will have to be an increase in production. This would be in terms of getting the dentists to agree to do discounted dental work, having extra money for more equipment and possibly more staff to accommodate the increased quantity of those now seeking dental care. For the dentist to agree to this term they may be accommodated in some way, this could be an amount of money to put towards buying this equipment or to update the facility. <mark>This policy's equity can be measured in those who want to go to the dentist can now go without cost being a big barrier.</mark> However, it may still restrict people on lower incomes who do not see dental care as a necessity but more of a luxury good. Employment opportunities will be available in dentistry positions but money would have to go into training and loans may need to be taken out. Without the pain that teeth can cause which may make you want to stay at home Productiveness in work will be increased without tooth pain. Subsidising dental care will be cheaper than the running cost of free clinics or in the public health sector. An increase in demand would also be needed if the subsidy is still not an attractive reward for going to the dentist, the public will have to see that dental care is important and they should seek treatment before there problem worsens and more larger methods are needed. Twenty is the age proposed to be allegeable for a discount/subsidy because those under the age of 18 currently have basic free dental care and because it has been shown those under and around the age of 18 are not willing to seek out dental care.

|	Grade Boundary: High Not Achieved
6.	The student has not adequately demonstrated an understanding of government interventions to correct market failures, which is required for Achieved. The student's second market failure on negative production externalities of commercial fishing was also a Not Achieved. The student has not explained the market failure (fast food), and has not linked the problems to the spillover cost and MSB of the graph used to illustrate the market failure. The student also refers to 'demand' instead of quantity demanded. Refer to part S. The government intervention of subsidising gym membership has not been explained in terms of efficiency or equity and the graph used to illustrate the intervention has not been linked into the explanation. Refer to part T. The government intervention of a tax on fast food and a subsidy on healthy food has not been explained in terms of efficiency or equity and the graphs used to illustrate this intervention had inaccuracies, and were not explained in relation to the intervention. Refer to part U. To reach Achieved, the student needs to address the quality of graphs and explain how they relate to market failure, and the government interventions. The government interventions to correct this market failure need to be explained in terms of efficiency or equity, and attention paid to the correct use of economic language.

Market Failure: The Market in Fast Food fails because as the people eat the fast food they can become over weight which will cause medical problems for themselves

Market Failure

$MC = MSC$

As Shown in the Graph Where the Demand is High 'QP' the Price Demand is Also High 'PP' When People Choose Drops 'Qs' Because Price On Fast Healthy food Also the Price Down Food food Also that Drop the Cost 'Qs' Depend:) Showing Market is Very Unreliable On Demand

(S)

Policy 1 Subsidize Gym Memberships: This Policy would open up the gym to people who wouldn't normally be able to afford such a thing, but the policy wouldn't work because the people that this is targeted at may not go for it as they don't have the motivation for it which would mean that tax payers are paying more which they don't need to because there may not be a need because there won't be as many people running for a gym membership.
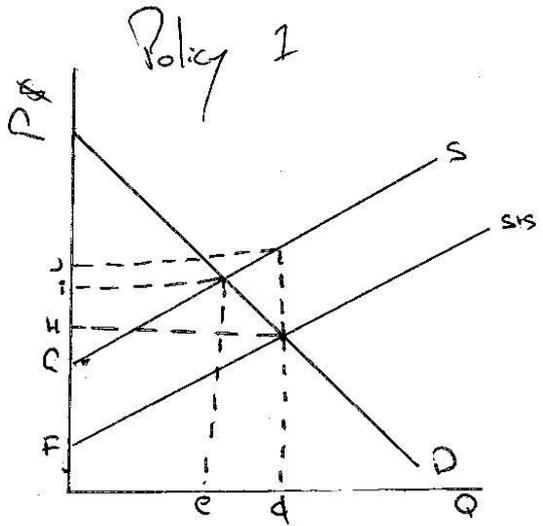

Policy 1

As the Gym membership Cost falls 'H' the Demand did increase but the max Price People would Pay is 'J' but from where the Price was 'I' The Demand was Low 'E'

(T)

Policy 2 Tax Fast Food And Subsidize Healthy Foods; would gradually reduce the amount of fast food purchased because the buyers would be getting less satisfaction knowing they spent x amount on food when they used to be spending y amount on food "Y Being Cheaper x Being Expensive" And By making the healthy food cheaper it allows people who would normally choose Fast food they would change to the healthy food option because it's cheaper. As with the tax on the fast food they wouldn't have a choice but to spend x amount on the food, but while there is the tax on the fast food the subsidised healthy food would become more appealing to the users as they will end up getting sick of the fast food where there enjoyment will become lower than the price which would get them to buy healthier foods. See graph 3

Policy 2 - Healthy foods
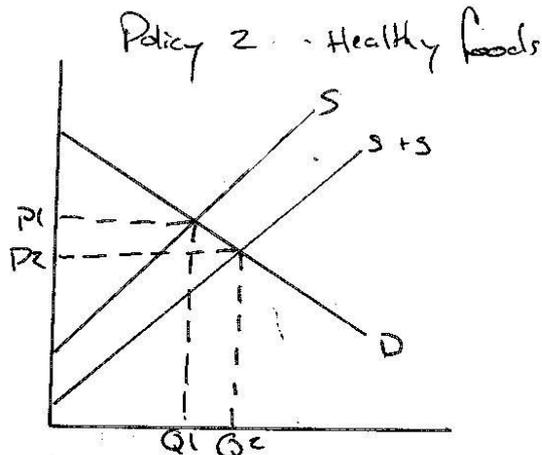
From the Original Price of Healthy food 'P1' the Demand was Low 'Q1' but when The Price was Put Down 'P2' the Demand increases 'Q2'
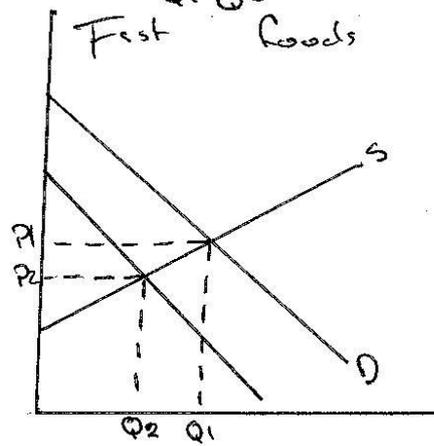
Fast Foods

As the Price for Fast food Was High 'P1' the Demand Was Also 'Q1' But when they Subsidize Healthy food The Demand Decreases 'Q2' the Price Also Falls 'P2'

(U)