Tax Working Group
Te Awheawhe Tāke

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This paper contains advice that has been prepared by the Tax Working Group Secretariat for consideration by the Tax Working Group.

The advice represents the preliminary views of the Secretariat and does not necessarily represent the views of the Group or the Government.

Coversheet: **Corrective taxes**

Discussion Paper for Session 13 of the Tax Working Group, 6 July 2018

Purpose of discussion

The attached paper is intended to help the Group decide whether it wishes to make recommendations on corrective taxes.

The paper provides:

- An outline of the theoretical framework for applying corrective taxes.
- An overview of current policy settings in New Zealand for taxes on alcohol and tobacco products, and of settings in certain other countries for taxes on sugar products.
- An assessment of the impact of these taxes against the standard tax principles of efficiency, equity, and compliance and administration costs; and a broader living standards assessment of their effectiveness in meeting wider societal objectives.

Key points for discussion

- Does the Group agree with the frameworks for corrective taxes outlined in this paper?
- Does the Group want to reconsider the current rates of tobacco and alcohol excise?
- Does the Group want to recommend taxes on sugar-sweetened beverages or sugar more generally?

Recommended actions

The Secretariat recommends that the Group:

a) **Indicates** what, if anything, it wishes to say in the interim report about:
   - the framework for applying corrective taxes;
   - any changes to existing taxes on alcohol and tobacco;
   - the introduction of taxes on sugar or sugar-sweetened beverages; or
   - the introduction of other corrective taxes.

Corrective Taxes

Discussion Paper for Session 13
of the Tax Working Group

July 2018

Prepared by Inland Revenue and the Treasury

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Executive Summary

Corrective taxes are typically used to achieve one of two objectives: to discourage behaviour that is judged to be undesirable; and/or to ensure individuals take into account the costs of their behaviour.

In considering whether corrective taxes are effective in meeting these objectives, policymakers need to consider their effectiveness relative to other available policy instruments. Even where corrective taxes are found to be relatively more effective, it can be difficult for policymakers to know the level at which to set them to achieve their objectives. Policymakers also need to consider whether the benefits of applying corrective taxes outweigh the costs.

New Zealand currently has two main types of corrective taxes: alcohol excise and tobacco excise. Several other countries have recently introduced a third type: taxes on sugar products, in particular sugar-sweetened beverages.

Assessing the merits of taxes on alcohol, tobacco, and sugar products requires an in-depth understanding of the physiological impacts of these products. This is beyond the expertise of the Secretariat, so we have relied on pre-existing research to provide an assessment of the impact of these taxes against standard tax principles and broader objectives.

The research indicates that both tobacco excise and alcohol excise are likely to be effective in discouraging harmful behaviour. However, there is little consensus as to whether, at their current levels, these taxes ensure individuals face the full costs of their behaviour. It is likely that tobacco excise does, but it is less clear with alcohol excise. Recent cost-benefit analysis suggests that increases in alcohol excise could bring net benefits to society, although its findings on the price responsiveness of drinkers differ to findings in other studies.

There is less certainty over the effectiveness of taxes on sugar-sweetened beverages relative to taxes on alcohol and tobacco. There is also a lack of evidence to suggest the level at which taxes on sugar-sweetened beverages should be set to achieve policymakers' objectives.

Alcohol excise appears to be a slightly progressive tax. Tobacco excise is likely to be regressive. Taxes on sugar-sweetened beverages appear to be moderately regressive.

Further analysis is needed to produce more confident conclusions on the impact of corrective taxes. However, given the uncertainties involved, it is unlikely that additional research and evidence would provide definitive answers to the appropriate application and level of corrective taxes – a significant element of judgement would still be required.

1. Introduction

1.1 Purpose

1. The purpose of this discussion paper is to help the Group decide whether it wishes to make recommendations on corrective taxes.

1.2 Definition and scope

2. Corrective taxes are primarily intended to change behaviour. They can therefore be contrasted with revenue taxes, which are primarily intended to raise revenue.

3. This paper focuses on *non-environmental* corrective taxes, as environmental corrective taxes (such as those on pollutants and waste) are covered in separate Tax Working Group papers.

4. This paper also focuses on corrective taxes on alcohol, tobacco, and sugar products. This is because the majority of submissions on non-environmental corrective taxes focused on these particular taxes. These taxes are also the most widely applied types of corrective tax internationally.

1.3 Content

5. This paper first outlines the theoretical framework for applying corrective taxes. It then describes current policy settings in New Zealand for taxes on alcohol and tobacco products, and settings in certain other countries for taxes on sugar products. It then assesses the impact of these taxes. Lastly, the paper makes some conclusions and recommendations to the Group.

2. Theoretical Framework

2.1 Introduction

6. There are two main reasons why policymakers may wish to use corrective taxes to change behaviour:

    - **active discouragement:** policymakers may wish to discourage some types of behaviour that they judge to be inherently undesirable; and/or

    - **informed decision-making:** policymakers may wish to ensure individuals take into account the full costs of their choices when deciding how to behave.

7. In both cases, there is a need to judge whether corrective taxes represent the most effective means of achieving the desired behavioural change, relative to other policy instruments.

8. This section begins by considering the effectiveness of different policy instruments. It then introduces the concepts of externalities and internalities, in the context of using taxes to push individuals to take into account the full costs of their behaviour. Lastly, it discusses some limitations of corrective taxes.

2.2 Effectiveness of different policy instruments

9. Whether taxes are more effective than other policy instruments depends on the objectives of policymakers.

10. If policymakers wish to stop undesirable behaviour, then a ban on the behaviour is likely to achieve their objectives faster, and with greater certainty, than a tax. This is because individuals may be willing to pay the tax in order to continue to behave in the same, undesirable, way; or switch to a different type of behaviour that is just as undesirable. However, a ban may be impractical to enforce, in which case a tax, or another instrument, might provide a second-best policy solution.

11. If policymakers wish to limit undesirable behaviour, or ensure that individuals face the full costs of their behaviour, then imposing a cap or a tax, or providing better information, may be a suitable policy response. The relative effectiveness of each instrument will depend on:

    - how individuals respond to each instrument;

    - whether policymakers have information on how individuals respond; and

    - whether policymakers can tailor each instrument to individuals' responses.

2.3 Externalities and internalities

12. There are two types of costs that individuals may not take into account when deciding to behave in certain ways: externalities and internalities.

Externalities

13. Externalities are the costs that one individual's activity imposes on others, without their consent. Because externalities are not borne by the individual that creates them, the individual's level of activity is likely to be higher than others would prefer.

14. There are two types of externalities:

    - **technological externalities:** these arise when one individual's activity changes the choices faced by other individuals; and

    - **pecuniary externalities:** these arise when one individual's activity changes the prices faced by other individuals.

15. An example of a technological externality is where a smoker exposes others to second-hand smoke without their consent.

16. An example of a pecuniary externality is where a smoker requires additional publically-funded healthcare because of their smoking habit and, as a result, others have to pay higher taxes to fund the treatment. This particular type of pecuniary externality is also known as a 'fiscal externality', as one individual's behaviour affects how much others have to pay in tax.

17. Corrective taxes can incentivise those that impose externalities on others to shift their level of activity towards a level they would choose if they had to bear the externalities themselves.

Internalities

18. Internalities are the costs an individual imposes on themselves that they do not take into account when deciding their level of activity. As a result, the individual's level of activity may be higher than the level they would have chosen had they taken these costs into account.

19. Internalities may arise for a number of reasons. For example, individuals may make decisions thinking only about the costs imposed on their current selves, and not about the costs imposed on their future selves. Alternatively, addicted individuals may be unable to think clearly about the costs they impose on themselves generally.

20. Corrective taxes can incentivise individuals that impose internalities on themselves to shift their level of activity towards a level they would have chosen had they taken the internalities into account.

2.4 Limitations of corrective taxes

21. One issue limiting the effectiveness of corrective taxes is that policymakers often have limited information about the size of certain externalities or internalities. While policymakers may have some information about the fiscal costs of treating a disease, for example, they are much less likely to have information about the costs of altered choices made by those bearing the internalities or externalities. Without this information, policymakers will not know the level at which to set a corrective tax to fully correct for these costs. Setting corrective taxes at the wrong level will result in welfare losses.

22. The size of certain externalities or internalities is also likely to vary from consumer to consumer and by the level of the activity. One person might produce different levels of external or internal costs at different levels of consumption. Two people consuming the same amount of a product might produce different levels of external or internal costs. A tax that accounts for these variations across consumption levels and consumers is likely to be impractical, if not impossible, to implement. A tax that does not account for these variations will sometimes be too high, and sometimes too low, relative to the size of the costs.

23. In addition, the presence of externalities and internalities alone may not be sufficient to establish a case for intervention, whether through corrective taxes or alternative interventions. Policymakers should also consider whether the advantages of intervention outweigh the disadvantages. This might include consideration of, for example, whether an intervention is equitable, and whether the fiscal costs of intervention are affordable.

3. Current Settings

3.1 Introduction

25. This section sets out current policy settings in New Zealand for taxes on alcohol and tobacco products, and settings in a selection of other countries for taxes on sugar products. It also briefly explores policy settings in New Zealand and elsewhere for corrective taxes on other products.

3.2 Alcohol

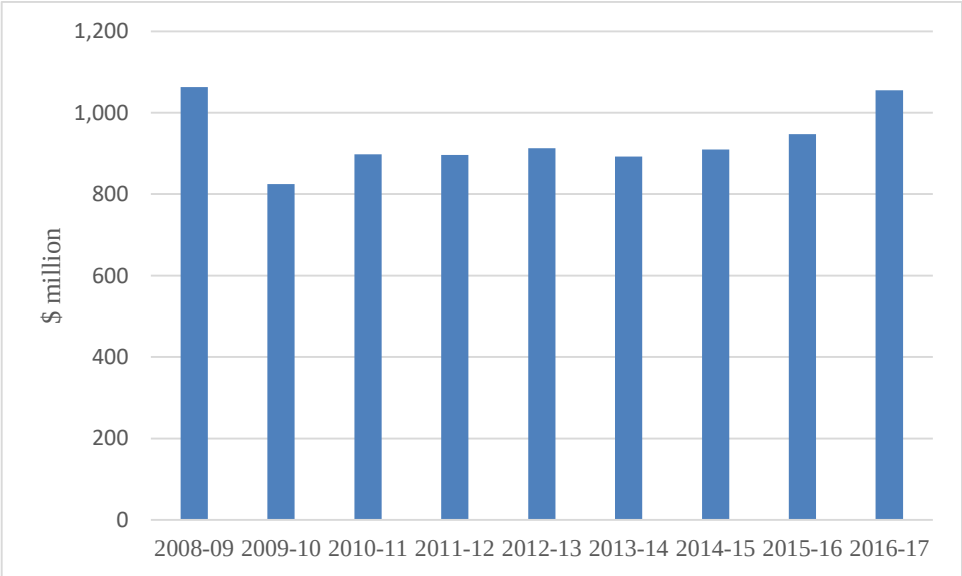
26. There are two corrective taxes on alcohol products in New Zealand: alcohol excise and the Health Promotion Agency (HPA) levy. Both are charged on alcohol manufactured in, or imported into, New Zealand; and both are collected by the New Zealand Customs Service.

27. Revenue from alcohol excise is pooled with revenue from other taxes and directed to various spending programmes through the Budget process. Revenue from the levy is hypothecated to fund the HPA.

28. Alcohol excise is far larger than the levy in revenue terms. In 2017, alcohol excise raised $1 billion while the levy raised $12 million. Due to its much larger size, the following paragraphs focus on alcohol excise.

29. Figure 1 below shows nominal revenue from alcohol excise between 2008 and 2017.

Figure 1: Alcohol excise revenue, 2008-2017



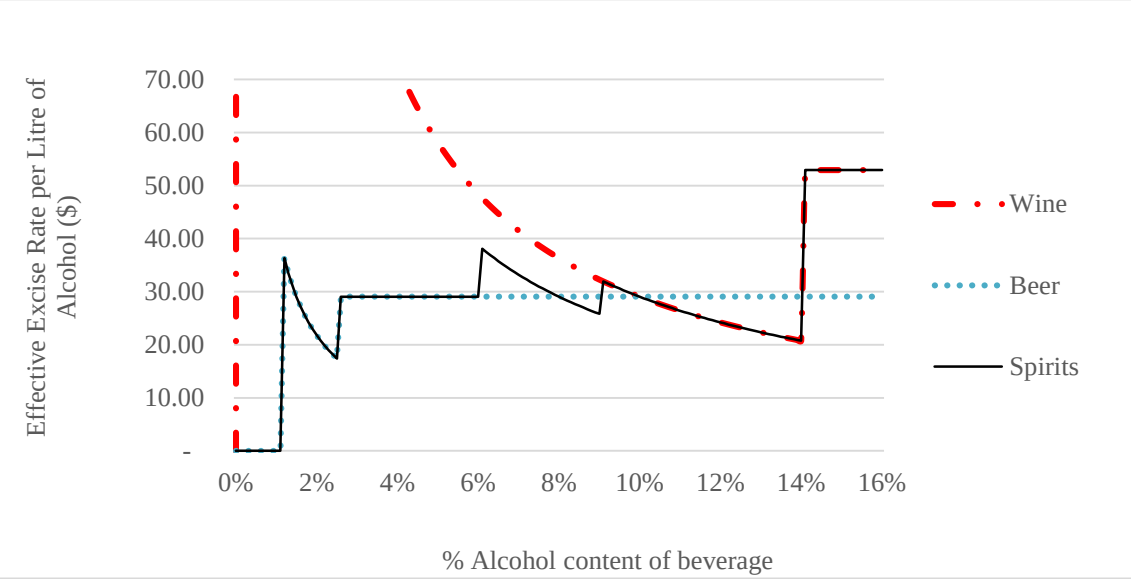
30. Rates of alcohol excise vary by product type and alcohol volume. Some rates are applied on a *per litre* basis, while others are applied on a *per litre of alcohol* basis. Table 1 below shows rates for beer and certain wines and spirits.

Table 1: Alcohol excise rates, effective from 1 July 2017

Beer	Containing more than 1.15 % vol., but not more than 2.5 % vol.	$0.43573 per litre
	Containing more than 2.5 % vol.	$29.054 per litre of alcohol
Wine	Containing more than 14 % vol., fortified by the addition of spirits or any substance containing spirit	$52.916 per litre of alcohol
	Other	$2.9054 per litre
Spirits	Containing more than 1.15 % vol., but not more than 2.5 % vol.	$0.43573 per litre
	Containing more than 2.5 % vol., but not more than 6 % vol.	$29.054 per litre of alcohol
	Containing more than 6 % vol., but not more than 9 % vol.	$2.3243 per litre
	Containing more than 9 % vol., but not more than 14 % vol.	$2.9054 per litre
	Containing more than 14 % vol.	$52.916 per litre of alcohol

31. This rates structure means the effective rate of excise per litre of alcohol varies considerably across different products. Figure 2 below illustrates the effective rates for beer and certain wines and spirits at different alcohol volumes.

Figure 2: Effective rate of excise per litre of alcohol



32. Alcohol excise rates are customarily increased in line with inflation each year. The most recent departure from this policy was in 2003, when rates for spirits containing between 14-23 per cent alcohol volume were increased to the level of rates for spirits containing more than 23 per cent alcohol volume.

33. A notable exemption from alcohol excise is the duty-free concession. This permits travellers to bring up to 4.5 litres of wine and 3 bottles of spirits into New Zealand free of excise, provided they are for personal use or gifts.

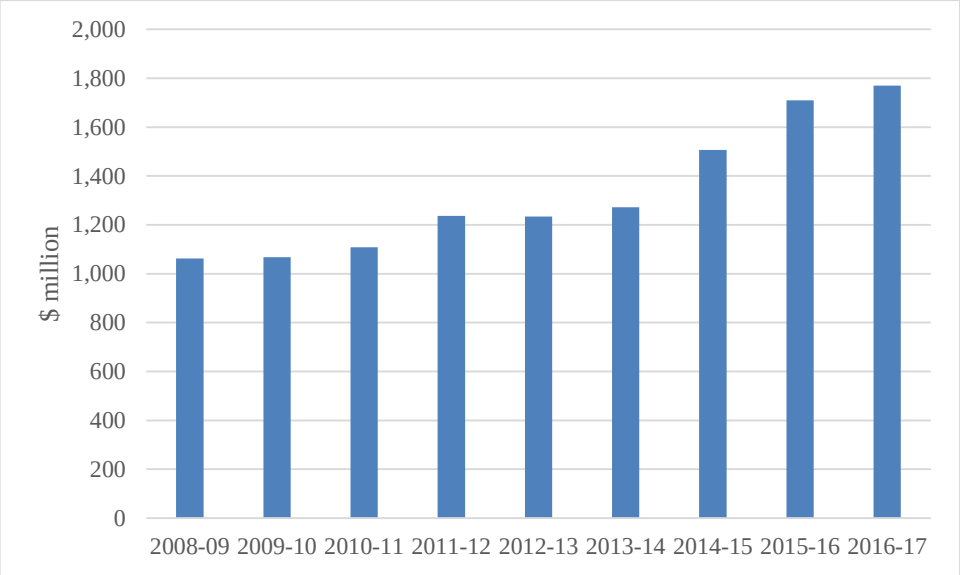
3.3 Tobacco

34. Tobacco excise is charged on tobacco manufactured in, or imported into, New Zealand. It is collected by the New Zealand Customs Service.

35. Revenue from tobacco excise is pooled with revenue from other taxes and directed to various spending programmes through the Budget process.

36. Figure 3 below shows nominal revenue from tobacco excise between 2008 and 2017.

Figure 3: Tobacco excise revenue, 2008-2017



37. Table 2 below shows the rates of tobacco excise.

Table 2: Tobacco excise rates, effective from 1 January 2018

Cigarettes not exceeding in weight 0.8 kg of actual tobacco content per 1,000 cigarettes	$826.58 per 1,000 cigarettes
Cigarettes exceeding in weight 0.8 kg of actual tobacco content per 1,000 cigarettes	$1,177.87 per kilo of tobacco content
Cigars, cheroots, and cigarillos	$1,033.20 per kilo of tobacco content

38. Tobacco excise rates have been increased by 10 per cent above inflation each year since 2010, and are scheduled to increase by 10 per cent above inflation each year until 2020.

39. A notable exemption from tobacco excise is the duty-free concession. This permits travellers to bring up to 50 grammes of tobacco products into New Zealand free of excise, provided it is for personal use or a gift.

3.4 Sugar

40. Several countries and cities tax sugar products. In recent years, taxes on sugary drinks have become increasingly common. Table 3 below lists some examples.

Table 3: Sugary drinks taxes in selected countries and cities

France	Sugar-sweetened beverage tax introduced in 2013. Rate of €7.53 per hectolitre.
Ireland	Sugar-sweetened drinks tax introduced in 2018. Rates of €16.26 per hectolitre for lower sugar drinks and €24.39 per hectolitre for higher sugar drinks.
Mexico	Tax on non-alcoholic drinks containing added sugar introduced in 2014. Rate of 1 peso per litre.
UK	Soft drinks industry levy introduced in 2018. Rates of 18 pence per litre for lower sugar drinks and 24 pence per litre for higher sugar drinks.
Berkley, USA	Sugar-sweetened beverage tax introduced in 2014. Rate of 1 cent per ounce.

41. Some countries also tax sugary foods. For example, in 2011, Hungary introduced a tax on certain foods deemed to be unhealthy, including sweets, biscuits, and bakery items (Berridge and Marriott, 2017).

3.5 Other corrective taxes

42. There are various taxes on gambling in New Zealand, as shown in table 4 below.

Table 4: Gambling taxes

Totalisator duty	A tax on betting profits at a rate of 4 per cent, paid by the New Zealand Racing Board.
Lottery duty	A tax on the nominal value of tickets at a rate of 5.5 per cent, paid by the New Zealand Lotteries Commission.
Gaming machine duty	A tax on gaming machine profits at a rate of 20 per cent, paid by gaming machine operators.
Casino duty	A tax on the gambling profits at a rate of 4 per cent, paid by casino operators.
Problem gambling levy	A tax on the profits of the New Zealand Racing Board, the New Zealand Lotteries Commission, gaming machine operators and casino operators, paid at the following rates: • New Zealand Racing Board – 0.52 per cent. • New Zealand Lotteries Commission – 0.4 per cent. • Gaming machine operators – 1.3 per cent. • Casino operators – 0.87 per cent.

43. The totalisator duty was last amended in 2006, when the rate was reduced from 20 per cent to 4 per cent. The problem gambling levy was introduced in 2004. Changes were last made to the other duties in the early 1990s.

44. Examples of the different types of corrective taxes in other countries include those on fatty foods and marijuana products. Denmark introduced a tax on food high in saturated fat in 2011, but this was repealed in 2012 due to concerns over complexity and avoidance (Berridge and Marriott, 2017). A number of states and cities in the US have recently introduced a tax on non-medicinal marijuana following its legalisation.

4. Assessment

4.1 Introduction

45. Assessing the merits of taxes on alcohol, tobacco, and sugar products requires an in-depth understanding of the physiological impacts of these products. This is beyond the expertise of the Secretariat. This section therefore provides a summary of pre-existing research on the impacts of alcohol, tobacco, and sugar taxes. It considers these impacts against the standard tax principles of efficiency, equity, and compliance and administration costs. It also takes a broader living standards approach by considering the effectiveness of such taxes in meeting wider societal objectives.

4.2 Efficiency

Alcohol

46. The *Tax Review 2001* (the Review) rejected the grounds for using corrective taxes to address what they called 'social spending externalities' – the additional costs to the public healthcare system resulting from harmful drinking and smoking that drinkers and smokers do not take into account. The Review considered that such costs should be accepted as part of the decision to provide a publically funded healthcare system, and that a case could not be made for addressing these costs through taxes on drinking and smoking alone, while leaving other harmful behaviour untaxed.

47. The Review noted that the uniform nature of corrective taxes means they are not well suited to addressing external costs that are typically non-uniform across society. The Review favoured using interventions other than tax to address externalities, and commented that such interventions were being used successfully in the case of alcohol. The Review concluded that "the levels of alcohol excise that could be justified on externality grounds are likely to be well below those currently applied in New Zealand" (McLeod, Patterson, Jones, Chatterjee, and Sieper, 2001).

48. The 2002 Treasury Working Paper, *Consumption Externalities and the Role of Government: The Case of Alcohol*, compared the tangible external costs of alcohol consumption to the revenue from alcohol taxes. Based on data in a separate study from 1997, it provided an estimate of the cost of alcohol-related hospital treatment, production losses, and policing measures.

49. The Working Paper concluded that because the amount of revenue collected from tax on alcohol ($580 million in 1999/2000) was close to the mid-point of the lower and upper estimated external tangible costs of alcohol consumption (between $385 million and $831 million in $1999), "the current rate of excise tax can be justified on externality grounds" (Barker, 2002).

50. The 2014 Ministry of Justice paper, *The Effectiveness of Alcohol Pricing Policies*, provided a cost-benefit analysis of different alcohol pricing options. The paper estimated the costs that each option would impose in terms of lost consumer surplus, excise revenue, and value of industry assets. It then estimated the benefits that each

option would bring in terms of reduced alcohol-related health, crime, and productivity costs; and then weighed up the costs and benefits to determine the overall net effect on society.

51. The paper concluded that, over a ten-year period, increases in alcohol excise of 82 per cent would have net benefits of $2.5 billion, and increases of 133 per cent would have net benefits of $3.4 billion. The paper noted, however, that its findings on how drinkers respond to price increases differs to findings in other studies (White, Lynn, Ong and Whittington, 2014).

Tobacco

52. As noted above, the *Tax Review 2001* rejected the argument for using corrective taxes to address the additional costs to the public healthcare system from smoking. The Review concluded that, even if this argument was accepted, existing levels of tobacco taxes "appear indefensible on externality grounds" (McLeod et al., 2001).

53. The 2007 study published by The Smokefree Coalition and ASH New Zealand, *Report on Tobacco Taxation in New Zealand*, estimated the additional public health system costs attributable to smoking at between $300 million and $350 million. Comparing this to the $1 billion raised by tobacco taxes at the time, the study commented that "it appears possible that present taxation rates are in excess of the appropriate rates for correction of externality burdens". However, adding in other costs, such as those from production losses, the study estimated total tangible social costs of tobacco use at $1.7 billion (O'Dea and Thompson, 2007).

Sugar

54. The 2017 NZIER paper for the Ministry of Health, *Sugar Taxes: a Review of the Evidence*, took the view that behavioural changes stemming from the provision of publically-funded healthcare are not externalities, but rather akin to a form of moral hazard. The paper noted that the usual way to address moral hazard is to charge an excess or co-payment. It concluded that "[i]t is difficult to see how consumption of sugar can lead to externalities, as that term is understood in welfare economics" (Wilson and Hogan, 2017).

4.2 Effectiveness

Alcohol

55. *The Effectiveness of Alcohol Pricing Policies* estimated that increases in alcohol excise of up to 133 per cent were effective in reducing the harmful consumption of alcohol. The paper also found that increases in excise had higher net benefits than minimum pricing. The explanation provided was that, unlike minimum pricing, an excise increase applies to all alcohol products, and so has a larger impact on consumer behaviour (White et al., 2014).

Tobacco

56. Increasing the price of tobacco, for example through excise increases, is widely held to be one of the most effective means of reducing smoking and its associated health costs (see, for example, the World Health Organisation's *Tobacco Free Initiative*).

57. A 2016 Regulatory Impact Statement by the Treasury examined the impact of tobacco excise increases on levels of smoking prevalence. Table 5 below reproduces the findings.

Table 5: Impact of tobacco excise increases on daily smoking prevalence (those who have smoked more than 100 cigarettes in their lifetime and currently smoke at least once a day)

Tobacco excise increase	Smoking prevalence (per cent)	
	2020	*2025*
No increase	14.4	13.7
Four annual increases of 10 per cent plus inflation	12.7	12.0
Four annual increases of 12.5 per cent plus inflation	12.3	11.7
Four annual increases of 15 per cent plus inflation	12.0	11.4

58. The table shows that reductions in smoking prevalence were expected to be quite small relative to the size of increases in excise. The analysis noted that excise increases substantially higher than 15 per cent would be needed to achieve the Government's *Smokefree 2025* goal of reducing smoking prevalence to minimal levels (The Treasury, 2016).

59. The Ministry of Health is currently evaluating the impact of recent tobacco excise increases on tobacco consumption. The evaluation is expected to be complete by the end of 2018.

Sugar

60. *Sugar Taxes: a Review of the Evidence* provided a literature review of the effect of sugar taxes on improving health outcomes. The paper identified that, to be effective, a sugar tax needed to work across five steps of an 'intervention logic':

Intervention logic for assessing effectiveness of sugar taxes

1. Imposing a tax must increase the price of the targeted item.
2. The increase in price must lead to a reduction in consumption of the item.
3. Reducing consumption of the item must lead to a reduction in sugar and/or energy intake.
4. Lower energy intake must result in lower physiological risk factors.
5. Lower physiological risk factors must improve health outcomes.

(Wilson and Hogan, 2017)

61. The paper commented that sugar taxes are likely to become less effective as each step of this intervention logic was followed. Reasons for this include that a tax may cause individuals to switch to cheaper or untaxed products that are similarly unhealthy. The paper concluded that "[t]he evidence that sugar taxes improve health is weak" (Wilson and Hogan, 2017).

62. A 2017 study, *Health impact assessment of the UK soft drinks industry levy*, modelled the possible effects of the UK soft drinks industry levy on obesity, diabetes, and dental caries ahead of its introduction. The study considered the potential impact the levy might have through three mechanisms:

    - reformulation by manufacturers to reduce sugar concentration in soft drinks;
    - an increase in the price of soft drinks; and
    - a change in the market share of high-, medium-, and low-sugar soft drinks.

63. The study found that reformulation could be expected to have the highest impact (Briggs et al., 2017), which suggests that direct regulation of sugar content may be more effective. Subsequent analysis by Public Health England found that the sugar concentration in drinks subject to the levy fell 11 per cent over a two-year period ahead of the levy's introduction in April 2018, although the effect of the levy on this reduction was not estimated (Tedstone et al., 2018).

4.3 Equity

Alcohol

64. The 1989 study, *Alcohol taxes: do the poor pay more than the rich?*, which is based on New Zealand survey data, found that "alcohol taxes are distributed proportionally across the lower income brackets but decline towards the upper end of the income scale" (Ashton, Casswell and Gilmore, 1989).

65. The *Tax Review 2001* quoted figures from the 1997/98 Household Economic Survey showing that expenditure on alcohol rises from around 1.85 per cent of household expenditure in the bottom two income quintiles to 2.79 per cent in the top quintile, "suggesting that the incidence of alcohol taxation is progressive" (McLeod et al., 2001).

66. One reason why alcohol excise might be progressive – or at least not regressive – is that there is a higher proportion of non-drinkers in the most socioeconomically deprived areas (Ministry of Health, 2017).

Tobacco

67. Ministry of Health statistics from the 2015/16 New Zealand Health Survey indicate that tobacco excise is regressive. Table 6 below shows a substantially higher smoking prevalence in the most socioeconomically deprived neighbourhood (Quintile 5) compared to the least socioeconomically deprived neighbourhood (Quintile 1).

Table 6: Prevalence of current smokers (those who have smoked more than 100 cigarettes in their lifetime and currently smoke at least once a month)

Quintile 1 (least deprived neighbourhood)	8.0 per cent
Quintile 2	11.8 per cent
Quintile 3	15.1 per cent
Quintile 4	19.2 per cent
Quintile 5 (most deprived neighbourhood)	28.0 per cent

68. The data also show higher smoking prevalence among Māori and Pasifika than other ethnic groups, as shown in table 7 below (Ministry of Health, 2016).

Table 7: Prevalence of current smokers (those who have smoked more than 100 cigarettes in their lifetime and currently smoke at least once a month)

Asian	8.7 per cent
European/Other	14.5 per cent
Māori	38.6 per cent
Pasifika	25.5 per cent

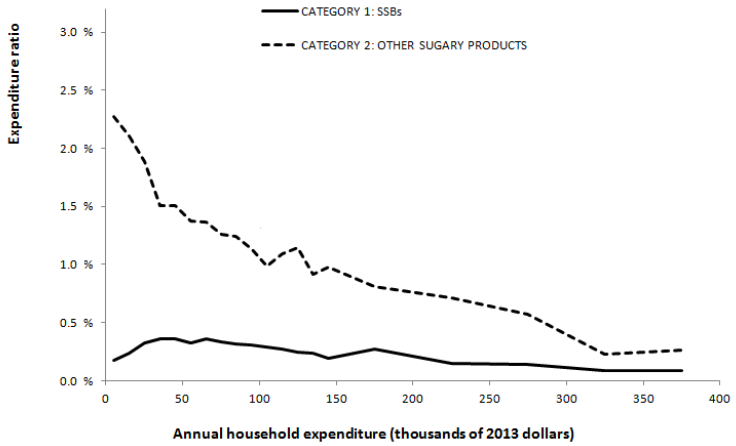
69. A 2016 Regulatory Impact Statement (RIS) by the Treasury noted that although tobacco excise is regressive, increases in excise may make it less regressive. This is because lower-income smokers are likely to be more price-sensitive than higher-income smokers. They are therefore likely to reduce their consumption of tobacco by a greater amount following an increase in excise, leaving higher-income smokers paying a greater share of the tax. The RIS also noted, however, that the increase in excise would weigh heaviest on lower-income smokers who continued to smoke (The Treasury, 2016).

70. The Ministry of Health's current evaluation is considering the financial impact of tobacco excise increases on smokers and their families.

Sugar

71. The 2016 Treasury Working Paper, *Implications of a Sugar Tax in New Zealand: Incidence and Effectiveness*, estimated the potential incidence of a tax on sugar-sweetened beverages (SSBs) and a tax on all sugary products. Figure 4 below shows the incidence of the two taxes across all households.

Figure 4: Tax as a proportion of household expenditure



72. Figure 4 shows that a tax on SSBs was found to be only slightly regressive, while a tax on all sugary products was found to be moderately regressive.

73. The paper noted that higher-income Māori spend more on SSBs than lower-income Māori. It tentatively concluded that a tax on SSBs was likely to be progressive among Māori, while noting that this was based on a small sample size (Gardiner, 2016).

4.4 Administration and compliance costs

Alcohol and tobacco

74. Alcohol and tobacco excise impose low administration and compliance costs relative to the revenue they raise. Both are taxed at a point high up the supply chain, meaning there are fewer taxpayers, and making payment and collection more straightforward.

75. There is relatively strong compliance with both taxes. New Zealand's geographic isolation and robust border control systems reduce the risk of large-scale cross-border smuggling of alcohol and tobacco products. However, there have recently been an increasing number of reports linking increases in tobacco excise to dairy robberies, with the higher price of tobacco making it an attractive target.

76. The Ministry of Health's current evaluation is considering the impact of tobacco excise increases on illicit trade and robberies.

Sugar

77. The introduction of a sugar tax would bring new administration and compliance costs. The Government would need to establish a means of collecting the tax, and the industry would need to establish a means of paying and complying with the tax.

78. A tax on SSBs would likely impose lower costs than a tax on all sugar products. This is because SSBs are more easily identifiable and quantifiable, and there are fewer manufacturers.

5. Conclusions and recommendations

5.1 Conclusions

79. In general, corrective taxes are likely to be effective in discouraging certain types of behaviour, through the simple rule that an increase in the price of a product tends to reduce demand for it. Taxes on alcohol and tobacco are more likely to be more effective in achieving desired health objectives than taxes on SSBs, given the latter only tax a sub-set of the target product.

80. While corrective taxes can help ensure individuals take into account the full costs of their behaviour, it is difficult to know the level at which they should be set to ensure all relevant costs are taken into account. Perhaps the firmest conclusion that can be drawn is that tobacco excise is likely to be at a level similar to, or higher than, the level necessary to ensure smokers take into account the costs of smoking – at least in terms of non-fiscal externalities. Recent cost-benefit analysis suggests that increases in alcohol excise could bring net benefits to society, although its findings on the price responsiveness of drinkers differs to findings in other studies.

81. Of the three taxes focused on in this paper, tobacco excise is likely to be the most regressive, and alcohol excise the least regressive. If policymakers wish to continue increasing tobacco excise to reduce levels of smoking, there will be a sharp trade-off with equity concerns.

82. Further analysis is needed to produce more confident conclusions on the impact of corrective taxes. However, given the uncertainties involved, it is unlikely that additional research and evidence would provide definitive answers to the appropriate application and level of corrective taxes – a significant element of judgement would still be required.

5.2 Recommendations

83. The Secretariat recommends that the Group:

    a) **Indicates** what, if anything, it wishes to say in the interim report about:
        - the framework for applying corrective taxes;
        - any changes to existing taxes on alcohol and tobacco;
        - the introduction of taxes on sugar or sugar-sweetened beverages; or
        - the introduction of other corrective taxes.

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