Comments on EY report Evaluation of the tobacco excise increases as a contributor to Smokefree 2025

Note for EY: One of our senior analysts (economics) provided this feedback on your report, comparing the final report with their assessment of the draft report and the feedback given to you about the economic aspects of that draft. We welcome your views on their assessment.

Table 1. Assessment of how well the evaluation meets its objectives and suggested improvements

Evaluation objective	Assessment of draft report	Suggested improvements to draft report	Comment on final report
The impact of the tobacco excise in changing people's behaviours and perceptions - Explore changes in smoking behaviours –quitting, reducing consumption, substitution, changed household spend	The elasticity estimates provided do not properly separate changes in smoking behaviour attributable to the excise increase, and the changes due to changing social norms and other factors. This means they are unreliable, and likely overestimate the effect caused by the excise. EY admit this weakness in their report, but make no attempt to control for these other factors. We also made clear early on that causality was an important part of this evaluation. They also provide no measures of statistical significance, so their estimates could be due to noise in the data.	Many statistical techniques can control for trends: interrupted time series, using other countries as control groups. Many techniques are described in EY's own proposal. EY could look at which groups use RYO tobacco, as this had a larger tax increase in 2010.	The secondary data analysis appears to be unchanged from the draft report. The weaknesses highlighted in the assessment of the draft report remain. The Final Report includes a disclaimer that "analysis of price elasticity does not attempt to control for the effects of other underlying variables on the price elasticity of tobacco" and that data on these underlying factors "was either non-existent, inconclusive, or did not cover a sufficient period". This ignores that there are a wide range of statistical techniques to control for these unobservable factors (interrupted time series, difference-in-difference). These techniques are not used in the final report. One very simple analysis would be to compare changes between 2010 to 2016 (with large excise increases) with changes between 2002 and 2008 (with excise changes only for CPI). Comparing the two periods would identify the effect of excise rate increases, over and above the changes due to social norms and other tobacco control policies. The analysis of household economic survey data still does not control for price, making discussion of the responsiveness of different groups misleading. Stats NZ has quarterly data on cigarette prices, which could be used in this and other analyses.

Evaluation objective	Assessment of draft report	Suggested improvements to draft report	Comment on final report
The impact of the tobacco excise in changing people's behaviours and perceptions - Consider which groups are impacted and by how much	As above, estimates are unreliable, and are unintuitive (Maori more price sensitive, pacific peoples less).	The above techniques can be applies to subgroups.	As above, there appears to be no change in the secondary data analysis performed, so the weaknesses in the draft report remain.
The impact of the tobacco excise in changing people's behaviours and perceptions - The perceptions of affordability following increases in tobacco excise			
The impact of the tobacco excise in changing people's behaviours and perceptions - Consider whether past changes in behaviour will continue with future increases	Little analysis of whether past relationships will hold in future, even though throughout the paper, reference is made to a "tipping-point". EY cite that there is no clear pattern in elasticities over time when calculated year-on-year. However, these tests likely have very little statistical power, so were unlikely to show a clear pattern regardless.	Could analyse how the population of smokers will change, and what this implies for average elasticity. Could look at other commodities (e.g. fuel, electricity, illicit drugs).	There appears to be no change in the secondary data analysis performed, so the weaknesses in the draft report remain. In the executive summary, the report notes that price elasticities may fall in the future as "remaining smokers are more likely to be those who have a strong addiction, are less motivated to stop and inherently have more complex confounding factors to address". However, no effort is made to quantify this effect, or explore how this may affect price elasticities in the future.

Evaluation objective	Assessment of draft report	Suggested improvements to draft report	Comment on final report
Impact of tobacco excise as a regressive tax - Consider the impact of the tax excise increases on equity given that the prevalence of smoking is generally higher among low income groups	The report gives only qualitative discussion of this point. No attempt is made to quantify the impact, or place in any context.	Estimate average excise tax payments by income quintile, ethnicity and other factors. What sort of income tax change is this equivalent to? How would this affect measures like P20:P80 ratio? What is a good way of describing these impacts in a way that decision makers understand?	The final report includes a section in the literature review on equity impacts. It cites international studies that find pricing and taxation interventions tend to be pro-equity. One metastudy found tobacco taxes to be on net pro-equity, as health benefits accrue most to those on low incomes. However, no effort is made to quantify these equity impacts in New Zealand. In addition, the report does not discuss the inconsistency between the international literature, which finds that low socio-economic status individuals are more responsive to price increases, and the New Zealand experience, where smoking rates remain highest among low income people, Maori and Pacific peoples. This may be caused by low income people not being more responsive in New Zealand due to NZ-specific factors, or because changes in social norms over time have been a more powerful force than price changes. Both have important implications for the evaluation.
Other unintended social consequences - Determine unintended societal consequences of increasing the tobacco excise such as increased robberies and illicit trade	The report merely points out that these exist. Some survey data on the extent of illicit trade. Report essentially 'gives up' on measuring extent of robberies, as data is not collected. It would be better to draw on evidence from other jurisdictions	Look at total dairy robbery statistics. Is there an increasing trend recently? Is this in areas where smoking more prevalent? In the worst case scenario that all of this is due to excise increases, what is the magnitude of this cost?	The final report cites Police data that shows an increasing trend in robberies at petrol stations, shops and liquor stores. However, because this includes a wide set of robberies, they cannot conclude this is due to tobacco related robberies. It would be good to have a graph of this data, so the reader can inspect these trends. Some additional analysis would be valuable, for example trying to place an upper-bound on the size of this problem, or providing some idea of the costs associated with robberies (police resources, victim trauma).
Other unintended social consequences - Explore the likely future trajectory of these consequences with further increases in tobacco excise	Report has no analysis on this point. Some comments from stakeholders that things may get worse.	Extrapolate above analysis. Could try to model illicit trade and robberies by assuming profit motivated crime.	There appears to be no quantitative analysis on this point. The executive summary notes that elasticities are likely to fall over time as continuing smokers are likely to be less responsive. However, there appears to be no analysis of this point, or any quantification of how much they would expect elasticities to fall.

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Tobacco industry response - Identify past and possible future strategies to be employed by the tobacco industry in response to increases in the tobacco excise	Mentions one paper on keeping budget brands cheaper. Otherwise only anecdotal evidence to support this point.	Does Stats NZ's quarterly data on tobacco collect prices on budget and premium brands separately?	Most of the evidence of pricing strategies appears to be anecdotes from stakeholders and smokers. Stats NZ reports data on cigarette prices quarterly as part of the CPI. This data – and the data used internally in Stats NZ to produce the CPI – would be very useful for answering this and other questions. This data is not cited in the final report.
Tobacco industry response - Determine the impact of these strategies	States that it mitigates the impact of the excise tax, but no data provided.	Can we estimate the price gap between budget and premium brands? How does that price gap compare to the very large compound increase in tobacco excise? How will plain packaging effect this in the future?	There appears to be no further analysis performed since the draft report. The executive summary states "there is no evidence to suggest that, in the absence of further tobacco control interventions, the tobacco industry will materially shift from recent behaviours observed and reported in New Zealand". However, this does not appear to be a meaningful conclusion. Most of the sources of recent tobacco industry behaviours are anecdotes. The report does not state what analysis has been performed to find evidence that behaviours will change, so the lack of evidence does not imply that behaviour won't change. Finally, we are most interested in how behaviour will change in the *presence* of future tobacco excise increases and other interventions, not in the absence.

Cost and benefits of further excise increases - Better understand / quantify the expected benefits and costs of future excise increases on previously assessed impacts	No quantification of any costs or any benefits. This means decision makers have no idea of the magnitude of any of the costs and benefits. There isn't even a short table summarising all of them.	BODE3 can give data on health benefits (scaling to account for differences in elasticities). Can use Atkinson measures of inequality to give rough costs of the regressive effect. Can use fiscal cost data on crime to quantify cost of robberies.	The report still gives little quantification of the cost and benefits of future excise increases, and the report does not state a conclusion on whether the benefits exceed the costs. The report instead recommends further increasing tobacco excise on the basis that "it is the most effective tool". However, whether excise is the most effective tool was not one of the evaluation questions set out in the CSO. Furthermore, the report does not clearly state the evidence and logic supporting how they reached this conclusion. One would expect an assessment of the costs and benefits of tobacco excise would be necessary to reach the conclusion it is "the most effective tool". The final report provides no quantification of the tax burden of tobacco excise, how this is affecting different population groups (such as Maori and Pacific peoples), or how it affects inequality measures. The report provides no quantification or even rough guidance of the cost of robberies or illicit trade. Citing the BODE3 study, the final report has included some information on the health benefits (and future cost reductions) of tobacco excise increases. However, the report does little to critically evaluate these estimates, or place them in context. The BODE3 estimates are for 14 consecutive 10% increases in tobacco excise between 2011 and 2025. Compounded, this is an almost four-fold increase in tobacco prices. How would an increase of this magnitude affect disposable incomes, black market tobacco use and robberies? Given BODE3 estimates 18% of Maori would be daily smokers even in this scenario, how would a four-fold increase in tobacco prices affect Maori as a population? The report also notes that BODE3 modelling has predicted greater falls in Maori smoking rates compared to reality, but does not discuss how this would affect the reported health benefits and reduced health costs.

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			The report makes recommends providing more holistic smoking harm reduction services by hypothecating tobacco excise revenue. The report also recommends reducing the supply of tobacco by introducing a tobacco retail licensing regime, and restricting tobacco retail locations, particularly near schools, hospitals and marae. These are not unreasonable recommendations. However, the final report does not provide a broad base of evidence to support these recommendations. The report does not evaluate the effectiveness of smoking cessation services, either at reducing smoking rates, or on wider measures of wellbeing. It does not consider the costs of a retail licensing regime, and the effect it may have on illicit trade. Furthermore, these recommendations are outside the scope of CSO.

Table 2. Assessment of how well the evaluation matches the plan set out by EY and suggested improvements

Proposals or comments in consultancy services order (emphasis added)	Assessment of draft report	Potential improvements to draft report	Comment on final report
"**Detailed** review of evidence from New Zealand and overseas, ensuring our review appropriately **weights** the most important and relevant findings, based both on **rigor and application** to the New Zealand context".	The review is not detailed. In total, there are two sources of elasticity estimates (Tony Blakely, and the Treasury) and both of these are secondary sources (i.e. they did not estimate those elasticities themselves). There is very little discussion of the rigor or application of these elasticity estimates. No attempt is made to 'weigh' or summarise the literature.	EY state that there is a lot of literature review work that wasn't included in the report. This is good to hear. We would expect the following from this review: • An assessment of the rigor (i.e. causal methods) of the papers reviewed. • A review of papers that separately measure effects for different populations (income, age, ethnicity, smoking history etc.) • A review of papers that consider if tobacco taxes are still effective at high price levels. • At least a summary of the key insights from the literature to be included in the final report. New data sources and statistical techniques mean that past studies may not be as valuable.	The final report includes a section on the equity impacts of tobacco taxes. It notes that most studies find tobacco taxes to be pro-equity because the health benefits are more concentrated among low socioeconomic groups. However, it is not clear if all these studies also consider the distribution of tax burden when assessing equity (at least one study explicitly does). Beyond this, there appear to be no further additions to the literature review. In terms of elasticity estimates, only one primary source is cited (the IARC). BODE3 and Treasury are cited, but these sources merely report estimates drawn from other literature. A systematic review of government tobacco policies is cited, but this study merely concludes that taxation is one of the top two policies in terms of health gain. This does not help the evaluation answer the questions set out in the CSO. The report itself does not assess the rigor or application of studies to New Zealand. Some information cited does assess the quality of evidence support qualitative statements, but not for quantitative elasticity estimates. There also appears to be little application of the literature review to answering the CSO questions. For example, the literature review cites BODE3 elasticity estimates showing younger smokers are more price elastic. This could have been combined with data on the age of smokers to estimate how average elasticities would change as the cohort of smokers gets older.

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"Triangulating tobacco analysis with New Zealand price elasticity information for **other consumables** to test our conclusions from point (1)."	There is no analysis of the elasticity of other consumables.	EY states there were no valuable insights from this work, so wasn't included in the report. We would be interested in seeing this work, and seeing whether elasticities were related to the level of prices, and whether those on low incomes were actually more price sensitive.	The final report includes a short section which cites two studies showing the average price elasticities for energy and alcohol were -0.3 and -0.5 respectively. The lack of literature cited contradicts the claim made in the evaluation proposal that "many of these [other consumable] studies assess the impact of price changes based on New Zealand's socioeconomic structure". A response to questions on the evaluation proposal also stated that "the most robust [other consumable] work include" NZTA analysis of fuel price elasticities and MBIE's "comprehensive work" on electricity price elasticities. Neither of these studies are cited or mentioned in the final report.
"Working with the Treasury to understand the long term **performance** of their tax forecasting modelling around excise increases."	Treasury's tax modelling is discussed, but there is no assessment of the performance of their forecasts.	It would be very easy to compare excise revenue and Treasury's forecast review.	The final report contains no analysis of the performance of Treasury's tax forecasting. Three international studies are cited to support the view that tobacco excise increases can be progressive if low-income groups are more responsive to price changes. No assessment is made of whether this is the case in New Zealand.
"Applying our **professional judgement** based on experience with other sectors, on how future disruption and availability of substitutes will impact on price elasticity."	Core judgement is: "there appears to be no compelling evidence to support claims of reducing average price elasticity over the period of analysis (2010 to 2016)". However, this judgement is driven primarily by the low quality of evidence provided in the evaluation, rather than experience in other contexts.	Improving the quality of the secondary data analysis and literature review would help in this area. Judgement is used, but the lack of actual evidence means it is hard to see this judgement as reliable.	The final report states that "the weight of evidence shows that in the short to medium term" increases in tobacco tax are likely to be effective, but "the longer term is unclear". However, the report does not clearly lay out the evidence and logic behind this judgement, or provide guidance on when tobacco excise increases are likely to become less effective.
"There is **extensive** existing New Zealand and international literature and **recent studies** examining tobacco price responsiveness in the New Zealand and international context."	The review covers very little of the existing literature and few recent studies are cited.	EY have stated this work was completed but not included in the report.	The literature review now contains a section on the equity impact of tobacco taxes. Beyond that, little of the extensive or recent literature has been cited.

Proposals or comments in consultancy services order (emphasis added)	Assessment of draft report	Potential improvements to draft report	Comment on final report
"We will look to draw on and **combine different sources** of evidence to **model** elasticities for the overall population and for different subgroups, including how price elasticities will **change over time**."	While different sources of data are used, there is little attempt to draw these together into a cohesive picture. There is no modelling of how elasticities are likely to change in the future.	It would be easy to model how elasticities change based on how the population of smokers is expected to change. For example we have data on casual vs daily smokers. If remaining smokers are less responsive, there will be a decrease in the average elasticity of the total population.	The final report has no modelling. There is no analysis of how price elasticities change in the future. The report states "there appears to be no compelling evidence of reducing average price elasticity for the total population over the period of analysis (2010 to 2016)". However, this lack of evidence does not imply there was no reduction. No evidence could be found primarily because the analysis has weak statistical power – it is not able to precisely measure changes in elasticities over time. Furthermore, these elasticity estimates are biased upwards due to not controlling for time trends.
"Using **vector autoregressive models** (or similar) we can work to establish changes over time **due to price shocks** and test findings about the nature of price elasticity over time and between groups."	The analysis makes little effort to isolate the causal impact of price shocks using vector autoregression or any other method.	Could use: VARs, one or more other countries as a 'control' group, interrupted time series analysis. Could use data on attitudes to smoking to control for social norms. There are many options, and we would expect these to be thoroughly explored.	The final report makes little effort to use these statistical techniques. The report includes a disclaimer that data on confounding factors was not available. However, it ignores the large number of statistical techniques (some of which are cited in the evaluation proposal) that can control for these factors, even when data is not available.
"New Zealand and Australia have similar cultural elements, therefore using an 'income, age, urban, ethnicity adjusted' **Australia as a reference point** analysis can be conducted to understand the isolated impact of price even in an **environment of otherwise decreasing consumption**."	The evaluation makes no comparison with smoking rates in Australia. Little effort is made to control for the environment of otherwise decreasing consumption.	Smoking rates from other developed countries could be used to create a 'counterfactual' smoking rate for New Zealand in the absence of tobacco excise increases above inflation.	The final report has no comparisons against Australia, or any other country. The report does not attempt to use cross country data to estimate the reduction in smoking rates that would have occurred in the absence of large tobacco excise increases.

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"We are prepared to examine **mortality**, **import statistics** (derived from New Zealand Customs Service data), and changes in the **type of tobacco** consumed to understand how the nature of consumption has changed since the introduction of annual tobacco excise increases in 2010 (to the extent that information is available to us)."	None of these data sources are used.	Import data publicly is available on the Stats NZ website. Type of tobacco consumed is collected in the Household Economic Survey, and in the New Zealand Health Survey.	The final report does not appear to use these data sources.
"This may include considerations such as: **incidence of taxation**, the **equity effects** of taxation, and whether the tax has similar impacts across **different income groups**."	The evaluation does not calculate the incidence of tobacco excise. It does not quantify the effect of tobacco excise on equity (or the after-tax income distribution). The effect on different quintiles of deprivation is consider in the price elasticity analysis, but not in the household expenditure analysis.	Income data is available within the HES, and could be easily linked to smoking data. Analysis of the incidence of taxation and equity effects could be performed using the HES or other data sources.	The final report's literature review has a section on the equity impacts of tobacco taxes. However, no effort is made to estimate the incidence of taxation, or the effect of tobacco excise on inequality measures, and different population groups, such as Maori and Pacific peoples.
"We would look to use a **range** of these [government studies of price elasticities] studies, but would most likely focus on those that analyse **essential products**. The most robust work includes **transport** (e.g. fuel and public transport) and energy."	The evaluation cites no studies looking at the elasticity of other products.	EY states this analysis was performed but not included in the final report.	As stated above, a very limited section on other commodities is included in the final report.
"**Forecast performance** over successive excise increases, relative to tax receipts, will provide valuable information on which to test international evidence and its application to New Zealand."	The evaluation states this information does not exist.	Assessing the performance of tobacco excise forecasts would require two things: tax receipts from tobacco excise, and Treasury's forecast of tobacco excise. Both these things exist and could be accessed relatively easily.	The final report contains no analysis of the performance of Treasury's tax forecasting.

Proposals or comments in consultancy services order (emphasis added)	**Assessment of draft report**	**Potential improvements to draft report**	**Comment on final report**
"To complement the foregoing analysis we would also look to access contemporary research, along with Police intelligence data in respect of illicit trade and **robberies**"	The evaluation states there is no reliable source of data on tobacco-related crime. No attempt is made to use proxies to estimate the scale of tobacco-related crime. No analysis is performed.	Trends in robberies targeting retailers could be analysed. An "upper bound" could be estimates by assuming the growth in the last few years.	The final report states that robberies of petrol stations, shops and liquor stores are increasing, but that it cannot be concluded that this is due to tobacco-related robberies.