

Alcohol price increase: uniform volumetric tax / minimum floor price

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The intervention

- Scenario 1: Replace the current taxation system on alcohol with a uniform volumetric tax equal to 84 centsⁱ per standard drink, applied across all alcohol products.
- Scenario 2: Introduce a floor price on alcohol at \$1.30 per standard drink.

What we already know

- High intake of alcohol is linked to weight gain, and the energy (kJ) contribution from alcohol in the diet is significant (e.g., alcohol contributes ~6.6% of energy intake for males aged 51-70).ⁱⁱ
- Increasing the price of alcohol has been shown to be an effective measure for reducing consumption of alcohol. While the impact of alcohol taxes on traditional harms associated with alcohol (e.g., road traffic accidents, violence and injuries) have been previously examined, their potential impact on obesity-related diseases has not been explored.
- In 2018, the Northern Territory introduced a floor price on alcohol at \$1.30 per standard drink.ⁱⁱⁱ

Key elements of the modelled intervention

- Alcohol intake by age and sex was extracted from 2011-12 Australian Health Survey data. Expected changes in prices, by alcohol type and point of purchase (off-premise and on-premise)^{iv} were calculated for each scenario. Recent Australian-specific own- and cross-price elasticity estimates were used to calculate expected mean changes in consumption post-intervention. Relative changes in energy intake and BMI were then calculated for each scenario. Other benefits directly related to reduction in alcohol consumption were not modelled. Substitution to non-alcoholic beverages/foods was assumed to be zero.
- Costs to government included the costs of passing the legislation; administering, supporting and monitoring implementation; and running consumer education campaigns. Costs to the alcohol industry included expected compliance costs to alcohol retailers and venues (e.g., pubs, hotels). Changes to industry revenue and tax revenue are not included in the analyses.

Key findings

- Scenario 1 would cost \$32M to implement, predominantly increasing the price of off-premise beer and wine (average of 29%), and cask wine (121%). This would lead to a 16% reduction in mean alcohol consumption (reduction of 202ml alcohol/week); a 0.7kg reduction in mean population body weight; 471,165 HALYs gained and cost offsets of \$4.9B.
- Scenario 2 would cost \$30M to implement. This scenario would largely not affect the price of on-premise alcohol, but would increase the price of some off-premise alcohol (e.g., wine by 14% and cask wine by 168%). This would lead to a 9% decrease in mean alcohol consumption (reduction of 117ml alcohol/week); a 0.45kg reduction in mean population body weight; 317,653 HALYs gained and costs offsets of \$3.3B.
- Both scenarios were shown to be dominant (cost saving and health promoting), and would lead to significant obesity-related health benefits to the Australian population.

Conclusion

Price interventions aimed at reducing alcohol consumption in the population are likely to be cost-effective from an obesity prevention perspective, over and above the benefits related directly to reduce alcohol consumption. Public acceptability of these interventions is likely to be low.

Scenarios description and cost-effectiveness results

Table 1 Description of selected scenarios

	Scenario 1 Uniform volumetric tax equiv. to a 10% increase in the tax applied to spirits, applying to all alcohol - replacing current tax regime	Scenario 2 Floor price of \$1.30 per standard drink for all alcohol
Risk factor(s) addressed by intervention	BMI	
Population targeted	Australian drinking age population, aged 14-100 years	
Weighted average reduction in body weight (95% UI)	0.68kg (0.64 to 0.73)	0.45kg (0.42 to 0.48)
Weighted average reduction in BMI (95% UI)	0.28kg/m ² (0.26 to 0.30)	0.19kg/m ² (0.17 to 0.20)
Effect decay	100% maintenance of effect	
Costs included	Government: cost of legislation, consumer awareness campaign, tax administration and monitoring. Industry: implementation and compliance costs	Government: cost of legislation, consumer awareness campaign, monitoring and advice to industry. Industry: implementation and compliance costs
Type of model used	Population model with quality of life in children	
Notes: BMI: Body mass index; kg: kilogram; m: metre; UI: uncertainty interval		

Table 2 Cost-effectiveness results, mean (95% UI)

	Scenario 1	Scenario 2
Total HALYs gained	471,165 (413,231 to 535,804)	317,653 (276,334 to 361,573)
Total intervention costs	\$32M (\$31M to \$33M)	\$30M (\$26M to \$36M)
Total healthcare cost savings	\$4.8B (\$4.3B to \$5.5B)	\$3.3B (\$2.9B to \$3.7B)
Total net cost *	-\$4.8B (-\$5.5B to -\$4.2B)	-\$3.3B (-\$3.7B to -\$2.8B)
Mean ICER	Dominant (Dominant to Dominant)	Dominant (Dominant to Dominant)
Probability of being cost-effective #	100%	100%
Overall result	Dominant	Dominant
Notes: B: billion; Dominant: the intervention is both cost-saving and improves health; HALY: health adjusted life year; ICER: incremental cost effectiveness ratio; M: million; \$: 2010 Australian dollars; * Negative total net costs equate to cost savings; # The willingness-to-pay threshold for this analysis is \$50,000 per HALY.		

Figure 1 Cost-effectiveness plane

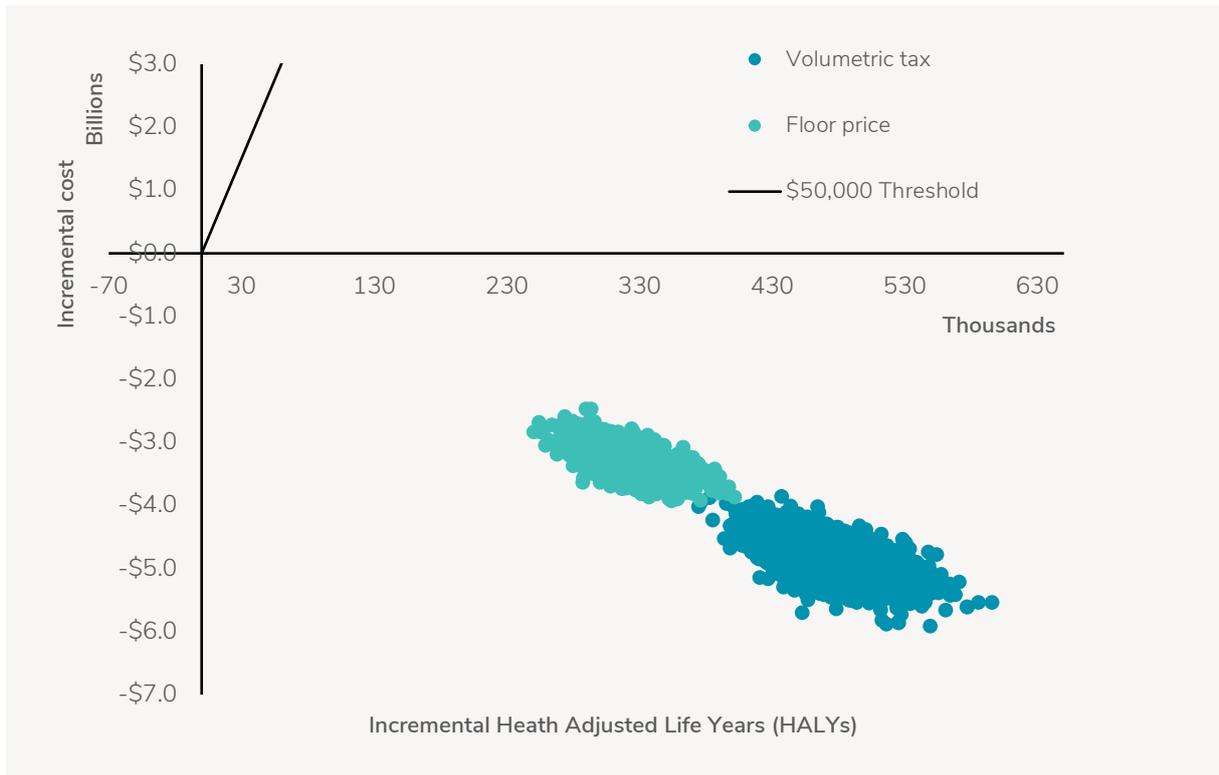
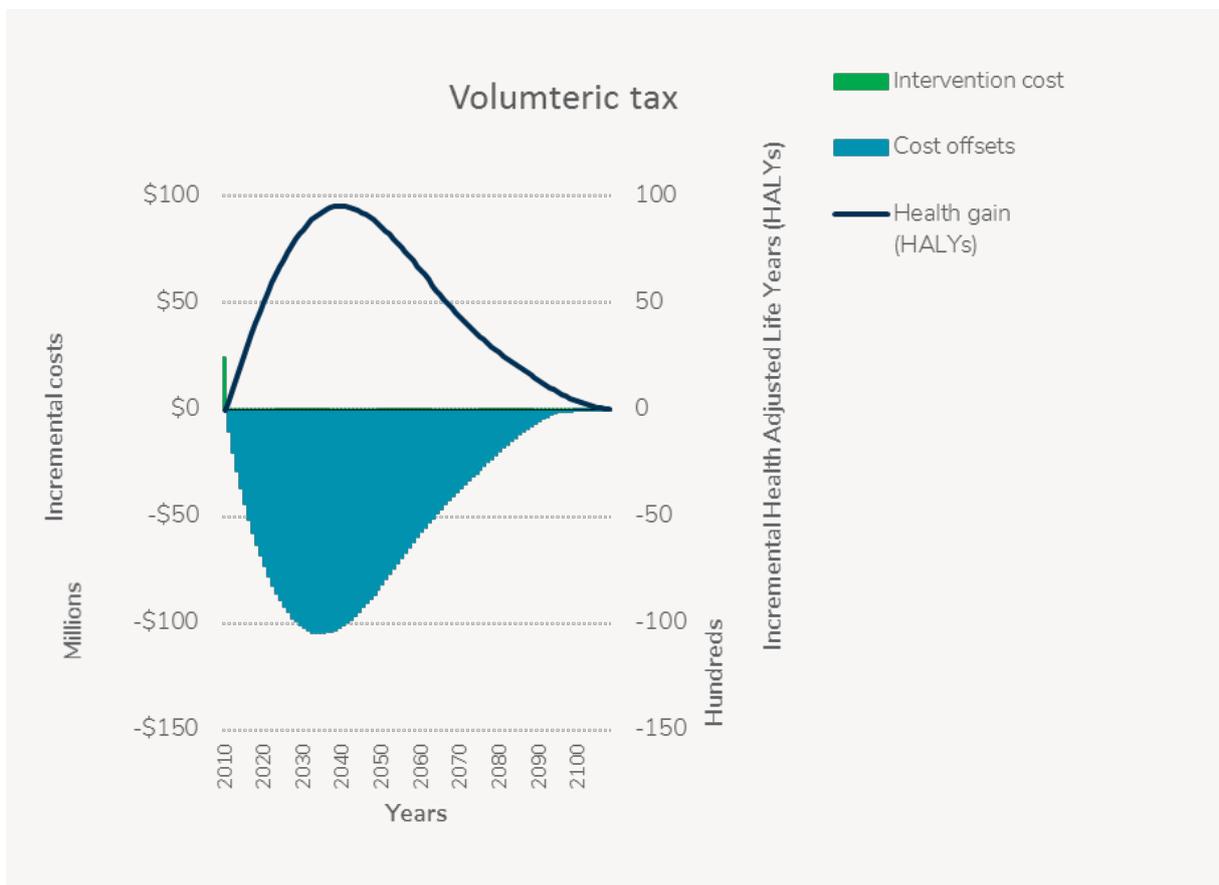


Figure 2 Costs, cost offsets and health gains over time (uniform volumetric tax)



Implementation considerations

Consideration	Details	Assessment
Strength of evidence	Low certainty of the effect of reductions in alcohol consumption on Body Mass Index / body weight outcomes due to absence of relevant studies.	Low
	Medium certainty of effect regarding how changes in price affect alcohol consumption and the corresponding impact on energy intake. Limited available evidence on potential substitution to non-alcoholic beverages/foods. ^v	Medium
Equity	Scenario 1: Price of all alcoholic beverages, particularly alcohol that is currently taxed at a low rate (e.g., cask wine), would increase. This will affect low-income consumers proportionately more.	Negative
	Scenario 2: This intervention would predominantly increase the price of low cost alcohol (e.g., cask wine). This will be somewhat regressive for low-income consumers; however, purchasing of low-cost alcohol is predominantly associated with drinking pattern (e.g., heavy drinkers) rather than income level. ^{vi}	
Acceptability	Government: Governments in Australia have shown strong support for taxes on alcohol, although have been reluctant to undertake large-scale changes to the existing alcohol taxation system. The Northern Territory (NT) government introduced a floor price on alcohol of \$1.30 in 2018, indicating its acceptability in that context.	Medium
	Industry: The alcohol industry is strongly opposed to increases in taxes and government intervention with respect to price. Evidence suggests that alcohol retailers and certain sectors of the alcohol industry (e.g., beer, spirits) may be somewhat supportive of a floor price on alcohol, particularly considering that revenue from the price increase will go to them. ^{vii}	Low
	Public: The majority of the public are likely to oppose increases in alcohol prices.	Low
Feasibility	Scenario 1: Various excise taxes on alcohol are currently in place, although this intervention will involve substantial change to the current alcohol tax regime.	High
	Scenario 2: A floor price would require a significant change to the current system. Nevertheless, the NT government has demonstrated the feasibility of this approach in that context.	
Sustainability	Scenario 1: Likely to be high due to the regulatory nature of the intervention.	High
	Scenario 2: The floor price would need to be indexed on a regular basis.	Medium
Other considerations	<p>Likely to be substantial additional benefits from reducing alcohol consumption, e.g., violence, injuries and road accidents.</p> <p>Self-reported alcohol consumption has been shown to be approximately 50% lower than what is actually consumed. This model relied on self-reported data; therefore, the results are likely to be a conservative estimate of the potential health gains.</p> <p>The differential impact of the intervention on heavy drinkers was not considered.</p> <p>The potential impact on industry profits was not considered.</p>	

ⁱ This is equivalent to a 10% increase in the current tax applied to off-premise spirits

ⁱⁱ Australian Bureau of Statistics 2014, Australian Health Survey: Nutrition First Results - Food and Nutrients 2011-12

ⁱⁱⁱ Northern Territory Government 2018. Floor price: Northern Territory Alcohol Policies and Legislation Reform, passed 22 August 2018. Darwin

^{iv} On-premise includes alcohol bought from licensed premises (e.g., bars, clubs, restaurants and hotels). Off-premise includes alcohol bought from liquor stores and other retail outlets.

^v One study (Quirnbach et al, *h*, vol. 72, no. 4, p. 324). indicates that introducing taxes on sugar-sweetened beverages leads to increased consumption of alcohol, which may indicate potential substitution effects from alcohol price interventions.

^{vi} Vandenberg, B & Sharma, A 2016, 'Are Alcohol Taxation and Pricing Policies Regressive? Product-Level Effects of a Specific Tax and a Minimum Unit Price for Alcohol', *Alcohol and Alcoholism*, vol. 51, no. 4, pp. 493-502.

^{vii} The Foundation for Alcohol Research and Education (2017). The Price is Right: Setting a Minimum Unit Price on Alcohol in the Northern Territory. FARE: Canberra.