

REPORT TO

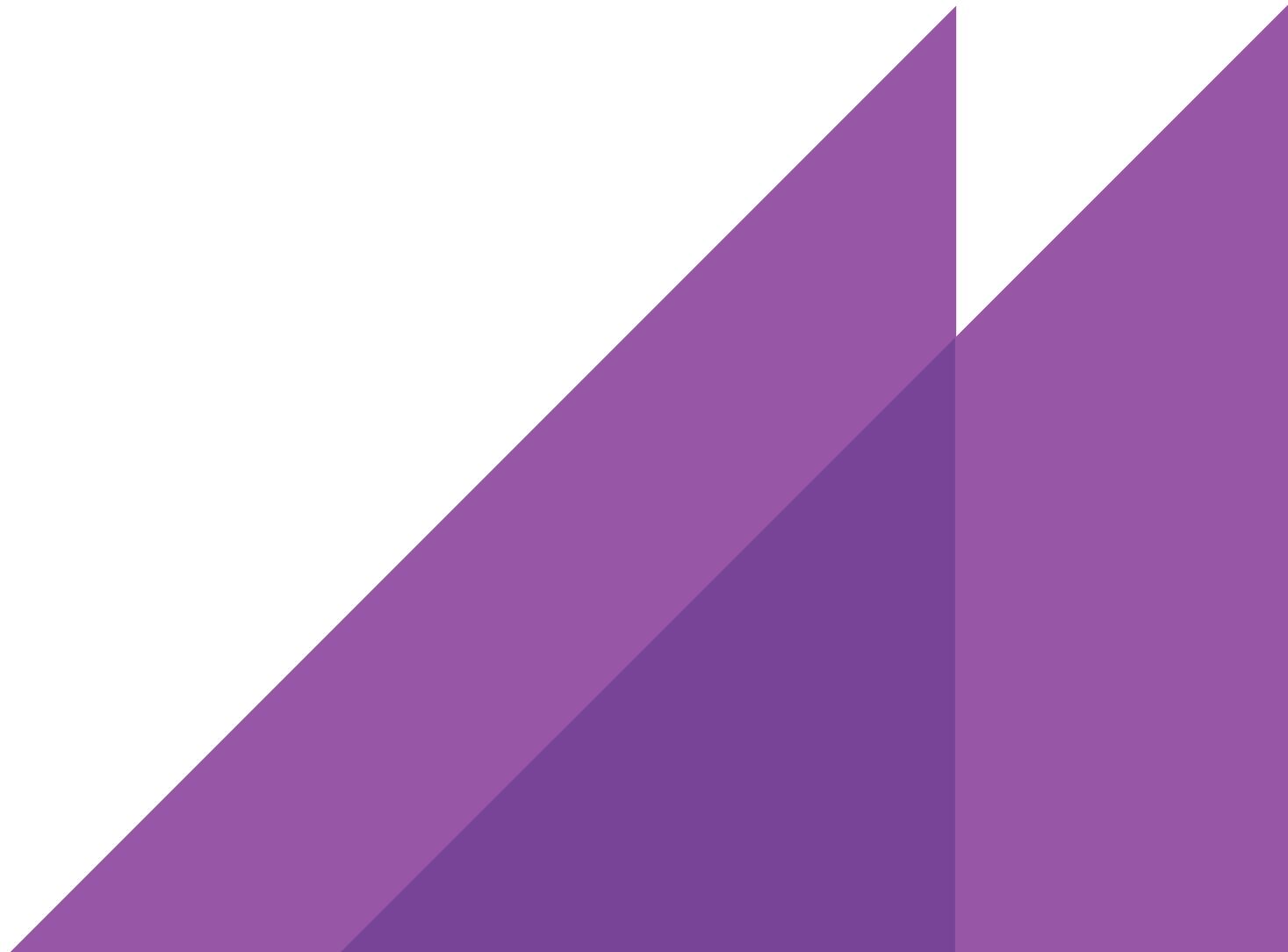
FOUNDATION FOR ALCOHOL RESEARCH AND
EDUCATION

JULY 2015

ALCOHOL TAX REFORM



ECONOMIC MODELLING
THREE ALCOHOL TAX REFORM OPTIONS





PURPOSE OF ALCOHOL TAX MODELLING

1

Existing alcohol taxation regime

Alcohol products sold in Australia are currently taxed at different rates through a number of different regimes. Beer and spirits are subject to excise at eight different rates. Wine is subject to the Wine Equalisation Tax (WET), which is based on the value of the wine where rebates are available to small producers.

Different amounts of tax are payable on a standard drink depending on type of beverage, alcohol concentration, container size, size of producer and the pre-tax price of the beverage. Some examples include:

- cheaper wine is taxed at a lower rate than premium wine
- small producers' wine is taxed at a lower rate than larger producers' wine
- beer sold in hotels is taxed at a lower rate than packaged beer bought to be consumed at home
- brandy is taxed at a lower rate than spirits.

The purpose of modelling these scenarios is to illustrate the impacts on the Australian economy of changes to alcohol taxation policy in Australia.

Purpose of modelling

The Foundation for Alcohol Research and Education (FARE) commissioned ACIL Allen Consulting (ACIL Allen) to model three alcohol taxation reform scenarios and their impact on:

- tax revenues collected
- alcohol consumption
- alcohol prices
- value of alcohol production
- employment.

This brief

This brief:

- outlines the economic framework used for the alcohol tax modelling
- describes the three scenarios modelled in relation to alcohol taxation reform, and in doing so, outlines the alcohol tax rates applied to the different types of alcohol beverages
- explains the results of the alcohol tax modelling by scenario.

ERRATA: The figures published in "Table 3.4. Tax per standard drink" (p.15) have been amended since the report's original publication. The following copy has been updated to reflect this correction.



ECONOMIC FRAMEWORK FOR ASSESSING ALCOHOL TAX POLICY REFORM

2

The impacts of changes to alcohol taxation policy from the existing alcohol taxation are modelled using ACIL Allen's BeverAGE model with the latest available data. The model is a powerful tool for policy analysis because it can quantify the impact of a tax policy change on consumption, prices and taxation revenue.

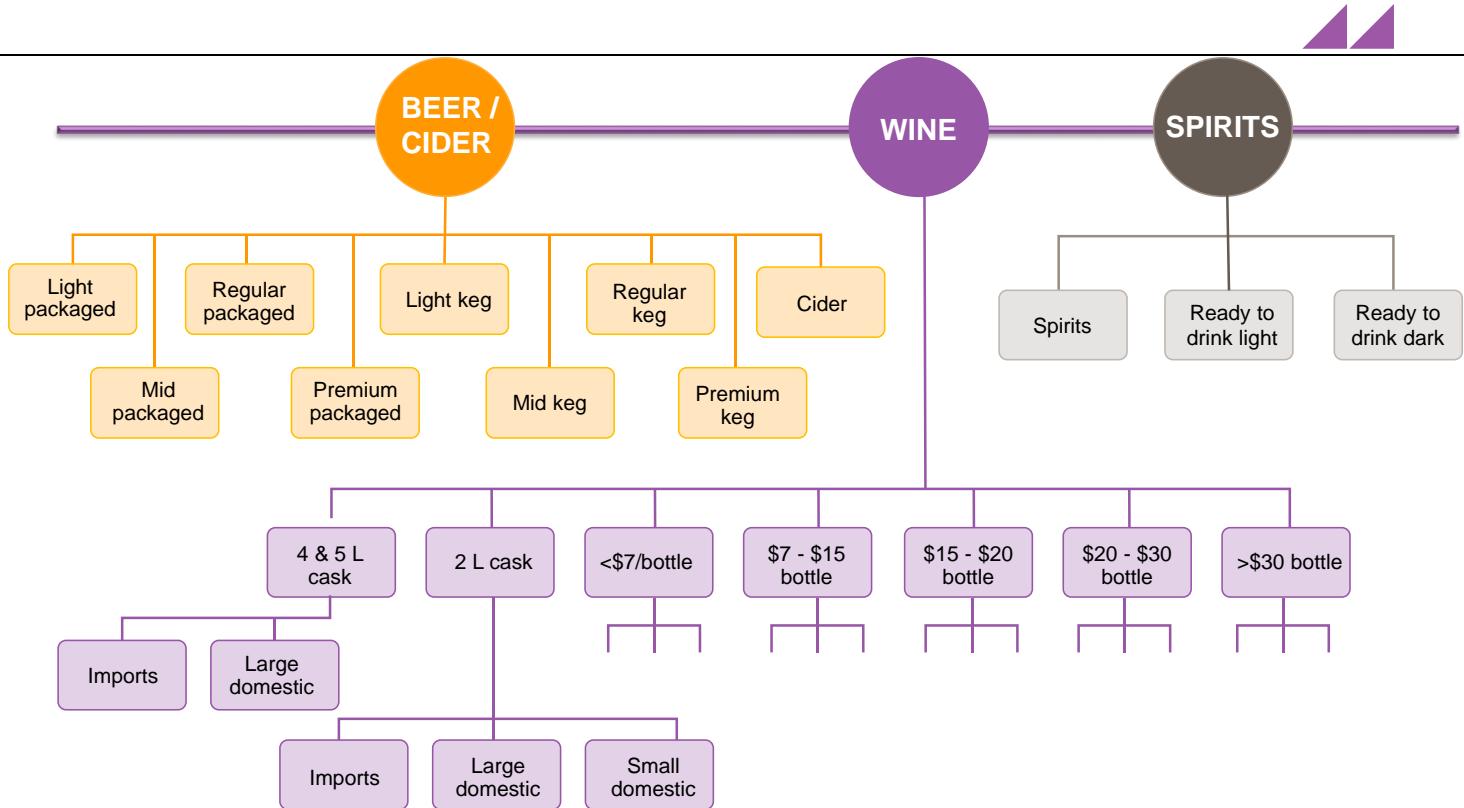
The BeverAGE model is a computable general equilibrium (CGE) model of the Australian economy (including trade interactions with the rest of the world). The core database for the CGE model was derived from the Global Trade Analysis Project (GTAP) database released in 2008. The database is a fully documented, publicly available, global database containing complete bilateral trade information and transport and protection linkages among regions for all GTAP commodities.

Consumer utility and model structure

In the CGE model, the alcohol sector is depicted in detail and distinguishes between different types of alcoholic beverages. In modelling the impact of alcohol tax changes, consumer utility has been represented using a constant difference of elasticities (CDE) function.

It includes 3 types of alcoholic beverages. The structure of the alcohol beverages sector is depicted in Figure 2.1

FIGURE 2.1. UTILITY TREE REPRESENTATION OF MODEL STRUCTURE



SOURCE: ACIL ALLEN CONSULTING, 2015

In the model, the three aggregate alcohol products of beer, wine and spirits enter at the top level and below each beverage is a product nest for the individual market segments. This includes:

- Beer sub-sector: the market segments within the beer sub-sector include light beer, mid-strength beer, regular beer and premium beer, all in either keg format or as packaged beer and cider (this is a new alcoholic beverage which has been added to the model).
- Spirits sub-sector: the market segments are spirits, light ready-to-drink (RTD) spirits and dark RTD spirits.
- Wine sub-sector: the market segments are four and five litre cases (otherwise called non-premium cask wine), two litre casks (otherwise called premium cask wine), wines less than \$7 a bottle, wines between \$7 and \$15 per bottle, wines between \$15 and \$20 per bottle, wines between \$20 and \$30 per bottle and wine costing more than \$30 per bottle.

For beer and spirits, a constant elasticity of substitution (CES) structure has been used to capture substitution between the different market segments. For wine, more flexible constant ratios of elasticities of substitution has been assumed. For each wine segment, an additional CES nest is added to allow for substitution between imported wine, domestic wine from large producers that have a net WET liability and domestic wine from small producers that have no net WET liability. The detailed database developed assumes small producers do not produce four and five litre cask wine products (see Figure 2.1 for structure of model).

In terms of production costs, small WET-free producers are assumed to have production costs that are higher than those of large producers by approximately the value of the WET rebate. This means that, across each market segment, the retail prices of wines from large wineries and small wineries are approximately the same. It is further assumed that across large wineries and small wineries, there is a specific profit centre for each market segment that has a specific capital requirement. The share of capital assumed to be specific to each market segment has been set at 15 per cent. This approach means that, as demand for a specific market segment falls or rises, there can be a slight decrease or increase in the return to that market segment.

The overall return to small wineries and large wineries, in terms of the average dollar margin per litre of wine sold, is however held constant. This structure has been chosen as it allows an export response following the tax changes considered. The impact of assuming there is no export response following the tax changes considered is discussed as part of the sensitivity analysis.

For imports, the average per litre import price to Australia for each country of origin has been used to allocate wine imports to different quality categories.

A range of data sources were used to create the database, including: Australian Bureau of Statistic (ABS, 1998, 2000, 2003, 2009, 2010a), Wittwer, Valenzuela and Anderson (2009), Australian Taxation Office (ATO) and Australian Wine and Brandy Corporation (AWBC) data, the Deloitte Wine Federation of Australia (WFA, 2003-2009) benchmarking surveys and several unpublished industry reports.

Income, own-price and substitution and elasticity values

The parameterisation of the CDE utility function relies on unconditional compensated own-price elasticity values and unconditional income elasticity values. Across the alcohol demand studies of Australia that have been published since the 1980s, the average unconditional income elasticity values are 0.66 for beer, 0.65 for wine and 2.08 for spirits and the average unconditional compensated own-price elasticity values are -0.37 for beer, -0.40 for wine and -0.96 for spirits (Fogarty, 2010). As noted above, for beer and spirits, a CES nest has been used to capture substitution between market segments. The default elasticity of substitution value in both these nests has been set at 2.0.

A CRESH specification has been used for the wine nest. For the CRESH specification, the compensated own-price elasticity formula can be expressed as $\eta_{ii} = -(1 - s^*_{ii})\sigma_i$, where η_{ii} is the own-price elasticity of good i , σ_i is the elasticity of substitution for good i , $s^*_{ii} = s_i / (1 - h_i)$, $s_i / (1 - h_i)$, where s_i is the (conditional) budget share of good i , $\sigma_i = 1 / (1 - h_i)$ and h_i is a parameter that is less than one, but not zero.

As an individual elasticity of substitution value can be specified for each good in the nest, it is possible to set the elasticity of substitution values with target own-price elasticity values in mind. The default price elasticity values are as follows: -0.31 for four and five litre casks, -0.42 for premium casks, -0.55 for less than \$7 per bottle, -0.66 for \$7-\$15 per bottle, -0.75 for \$15-\$20 per bottle, -0.88 for \$20-\$30 per bottle and -0.98 for more than \$30 per bottle. The pattern of the own-price elasticity values being more responsive as quality increases is consistent with the demand structures used in Wittwer and Anderson (2002) and is also consistent with evidence for the alcohol market as a whole (Clements, Yang & Zheng, 1997). As part of the sensitivity analysis, the default own-price elasticity values were scaled up and down by 20 per cent and 40 per cent. For completeness, the sensitivity analysis also considers a scenario where the market segment level own price elasticity values were all assumed to be -0.66.

For wine as a composite good, the approach of Wittwer and Anderson (2002), where 4.0 is used as the Armington elasticity of substitution between imported wine and domestic wine and where 8.0 is used as the elasticity of substitution for imports from different destinations, appears appropriate. However, as the current application involves several wine categories, these values are not directly applicable. For low-value wine, substitution is expected to be strong but for premium wine, where terroir is important, substitution is expected to be more subdued. Reflecting this, the default elasticity of substitution value for imports, wine from small producers and wine from large producers has been set at 6.0 for the lowest three wine quality market segments: 4.0 for wine between \$7 and \$20 per bottle, 2.0 for wine between \$20 and \$30 per bottle and 1.5 for wine costing more than \$30 per bottle. The same elasticity values are also used for demand in the rest of the world which imports wine from Australia.

As part of the sensitivity analysis, these values were scaled up and down by 20 per cent and 40 per cent, with the implication of assuming a uniform elasticity of substitution value of 4.0 also considered.

Other assumptions

The actual retail price changes modelled depend in part on the product mark-up assumption. Assuming retailers maintain constant absolute margins implies that only the incremental effect of the tax change (and the goods and services tax effect) will be passed on to consumers. Assuming a constant percentage margin implies that retailers will pass on more than the additional tax impost for the alcoholic beverages whose prices are rising and reduce prices further for the alcoholic beverages whose prices are falling. The main results report findings based on the constant per litre retail margin assumption, with the impact of assuming a constant percentage mark-up considered as part of the sensitivity analysis.

As the WET is based on value, not alcohol content, wine producers have not felt the need to control the alcohol content of the wine they produce and, over the past 20 years, the average alcohol content of Australian wine has gradually risen. For example, Godden and Gishen (2005) report that, between 1984 and 2004, the average alcohol content of Australian red wine increased by 1.6 percentage points and that, between 1985 and 2000, the average alcohol content of Australian white wine increased by 1.0 percentage point. The change to a volumetric alcohol tax would provide producers with a strong incentive to reduce the alcohol content of their wines. As such, it is assumed that although the revenue-neutral tax rate imposed is calculated based on an average alcohol content of wine of 12.65 per cent, the actual average alcohol content of wine, once the system is introduced, is actually 11.65 per cent. The impact of assuming producers ignore the incentive to reduce the alcohol content of their wine is noted in the sensitivity analysis. With a change to a volumetric tax, the value of the WET rebate for products sold in each market segment would change. To simplify matters, for the scenario that assumes a producer rebate system is retained, the assumption used is that if a winery had a zero net WET liability prior to the tax change, they have a zero net excise tax liability after the change to a volumetric tax.



SCENARIO ANALYSIS

3

To quantitatively assess the impacts of changes to alcohol taxation policy in Australia, ACIL Allen assessed the following changes:

- **Scenario 1:** change the existing wine tax to a volumetric tax at a rate that is revenue neutral (excluding the consideration of the WET rebate).
- **Scenario 2:** change the existing wine tax to a volumetric tax at a tax rate of \$56.46 (half way between full strength draught beer rate and spirits rate).
- **Scenario 3:** change the existing wine tax to a volumetric tax at a tax rate of \$56.46 (half way between full strength draught beer rate and spirits rate), taxing draught beer at the existing packaged beer rate and taxing cider at the existing regular beer rate.

Scenario 1 – Replacing the WET with a tax neutral volumetric tax rate

In Scenario 1, the BeverAGE model estimated the impacts of removing the WET and replacing it with a volumetric tax for wine which results in no changes in tax revenue collected from the sale of wine.

Under this scenario, the taxation levied on the wine industry remains constant, while the liability of individual producers will change. Producers of low-cost wine will tend to pay more of the WET while producers of premium wines will tend to pay less.

The volumetric tax required to maintain revenue neutrality was calculated as \$14.08 per litre of alcohol. Applying this rate of tax to wine results in the following quantity of impacts (see Table 3.1 for a detailed summary of the impacts from the tax change). In terms of health, it is most relevant to assess the effectiveness of this by the change in consumption in terms of quantity of pure alcohol.

TABLE 3.1. IMPACT OF SCENARIO 1

	SCENARIO 1				
	VALUE \$m	LAL '000 L	PRICE % change	Litres % change	LAL % change
WET-free wineries					
Non-premium cask wine	0	0	0	0	0
Premium cask wine	-7.05	-186.97	26.72	-52.31	-52.31
\$7 bottle wine – small	-12.29	-358.32	26.33	-42.92	-42.92
\$7-\$15 bottle wine – small	-60.72	-752.87	12.83	-39.63	-39.63
\$15-\$20 bottle wine – small	-100.10	-663.99	6.83	-34.34	-34.34
\$20-\$30 bottle wine – small	-31.20	-175.15	5.17	-15.58	-15.58
>\$30 bottle wine – small	-1.37	-4.25	2.88	-10.89	-10.89
WET-payable wineries					
Non-premium cask wine	112.85	-1837.09	40.16	-10.41	-10.41
Premium cask wine	33.23	-210.71	12.57	-2.91	-2.91
\$7 bottle wine	32.29	-215.82	10.55	-2.68	-2.68
\$7-\$15 bottle wine	32.79	539.36	-1.50	3.98	3.98
\$15-\$20 bottle wine	57.24	865.36	-6.44	11.62	11.62

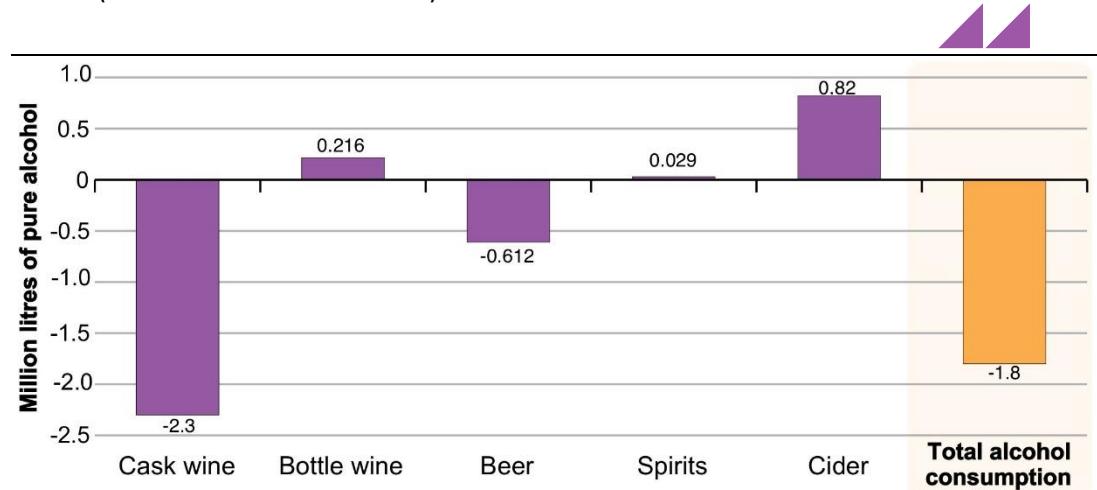
	SCENARIO 1				
	VALUE \$m	LAL '000 L	PRICE % change	Litres % change	LAL % change
\$20-\$30 bottle wine	12.85	264.85	-8.85	12.36	12.36
>\$30 bottle wine	-2.90	122.52	-12.23	13.09	13.09
Imported wines					
Non-premium cask wine	9.39	-40.99	38.47	-3.63	-3.63
Premium cask wine	1.28	6.20	11.34	3.69	3.69
\$7 bottle wine	0.80	1.73	9.47	1.23	1.23
\$7-\$15 bottle wine	6.54	96.64	-2.55	8.53	8.53
\$15-\$20 bottle wine	18.54	321.78	-6.11	10.06	10.06
\$20-\$30 bottle wine	3.39	55.81	-10.00	15.27	15.27
>\$30 bottle wine	-0.01	118.41	-13.52	15.63	15.63
Packaged beer					
Beer – light	-2.12	-15.15	-0.04	-0.78	-0.78
Beer – mid	-8.82	-76.64	-0.03	-0.79	-0.79
Beer – regular	-36.93	-338.96	-0.03	-0.80	-0.80
Beer – premium	-6.82	-44.84	-0.03	-0.79	-0.79
Draught beer					
Keg beer – light	-1.53	-4.08	-0.04	-0.77	-0.77
Keg beer – mid	-4.69	-15.53	-0.04	-0.77	-0.77
Keg beer – regular	-27.57	-104.30	-0.04	-0.78	-0.78
Keg beer – premium	-4.68	-12.18	-0.04	-0.77	-0.77
Spirits & RTDs					
Spirits	3.06	20.04	0.01	0.08	0.08
RTD – light	0.59	2.97	0.01	0.08	0.08
RTD – dark	1.29	6.58	0.01	0.08	0.08
Cider					
Cider	55.81	820.33	-8.90	19.47	19.47
TOTAL	73.14	-1,815.28	0.82	-0.51	-0.97

SOURCE: ACIL ALLEN CONSULTING, 2015

In summary (see **Figure 3.1**), Scenario 1 results in:

- an increase in the price of non-premium cask wine of 28.54 per cent results in a decrease in the consumption of cask wine by 8.5 per cent or 2.3 million litres of pure alcohol
- a small decrease in the consumption of beer by less than 1 per cent or 611.67 litres of pure alcohol
- an increase in the consumption of other alcohol types
- a decrease in total alcohol consumption of just under 1 per cent or 1.8 million litres of pure alcohol.

FIGURE 3.1. SCENARIO 1 – CHANGE IN ALCOHOL CONSUMPTION COMPARED TO THE CURRENT POLICY (MILLION LITRES OF ALCOHOL)



SOURCE: ALLEN CONSULTING GROUP, 2015

The changes in alcohol consumption seen in this scenario are due to the direct changes which the proposed alcohol taxation policy reform has on the relative prices of alcohol beverages. In the proposed case, removing the WET and introducing a common volumetric tax rate on wine increases the effective tax rate on cask wine that increases the price of cask wine relative to premium wine and other non-wine alcoholic beverages. This in turn drives the swing in expected consumption away from cask wine, offset by an increase in the consumption of premium wines.

Although the taxation revenue collected from the sale of wine has been held constant from the tax policy change, Scenario 1 results in a small change in taxation revenue across all alcohol beverages estimated to be in the order of \$24.97 million per annum.

Scenario 1 is estimated to result in:

- an increase of 87 full-time-equivalent (FTE) jobs in the alcohol industry
- an increase in total employment for the economy of 447 FTE jobs.

These estimated job gains are driven by the small income gain for consumers due to the marginal decrease in the cost of alcohol as a result of the tax change.

Scenario 2 – Replacing the WET with a tax rate of \$56.46 (half way between full strength draught beer rate and spirits rate)

In Scenario 2, the BeverAGE model estimated the impacts of removing the WET and introducing a common volumetric tax rate for wine at \$56.46. This rate is half way between the full strength draught beer rate (more than 3.5 per cent) of \$33.16 and the spirits rate of \$79.77.

Applying this rate of tax to wine results in the following quantity of impacts (see Table 3.2 for a detailed summary of the impacts from the tax change).

TABLE 3.2. IMPACT OF SCENARIO 2

	SCENARIO 2				
	VALUE \$m	LAL '000 L	PRICE % change	Litres % change	LAL % change
WET-free wineries					
Non-premium cask wine	0	0	0	0	0
Premium cask wine	1.18	-178.53	113.01	-49.95	-49.95
\$7 bottle wine – small	4.42	-390.81	106.91	-46.82	-46.82
\$7-\$15 bottle wine – small	-19.65	-799.67	54.87	-42.09	-42.09
\$15-\$20 bottle wine – small	-37.12	-621.47	31.05	-32.14	-32.14
\$20-\$30 bottle wine – small	16.91	-146.79	22.02	-13.06	-13.06
>\$30 bottle wine – small	1.70	-0.87	12.87	-2.23	-2.23
WET-payable wineries					
Non-premium cask wine	490.69	-5715.30	212.32	-32.38	-32.38
Premium cask wine	181.71	-1745.17	98.75	-24.14	-24.14
\$7 bottle wine	172.10	-2126.26	90.75	-26.37	-26.37
\$7-\$15 bottle wine	282.97	-1870.77	40.21	-13.81	-13.81
\$15-\$20 bottle wine	300.93	366.80	17.52	4.92	4.92
\$20-\$30 bottle wine	106.00	240.36	7.88	11.22	11.22
>\$30 bottle wine	72.95	200.10	-2.28	21.37	21.37
Imported wines					
Non-premium cask wine – 2 litre	36.20	-288.05	207.33	-25.52	-25.52
Premium cask wine	5.11	-29.54	96.03	-17.59	-17.59
\$7 bottle wine	3.29	-33.14	88.98	-23.57	-23.57
\$7-\$15 bottle wine	27.16	-123.39	39.05	-10.88	-10.88
\$15-\$20 bottle wine	126.30	136.90	17.70	4.28	4.28
\$20-\$30 bottle wine	19.48	51.31	6.54	14.04	14.04
>\$30 bottle wine	62.35	185.52	-3.92	24.49	24.49
Packaged beer					
Beer – light	1.23	16.62	-0.38	0.86	0.86
Beer – mid	4.51	72.54	-0.33	0.75	0.75
Beer – regular	17.73	298.13	-0.30	0.70	0.70
Beer – premium	3.63	44.46	-0.34	0.78	0.78
Draught beer					
Keg beer – light	1.03	5.29	-0.45	1.00	1.00
Keg beer – mid	3.01	19.20	-0.43	0.96	0.96
Keg beer – regular	17.10	123.65	-0.41	0.92	0.92

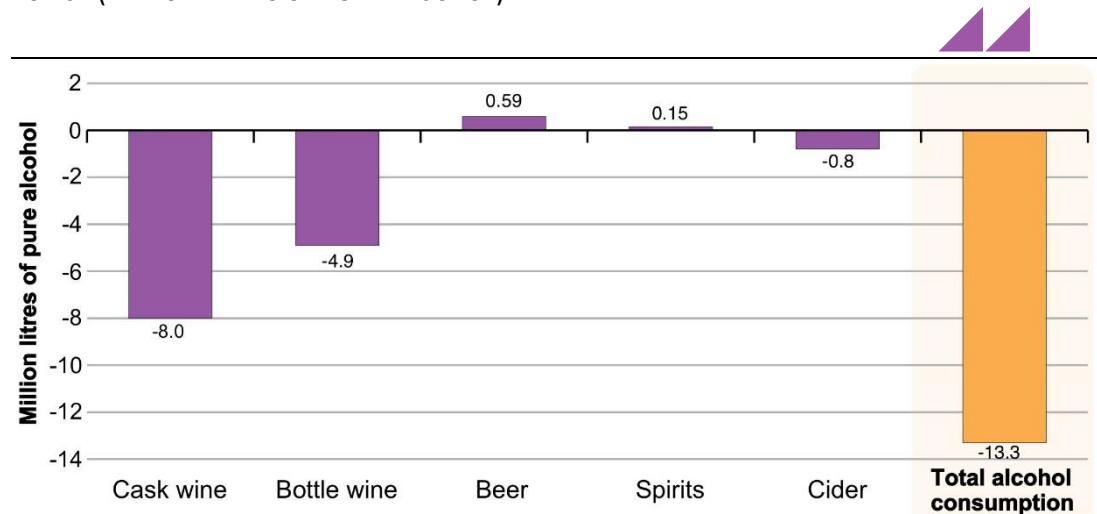
	SCENARIO 2				
	VALUE \$m	LAL '000 L	PRICE % change	Litres % change	LAL % change
Keg beer – premium	2.98	14.89	-0.42	0.95	0.95
Spirits & RTDs					
Spirits	-23.04	-112.33	-0.21	-0.47	-0.47
RTD – light	-4.10	-12.49	-0.28	-0.34	-0.34
RTD – dark	-8.99	-28.24	-0.28	-0.35	-0.35
Cider					
Cider	-68.20	-863.66	12.20	-20.49	-20.49
TOTAL	1,801.57	-13,310.71	11.80	-3.91	-7.11

SOURCE: ACIL ALLEN CONSULTING, 2015

In summary (see **Figure 3.2**), Scenario 2 results in:

- an increase in the price of cask wine of 160 per cent results in a decrease in the consumption of cask wine by 30 per cent or just under 8.0 million litres of pure alcohol
- an increase in the consumption of only beer of 594 litres of pure alcohol
- a decrease in total alcohol consumption of 7.1 per cent or 13.31 million litres of pure alcohol.

FIGURE 3.2. SCENARIO 2 – CHANGE IN ALCOHOL CONSUMPTION COMPARED TO THE CURRENT POLICY (MILLION LITRES OF PURE ALCOHOL)



SOURCE: ACIL ALLEN CONSULTING, 2015

The changes in alcohol consumption seen in Scenario 2 are due to the direct changes which the proposed alcohol taxation policy reform has on the relative prices of alcohol beverages. In the proposed case, removing the WET and introducing a higher common volumetric tax rate on wine (relative to Scenario 1) increases the effective tax rate on cask wine, therefore increasing the price of cask wine relative to premium wine and even more so in relation to the other non-wine alcoholic beverages. This in turn drives the swing in expected consumption away from cask wine with a small increase in the consumption of beer.

Scenario 2 results in an increase in the level of taxation revenue collected from alcoholic beverages. It is estimated to result in \$2.3 billion additional taxation revenues.

Scenario 2 is estimated to result in:

- a decrease of 1,032 full-time-equivalent (FTE) jobs in the alcohol industry
- a decrease in total employment for the economy of 14,898 FTE jobs

These estimated job losses are driven by the income loss for consumers due to the increase in the cost of alcohol as a result of the tax change.

Scenario 3 – Replacing the WET with a tax rate of \$56.46, taxing draught beer at the existing packaged beer rate and taxing cider at the regular beer rate

In Scenario 3, the BeverAGE model estimated the impacts of:

- introducing a common volumetric tax rate for wine of \$56.46. That is, this scenario removes the WET and applies a \$56.46 tax rate to wine. This rate is half way between the existing full strength draught beer rate (more than 3.5 per cent) of \$33.16 and the spirits rate of \$79.77.
- taxing draught beer at the existing packaged beer rate
- taxing cider at the existing regular beer rate.

Applying these alcohol tax rates results in the following quantity of impacts (see Table 3.3) for a detailed summary of the impact from the tax change).

TABLE 3.3 IMPACT OF SCENARIO 3

	SCENARIO 3				
	VALUE \$m	LAL '000 L	PRICE % change	Litres % change	LAL % change
WET-free wineries					
Non-premium cask wine	0	0	0	0	0
Premium cask wine	1.17	-178.55	112.98	-49.95	-49.95
\$7 bottle wine – small	4.41	-390.87	106.87	-46.82	-46.82
\$7-\$15 bottle wine – small	-19.70	-799.78	54.83	-42.10	-42.10
\$15-\$20 bottle wine – small	-37.22	-621.55	31.01	-32.14	-32.14
\$20-\$30 bottle wine – small	16.81	-146.86	21.98	-13.07	-13.07
>\$30 bottle wine – small	1.70	-0.87	12.84	-2.23	-2.23
WET-payable wineries					
Non-premium cask wine	490.45	-5,717.22	212.29	-32.39	-32.39
Premium cask wine	181.55	-1,746.03	98.72	-24.15	-24.15
\$7 bottle wine	171.91	-2,127.27	90.72	-26.38	-26.38
\$7-\$15 bottle wine	282.40	-1,872.41	40.18	-13.82	-13.82
\$15-\$20 bottle wine	300.39	366.07	17.49	4.91	4.91
\$20-\$30 bottle wine	105.78	240.17	7.85	11.21	11.21
>\$30 bottle wine	72.79	200.05	-2.31	21.37	21.37
Imported wines					
Non-premium cask wine	36.18	-288.22	207.30	-25.53	-25.53
Premium cask wine	5.11	-29.57	96.00	-17.61	-17.61
\$7 bottle wine	3.29	-33.16	88.95	-23.59	-23.59
\$7-\$15 bottle wine	27.10	-123.58	39.02	-10.90	-10.90
\$15-\$20 bottle wine	126.04	136.43	17.67	4.26	4.26

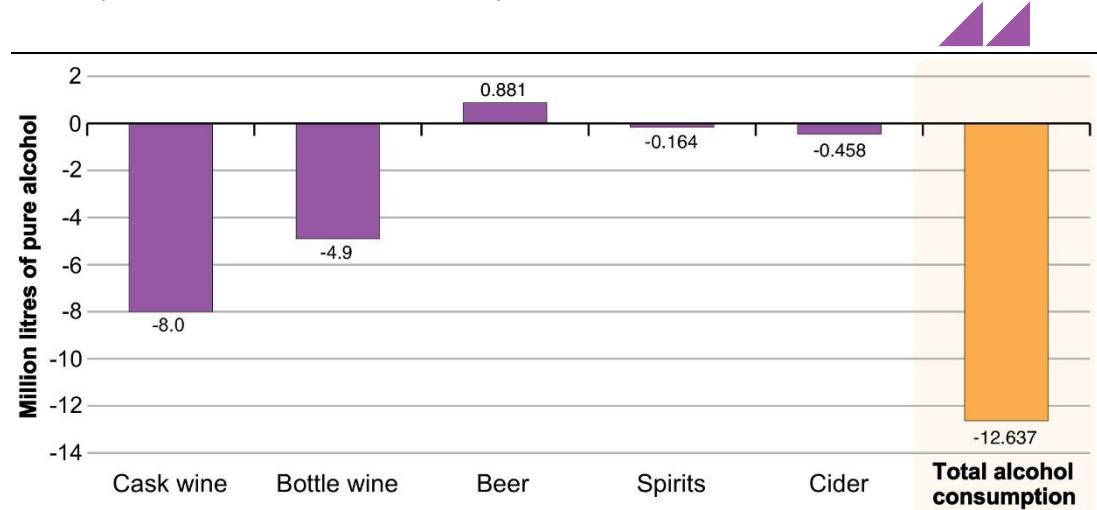
	SCENARIO 3				
	VALUE \$m	LAL '000 L	PRICE % change	Litres % change	LAL % change
\$20-\$30 bottle wine	19.44	51.27	6.51	14.03	14.03
>\$30 bottle wine	62.22	185.45	-3.95	24.48	24.48
Packaged beer					
Beer – light	6.97	57.81	-0.29	2.98	2.98
Beer – mid	28.37	280.71	-0.25	2.90	2.90
Beer – regular	117.62	1,218.34	-0.23	2.86	2.86
Beer – premium	22.07	166.30	-0.26	2.93	2.93
Draught beer					
Keg beer – light	-3.77	-32.95	4.48	-6.20	-6.20
Keg beer – mid	-11.88	-127.11	4.55	-6.32	-6.32
Keg beer – regular	-42.41	-641.37	3.69	-4.77	-4.77
Keg beer – premium	-0.64	-40.24	2.51	-2.56	-2.56
Spirits & RTDs					
Spirits	-24.65	-120.35	-0.23	-0.51	-0.51
RTD – light	-4.39	-13.41	-0.30	-0.36	-0.36
RTD – dark	-9.62	-30.31	-0.30	-0.37	-0.37
Cider					
Cider	-28.24	-458.18	7.18	-10.87	-10.87
TOTAL	1,901.24	-12,637.24	11.61	-3.38	-6.75

SOURCE: ACIL ALLEN CONSULTING, 2015

In summary (see Figure 3.3), Scenario 3 results in:

- a decrease in the consumption of cask wine by eight million litres of pure alcohol
- a marginal increase in the consumption of beer
- a reduction in the consumption of all other alcohol beverage types (cider, spirits, RTDs and bottled wine)
- a decrease in total alcohol consumption of 6.7 per cent which equates to 12.6 million litres of pure alcohol.

FIGURE 3.3 SCENARIO 3 – CHANGE IN ALCOHOL CONSUMPTION COMPARED TO THE CURRENT POLICY (MILLION LITRES OF PURE ALCOHOL)



SOURCE: ACIL ALLEN CONSULTING, 2015

The changes in alcohol consumption in Scenario 3 are due to the direct changes which the proposed alcohol taxation policy reform has on the relative prices of alcohol beverages. In the proposed case, removing the WET and introducing a higher common volumetric tax rate on wine (relative to Scenario 1) increases the effective tax rate on cask wine that increases the price of cask wine relative to premium wine and even more so in relation to the other non-wine alcoholic beverages. This in turn drives the swing in expected consumption away from cask wine with a small increase in the consumption of beer. The impacts on non-wine alcohol however varies from the impacts of Scenario 2 as beer is taxed at a single rate regardless of whether it is packaged or draught beer (although it is taxed differently based upon the low, mid and high categories).

Scenario 3 results in an increase in the level of taxation revenue collected from alcoholic beverages. It is estimated to result in \$2.5 billion additional taxation revenues.

Scenario 3 is estimated to result in:

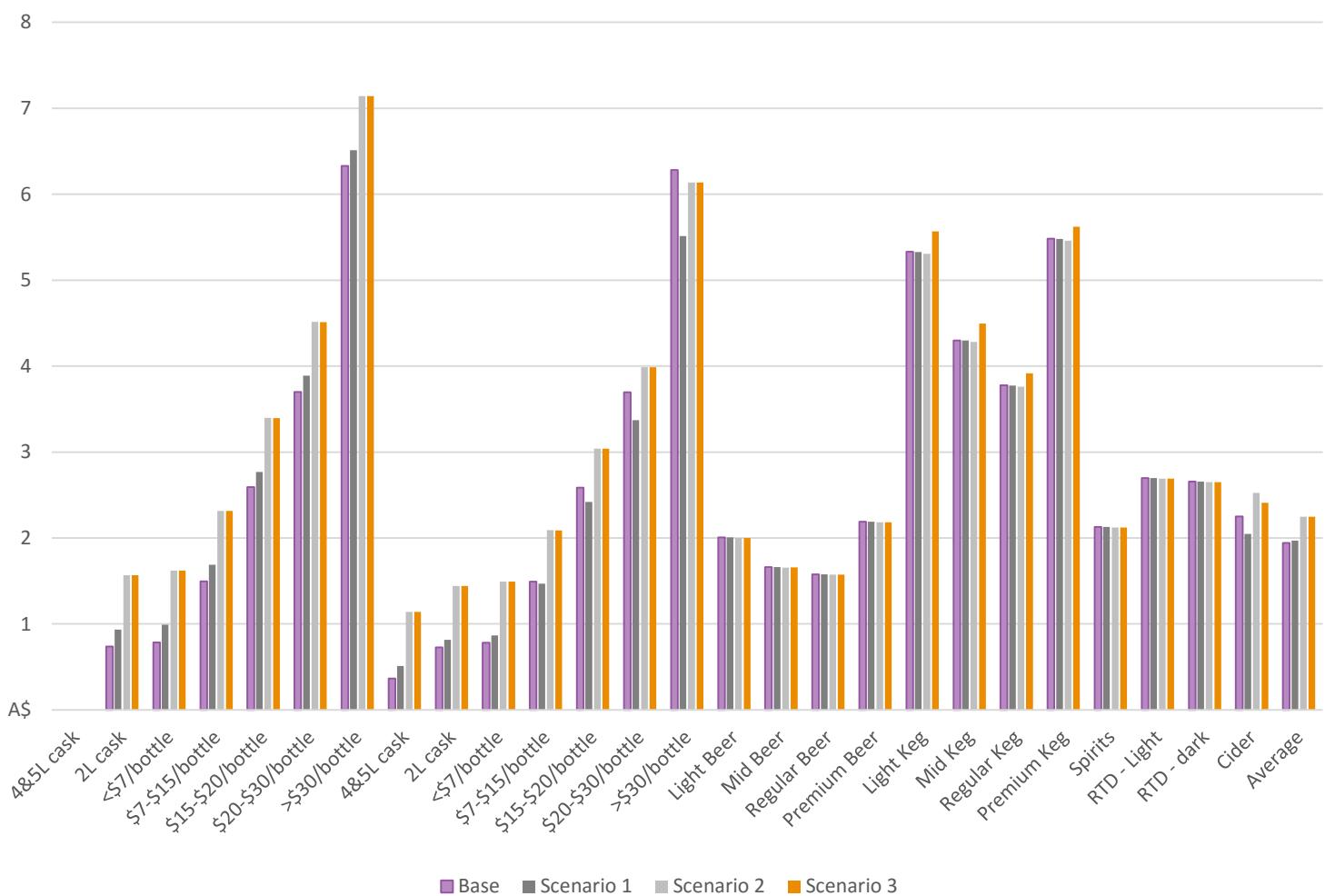
- a decrease of 1,462 full-time-equivalent (FTE) jobs in the alcohol industry
- a decrease in total employment for the economy of 14,404 FTE jobs.

These estimated job losses are driven by the income loss for consumers due to the increase in the cost of alcohol as a result of the tax change.

Average retail price and tax payable per standard drink – existing and proposed alcohol tax regimes

Figure 3.4 depicts the average retail price per standard drink by type of alcohol. The results indicates the degree to which the average retail price per standard drink differs due to the varying alcohol tax paid as a result of the varied alcohol tax regimes.

FIGURE 3.4. AVERAGE RETAIL PRICE PER STANDARD DRINK UNDER EACH SCENARIO



Note: The base case represents the existing alcohol tax regime before any of the proposed tax changes.

SOURCE: ACIL ALLEN CONSULTING, 2015

Based upon a standard drink (comprising 15 ml ethanol), Table 3.4 summarises the different tax payable per unit of alcohol under the existing and proposed tax regimes. The base case represents the tax payable under the existing regime and shows how the tax payable per unit of alcohol varies significantly by type of standard alcoholic drink.

TABLE 3.4. TAX PER STANDARD DRINK

	Alcohol drink type	Existing alcohol tax regime	Scenario 1	Scenario 2	Scenario 3
WET-free wineries	4&5L cask	na	na	na	na
	2L cask	0.07	0.28	0.91	0.91
	<\$7/bottle	0.07	0.28	0.91	0.91
	\$7-\$15/bottle	0.14	0.35	0.98	0.98
	\$15-\$20/bottle	0.24	0.45	1.08	1.08
	\$20-\$30/bottle	0.34	0.55	1.18	1.18
WET-payable wineries	>\$30/bottle	0.57	0.79	1.42	1.42
	4&5L cask	0.09	0.24	0.87	0.87
	2L cask	0.18	0.27	0.90	0.90
	<\$7/bottle	0.19	0.27	0.90	0.90
	\$7-\$15/bottle	0.35	0.33	0.96	0.96
	\$15-\$20/bottle	0.58	0.41	1.04	1.04
Packaged beer	\$20-\$30/bottle	0.83	0.50	1.13	1.13
	>\$30/bottle	1.48	0.69	1.32	1.32
	>\$30/bottle	1.53	0.68	1.32	1.32
	Beer – light	0.51	0.51	0.51	0.51
Draught beer	Beer – mid	0.62	0.62	0.62	0.62
	Beer – regular	0.67	0.67	0.67	0.67
	Beer – premium	0.74	0.74	0.74	0.74
	Keg beer – light	0.55	0.55	0.55	0.84
Spirits & RTDs	Keg beer – mid	0.64	0.64	0.64	0.88
	Keg beer – regular	0.71	0.71	0.71	0.88
	Keg beer – premium	0.88	0.88	0.88	1.05
	Spirits	1.39	1.39	1.39	1.39
Cider	RTD – light	1.44	1.44	1.44	1.44
	RTD – dark	1.44	1.44	1.44	1.44
Average	Cider	0.57	0.35	0.89	0.76
		0.67	0.67	0.92	0.94

NOTE: TAX INCLUDES GST.

SOURCE: ACIL ALLEN CONSULTING

ERRATA: The figures published in “Table 3.4. Tax per standard drink” have been amended since the report’s original publication. The above copy has been updated to reflect this correction.



R E F E R E N C E S

- Australian Bureau of Statistics 1998, Australian Wine and Grape Industry, Cat. No. 1329.0, Australian Bureau of Statistics, Canberra.
- Australian Bureau of Statistics 2000, Australian Wine and Grape Industry, Cat. No. 1329.0, Australian Bureau of Statistics, Canberra.
- Australian Bureau of Statistics 2003, Australian Wine and Grape Industry, Cat. No. 1329.0, Australian Bureau of Statistics, Canberra.
- Australian Bureau of Statistics 2008, Australian Historical Population Statistics, 2008, Cat. No. 3105.0.65.001, Australian Bureau of Statistics, Canberra.
- Australian Bureau of Statistics 2009, Sales of Australian Wine and Brandy by Winemakers, Cat. No. 8504.0, Australian Bureau of Statistics, Canberra.
- Australian Bureau of Statistics 2010a, Apparent Consumption of Alcohol, Australia 2007-08, Cat. No. 4307.0.55.001, Australian Bureau of Statistics, Canberra.
- Australian Taxation Office (ATO)
- Australian Wine and Brandy Corporation (AWBC) data
- Clements, K. W., Yang, W. & Zheng, S.W. 1997, 'Is utility additive? The case of alcohol', *Applied Economics*, vol.29, pp.1163-7.
- Deloitte Wine Federation of Australia, 2003, *Annual Financial Benchmarking Survey for the Australian Wine Industry: Vintage 2003*, Deloitte Touche Tohmatsu, Adelaide.
- Deloitte Wine Federation of Australia, 2004, *Annual Financial Benchmarking Survey for the Australian Wine Industry: Vintage 2004*, Deloitte Touche Tohmatsu, Adelaide.
- Deloitte Wine Federation of Australia, 2005, *Annual Financial Benchmarking Survey for the Australian Wine Industry: Vintage 2005*, Deloitte Touche Tohmatsu, Adelaide.
- Deloitte Wine Federation of Australia, 2006, *Annual Financial Benchmarking Survey for the Australian Wine Industry: Vintage 2006*, Deloitte Touche Tohmatsu, Adelaide.
- Deloitte Wine Federation of Australia, 2007, *Annual Financial Benchmarking Survey for the Australian Wine Industry: Vintage 2007*, Deloitte Touche Tohmatsu, Adelaide.
- Deloitte Wine Federation of Australia, 2008, *Annual Financial Benchmarking Survey for the Australian Wine Industry: Vintage 2008*, Deloitte Touche Tohmatsu, Adelaide.
- Deloitte Wine Federation of Australia, 2009, *Annual Financial Benchmarking Survey for the Australian Wine Industry: Vintage 2009*, Deloitte Touche Tohmatsu, Adelaide.
- Fogarty, J. J. 2010, 'The demand for beer, wine and spirits: A survey of the literature', *Journal of Economic Surveys*, vol.24, pp.428-78.
- Global Trade Analysis Project (GTAP) database, 2008.
- Godden, P.W. and Gishen, M. 2005, 'Trends in the composition of Australian wine', *Australian and New Zealand Wine Industry Journal*, vol. 20, no.5, pp.21-46. 2005,
- Wittwer, G. and Anderson, K. 2002, 'Impact of the GST and wine tax reform on Australia's wine industry: A CGE analysis,' *Australian Economic Papers*, vol.41, pp.69-81.

Wittwer, G., Valenzuela, E. and Anderson, K. 2009, 'Regional consequences in Australia of wine export demand shocks and alternative wine taxes: An economy-wide approach,' discussion paper prepared for the 12th Annual Conference on Global Economic Analysis, Santiago, Chile, 10-12 June.

ACIL ALLEN CONSULTING PTY LTD

ABN 68 102 652 148

ACILALLEN.COM.AU

