Centre for International Economic Studies

Policy Discussion Paper

No. 99/03

University of Adelaide • Adelaide • SA 5005 • Australia

CONSUMER AND IMPORT TAXES IN THE WORLD WINE MARKET: AUSTRALIA IN INTERNATIONAL PERSPECTIVE

Nicholas Berger and Kym Anderson

February 1999

CIES POLICY DISCUSSION PAPER 99/03

CONSUMER AND IMPORT TAXES IN THE WORLD WINE MARKET: AUSTRALIA IN INTERNATIONAL PERSPECTIVE

Nicholas Berger and Kym Anderson
Centre for International Economic Studies
School of Economics
University of Adelaide
Adelaide SA 5005
Australia

February 1999

Revision of a paper presented at the 43rd Annual Conference of the Australian Agricultural and Resource Economics Society, Christchurch, 20-22 January 1999. Thanks are due to Andrew Scott, Laurie Stanford, Stephen Strachan, Randy Stringer and Glyn Wittwer for helpful comments, and to the Grape and Wine Research and Development Corporation for financial support.

ABSTRACT

Consumer and Import Taxes in the World Wine Market: Australia in International Perspective

Nicholas Berger and Kym Anderson

Virtually all countries tax the consumption of wine (and other alcoholic beverages). However, the rates of taxation, and the tax instruments used, vary enormously between countries. This paper details for all the OECD members plus some other countries the consumer tax equivalents (CTEs) of wine taxes as of 1996. It shows wholesale sales taxes, excise taxes, import tariffs, and value-added or goods-and-services taxes, expressed both in dollars per litre and as a percentage of what the retail price would be without those taxes. These are shown in aggregate and also separately for non-premium and premium wines (since many wine taxes are volumetric and so their percentage CTE rates vary with the price of wine). The CTE tends to be lower the larger a country's per capita production of wine. Australia and New Zealand are shown to have relatively very high wine CTEs. In Australia's case this is especially so for premium wine, because Australia uses a percentage tax rather than the commonly used volumetric tax measure. Moreover, the extent to which Australia is an outlier has increased considerably during the past 15 years. This has implications for the current debate over reforms to Australia's tax system. The paper concludes by pointing also to the high wine import tariffs in some countries, arguing that there is scope for trade negotiators to expand wine market access in East Asia especially as the next WTO trade negotiations begin at the end of 1999.

Keywords: consumer wine taxation, GST, excise taxes

JEL codes: H21, H22, H23, F13

Contact author: **Nicholas Berger**
School of Economics and
Centre for International Economic Studies University of Adelaide
Adelaide SA 5005
Australia

Phone: (61 8) 8303 4927
Fax: (61 8) 8223 1460
nberger@economics.adelaide.edu.au

NON-TECHNICAL SUMMARY

The Australian Government is in the midst of trying to introduce a goods-and-services tax (GST). In doing so it is proposing to replace the current wholesale sales tax on wine of 41 per cent with a top-up wholesale Wine 'Equalization' Tax (WET) which, together with the GST, would bring in roughly the same tax revenue from domestic wine consumers as currently.

The proposed change in the tax regime raises at least four questions. First, why should wine continue to be seen as a source of additional government revenue when the main thrust of the GST proposal is to move to a broad-based uniform rate of indirect taxation across all products? Second, if revenue raising is no longer the reason to tax wine consumption, what is the evidence that the current rate is optimal in terms of offsetting net negative externalities from consuming alcohol in this form -- given that there is growing evidence of the positive health benefits from moderate wine consumption? Third, in so far as a volumetric tax is a more precise way of taxing alcohol consumption than an ad valorem (percentage) tax, why is an ad valorem tax instrument still being contemplated when most other countries use a volumetric tax? And fourth, if Australia is going to continue to keep wine taxes high by international standards, which means the industry will have to market an ever-rising share of its expanding production abroad, what scope is there for our trading partners to buy more wine through lowering their tariffs on wine imports?

This paper addresses each of these question. It calculates the consumer tax equivalents (CTEs) of the various wine (and beer) taxation measures, including from wine import tariffs/export subsidies, for the main wine-consuming and producing countries of the world, countries which together account for 85 per cent of global wine consumption. The paper compares Australia's recent and proposed rates and means of wine taxation with those adopted by other OECD countries, and draws out implications for the on-going tax reform debate in Australia. It finds that Australia (and New Zealand) have wine CTEs three times as high as the OECD average, and six times as high as in Europe's main wine-producing countries. Because Australia is almost unique in using an ad valorem rather than volumetric wine tax measure, the contrast is even starker if attention is focused just on premium wine: the above differences are roughly twice as large. When expressed on a per litre of alcohol basis, among OECD countries it is only in Sweden and Mexico that the CTE for premium wine relative to beer is significantly above that for Australia and New Zealand.

The wine CTE for Australia has gradually risen over the past 15 years from being below the OECD average. The rise in the ad valorem tax rate is only part of the explanation; the other part is due to the trebling in the pre-tax wholesale price of wine (because of wine quality improvements, the shift in preferences toward premium wines, and rapid growth in export demand). Together these changes caused wine tax revenue to rise sevenfold in nominal value terms since 1986, or threefold as a percentage of total government revenue (from 0.15 to 0.45 per cent). Had the wine tax been volumetric rather than ad valorem even as recently as 1991, and that rate been frozen since then, Australia's premium wine CTE in ad valorem terms would have halved in aggregate and fallen by four-fifths for premium wine by now. And being in proportion to the amount of alcohol, that form of wine taxation also would have provided a much more efficient form of taxing the negative externality perceived to be associated with excessive drinking.

The final section notes the extent of import taxation of wine in different countries and thus the scope for wine consumption and import growth via trade liberalization. It shows that scope to be especially significant in East Asia.

Consumer and Import Taxes in the World Wine Market: Australia in International Perspective

Nicholas Berger and Kym Anderson

University of Adelaide

The Australian Government is in the midst of trying to introduce a goods-and-services tax (GST). In doing so it is proposing to replace the current wholesale sales tax on wine of 41 per cent with a top-up wholesale Wine 'Equalization' Tax (WET) which, together with the GST, would bring in roughly the same tax revenue from domestic wine consumers as currently.[1] An alternative proposal, pushed by some spirits industry and anti-alcohol interest groups, is to make the WET a much higher (volume-based) tax equivalent to the beer 'equalization' tax that will be in place when the GST is operating.[2] Australia's rate of wine consumer taxation is already high by OECD standards, and especially by the standards of significant wine producing/exporting countries. It is also unusual in being ad valorem (percentage) rather than specific (cents per litre). Given the current review of the overall Australian tax system, now is an appropriate time to ask whether the current rate and instrument of consumer wine taxation in Australia is optimal. This paper's examination of Australia's wine taxation as compared with that of other countries is a contribution to that debate.

[1] Government revenue raising is a significant, but not the only, reason for the current tax. Its relevance should diminish in the context of a major tax reform aimed at introducing a general goods-and-services tax. An additional motivation for taxing wine and other alcoholic beverages is to offset perceived negative health and other social externalities from excessive drinking. In the case of wine, however, there are reputed to be positive health benefits from moderate drinking, especially of red dry wine. An overview assessment of those externalities is provided in Freebairn (1995). More-detailed assessments from the industry's viewpoint, together with very extensive bibliographies, are included in WFA (1998a, Appendixes A, B and C).

[2] For an empirical analysis of these and other wine tax options for Australia using an economy-wide model, see Wittwer and Anderson (1998).

The rates of wine taxation, and the tax instruments used, vary enormously between countries. In some countries trade policy instruments are used instead of or in addition to direct consumer taxes (in which case they also provide support for domestic producers). Both necessarily affect the volume of international wine trade, and so are of interest also to wine exporters and to trade negotiators – including in Australia, given the industry’s recently successful export-oriented growth strategy. This is especially so as trade negotiators prepare for the World Trade Organization’s next round of multilateral trade negotiations, due to begin by the end of 1999. These data are also of interest to wine producers and consumers in New Zealand and other highly taxed countries who are wishing to lobby for lower consumer tax rates. As well, analysts seeking to examine the economic impact of tax, subsidy and trade policy reforms at home or abroad need such information. This is especially so for analysts seeking to build economic models of wine markets, for which purpose it is helpful to distinguish premium from non-premium wine. That distinction in turn makes it crucial to also distinguish specific from ad valorem tax measures, because the ad valorem consumer tax equivalent of a specific tax (cents per litre of wine or alcohol) falls with the price of the product. The aggregate ad valorem CTE therefore also falls in countries with specific wine taxes when the proportion of premium wine in total wine consumption rises over time, as it has been doing in most countries during the past decade or two.

This paper summarizes available rates of wine (and beer) consumer taxation, including from wine import tariffs/export subsidies, for the main wine-consuming and producing countries of the world. They have been compiled with the intention of inserting them in a partial equilibrium model of the world wine market that is currently being constructed for projections and policy analysis, but they are provided at this interim stage because of their usefulness in their own right. The rates reported refer to 1996, but just-released evidence for 1998 (OECD 1999) suggests there have been few changes in the past two years.

The first section summarizes the methodology used for compiling and reporting the tax rates and the sources of tax rate data. Section two discusses the calculations of the consumer tax equivalents for the OECD and other countries for which data are available, countries which together account for 85 per cent of global wine consumption. Section three compares Australia’s current and proposed rates and means of wine taxation with those adopted by other OECD countries, and draws out implications for the on-going tax reform debate in

Australia. The final section notes the extent of import taxation of wine in different countries and thus the scope for wine consumption and import growth via trade liberalization, for example under APEC's regional reform agenda and the up-coming WTO multilateral trade negotiations expected to get under way in 2000.

1. Methodology and data sources

Since specific (volumetric, cents per litre) as well as ad valorem (percentage) tax rates are used in many countries, the consumer tax equivalent (CTE) in percentage terms typically varies with the price of wine. This distinction is important because in recent years the world wine market has been characterised by a trend towards premium wine consumption, and in some countries the volume of non-premium wine consumption has fallen greatly. We therefore identify the tax type (specific or ad valorem) and express the CTE in terms of dollars per litre or bottle as well as an ad valorem equivalent for two different retail pre-tax price levels: one for non-premium wine, the other for mid-range premium wine.

In the Appendix tables we also show the contribution to the aggregate CTE by the three key tax instruments: import tariffs, excise or wholesale sales taxes (WST), and value-added or goods-and-services taxes (VAT/GST). The paper highlights the relative importance of border taxation in the total consumer tax on wine across countries, bearing in mind that import tariffs also protect local wine producers. It also tests the hypotheses that the wine CTE (excluding the VAT/GST), and the wine-beer taxation differential, are negatively correlated with a country's production of wine per capita. The main reasoning behind these hypotheses is that the more important is the wine industry in the national economy, the more lobbying power it has to argue against taxing domestic wine consumers (who are their main customers in most cases), and in particular to counter the lobbying from the local beer and spirits industries for a higher wine tax.

The consumer tax equivalent (CTE) is defined as the difference between the tax-inclusive retail price and the pre-tax wholesale price plus retail marketing margin, expressed as a percentage of the latter. To estimate the CTE, numerous assumptions have to be made:

(1) We assume that imported and domestically produced wines are perfect substitutes. That is, we assume the domestic prices of all wines, not just those imported, are raised by the

amount of the import tariff. The tariff portion of the price is then also subject to any domestic consumer tax. Given the heterogeneous nature of wine, it is unlikely that the average price of all wine will increase by the full amount of the tariff and moreso the less substitutability there is between domestically produced and foreign wines (which in practice differs by country of origin). This assumption inflates the estimated CTE above its true value in countries that are significant producers of wines that differ from their imports. However, this is more or less offset by our inability to include estimates of the contribution to the true CTE of non-tariff barriers to wine imports (and export subsidies, but the latter probably only apply to extra-European Union trade and amount currently to less than 2 per cent even there). The extent to which the tariff component of the CTE is over-estimated would be greatest for EU member countries, since they import the vast majority of their wine duty-free from other members of their customs union.

(2) Neither the average pre-tax retail price of a bottle of premium wine or a litre of non-premium wine, nor the shares of each of these types in national consumption, are reliably known for more than a handful of countries. Hence an average CTE for each country can be calculated only by assuming something about these values. For simplicity we calculate the CTE at two pre-tax retail price levels: $2.70 per litre for non-premium wine, and $9 per 750ml bottle for premium wine. These approximate the average prices in Australian dollars for these two categories of wine sold in Australia in 1995-97, the weighted average of which is $5.50 per litre using domestic sales volumes in that period as weights (when 70 per cent of consumption volume was non-premium – see Osmond and Anderson (1998, Table 10)). For simplicity that same set of average prices and the 70/30 split are used for calculating the aggregate CTE for all countries, but the CTE is also shown separately for those two product types.

(3) The assumed retail margin is the same across countries and is set at the estimated Australian rates of 25 per cent of the tax-inclusive wholesale price for non-premium wine and 33 per cent for premium wine. These retail margins provide conservative estimates of the CTE because they implicitly assume that 100 per cent of sales occur off licensed premises.[3]

[3] In Australia currently only about 80 per cent of all wine consumption and 70 per cent of premium wine consumption occurs off licenced premises. The average margin for sales in licenced restaurants in Australia is estimated to be around 120 per cent for premium wine and more than 250 per cent for non-premium wine (Strachan 1999).

The data requirements for CTE calculations include import tariffs, excise or wholesale sales taxes, and value-added or goods-and-services taxes. The primary source for this information was the Brewers Association of Canada (1998). The data obtained from the BAC Survey was cross-checked with excise tax, wholesale sales tax and VAT/GST rates from the OECD (1997), and supplemented with import tariff data from the APEC applied tariff rates web site.[4] Any inconsistencies between data sources are either noted in calculations or were resolved through consultation with national and/or other international sources. Taxation data on Asian-Pacific developing countries were obtained from a recent survey by the Australian Trade Commission, the Australian Wine and Brandy Corporation and the Australian Wine Export Council (ATC, AWBC and AWEC 1997).

The import tariff levied on a bottle of wine differs between countries based on the nominal duty and the tax instrument used. Depending on the importing country, a bottle of wine could face a specific (volume-based) tariff, an ad valorem (value-based) tariff or a tariff based on the volume of alcohol in the product. Specific tariffs based on volume are the most popular in Europe and the United States, while ad valorem tariffs based on product value are the norm in the Asia-Pacific region with the exception of Japan and Malaysia (see Appendix Table A1).[5]

World wine consumption and production per capita volumes are taken from the statistical compendium recently compiled by Berger, Anderson and Stringer (1998), which is based on FAO and OIV data.[6] To convert exchange rates to Australian dollar terms as at 2 January 1996, we draw on the IMF (1996).

In most countries the VAT for all alcoholic beverages is the same as the general rate. In some countries (Italy, Luxembourg, Portugal) it is less for wine though, and in Switzerland the rate is more for beer. The exceptions are shown in Appendix Table A2. Where the wine VAT rate

[4] See http://www.apectariff.org

[5] In Japan the import tariff is calculated as the lesser of 196 yen per litre or 35 per cent of product value, which means that as the per unit value of wine imports into Japan increases, the specific duty tends to become operative. In Malaysia the duty on wine is based on alcoholic volume in the same way that the excise tax on spirits is treated in virtually all countries.

[6] The United Nations' Rome-based Food and Agriculture Organisation, and the Paris-based Office International de la Vigne et du Vin. In the case of Australia in Figure 1, three-year averages of production are used around the 1991 and 1996 vintages to reduce the effect of seasonal fluctuations, while the projections for 2001 are from Strachan (1998).

is less than the general VAT rate, the difference is treated here as a consumer subsidy that is netted out when calculating the overall consumer tax equivalent.

2. CTE calculations

Appendix Tables A3 to A6 detail the calculations of the consumer tax equivalent (CTE) by tax instrument for non-premium and premium wine, expressed both in dollars and in percentages. Summaries of those estimates are shown in Tables 1 to 4, each of which is discussed in turn.

In Table 1 we show the CTE for a litre of wine, excluding VAT or GST, valued at the average pre-tax Australian retail price of A$5.50 in 1995-97. The reason for excluding the VAT/GST in this table is that such a general tax applies to all or most goods and services and so causes little or no distortion to wine consumption levels, and is set with virtually no consideration for the wine industry or any negative externalities associated with alcohol consumption. The average CTE across all countries in this study (85 per cent of global consumption) amounts to about 16 per cent or A$0.89 per litre. Australia and New Zealand have CTEs three times those levels. While the United Kingdom and Ireland tax wine more (and consume much less of it per capita), and the Scandavians have rates double those of New Zealand, the wine taxes of other Western European (and especially its wine-producing) countries are nearly half the global averages and one-sixth those of Australia – despite our over-estimation of the tariff component of their wine CTE (because we have not adjusted for the fact that the EU's common 12 per cent external import tariff does not apply to the vast majority of EU member country imports, since their imports come mostly from other EU members duty-free). North America and South Africa too, and even Japan and Russia, tax wine consumers much less than Australia.[7] The only other countries with higher tax rates are some East Asian developing countries.[8]

---

[7] The calculated CTEs for North America are 'lower bound' estimates of the true CTEs as the price effects of state monopoly controls on the distribution of alcohol in Canada and myriad state-controlled non-tariff barriers to wine trade into the United States have not been quantified. It has been alleged, for example, that the Liquor Control Board of Ontario (possibly the world's biggest importer of wine) applies a two-thirds mark-up on imported wine.

[8] Comprehensive data from Eastern Europe are not available. However, unpublished numbers provided by Scott (1999) suggest that domestic wine taxes (not including any import taxes) in Estonia and Lithuania are only about 50 per cent above the OECD average shown in Table 1 while those in Slovenia are well below that average.

There is a significant negative correlation between wine production per capita and the wine CTE. This is illustrated in Figure 1. Evidently the more important is wine production in a country, the less inclined are governments to tax their wine consumers. One possible reason is simply relative lobbying strengths: the more significant is national wine production, the stronger the wine industry's lobby against wine taxes; whereas in countries with little or no wine production, the local brewing and spirits industries would lobby for high taxes on that competing provider of alcohol.

What is also clear from Figure 1 is that Australia and New Zealand are well above the 1996 log-linear regression line summarizing that negative relationship. That was not the case for Australia prior to the most recent wine tax hike: in 1991 when the WST was only about 32 per cent and production per capita was less, Australia was much closer to the regression line. And in 1986 it was slightly below that line. If a 10 per cent GST is introduced in Australia by 2001 and the wine WST is commensurately reduced from 41 per cent back to around 32 per cent (as currently proposed by the Treasury), Australia will move closer to the regression line in Figure 1 as shown – but only slightly closer, and it will not be as close as in the early 1990s, because production per capita is expanding so rapidly.

Table 2 presents similar information as in Table 1 but reports CTEs separately for non-premium and premium wine. What this shows is how much less premium wine consumers are taxed relative to consumers of non-premium wine in most countries: the average for the countries shown is 10 per cent for premium, compared with nearly three times that for non-premium. This is because of the use of specific rather than ad valorem taxes in most countries. Australia is one of the few exceptional countries in using only an ad valorem rate. Australia's premium wine consumers face a CTE five times greater than the OECD average, while its non-premium consumers face a CTE just twice the OECD average.

Table 3 is similar to Table 2 except that the VAT/GST is included where applicable. While that lowers the extent to which Australia is an outlier in aggregate (column 5), its CTE remains above the OECD average even for non-premium wine and still more than twice as high for premium wine. (New Zealand's 12.5 per cent GST causes its CTE on non-premium wine to remain more than three times the VAT-inclusive CTE of the European wine-producing countries.)

How do countries' wine CTEs compare relative to beer CTEs? Appendix Table A7 summarizes the beer CTEs (including VAT/GST) for a standard beer with 4.5 per cent alcohol, for comparison with the wine CTEs of Table 3. Three different comparisons are summarized on Table 4: percentage CTE rates, CTEs per litre of beverage, and CTEs per litre of alcohol. From the first pair of columns in Table 4 the final row shows that premium wine is taxed in percentage terms only about one-third as much as beer in the OECD on average, while non-premium wine is taxed two-thirds as much as beer. Australia falls half way between those two, that is, it taxes non-premium wine relative to beer less and premium wine relative to beer more than other OECD countries (while New Zealand taxes both types of wine relative to beer at twice the OECD average).

When CTEs are expressed on a per litre of beverage basis, however, in the OECD on average non-premium wine is taxed slightly more heavily than beer and premium wine is taxed three times as much as beer (middle pair of columns in Table 4). Even for Australia the non-premium wine tax almost matches that of beer by this measure, and the premium wine CTE is more than four times that for beer. These higher ratios result from the fact that even non-premium wine is more expensive per litre than beer. Wine at around 12.5 per cent alcohol is more alcoholic than beer though, so when the comparison is made on a per-litre-of-alcohol basis, only the premium wine CTE exceeds that for beer (final columns of Table 4). For Australia that final comparison is especially stark: non-premium wine is taxed at only one-third the rate of beer per unit of alcohol, while premium wine is taxed at 50 per cent above that beer rate – more than twice the non-premium/premium gap of the OECD average. Notice that only in Sweden and Mexico is the CTE for premium wine relative to beer, on a per-litre-of-alcohol basis, significantly above that ratio for Australia and New Zealand.

These comparisons suggest that if Australia were to copy the European wine-producing countries' relative tax structure, or even that of the OECD average, it would switch to a volumetric wine tax that would be only slightly higher than the current tax for non-premium wine, but would be at least one-third lower on average for premium wine (see final two columns of Table 4).

3. Implications relevant to Australia's tax reform debate

This survey raises at least two questions of relevance to the wine tax component of Australia's current tax reform debate: on the level of wine taxation, and on whether the tax measure should remain ad valorem.

In addressing the question of whether Australia is over-taxing its wine consumers, the first point to make is that the move to a GST diminishes greatly the justification for taxing alcohol for revenue-raising reasons. Just as the government argues that there should be no exemptions from the GST (on grounds of administrative tax simplicity and to avoid socially unproductive lobbying), so it could be argued that there is no need for add-on consumer taxes simply to raise revenue. At the very least it should be acknowledged that since the administrative cost of raising more government revenue via indirect taxes will be less under a GST, the case for relying as much on wine taxation would have less force: since wine provides less that 0.5 per cent of all government tax revenue, a very slightly higher GST on all products would be enough to raise the revenue provided by current taxation of wine. Nor can State Governments complain that they would be denied their current revenue equivalent of a 15 per cent tax on alcohol sales, since the Federal Government proposal is to give them *all* the GST revenue: again, a very slight adjustment to the revenue-sharing formula to be included in the tax reform package is all that would be needed to accommodate that concern.

The other justification typically given for taxing alcoholic beverages is to compensate society for the negative externalities associated with alcohol consumption. That justification has become clouded in recent years as more evidence of the health benefits of moderate wine comsumption with meals accumulates (WFA 1998a, Appendixes A, B, and C). But even if those negative externalities are greater than any positive health externalities, are they so much larger in Australia than elsewhere as the above CTEs imply -- or are wine consumers in the vast majority of OECD countries being under-taxed? It is clear from the data above that Australia taxes wine exceptionally heavily by OECD standards and especially compared with those countries that are sizeable wine producers and consumers per capita. This is particularly so for premium wine, where only the Nordic countries have significantly higher wine CTEs than Australia (ignoring VAT/GST – see column 4 of Table 2). Only Sweden and Mexico tax premium wine relative to beer consumption substantially more than does Australia. And those comparisons with European countries would be even more stark if less than the full pass-though of import tariffs had been assumed in calculating the CTEs.

In addition to looking across countries, it is also helpful to examine Australia's wine tax over time. While beer and spirits have always attracted excise taxes in Australia, it was not until August 1970 that an excise tax (of 50 cents per gallon) was imposed on wine. So unpopular was the tax that it was halved in March 1992 and completely removed in December 1972 by the new Whitlam Labor Government. The Fraser Coalition Government that followed resisted re-introducing it, but the new Hawke Labor Government chose to impose a 10 per cent wholesale sales tax in its August 1984 budget. The WST was subsequently raised to 20 per cent in the August 1986 budget. It stayed at that level until the Labor Government raised it to 31 per cent in the August 1993 budget. The outcry that followed led to its reduction to 22 per cent in October of that year and the setting up of an inquiry into the industry and its taxation (Industry Commission 1995). In the event, the WST was raised by two percentage points in July 1994 and again in July 1995. Since then it has remained at 26 per cent. Meanwhile, State government franchise fees on wine sales had risen to close to 15 per cent at the wholesale level. Since August 1997 those fees have been collected by the Federal Government on behalf of the States, following a High Court ruling declaring State franchise fees unconstitutional. Thus the WST since then has been a total of 41 per cent.

The relatively high rate of tax on (especially premium) wine consumption in Australia has been worsening over the past decade or so not just because Australia's rate of wine tax has risen several times since the mid-1980s, but also because it has always been an ad valorem tax. The type of measure is important because, unlike with a specific tax, the degree of taxation via an ad valorem tax has not become less significant with the rise in both the price of (especially premium) wine and the share of premium in total wine consumption. As Table 5 shows, the premium share of Australia's total wine consumption has risen from 20 per cent to a projected 36 per cent over the 15 years from the mid-1980s, the average pre-tax wholesale price has already risen more than three-fold for that reason and because of quality improvements, export demand growth and general inflation, and the wholesale sales tax rate (including State liquor licence fees) has more than doubled.[9] For all these reasons, the nominal value of wine tax revenue is estimated to have risen sevenfold since the mid-1980s. Figure 2 illustrates that growth, and shows it also as a percentage of total government revenue -- which has trebled over that period, from 0.15 to 0.45 per cent.

Had the consumer tax been specific rather than ad valorem even as recently as 1991 (when at 32 per cent it would have been equivalent to 72 cents per litre of wine or about $5.70 per litre of alcohol), and had the specific rate not changed from that level since then, Australia's wine CTE in ad valorem terms would have halved in aggregate and fallen by more than four-fifths for premium wine by now. In terms of Figure 1, that would have put Australia almost exactly on the regression line in 1998 – still well above the average for all the large wine-producing countries, but much closer than currently. And being in proportion to the amount of alcohol, that form of wine taxation also would have provided a much more efficient form of taxing the negative externality perceived to be associated with excessive drinking.

This difference in outcomes raises the question as to why Australia continues with an ad valorem measure. The main Australian wine industry bodies still lobby for the retention of ad valorem taxation rather than a switch to a specific (volumetric) tax. This is partly out of fear that such a switch might be accompanied by a rise in the tax rate to match that of beer, and partly because they do not acknowledge that wine deserves a 'sin' tax. The above evidence suggests that while the wine rate is no more than half that of beer in ad valorem CTE terms or per litre of alcohol, it is already more than the beer rate when expressed per litre of beverage. Even so industry bodies expect the Government would argue that, notwithstanding the possible positive health benefits of moderate wine consumption with meals, at least non-premium wine has net negative externalities associated with its consumption that warrant a CTE higher than at present. Even if a change in tax instrument lowered the CTE on premium wine, large producers (as well as consumers) of non-premium wine could be made worse off. Their share of all wine firms and grapegrowers (and consumers) is continuing to fall over time, however, and already about 5 per cent of non-premium wine is imported to make up for shortfalls as Australian grapegrowers convert more land to premium varieties. Should these trends continue, there may come a time early next century when the balance of interest group

[9] For an analysis of the relative importance of these and other factors on the recent and prospective growth of

preferences will swing towards a volumetric tax in place of an ad valorem WST or (if the GST is introduced) WET. That is less likely the more the price of wine falls as global supplies expand, however – and the more people continue to believe the government would not peg a volumetric tax but rather raise it over time to bring in more revenue.

4. Wine import taxes and the scope for trade reform

Finally, what do the data have to say about trade distortions? If Australia's high consumer tax on wine does not come down if/when the GST is introduced, the wine industry will have to continue to expand its export sales to dispose of the rapidly expanding crush. Indeed export sales could well exceed domestic sales early next century. One way the surplus from Australia and other expanding regions could be accommodated is for markets protected by trade barriers to open up more, and for wine export subsidies to be eliminated.

Export subsidies appear to be unimportant even in the European Union, where there has been a gradual running down of the wine surplus generated by high support prices in the past. At present they probably amount to less than 2 per cent for the EU exporting countries.[10] Import barriers are non-trivial though. Numerous non-tariff barriers exist and provide scope for trade liberalization (e.g., through harmonization or mutual recognition of technical standards), but because of a lack of quantifiable information only tariffs are reported in Table 6. Tariffs are zero or unimportant within the so-called free-trade areas of the EU, NAFTA and the ANZCER. But non-EU countries face a A$0.32 tariff barrier into the massive EU wine market for an average bottle of premium wine, a A$1.50 barrier into the Swiss market, and barriers several times that into some of East Asia's markets -- where premium wine imports have begun to grow rapidly, albeit from a low base. These data suggest there are considerable opportunities for further export growth for producers in the Southern Hemisphere and California, for example by pushing for wine import liberalization as part of the next WTO multilateral trade negotiations which are due to begin at the end of 1999. Given the very small

Australia's wine production and exports, see Wittwer and Anderson (1999).

[10] In 1995 the EU-15 spent 37 million ECU on wine export subsidies, and it is capped under Uruguay Round commitments to 39 million by 2000 (Tracy 1997). This equates to about 1.6 per cent of the value of extra-EU wine trade. See also Polidori, Rocchi and Stefani (1998). With new plantings of premium winegrapes rapidly expanding in Europe, however, surplus wine 'lakes' could well re-appear in the future unless farm export subsidies are outlawed following the next round of WTO negotiations.

proportion of alcohol consumed as wine in East Asia (see Table 7), due at least in part to the high tariffs on wine imports, trade negotiators' attention might be focused on that region especially as income growth rates there recover after the present downturn. Removing Australia's own 5 per cent tariff on wine imports would be a small price for the domestic industry to pay as a quid pro quo for lower import barriers abroad for Australian wine – and a small reprieve for Australia's highly taxed wine consumers as they await the outcome of the tax reform debate.

References

ATC, AWBC and AWEC (1998), *1997 Export Market Grid*, Adelaide: Australian Wine and Brandy Corporation.

Berger, N., K. Anderson and R. Stringer (1998), *Trends in the World Wine Market, 1961 to 1996: A Statistical Compendium*, Adelaide: Centre for International Economic Studies, June.

Brewers Association of Canada (1998), *International Survey, Alcoholic Beverage Taxation and Control Policies: Ninth Edition*, Ottawa: Brewers Association of Canada.

Freebairn, J. (1995), 'Consumption Taxation of Wine', Invited Paper presented to the annual Conference of Economists, University of Adelaide, September.

IMF (1996), *International Financial Statistics*, Washington: International Monetary Fund, March.

Industry Commission (1995), *Winegrape and Wine Industry in Australia*, Canberra: Industry Commission.

OECD (1997), *Consumption Tax Trends: Second Edition*, Paris: OECD, January (a bi-annual publication).

OECD (1999), *Consumption Tax Trends: Third Edition*, Paris: OECD, January (a bi-annual publication).

Osmond, R. and K. Anderson (1998), *Trends and Cycles in the Australian Wine Industry, 1850 to 2000*, Adelaide: Centre for International Economic Studies, June.

Polidori, R., B. Rocchi and G. Stefani (1998), 'Reform of the CAP and the EU Wine Sector', pp. 29-40 in *CAP Reform: The Southern Products*, edited by M. Tracy, Genappe, Belgium: Agricultural Policy Studies.

PVGD (1997), *World Drink Trends 1997*, Henley-on-Thames: NTC Publications for Productschap Voor Gesdistilleerede Dranken (the Commodity Board for the Distilled Spirits Industry), Schiedam, Netherlands.

Scott, A. (1999), Personal communication, OECD Secretariat, Paris, 14 January.

Strachan, S. (1998), 'Projections of Australian Exports and Domestic Sales to 2003', WFA paper presented to the 1998 Wine Industry Outlook Conference, Melbourne, 21 October.

Strachan, S. (1999), Personal communication, Winemakers' Federation of Australia, Adelaide, 6 January.

Tracy, M. (1997), *Agricultural Policy in the European Union and Other Market Economies* (Second Edition), Genappe, Belgium: Agricultural Policy Studies.

WFA (1998a), *Submission to the Tax Consultative Task Force on Taxation Reform*, Adelaide: Winemakers' Federation of Australia, March.

WFA (1998b), *1998 Statistical Report*, Adelaide: Winemakers' Federation of Australia.

Wittwer, G. and K. Anderson (1998), *Tax Reform and the Australian Wine Industry*, Adelaide: Centre for International Economic Studies, June.

Wittwer, G. and K. Anderson (1999), 'Accounting for Growth in Australia's Wine Industry, 1986 to 2003', Paper presented to the Annual Conference of the Australian Agricultural and Resource Economics Society, Christchurch, 20-22 January.

Table 1: Average Consumer tax equivalent (CTE) on wine (excluding VAT/GST)* and wine production and consumption per capita, various countries and country groups, Jan.1996.

	CTE on wine that would retail at $5.50/litre without taxes		Production per capita	Consumption per capita
	dollars	**per cent**	**litres**	**litres**
Australia 1996	**2.64**	**48**	**32.8**	**18.2**
2001**	**2.12**	**39**	**41.7**	**19.8**
New Zealand	**2.93**	**53**	**15.9**	**9.9**
European wine producers	**0.42**	**8**	**92.9**	**53.7**
France	0.54	10	102.3	59.7
Italy	0.34	6	104.8	62.3
Greece	0.34	6	39.2	30.5
Portugal	0.34	6	97.2	59.2
Spain	0.34	6	75.3	37.2
Scandanavians	**5.86**	**107**	**0.0**	**13.5**
Denmark	2.36	43	0.0	27.2
Finland	6.63	121	0.0	5.2
Iceland	15.02	273	0.0	5.1
Norway	11.73	213	0.0	8.8
Sweden	7.11	129	0.0	12.7
Other Western Europe	**1.43**	**26**	**6.3**	**19.5**
Austria	0.34	6	26.0	32.6
Belgium	1.20	22	1.2	21.1
Germany	0.34	6	10.1	22.8
Ireland	6.26	114	0.0	7.3
Luxembourg	0.34	6	1.2	50.4
Netherlands	1.43	26	0.0	13.2
Switzerland	1.90	35	16.9	41.2
United Kingdom	4.12	75	0.0	12.4
NAFTA	**0.73**	**13**	**5.4**	**5.8**
United States	0.54	10	7.0	7.6
Canada	0.73	13	1.0	6.7
Mexico	2.79	51	2.0	0.2
Asia and Pacific	**3.99**	**73**	**0.3**	**0.4**
Japan	2.10	38	0.7	1.2
China	3.84	70	0.3	0.3
Malaysia	11.29	205	0.0	0.1
Korea	11.85	216	0.1	na
Thailand	6.81	124	0.0	0.1
Singapore	11.51	209	0.1	0.8
Other				
South Africa	0.31	6	22.4	20.0
Russian Federation	1.67	30	3.9	4.3
ABOVE COUNTRIES	**0.89**	**16**	**22.8**	**22.3**
Memo: OECD-24***	**0.78**	**14**	**28.1**	**26.0**

*World consumption shares are used to calculate the bold weighted average shares for country groups. Calculations assume non premium wine accounts for 70 per cent of total domestic wine consumption.

**Australia 2001 calculations assume a WST of 32 per cent, wine production of 8.00 million hl and a population of 19.2 million.

***Excludes the new members: Korea, the Czech Republic, Mexico, Hungary and Poland.

Table 2: Consumer tax equivalents (CTEs) on non premium and premium wine (excluding VAT/GST)* and shares of world wine consumption, various countries and country groups, Jan.1996.

	CTE on non premium wine that would retail at $2.70/litre without taxes		CTE on premium wine that would retail at $12/litre without taxes		Share of world wine consumption volume
	dollars	per cent	dollars	per cent	per cent
Australia	**1.30**	**48**	**5.77**	**48**	**1.7**
New Zealand	**2.53**	**94**	**3.88**	**32**	**0.3**
European wine producer	**0.38**	**14**	**0.50**	**4**	**50.4**
France	0.50	19	0.62	5	19.4
Italy	0.31	12	0.42	4	17.5
Greece	0.31	12	0.42	4	1.4
Portugal	0.31	12	0.42	4	3.0
Spain	0.31	12	0.42	4	9.1
Scandanavians	**5.73**	**212**	**6.18**	**52**	**1.2**
Denmark	2.29	85	2.53	21	0.5
Finland	6.48	240	6.98	58	0.1
Iceland	14.74	546	15.68	131	0.0
Norway	11.48	425	12.31	103	0.2
Sweden	6.95	257	7.48	62	0.4
Other Western Europe	**1.38**	**51**	**1.55**	**13**	**11.8**
Austria	0.31	12	0.42	4	0.8
Belgium	1.15	43	1.31	11	0.8
Germany	0.31	12	0.42	4	6.2
Ireland	6.12	227	6.60	55	0.1
Luxembourg	0.31	12	0.42	4	0.0
Netherlands	1.38	51	1.55	13	0.7
Switzerland	1.87	69	1.99	17	0.6
United Kingdom	4.01	149	4.36	36	2.6
NAFTA	**0.61**	**23**	**1.00**	**8**	**9.2**
United States	0.53	20	0.56	5	7.8
Canada	0.72	27	0.77	6	0.7
Mexico	1.37	51	6.11	51	0.7
Asia and Pacific	**2.33**	**86**	**7.87**	**66**	**2.4**
Japan	1.48	55	3.56	30	0.7
China	1.89	70	8.40	70	1.5
Malaysia	10.67	395	12.73	106	0.0
Korea	5.83	216	25.91	216	0.1
Thailand	3.35	124	14.88	124	0.0
Singapore	11.29	418	12.01	100	0.1
Other					
South Africa	0.30	11	0.32	3	3.2
Russian Federation	1.37	51	2.36	20	4.6
ABOVE COUNTRIES	**0.75**	**28**	**1.20**	**10**	**84.8**
Memo: OECD	**0.69**	**26**	**0.98**	**8**	**75.3**

*World consumption shares are used to calculate the bold weighted averages for country groups.

Table 3: Consumer tax equivalents on wine (incl. VAT/GST)* and VAT/GST rates, various countries and country groups, Jan.1996.

	CTE on various wine types that would retail at the following prices without taxes:					
	Non premium $2.70/litre		Premium $9/750ml bottle		Wtd. average $5.50/litre	VAT/GST (wine-specific rate)
	dollars	per cent	dollars	per cent	per cent	per cent
Australia	**1.30**	**48**	**4.32**	**48**	**48**	**0**
Australia 2001	**1.42**	**52**	**4.72**	**52**	**52**	**10**
New Zealand	**3.18**	**118**	**4.40**	**49**	**72**	**12.5**
European wine producers	**0.92**	**34**	**1.99**	**22**	**26**	
France	1.16	43	2.42	27	32	20.6
Italy	0.79	29	1.81	20	23	16
Greece	0.85	32	1.99	22	25	18
Portugal	0.46	17	0.78	9	12	5
Spain	0.79	29	1.81	20	23	16
Scandanavians	**7.76**	**287**	**7.95**	**88**	**157**	
Denmark	3.54	131	4.62	51	79	25
Finland	8.50	315	8.37	93	169	22
Iceland	19.01	704	16.85	187	365	24.5
Norway	14.74	546	13.42	149	285	23
Sweden	9.36	347	9.26	103	187	25
Other Western Europe	**2.04**	**76**	**2.80**	**31**	**46**	
Austria	0.91	34	2.18	24	27	20
Belgium	1.96	73	3.08	34	47	21
Germany	0.76	28	1.71	19	22	15
Ireland	7.97	295	7.88	88	159	21
Luxembourg	0.67	25	1.43	16	19	12
Netherlands	2.09	77	2.94	33	48	17.5
Switzerland	2.16	80	2.17	24	43	6.5
United Kingdom	5.19	192	5.42	60	105	17.5
NAFTA	**0.69**	**26**	**1.02**	**11**	**16**	
United States	0.53	20	0.42	5	10	0
Canada	1.24	46	2.03	23	30	7
Mexico	1.99	74	6.62	74	73	15
Asia and Pacific	**3.19**	**118**	**8.73**	**97**	**104**	
Japan	1.60	59	3.02	34	42	3
China	3.13	116	10.43	116	116	17
Malaysia	10.67	395	12.28	136	205	0
Korea	6.68	247	22.27	247	247	10
Thailand	3.77	140	12.57	140	139	7
Singapore	11.71	434	9.55	106	218	3
Other						
South Africa	0.72	27	1.54	17	20	14
Russian Federation	2.19	81	3.92	44	56	20
ABOVE COUNTRIES	**1.09**	**40**	**2.05**	**23**	**29**	
Memo: OECD-24	**1.20**	**44**	**2.16**	**24**	**31**	

*World consumption shares are used to calculate the bold weighted average shares for country groups.

Table 4: Wine CTE as a percentage of beer CTE, various countries and country groups, Jan. 1996.

	Percentage CTE rates		CTE per litre of beverage		CTE per litre of alcohol	
	Non premium wine ($2.70/litre)	Premium ($9/750ml bottle)	Non premium	Premium	Non premium	Premium
Australia	**52**	**52**	**97**	**433**	**34**	**150**
Australia 2001*	**57**	**57**	**106**	**472**	**37**	**163**
New Zealand	**148**	**61**	**276**	**509**	**96**	**176**
European wine producers	**64**	**42**	**120**	**346**	**41**	**120**
France	81	51	152	421	52	146
Italy	47	32	88	267	30	92
Greece	na	na	na	na	na	na
Portugal	29	15	55	124	19	43
Spain	61	42	114	346	39	120
Scandanavians	**179**	**55**	**335**	**457**	**116**	**158**
Denmark	120	47	225	392	78	136
Finland	124	37	232	304	80	105
Iceland	na	na	na	na	na	na
Norway	181	49	338	411	117	142
Sweden	356	106	665	878	230	304
Other Western Europe	**98**	**40**	**180**	**329**	**62**	**114**
Austria	123	88	98	312	34	108
Belgium	106	50	199	418	69	145
Germany	56	38	105	315	36	109
Ireland	158	47	296	390	102	135
Luxembourg	53	34	99	280	34	97
Netherlands	116	49	216	406	75	141
Switzerland	186	56	349	467	121	162
United Kingdom	145	45	271	377	94	130
NAFTA	**122**	**54**	**228**	**446**	**79**	**154**
United States	162	39	302	322	105	111
Canada	71	35	134	291	46	101
Mexico	233	233	437	1940	151	672
Japan	**27**	**15**	**50**	**126**	**17**	**43**
Memo: OECD-24	**69**	**37**	**128**	**307**	**44**	**106**

* Includes a 10 per cent GST and ad valorem beer equalisation sales tax (ie the tax on beer is assumed to be unchanged if the GST is introduced by 2001). With a 10 per cent GST the ad valorem wholesale sales tax on wine is assumed to fall from 37 per cent to 24.5 per cent to ensure a constant retail price. The The weights used to get the regional aggregates are national shares of world wine consumption volume.

Table 5: Composition, price and tax on wine consumption, Australia, 1985-86 to 2000-01

	Premium share (%) of domestic wine consumption volume	Pre-tax wholesale price of wine sold in Australia (A$/litre)	Wholesale sales tax including State licence fees[a] (%)	Wholesale sales tax including State licence fees[a] ($m)
1985-86	20.1	1.65	19	102
1990-91	24.3	2.24	32	213
1995-96	28.5	4.30	41	545
1997-98	31.2	5.16	41	717
2000-01	36.0	n.a.	43[b]	n.a.

[a] The State licence fees are assumed to have risen on average from 9 to 12 and then to 15 per cent at the wholesale level from 1986 to 1991 and 1996, before being collected on behalf of the states at a rate of 15 per cent after August 1997, following the High Court ruling the fees unconstitutional.

[b] Includes the WST-equivalent of the proposed GST, assuming the 10 per cent GST is introduced in July 2000 and that the top-up wine tax has the government’s proposed extra 1.9 percentage points added to the current rate.

Source: Updated from Osmond and Anderson (1998, Tables 9, 10) and WFA (1998b, p. 21).

Table 6: Import tariffs on non premium and premium wine and the weighted tariff on wine as a per cent of the average wine CTE (excl. VAT/GST). various countries and country groups, Jan.1996.

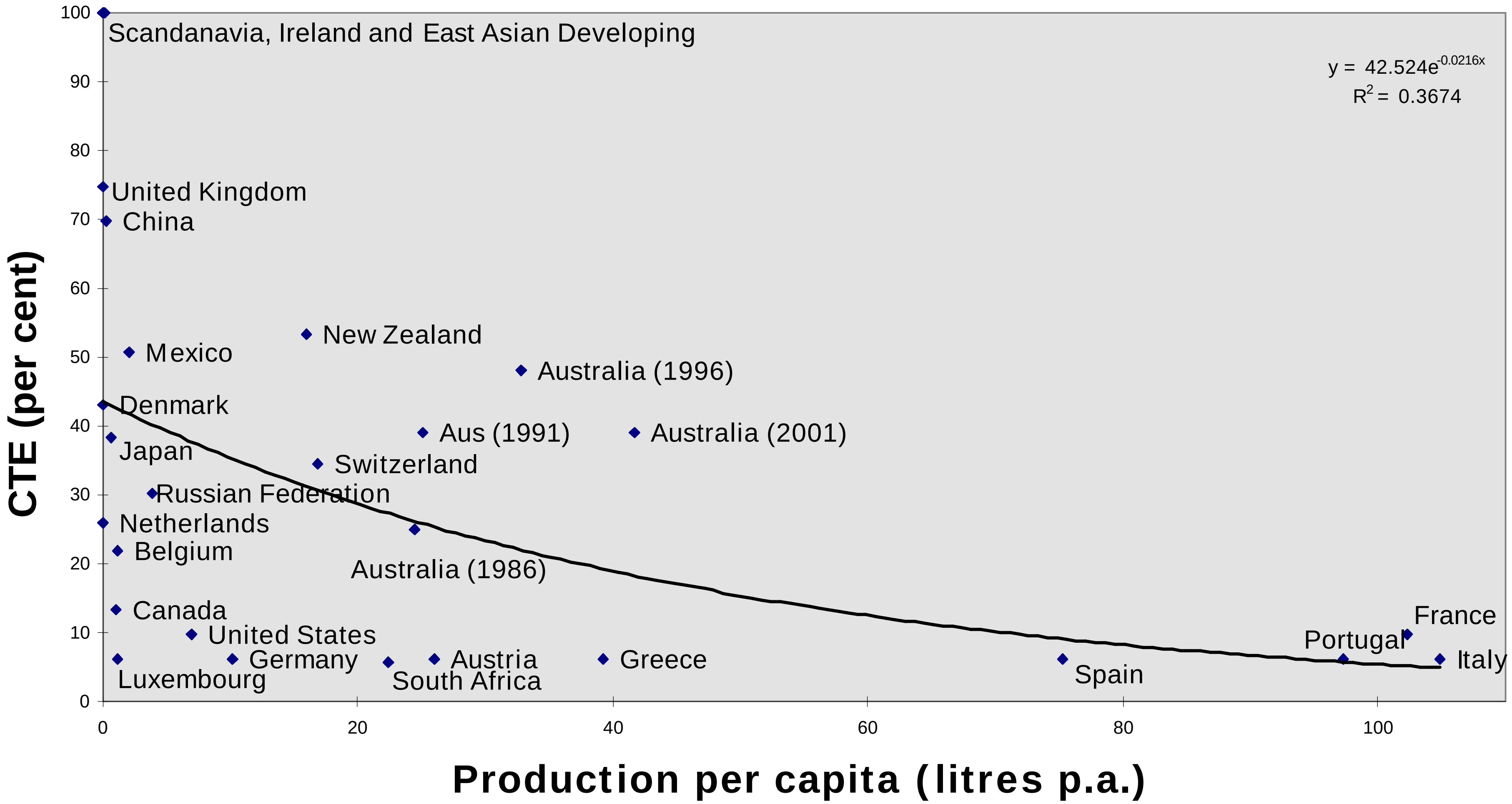
	Non premium $2.70/litre		Premium $9/750ml bottle		Wtd. tariff as a % of ave. wine CTE ($5.50/litre)
	dollars	per cent	dollars	per cent	per cent
Australia	**0.14**	**5**	**0.45**	**5**	**10**
Australia 2001	**0.14**	**5**	**0.45**	**5**	**13**
New Zealand	**0.35**	**13**	**1.17**	**13**	**17**
European wine producers					
France	0.31	12	0.32	4	63
Italy	0.31	12	0.32	4	100
Greece	0.31	12	0.32	4	100
Portugal	0.31	12	0.32	4	100
Spain	0.31	12	0.32	4	100
Scandanavians					
Denmark	0.31	12	0.32	4	14
Finland	0.31	12	0.32	4	5
Iceland	0.00	0	0.00	0	0
Norway	0.31	12	0.32	4	3
Sweden	0.31	12	0.32	4	5
Other Western Europe					
Austria	0.31	12	0.32	4	100
Belgium	0.31	12	0.32	4	28
Germany	0.31	12	0.32	4	100
Ireland	0.31	12	0.32	4	5
Luxembourg	0.31	12	0.32	4	100
Netherlands	0.31	12	0.32	4	23
Switzerland	1.87	69	1.49	17	100
United Kingdom	0.31	12	0.32	4	8
NAFTA					
United States	0.16	6	0.13	1	30
Canada	0.09	3	0.07	1	12
Mexico	0.54	20	1.80	20	40
Asia and Pacific					
Japan	0.58	21	1.95	22	45
China	1.89	70	6.30	70	100
Malaysia	8.93	331	9.50	106	83
Korea	0.81	30	2.70	30	14
Thailand	1.62	60	5.40	60	48
Singapore	11.29	418	9.01	100	100
Other					
South Africa	0.14	5	0.11	1	47
Russian Federation	0.27	10	0.88	10	24

Table 7: Alcohol consumption per capita by type of beverage, Western Pacific countries, 1986 and 1996 (litres of alcohol per year)

		Wine	Beer	Spirits	TOTAL
Australia	1986	2.8	5.2	1.3	9.0
	1996	2.4	4.3	1.4	7.5
New Zealand	1986	2.2	5.4	1.4	8.1
	1996	2.2	4.4	1.2	6.8
Japan	1986	0.09	1.8	2.4	5.9
	1996	0.13	2.4	2.2	6.6
Taiwan	1986	0.04	0.9	0.1	2.3
	1996	0.07	1.1	0.3	2.7
China	1986	0.01	0.02	1.5	1.5
	1996	0.02	0.06	3.0	3.7
Singapore	1986	0.07	n.a.	0.4	0.5
	1996	0.10	0.93	0.5	1.6
Malaysia	1986	0.01	0.27	0.1	0.4
	1996	0.01	0.43	0.1	0.6
Thailand	1986	0.00	0.09	0.0	0.2
	1996	0.01	0.50	0.1	0.7

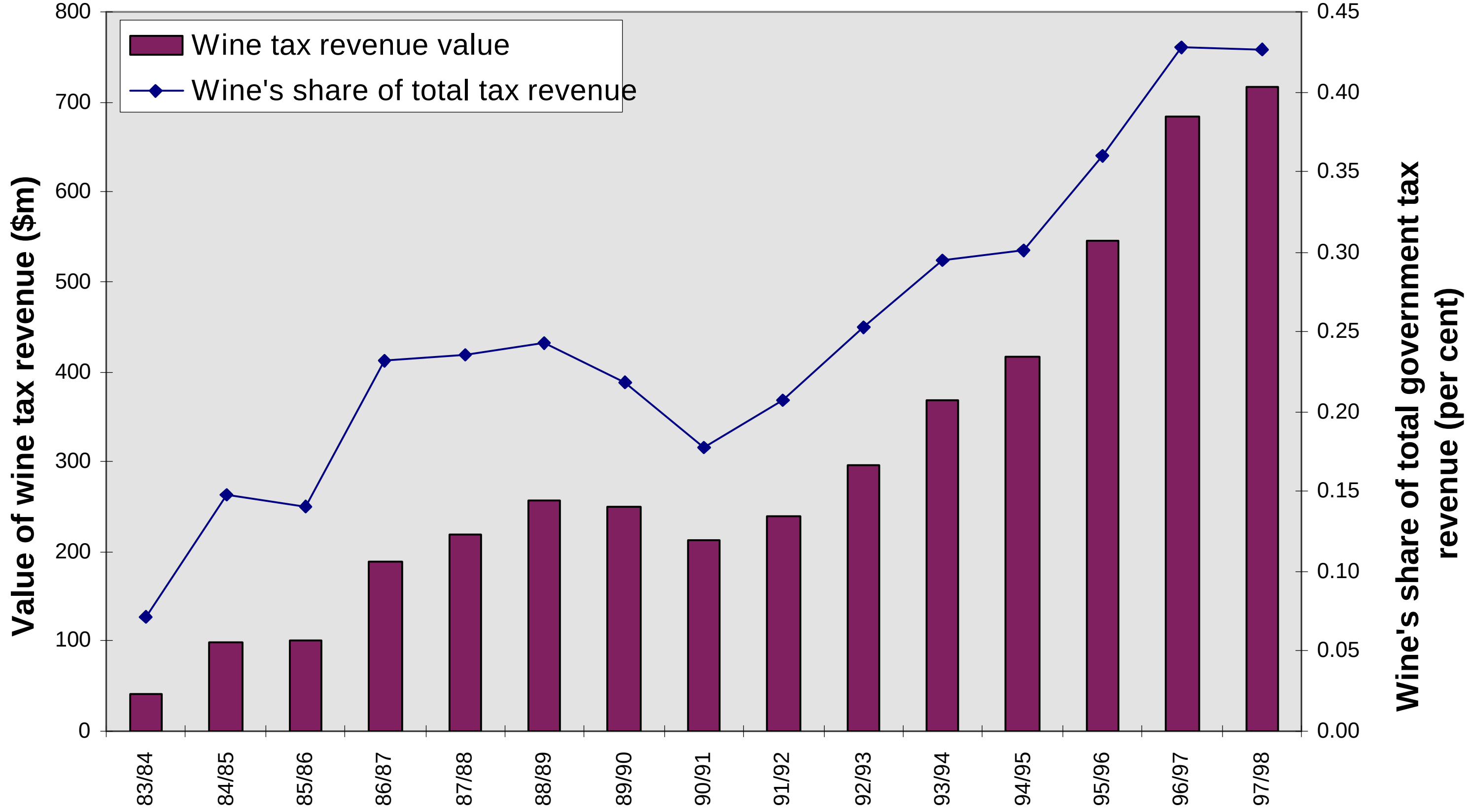
Source: PVGD (1997).

Figure 1: Comparing per capita wine production and the average CTE on wine (excluding VAT/GST), Australia, 1986, 1991, 1996 and 2001, and various other countries, 1996



Source: As for Table 1

Figure 2: Value of wine tax revenue and wine's share of total government revenue, 1983/84 to 1997/98



Source: The value of Australian wine sold domestically is from Osmond and Anderson (1998 pp 74-75), except revised figures for 1996/97 and 1997/98 which are from the 1998 ABS publication *Australian Wine and Grape Industry* (cat. 1329.0). Wholesale sales tax rates including State license fees were obtained from WFA (1998b, p.21). The value of wine tax revenue is calculated simply as the product of the State franchise inclusive WST rate and the value of Australian wine sold domestically. Total government revenue data (Commonwealth and State) is from the ABS publication *Taxation Revenue, Australia* (cat. 5506.0).

Appendix: Details of the taxes on wine consumption

The tables below provide more details of the taxes applied in each country, by tax instrument. The following notes explain some of the specific assumptions made to arrive at the CTE estimates.

Australia. The Government is proposing to introduce a 10 per cent GST in mid-2000, and at that time to abolish the current WSTs on wine and beer and replace them with commensurately lower 'equalization' taxes at the wholesale level. The rate proposed for wine is 32 per cent, compared with the current WST rate of 41 per cent (which translates to 48 per cent of the pre-tax wholesale price plus retail marketing margin).

New Zealand. New Zealand's Alcohol Advisory Council collects a levy of NZ$0.0319 per litre for unfortified wine. In our CTE calculations we have levied that tax at the customs duty inclusive wholesale price.

Norway. In Norway the excise tax is based on the percentage of alcohol in each product.

Switzerland. The base import tariff for Switzerland is 0.50 Swiss francs per litre of wine. However, a quota exists for the importation of both red and white wine. To account for the price wedge incurred by the quota we calculated that 88 per cent of red wine imports exceeded the quota and incurred an additional tariff of 1 Swiss franc per litre. Weighting by the proportion of red wine in total wine imports provided a tariff equivalent of 0.79 Swiss francs per litre of wine imported.

United States. The United States specific excise tax is calculated as a simple average of the tax for smaller wineries exempt from the excise tax and the tax for large wineries subject to full excise taxation.

Canada. The Canadian CTE includes an 8.15 per cent tax levied at the retail level (excl. GST) as an average of state taxes. The average was determined by weighting the retail sales tax in each of the Canadian provinces by the total alcohol consumption in each of the provinces. The wine import tariff was calculated as a simple average of that applying to wine with an alcoholic content of less than 13.7 per cent and that for wine with an alcoholic content greater than 13.7 per cent but less than 14.9 per cent.

Mexico. In Mexico the excise tax is 21.5 per cent for wine with an alcoholic content of less than or equal to 13.5 per cent and 30 per cent for wine with an alcoholic content of greater than 13.5 per cent but less than 20 per cent. The excise tax was calculated as a simple average of the above two tax rates.

Import tariffs. Specific tariffs can be calculated based on the percentage of alcohol in each product, by container size, or by a combination of the two. The import tariff facing wine entering the *European Union* is based on both container size and the percentage of alcohol. Wines in containers of less than two litres and with high alcoholic content face higher import tariffs than bulk, low alcohol wine. In contrast to the EU system, the *Russian Federation's* import tariff is based solely on container size. The effect of such a tariff is to distort consumption in favour of high-valued wine. The *United States* and *Canada* have import tariffs based on the percentage of alcohol as well as on the size of container (with some over 4 litres being subject to different rates): the import tariff "ratchets up" with the alcohol level (12 and 12.5 per cent alcohol wines may receive the same tariff while a 13 per cent alcohol wine receives a higher tariff).

For sources of all the data used to calculate the CTEs reported in this Appendix, see Section 1 of the paper's text.

Table A1: Wine tax instruments used (specific or ad valorem) at the various levels of taxation, various countries, Jan. 1996.

Country	Import duty	Excise tax or WST	VAT or GST
Australia	ad valorem	ad valorem	nil
Australia 2000	ad valorem	ad valorem	ad valorem
New Zealand	ad valorem	specific	ad valorem
France	specific	specific	ad valorem
Italy	specific	nil	ad valorem
Greece	specific	nil	ad valorem
Portugal	specific	nil	ad valorem
Spain	specific	nil	ad valorem
Denmark	specific	specific	ad valorem
Finland	specific	specific	ad valorem
Iceland	nil	specific	ad valorem
Norway	specific	specific	ad valorem
Sweden	specific	specific	ad valorem
Austria	specific	nil	ad valorem
Belgium	specific	specific	ad valorem
Germany	specific	nil	ad valorem
Ireland	specific	specific	ad valorem
Luxembourg	specific	nil	ad valorem
Netherlands	specific	specific	ad valorem
Switzerland	specific	nil	ad valorem
United Kingdom	specific	specific	ad valorem
United States	specific	specific	ad valorem
Canada	specific	specific	ad valorem
Mexico	ad valorem	ad valorem	ad valorem
Japan	ad valorem/specific	specific	ad valorem
China	ad valorem	nil	ad valorem
Malaysia	specific	ad valorem	nil
Korea	ad valorem	ad valorem	ad valorem
Thailand	ad valorem	ad valorem	ad valorem
Singapore	specific	nil	ad valorem
South Africa	specific	specific	ad valorem
Russian Federation	specific	specific	ad valorem

Table A2: VAT on wine, beer and spirits for those countries where it differs from the general VAT rate, Jan. 1996.

Country	Wine	Beer	Spirits	General Rate
Italy	16	19	19	20
Luxembourg	12	15	15	15
Portugal	5	17	17	17
Switzerland	6.5	13.45	6.5	6.5

Table A3: Decomposing the contribution to consumer taxes on non premium wine at each level of taxation (in per cent terms), various countries and country groups, Jan. 1996.

Tax on a litre of wine that would retail for $2.70 without taxes

	Consumer tax equivalent (CTE)			
Country	**Tariff**	**Excise tax or WST**	**VAT/GST**	**Total**
	per cent	per cent	per cent	per cent
Australia	**5**	**43**	**0**	**48**
Australia 2001	**5**	**34**	**14**	**52**
New Zealand	**13**	**81**	**24**	**118**
European Wine Producers				
France	12	7	24	43
Italy	12	0	18	29
Greece	12	0	20	32
Portugal	12	0	6	17
Spain	12	0	18	29
Scandanavians				
Denmark	12	73	46	131
Finland	12	228	75	315
Iceland	0	546	158	704
Norway	12	414	121	546
Sweden	12	246	89	347
Other Western Europe				
Austria	12	0	22	34
Belgium	12	31	30	73
Germany	12	0	17	28
Ireland	12	215	69	295
Luxembourg	12	0	13	25
Netherlands	12	39	26	77
Switzerland	69	0	11	80
United Kingdom	12	137	44	192
NAFTA				
United States	6	14	0	20
Canada	3	23	19	46
Mexico	20	31	23	74
Asia and Pacific				
Japan	21	33	5	59
China	70	0	46	116
Malaysia	331	65	0	395
Korea	30	186	32	247
Thailand	60	64	16	140
Singapore	418	0	16	434
Papua New Guinea	11	78	0	89
Other Countries				
South Africa	5	6	16	27
Russian Federation	10	41	30	81

Table A4: Decomposing the contribution to consumer taxes on premium wine at each level of taxation (in per cent terms), various countries and country groups, Jan. 1996.

Tax on a 750ml bottle of wine that would retail for $9 without taxes

	Consumer tax equivalent (CTE)			
Country	**Tariff**	**Excise tax or WST**	**VAT/GST**	**Total**
	per cent	per cent	per cent	per cent
Australia	**5**	**43**	**0**	**48**
Australia 2001	**5**	**34**	**14**	**52**
New Zealand	**13**	**19**	**17**	**49**
European Wine Producers				
France	4	2	22	27
Italy	4	0	17	20
Greece	4	0	19	22
Portugal	4	0	5	9
Spain	4	0	17	20
Scandanavians				
Denmark	4	18	30	51
Finland	4	55	35	93
Iceland	0	131	57	187
Norway	4	99	47	149
Sweden	4	59	41	103
Other Western Europe				
Austria	4	0	21	24
Belgium	4	7	23	34
Germany	4	0	16	19
Ireland	4	51	33	88
Luxembourg	4	0	12	16
Netherlands	4	9	20	33
Switzerland	17	0	8	24
United Kingdom	4	33	24	60
NAFTA				
United States	1	3	0	5
Canada	1	6	16	23
Mexico	20	31	23	74
Asia and Pacific				
Japan	22	8	4	34
China	70	0	46	116
Malaysia	106	31	0	136
Korea	30	186	32	247
Thailand	60	64	16	140
Singapore	100	0	6	106
Papua New Guinea	11	78	0	89
Other Countries				
South Africa	1	1	14	17
Russian Federation	10	10	24	44

Table A5: Decomposing the contribution to consumer taxes on non premium wine at each level of taxation (in dollar terms), various countries and country groups, Jan. 1996.

Tax on a litre of wine that would retail for $2.70 without taxes

	Consumer tax equivalent (CTE)				
Country	**Tariff**	**Excise tax or WST**	**VAT/GST**	**Total**	**Retail price including taxes**
	dollars	dollars	dollars	dollars	dollars
Australia	**0.14**	**1.16**	**0.00**	**1.30**	**4.00**
Australia 2001	**0.14**	**0.91**	**0.37**	**1.42**	**4.12**
New Zealand	**0.35**	**2.18**	**0.65**	**3.18**	**5.88**
European Wine Producers					
France	0.31	0.19	0.66	1.16	3.86
Italy	0.31	0.00	0.48	0.79	3.49
Greece	0.31	0.00	0.54	0.85	3.55
Portugal	0.31	0.00	0.15	0.46	3.16
Spain	0.31	0.00	0.48	0.79	3.49
Scandanavians					
Denmark	0.31	1.98	1.25	3.54	6.24
Finland	0.31	6.17	2.02	8.50	11.20
Iceland	0.00	14.74	4.27	19.01	21.71
Norway	0.31	11.17	3.26	14.74	17.44
Sweden	0.31	6.64	2.41	9.36	12.06
Other Western Europe					
Austria	0.31	0.00	0.60	0.91	3.61
Belgium	0.31	0.84	0.81	1.96	4.66
Germany	0.31	0.00	0.45	0.76	3.46
Ireland	0.31	5.81	1.85	7.97	10.67
Luxembourg	0.31	0.00	0.36	0.67	3.37
Netherlands	0.31	1.06	0.71	2.09	4.79
Switzerland	1.87	0.00	0.30	2.16	4.86
United Kingdom	0.31	3.70	1.17	5.19	7.89
NAFTA					
United States	0.16	0.37	0.00	0.53	3.23
Canada	0.09	0.63	0.52	1.24	3.94
Mexico	0.54	0.83	0.61	1.99	4.69
Asia and Pacific					
Japan	0.58	0.90	0.13	1.60	4.30
China	1.89	0.00	1.24	3.13	5.83
Malaysia	8.93	1.74	0.00	10.67	13.37
Korea	0.81	5.02	0.85	6.68	9.38
Thailand	1.62	1.73	0.42	3.77	6.47
Singapore	11.29	0.00	0.42	11.71	14.41
Papua New Guinea	0.30	2.10	0.00	2.39	5.09
Other Countries					
South Africa	0.14	0.16	0.42	0.72	3.42
Russian Federation	0.27	1.11	0.81	2.19	4.89

Table A6: Decomposing the contribution to consumer taxes on premium wine at each level of taxation (in dollar terms), various countries and country groups, Jan. 1996.

Tax on a 750ml bottle of wine that would retail for $9 without taxes

	Consumer tax equivalent (CTE)				
Country	**Tariff**	**Excise tax or WST**	**VAT/GST**	**Total**	**Retail price including taxes**
	dollars	dollars	dollars	dollars	dollars
Australia	**0.45**	**3.87**	**0.00**	**4.32**	**13.32**
Australia 2001	**0.45**	**3.02**	**1.25**	**4.72**	**13.72**
New Zealand	**1.17**	**1.74**	**1.49**	**4.40**	**13.40**
European Wine Producers					
France	0.32	0.15	1.95	2.42	11.42
Italy	0.32	0.00	1.49	1.81	10.81
Greece	0.32	0.00	1.68	1.99	10.99
Portugal	0.32	0.00	0.47	0.78	9.78
Spain	0.32	0.00	1.49	1.81	10.81
Scandanavians					
Denmark	0.32	1.58	2.72	4.62	13.62
Finland	0.32	4.92	3.13	8.37	17.37
Iceland	0.00	11.76	5.09	16.85	25.85
Norway	0.32	8.91	4.19	13.42	22.42
Sweden	0.32	5.30	3.65	9.26	18.26
Other Western Europe					
Austria	0.32	0.00	1.86	2.18	11.18
Belgium	0.32	0.67	2.10	3.08	12.08
Germany	0.32	0.00	1.40	1.71	10.71
Ireland	0.32	4.63	2.93	7.88	16.88
Luxembourg	0.32	0.00	1.12	1.43	10.43
Netherlands	0.32	0.85	1.78	2.94	11.94
Switzerland	1.49	0.00	0.68	2.17	11.17
United Kingdom	0.32	2.95	2.15	5.42	14.42
NAFTA					
United States	0.13	0.29	0.00	0.42	9.42
Canada	0.07	0.51	1.45	2.03	11.03
Mexico	1.80	2.78	2.04	6.62	15.62
Asia and Pacific					
Japan	1.95	0.72	0.35	3.02	12.02
China	6.30	0.00	4.13	10.43	19.43
Malaysia	9.50	2.78	0.00	12.28	21.28
Korea	2.70	16.73	2.84	22.27	31.27
Thailand	5.40	5.76	1.41	12.57	21.57
Singapore	9.01	0.00	0.54	9.55	18.55
Papua New Guinea	0.99	6.99	0.00	7.98	16.98
Other Countries					
South Africa	0.11	0.13	1.29	1.54	10.54
Russian Federation	0.88	0.88	2.15	3.92	12.92

Table A7: Consumer tax equivalent on beer, various countries and country groups, Jan. 1996.

	Tax on 4.5% alcohol beer that would retail at $1.45/litre without taxes		Share of world beer consumption volume
	dollars	per cent	per cent
Australia	**1.33**	**92**	**1.4**
Australia 2001*	**1.33**	**92**	**1.4**
New Zealand	**1.15**	**80**	**0.3**
European wine producers	**0.76**	**53**	**4.5**
France	0.77	53	1.2
Italy	0.90	63	0.8
Greece	na	na	na
Portugal	0.84	58	0.4
Spain	0.70	48	2.1
Scandanavians	**2.32**	**161**	**1.5**
Denmark	1.57	109	0.5
Finland	3.66	254	0.3
Iceland	na	na	na
Norway	4.36	302	0.2
Sweden	1.41	98	0.5
Other Western Europe	**1.14**	**77**	**18.2**
Austria	0.93	27	0.7
Belgium	0.98	68	1.1
Germany	0.72	50	9.0
Ireland	2.69	187	0.5
Luxembourg	0.68	47	0.0
Netherlands	0.97	67	1.8
Switzerland	0.62	43	0.3
United Kingdom	1.92	133	4.7
NAFTA	**0.30**	**21**	**22.3**
United States	0.17	12	17.5
Canada	0.93	64	3.2
Mexico	0.45	32	1.6
Japan	**3.21**	**223**	**5.4**
Memo: OECD-24	**0.94**	**65**	**53.6**

* Includes a 10 per cent GST and ad valorem beer equalisation sales tax (ie the tax on beer is assumed to be unchanged if the GST is introduced by 2001). With a 10 per cent GST the ad valorem wholesale sales tax on wine is assumed to fall from 37 per cent to 24.5 per cent to ensure a constant retail price. The The weights used to get the regional aggregates are national shares of world wine consumption volume.