Growth Prospects for Australia's Wine Industry in International Perspective

FINAL REPORT to
GRAPE AND WINE RESEARCH & DEVELOPMENT CORPORATION

Project Number: **UA 98/1**

Principal Investigator: **Prof K Anderson**

Research Organisation: **University of Adelaide**
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NON-TECHNICAL SUMMARY

The project sought to provide the grape and wine industry with a clearer idea of its economic future based on a careful accounting of the sources of growth since the late 1980s, and a compendium of data on developments of Australia's position in the world wine market over the past decade. It has done so though providing:

- a comprehensive revised empirical analysis of the impact of the GST and the associated change to wine consumption taxation on the Australian industry (used by WFA in its discussions within the industry and its subsequent lobbying in Canberra);
- an empirical analysis of the sources of growth in the Australian industry over the past decade, which has then been used to provide projections to 2003;
- a clearer picture of the magnitude and duration of booms and busts in the industry since 1850, and of the role that government policies played in those cycles;
- a comprehensive statistical picture of production, consumption and trade in wine globally since the early 1960s, and of the detailed pattern of bilateral trades since the late 1980s, for 40 countries/country groups spanning the world;
- a compilation of the consumer tax equivalents on wine in the major wine producing and consuming countries of the world by source (excise, VAT/GST, import tariff); and
- the construction of a prototype economic model of the world wine market, capable of being expanded into a 40-region global model and used to analyse the economic effects (including on the Australian industry) of consumer tax or import policy changes, of expanded plantings, of technological improvements, and of taste changes in any of those national markets.

The impact of the project has been considerable, judging from our book sales (around 1000 copies), the ready acceptance of its papers for publication in both academic and industry journals, and the coverage of those papers in news magazines and daily newspapers. The early analytical work on the effect of moving to a GST, and on the rate of wine taxation in other countries, was used in the tax reform debate and will be used again by the WFA when it seeks a reduction/elimination in the so-called Wine Equalization Tax that is due to come into effect on 1 July 2000.

DETAILED REPORT

GWRDC funding (1998/99): $29,700

Project time span: 12 months, from July 1998 to June 1999

Background to the project:

Since the Australian wine industry published in 1995 its *Strategy 2025,* there has been much discussion within the industry of the targets set for those three decades. In particular, the spectacular growth in the area of vineyards in the past decade is raising questions about whether/when this rapid expansion in winegrape supply will cause grape and wine prices to fall, and what the potential consequences will be for the various participants in the industry. Now is an appropriate time to revisit that *Strategy 2025* projection exercise, using a more-formal economic modeling approach which makes explicit the assumptions underlying the projections and takes into account people's behavioural responses to the changes occurring over time in the market.

Specifically, there is a need to integrate factors affecting growth in domestic supply, domestic demand, demands in markets overseas that Australia can supply, and production by competing suppliers to those markets. The integration of those four elements is necessary to obtain a clear picture of likely price and quantity outcomes in what is rapidly becoming a more integrated world wine market characterised by products differentiated by brand, grape variety, and region and country of origin yet with footloose consultant viticulturalists, oenologists, wine marketers, distributors, and investors.

The CIES program of wine economics research began in late 1997 in response to a number of perceived needs. It was launched after extensive consultations with grapegrowers, winemakers, and staff at agencies such as the Winemakers' Federation of Australia, the Australian Wine and Brandy Corporation, accounting and law firms specializing in providing investment advice to firms in the industry such as Findlaysons in Adelaide, and the Australian Centre for Wine Business Management at the University of South Australia and a similar group at the Waite campus of the University of Adelaide. The program that evolved from those discussions suggested a research agenda that required among other things an appropriate national economic model (not least to analyse the effects of the GST and associated changes in wine taxation) and potentially (but beyond the scope of the present project) a global model of world wine markets.

The CIES program of research is to stretch over four years in the first instance. It involves both basic research and applied research, and has been supplemented by contract research to meet specific immediate needs of industry groups. Four sources of initial funds were therefore sought, and have since been provided: ARC for some basic research ($146k, 1/99 to 12/2001); GWRDC for the first stage of the applied generic research ($30k, 7/98 to 6/99); RIRDC to fund the drawing out of lessons for other rural industries from wine's success ($38k, 4/98 to 11/99); plus contract research funds from industry (supplemented by SA State Government funds) for urgent analysis of the GST and wine tax issue ($70k, 12/97 to 6/98). CIES (together with the SA Centre for Economic Studies) put in substantial seed funding in 1997-98, and CIES continues to contribute (particularly in-kind) resources, valued at $65k in total. The aggregate input for the four-year period from late 1997 to late 2001 will be $349k, of which GWRDC has supplied 9% to date.

Research project objective:

The overall objectives are to provide the grape and wine industry with (i) a clearer idea of its economic future via a model-based empirical projection of the industry into the new millennium, based on a careful accounting of the sources of growth since the late 1980s, (ii) a compendium of data on developments of Australia's position in the world wine market over the past decade, and (iii) an assessment of the practicality of developing an economic model of the world wine market for the purpose of analysing the effects of structural and policy changes on that market.

Research methodology:

An obvious first step in considering the industry's economic future is to examine its past. During the summer of 1997-98, CIES staff and students reviewed available literature and data sources. The best available histories of the industry are by J. Beeston, *A Concise History of Australian Wine* (Sydney: Allen and Unwin, 1994), by J. Halliday, *A History of the Australian Wine Industry: 1949-1994* (Adelaide: Winetitles for the Australian Wine and Brandy Corporation, 1994) and its predecessor by H.E. Laffer, *The Wine Industry of Australia* (Adelaide: Australian Wine Board, 1949). A report of more contemporary times in Australia is also found in B. Rankine, *Evolution of the Modern Australian Wine Industry: A Personal Appraisal* (Adelaide: Ryan Publications, 1996). Those descriptive histories give only a rough idea of the extent and sources of past booms and gluts in the industry. Hence a more comprehensive quantitative picture was compiled and published by CIES in mid-1998 (R. Osmond and K. Anderson, *Trends and Cycles in the Australian Wine Industry, 1850 to 2000*). That report, which received wide publicity and was purchased by many investors and investment advisors (more than 300 copies have been sold), was the basis for an honours economic history thesis by Robert Osmond in 1998, analysing the extent of and reasons behind the industry's growth and cycles of the past 150 years, with a special focus on the inter-war period.

To that mainly historical analysis it was possible to add a more formal quantitative analysis of recent and prospective growth. That involved accounting for the past decade's growth by examining its constituent parts so as to get an idea of the relative importance of each contributing factor. Use was made of a methodology similar to that used by P. Dixon, J. Menon and M.T. Rimmer in 'An Explanation of the Rapid Growth in Australia's Trade: A General Equilibrium Analysis' (25th Conference of Economists, ANU, Canberra, 22-26 September 1996). To use that methodology (and to analyse the impact of the GST and wine tax change), a computable general equilibrium (CGE) model of the Australian economy, FEDSA-WINE, was constructed. That model, based on FEDERAL-SA (a two-region version of the Monash University's ORANI model) developed at the Universities of Adelaide and Tasmania, distinguishes three grape and wine types as well as beer and spirits (plus all other goods and services aggregated into about 60 other product groups/industries). FEDSA-WINE also separates South Australia (where half the wine industry is currently located) from the rest of Australia. It has been extensively updated, revised and calibrated to replicate the actual 1995-96 economy (with the average of 1994-95 to 1996-97 data included for the grape and wine industry). That FEDSA-WINE model was used first to examine the decade to 1996, thereby assisting the task of projecting the period to 2003. That end date (rather than 2010 as originally proposed) was chosen for two reasons: because recent and intended plantings data from ABS provide a reasonable

indication (as projected by ABARE for GWRDC) of what domestic production will be only until then; and because export demand projections further out would have been even more unreliable.

The reason for needing to use an economy-wide model, even though we are dealing with a very small Australian industry, is because it is necessary to include the move to a goods and services tax (GST) plus a smaller wholesale sales tax on wine. That tax regime change makes it necessary to estimate not just the direct but also the *indirect* effects of the change in the tax structure (including cuts in personal income tax and many wholesale taxes when the GST is introduced on 1 July 2000). A forward-looking economy-wide model also allows the increasing *relative* importance of the wine industry in Australia's (and South Australia's) economy to be quantified.

Aggregate elasticities of domestic demand for wine and other beverages' have been extensively estimated over the years. One of the latest sets of estimates for a number of OECD countries including Australia was published in 1997 as K.W. Clements, W. Yang and S.W. Zheng, 'Is Utility Additive? The Case of Alcohol', *Applied Economics* 29:1163-67.) However, these studies do not estimate elasticities for our three wine types (premium red, premium white, and non-premium). Nor could we do it ourselves because our review of available data suggests reliable matching price and quantity data for estimating at that level of disaggregation simply are not available. In any case, wine tastes have changed several times since the 1960s, suggesting two things: that estimates based on historical time series may well be inappropriate for obtaining elasticities of relevance for the next millennium; and that demand curve shifters due to taste changes are likely to be more important than the price elasticity of those demand curves in explaining the industry's growth in premium sales. Hence we instead do sensitivity analysis to show to what extent the model results of interest to this project depend on those elasticities.

Without reliable econometric estimates of export demand elasticities for the three wine types, they simply had to be assumed for this initial modelling work. An alternative approach to econometric estimation is to obtain synthetic estimates using a global model of national/regional wine markets, as was done by R. Tyers and K. Anderson for grain, livestock products and sugar ('Price Elasticities in International Food Trade: Synthetic Estimates From a Global Model', *Journal of Policy Modeling* 11(3): 315-44, Fall 1989). However, no appropriate global wine model currently exists to our knowledge. The feasibility of building one depends on the quality of available price and quantity data and information on policy distortions to markets, among other things. Hence the second part of this project, namely, to compile available data and assess its usefulness for developing a global wine model.

Quantity data and unit values of imports and exports were compiled by mid-1998 for wine as a whole (N. Berger, K. Anderson and R. Stringer, *Trends in the World Wine Market, 1961 to 1996: A Statistical Compendium*, based on data from and communications with people in FAO in Rome and OIV in Paris). In the subsequent six months the consumer and trade taxes applying to wine were compiled for the main wine-producing and -consuming countries (N. Berger and K. Anderson (1999), "Consumer and Import Taxes in the World Wine Market: Australia in International Perspective", CIES Discussion Paper 99/03, February 1999.) Data have also been compiled for bilateral trades in wine, dividing the world into more than 40 countries/country groups (N. Berger, P. Spahni and K. Anderson, *Bilateral Trade Patterns in the World Wine Market, 1988 to 1997: A Statistical Compendium*, based largely on United Nations trade data plus updated OIV consumption data and FAO production data). These provide most of the needed ingredients for a world wine model with a data base for 1995-97.

However, these data refer only to wine as a group. As well, they need to be supplemented with projections of future supplies abroad based on recent plantings data. Disaggregating to get premium red and premium white wines separately from other wine is a challenge that will only be met once more countries improve their published data collections. Hence we are not in a position to generate synthetic export demand elasticities for the three wine types in the Australian model. In any case, the price elasticities are probably less important than the export demand curve shifters, including those due to generic and brand promotion abroad.

We therefore decided to take advantage of the presence in Melbourne during 1999 of Professors Julian Alston of the University of California, Davis and Ellen Goddard of the University of Guelph in Canada, who are world experts in the economics of generic and brand promotion for primary and processed farm products. They and two of their doctoral students came to a workshop we organised in May 1999, to share ideas on how to model export demand growth (see workshop program in Appendix 1 below). Another potential impact on future demand discussed at that workshop is the introduction of zoning ('geographical indications', in GATT/WTO parlance). The gradual switch from using European names for wine types to varietal and regional names (forced on Australia by the European Union as part of the Uruguay Round's Agreement on Trade-related Intellectual Property) offers both challenges and new opportunities for wine brand marketing and generic promotion. These were explored by a CIES-supervised honours student during 1999 (Kok, S., *The Economics of Geographical Indications: A Case Study of the Bilateral EU-Australia Wine Agreement*, unpublished Honours thesis, School of Economics, University of Adelaide, November 1999).

Detailed results:

The project began by publishing three initial reports in mid-1998 (with the help of an additional one-off small grant from GWRDC): one on the long history of trends and cycles in the Australian grape and wine industry (87pp), one providing a compendium of carefully compiled statistics and indexes of developments in the world wine market since 1961 (281pp), and one providing an initial assessment of the impact of the GST and associated possible changes to the taxation of wine consumption on the Australian industry (37pp). (These and all other publications from the project are listed in Appendix 2 below.)

Since then the principal researcher and two of his graduate students (Wittwer and Berger) have produced several research papers (all submitted to academic journals and some already accepted for publication) and a number of policy briefs (all published in industry journals), plus a further statistical compendium on bilateral trade in wine (225pp). Both students are well on their way to completing their theses (PhD and MEc, respectively) and expect to submit by mid-2000. Three Honours theses on the industry also have been completed in 1998 and 1999. At our small international workshop held in Adelaide on 6-7 May 1999, most of those graduate students, plus two North American PhD students, each presented papers on their theses. Another paper was presented by Pierre Spahni from Geneva. Anderson and the supervisors of the North American students, plus several people from the industry, contributed as discussants.

The modelling of the global wine market is well advanced, but the collecting of the necessary data was, as expected, so time-consuming as to require the projections and policy analysis to be postponed until the summer of 1999/2000. Hence results from that work cannot yet be reported.

The main findings from the modelling of the Australian industry are reported in papers by Wittwer and Anderson. On Australia's GST and wine tax changes, the empirical modelling results suggest:

• the grape and wine industry would benefit slightly from the move to a broad-based GST in place of numerous wholesale sales taxes even if alcoholic products were to be left just as heavily taxed as at present;

• a so-called Wine Equalization Tax (WET) of 29 per cent, equivalent to an increase in the current wholesale rate by 5 percentage points, would reduce wine output significantly;

• a switch from the proposed ad valorem WET to a volumetric tax that raises the same government revenue would help premium wine producers and consumers, but harm the non-premium sector;

• raising such a volumetric tax to the same level as that for beer per litre of alcohol would cause even the premium part of the industry to be worse off than currently, and would lower national economic welfare; and

• lowering the add-on tax on wine so the same total rate applies as in other wine-producing OECD countries would add substantially to the benefits of the tax reform in a major way for the wine industry but also for the overall economy, and would encourage a rise in the quality of wine produced and consumed in Australia. (To justify the present level of wine taxation instead of reducing it to the OECD average, the government would need to demonstrate a reduction in the social costs of wine consumption, net of the social health benefits, of $25 million per year. This is the welfare loss calculated in this study from maintaining the current level of wine taxation rather than reducing it to the OECD average.)

On the sources of recent and prospective growth in the Australian grape and wine industry over the decade to 1996, and prospectively to 2003, the economy-wide CGE model FEDSA-WINE is used both to backcast and to forecast from 1996. Despite Australia's considerable income and population growth over the decade to 1996, the volume of wine consumed domestically fell by 2 per cent. However, there has been a marked switch in consumption from non-premium to (especially red) premium wine in Australia, as in numerous European countries. An important consequence has been the hike in real prices of premium red over the decade: by 43 per cent for wine and 116 per cent for winegrapes. Producers responded to the hike in premium grape and wine prices with a 150 per cent increase in plantings of premium wine grapes in the twelve years to 1998. The model results suggest the consequent wine output growth can be attributed as follows:

- around half is attributable to export demand growth (with Australia's exports of premium wine increasing more than ten-fold since the mid-1980s, raising the share of production exported from less than 5 per cent to more than 30 per cent);
- income growth accounts for about one-fifth of the increase in premium red wine output and two fifths of premium white output, while for non-premium wine, income growth offsets the negative taste swing by domestic consumers;

- technological changes appear to have made positive contributions too, with mechanical harvesting and pruning being used far more widely at the end of the decade than the beginning;
- consumer tax changes were the other main factor considered: for premium red wine, taxes were responsible for almost half of the real increase in price while for premium white wine, real consumer prices on average would not have risen at all had there been no tax increases. And through diverting sales from the domestic market to overseas, increased taxes have had a positive but only small effect on exports, according to the model results.

Turning to the future, recent and intended vine plantings ensure wine output in 2003 will be about twice that of 1996. The model is used to examine how that vineyard expansion might affect grape and wine prices over the next few years. Results suggest that even with continued strong export demand growth for premium wine, winegrape prices, and to a lesser extent wine prices, will fall substantially in real terms from their current very high levels, particularly for the premium segments of the industry. More specifically:

- premium red grape prices are projected to fall by $500 per tonne (31 per cent) and premium white grape prices by $160 per tonne (16 per cent) between 1998 and 2003,and the corresponding projected falls in premium wine prices are around 9 per cent for both red and white by 2003;
- domestic consumption of premium red wine is projected to increase from 53 Ml (megalitres) in 1998 to 95 Ml in 2003, and premium white wine consumption is projected to increase from 65 Ml to 90 Ml, while non-premium wine consumption is projected to increase only slightly, from 249 Ml to 267 Ml;
- with domestic demand growing so much slower than domestic supply, exports of premium wine are projected to continue to accelerate with premium red wine exports increasing from 77 Ml in 1998 to 328 Ml in 2003 and premium white wine exports rising from 74 Ml to 130 Ml;

The interim findings from the putting together of data on the global wine market are reported in several papers by Anderson and Berger. In one paper (CIES Discussion Paper 99/03) they calculated the consumer tax equivalents (CTEs) of the various wine (and beer) taxation measures for the main wine-consuming and producing countries of the world, countries which together account for 85 per cent of global wine consumption. They find 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 only partly because of the tax rate hike; 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.

Another Anderson/Berger paper (CIES Wine Policy Brief No. 5) reviews the past decade of developments in the international wine market and exposes some striking features as they relate to Australia. They include the following:

- Australia by 1997, while producing only 2.3% of the world's wine, was the world's fourth largest wine exporter in value terms, after France, Italy and Spain (and fifth behind Chile in volume terms);

- when the European Union is treated as a single trader and so intra-EU trade is excluded from the EU and world export data, the EU's share of world exports in value terms has fallen from more than 80% to just under 60% in the past decade, while Australia's share has risen from less than 4% to more than 9%, and the share of the other five main New World exporters (including the United States) has risen from 6% to 19%;

- so, while Australia still leads those New World exporters, wine exports from the other four Southern Hemisphere exporters (Argentina, Chile, New Zealand and South Africa) have grown even faster than Australia's during the 1990s;

- wine producers in Chile and New Zealand have become even more export oriented than producers in Australia, while those in much-bigger Argentina are only just beginning to exploit their export potential;

- Australia is doing very well in penetrating the markets of the United Kingdom, Ireland, Southeast Asia and New Zealand, but it appears to be doing only moderately well in North America and in the other East Asian developing countries and very poorly elsewhere, including Germany and Japan, suggesting there is plenty of scope for diversifying Australia's exports in the future as more exportable production comes on stream;

- in terms of the quality of exports as reflected in the average export price, France's strong position has remained unchanged while Australia and especially New Zealand have improved their positions hugely over the past decade to rival the quality dominance of France; and

- complacency is unwarranted, however, because while the Australian average export price rose 52% over the decade to 1997, that was exceeded by Chile (55%), Italy (59%), New Zealand (61%), and Argentina (63%), and not far behind were the United States (44%), South Africa (39%) and even Europe's transition economies (31%). Moreover, the US and Argentina are four and more than two times bigger producers than Australia, and are currently exporting only about 7% of their production (compared with Australia's 30%), so a small increase in their export orientation implies a big increase in New World exports.

Implications and recommendations:

The inevitable drop in premium grape prices is being anticipated by established grape growers, and most are likely to remain profitable at prices much lower than those of

the late 1990s. They are well aware that the Australian industry has experienced four previous major booms in the past 150 years, all of which have ended in 'busts'. More vulnerable are growers who entered the industry in the late 1990s budgeting on high prices continuing into the future. Lower grape prices do not necessarily mean profits will fall to zero, however. That is partly because this boom is somewhat different from past ones, and partly because there are various strategies that can be adopted to avoid a crash in returns.

Five differences between the present and past booms are:

- this (Australia's fifth) boom is overwhelmingly export-oriented, whereas the 1st (1855-70) and 4th (1968-75) were just domestic;
- the present boom is predominantly driven by private market forces, whereas the 3rd (1915-25) was artificially induced by soldier settler grants, creating a surplus of fortified wine that was disposed of only with the help of a 100% export subsidy plus a reduction in the preferential tariff imposed by the UK on its imports from Australia;
- the industry is benefiting at present from a fashion swing to moderate drinking of wine for health reasons, which means consumer dollars are now spent on quality rather than quantity of wine;
- European Union producers (who supply 60% of global production) have been slow to respond to that fashion swing because their price premia are blunted by EU support policies; and
- in contrast to the EU, and to Australia's 2nd boom (1880-95, from which bulk dry red was exported in hogsheads), the present expansion is entirely focused on quality upgrading to premium grape varieties, premium wine production, much more-sophisticated brand marketing (supplemented by improved generic promotion of 'brand Aust'), and far better distribution networks than in the past.

Even so, it needs to be kept in mind that while Australia's wine industry has done extremely well during the past decade, so too have several other New World producer/exporters. With the traditional European suppliers also working hard to improve the quality of their wine (the south of France, La Mancha in Spain, northern Italy, Southeastern Europe), and with huge areas of new premium-quality plantings to come on stream over the next few years, competition in the international marketplace will become fiercer. If the Australian dollar appreciates next year as expected (from around 64 US cents to perhaps 72-75 US cents), that will add further downward pressure to the AUD price of wine. Given all that, and the absence of growth in aggregate wine consumption, the key challenge for Australian producers is to adopt strategies that will help them remain internationally competitive. Several possibilities present themselves.

One is to lobby to reduce and hopefully eliminate the Federal Government's so-called 'wine equalization tax' (WET) of 29%, which is to come into force on 1 July 2000 with the GST. That WET, together with the 10% GST on wine, is supposed to be tax-revenue neutral as a replacement of the current 41% wholesale sales tax on wine. But in fact it will generate much more tax revenue from the industry than currently, and will make Australia one of the highest taxing of the wine-producing countries in the world. Reducing that WET would reduce its future discouragement to domestic wine consumption (especially of premium wine, since it raises the consumer price of wine by more dollars the higher the wine's price), and thereby would lower the volume of premium wine that would need to be exported.

A second obvious strategy is to boost investments in wineries and in marketing efforts and distribution networks to accommodate the forthcoming increase in supply of premium grapes. Some Australian wine firms already have excellent distribution

subsidiaries or agents in the UK. Establishing equally good networks in the US is probably the next priority, perhaps through forming alliances with Californian wine companies.

Thirdly, as more premium red wine becomes available, further diversification of the destinations for Australia's exports will be needed. The current narrowness of that distribution is clear from the fact that more than three-quarters of Australia's wine export earnings still come from just four English-speaking countries (UK, US, Canada and New Zealand). Of course there are good reasons for low shares in some other markets. One is that the types and qualities of wine Australia exports may be not well matched with the types/qualities currently imported by some of the major importing countries. For example, France imports mainly very low quality wine (priced at one-quarter Australia's average export price), and the same is true for Europe's transition economies and, to a lesser extent, for the Netherlands and Sweden. That is not the case in Japan though, yet Australia sells a very small proportion of its premium wine to Japan (while contributing a relatively high proportion of Japan's imports of other goods). This is probably due to Australia not being perceived by the Japanese as a super-premium supplier, having exported relatively low quality wine there in the early 1990s. Nor has Australia made much of an inroad into Germany, which is the world's biggest red wine importer (importing twelve times as much red wine as Australia exports). This has been because of insufficient premium red wine being available for export. As supplies expand over the next few years, the scope for high returns from further efforts in marketing and trade diplomacy in such countries will grow commensurately. A focus on premium red sales to Germany alone could well be sufficient to dispose of the additional production expected from recent plantings without prices having to fall much.

A fourth strategy is to continue to invest in the production and dissemination of new ideas in winegrape and wine production and in wine marketing and distribution. To date Australia has been a leader in wine R&D investments and in the rapid adoption of new technologies, which has given producers a significant competitive edge. The raising of the research levy on producers by more than one-third from this year will boost that tradition. However, Southern Hemisphere and Southern and Eastern European suppliers are catching up rapidly, including through international technology transfer. Australia is contributing to that in at least two ways. One is via Australian viticulturalists and oenologists exporting their services thorough spending time abroad as consultants. Another is via direct foreign investment (DFI) by Australia's bigger wine companies in grape production, wine making, wine marketing and distribution in other countries. Both mechanisms are not just one-way streets, however. On the contrary, those individuals and firms so engaged as consultants and investors are continually bringing back new ideas to Australia too.

Such international technology transfers are not peculiar to the wine industry of course -- it is part of the general contribution by multi-national corporations (MNCs) to globalization, aided by reforms to restrictions on DFI and by the fall in communication costs thanks to the digital revolution. The distinctive feature of this phenomenon is that successful MNCs have so-called 'knowledge capital' that is internationally mobile and hence tends to relocate to places where it can earn the highest reward. This has important consequences for Australian winegrape growers. During recent years they have enjoyed an exceptionally high proportion of the benefits of the growth in demand for premium wine, in the form of high prices for their grapes. Were those high prices to continue, large wine firms may find it more profitable to expand their crushing capacity in lower-priced countries rather than in Australia in the years ahead, thereby causing winegrape prices to tend to equalize across countries, even though the grapes themselves are not traded

internationally. (Since the grapegrowers' share of the pre-tax wholesale price of wine in Australia is currently at the top end of the usual 20-30 per cent range, the proportional decline in their returns could be perhaps two or three times as large as any percentage decline in wholesale wine prices.) Small winemakers also might be affected adversely in so far as the spreading abroad of Australian expertise in viticulture, winemaking and wine marketing eventually would reduce the distinctiveness of 'Australian' wine in the global marketplace.

A fifth strategy is to complete the definition of boundaries for the various regions and sub-regions ('geographical indications') so as to increase the payoff to producers in those regions from promoting their products on a regional basis. Australia was the first country to respond to pressure from the European Union to phase out the use of European names on wine labels. In return, Australia is able to register getting property rights recognised globally for its own geographical indications. Because of that opportunity, it needs to now capitalize on its head start over other New World producers before South Africa, the United Sates and others catch up in this respect. Corporate brand advertising will still remain the dominant form of promotion, but regional branding will add to 'Brand Australia' as an additional and more-specific means of generic promotion of the nation's wines.

Finally, attention needs to focus as well on the numerous barriers to wine imports abroad. Fortunately, a new round of agricultural trade negotiations is expected to be launched by the World Trade Organization (WTO) next year. That provides an opportunity to expand market access through the lowering of tariff and non-tariff import barriers, including through such trade facilitation measures as harmonization of standards. Import tariffs themselves are not very large except in East Asia. However, Old World fears of growing competition in the European and East Asian wine markets from New World suppliers could lead to the provision of more subsidies and protection via non-tariff measures by the European Commission. Already recent subsidies to producers in the EU to help upgrade their wine industry are reputed to be of the order of US$2.3 billion, over which negotiations could be targeted. There is also the possibility that the Uruguay Round agreements on Technical Barriers to Trade, on Sanitary and Phytosanitary Measures, and on Trade-Related Intellectual Property could be abused to provide hidden forms of protection to the EU industry.

New World wine exporters need to develop ways to make the most of the opportunity to become active participants, for the first time, in the next WTO round of multilateral trade negotiations. While each of those suppliers alone is not a very big player in the world wine market, their combined share of the value of global wine exports (excluding intra-EU trade) is 29 per cent, which is a sizeable counterweight to the EU's share of 55 per cent. It thus makes eminent sense for them to form a coalition for the purpose of dealing with the EU, including in multilateral negotiations. That was done recently, in the form of the New World Wine Producers' Forum that involves officials and wine industry representatives meeting twice a year. Building up that new informal institution, by drawing on the huge success during the Uruguay Round of the Cairns Group of like-minded agricultural-exporting countries, is likely to have a high payoff during and beyond this next round of WTO trade talks.

In terms of further areas for research, there is much scope for using a model of the world wine market both for projections and for trade and tax policy analysis. A prototype model will be developed by Nick Berger as part of his Master's research, to be completed in February 2000. Scope would then exist to build on and apply that model for myriad applications in the new millennium. Even though the present state of wine data in the

world (especially for bilateral trade) make it very difficult to disaggregate from one aggregate commodity (wine) even to just the three wine types used in the Australian FEDSA-WINE model, such a global model would be very useful for on-going projections and policy analysis.

Intellectual property/model developments/dissemination of information and ideas:

The project's national and global compilations of data have all been made available via publications of statistical compendiums. These have been made available for sale (priced at cost) through the CIES and also through Winetitles. All analytical papers and briefs, including ones summarizing the statistics in those compendia, have been placed on the CIES website for free downloading. They have also been submitted for publication in academic as well as wine industry journals, with almost all already accepted and in print (see Appendix 2 for the full list). Mass media coverage of our research results have included mentions on radio, in daily newspapers (including in columns by wine journalists such as James Halliday and Phillip White), in wine consumer magazines such as *Winestate*, and in the monthly news magazine *Grapegrowers*. They are expected to be featured also in the double Christmas 1999 issue of the London-based *Economist* weekly news magazine.

The FEDSA-WINE CGE model of the Australian economy will be included as an Appendix in Glyn Wittwer's PhD thesis; and a prototype model of the world wine market will be included as an Appendix in Nick Berger's MEc thesis. Both theses will include a diskette with a zipped file containing the model. There are no other intellectual property issues associated with the project to our knowledge.

The early analytical work on the effect of moving to a GST and on the rate of wine taxation in other countries was integral to the wine industry's case to the federal government during 1998-99, and will continue to be as the WFA seeks a reduction/elimination in the so-called Wine Equalization Tax that is due to come into effect on 1 July 2000.

APPENDIX 1:

May 1999 workshop program and list of participants

CIES Wine Economics Workshop presentations, 6-7 May 1999

Accounting for Growth in Australia's Wine Industry, 1986 to 2003, by **Glyn Wittwer, CIES**

The Demand for Wine in Canada: Impact of Advertising in Ontario, by **Brenda Dyack, Universities of Guelph**

The Australia-EU Wine Agreement: Implications of its Encouragement of Geographical Indications in Australia, by **Sarah Kok, CIES**

Developments in the World Wine Market in the Late 1990s, by **Pierre Spahni, Geneva**

Modelling Future Growth and Policy Reform Prospects in the World Wine Market, by **Nick Berger, CIES**

Predicting the Future Quality/Value of Region-Specific Wine from Weather Data, by **Vivian Piovesan, CIES**

Water Policy Issues in Australian Winegrape Regions, by **Randy Stringer, CIES**

Excise Taxes and Quality Response, by **Jenni James, University of California at Davis**

Impact of Tax Reform on the Australian Wine Industry: a CGE Analysis, by **Glyn Wittwer, CIES**

Advertising and Consumer Welfare, by **Julian Alston**, University of California at Davis

Participants in the CIES Workshop on Wine Economics were:

CIES
Kym Anderson, Director
Nick Berger, M.Ec student
Sarah Kok, Honours student
Vivian Piovesan, Lecturer and M.Ec. student
Zoe Ratcliffe, Executive Assistant
Randy Stringer, Deputy Director
Glyn Wittwer, PhD student

Australian Wine and Brandy Corporation
Lawrie Stanford, Senior Analyst
Sam Tolley, General Manager

Geneva
Pierre Spahni, wine economics consultant

Grape and Wine Research and Development Corporation
David Hall, Executive Director

University of Adelaide, Agric. Faculty
Madeleine Griffith, undergrad wine science student
Larry Lockshin, head of Wine Marketing

University of California at Davis
Julian Alston, Professor of Agricultural Economics (on study leave at the University of Melbourne)
Jenni James, PhD student (visiting the University of Melbourne)

University of Guelph
Brenda Dyack, PhD student (visiting Canberra in 1998-99)

University of Melbourne
Ellen Goddard, Professor of Agribusiness (on leave from University of Guelph)

University of South Australia
Tony Spawton, Co-Director, Aust. Centre for Wine Business Management

Winemakers' Federation of Australia
Tony Battaglene, Director of Canberra Office
Stephen Strachan, Senior Analyst

APPENDIX 2: CIES wine economics publications since 1998

(i) *CIES Wine Monographs:*

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.

Berger, N., P. Spahni and K. Anderson (1999), *Bilateral Trade Patterns in the World Wine Market, 1988 to 1997: A Statistical Compendium*, Adelaide: Centre for International Economic Studies. (Also to be included in abridged form as an appendix in the revised edition of Spahni's book on *The International Wine Trade*, Cambridge: Woodhead Publishing, forthcoming 2000.)

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

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

(ii) CIES Wine Policy Briefs:

Anderson, K. and R. Osmond (1998), "How Long will Australia's Wine Boom Last? Lessons from History", CIES Wine Policy Brief No. 1, August. (Since published in *Australian Grapegrower and Winemaker* 417: 15-18, September 1998.)

Wittwer, G. and K. Anderson (1998), "Impact of Tax Reform on the Wine Industry", CIES Wine Policy Brief No. 2, September. (Since published in *Australian Grapegrower and Winemaker* 418: 62-66, October 1998.)

Anderson, K. and N. Berger (1999), "Are Australia's Wine Consumers Over-taxed?" CIES Wine Policy Brief No. 3, February. (Since published in *Australian Grapegrower and Winemaker* 423: 59-61, March 1999.)

Anderson, K. and G. Wittwer (1999), "More on Modeling the Impact of Tax Reform: How Unequal is the Proposed Wine 'Equalization' Tax?" CIES Wine Policy Brief No. 4, May. (Since published in *Australian and New Zealand Wine Industry Journal* 14 (3): 100-101, May/June 1999.)

Anderson, K. and N. Berger (1999), "Australia's Re-Emergence as a Wine Exporter: The First Decade in International Perspective", CIES Wine Policy Brief No. 5, October. (Forthcoming in *Australian and New Zealand Wine Industry Journal* 14 (6), November/December 1999.)

(iii) Other CIES Discussion and Seminar Papers:

Anderson, K. (1999), "Australia's Grape and Wine Industry into the 21st Century", CIES Discussion Paper 99/24, November. (Since published as Ch. 9 in *Economic Briefing Report*, Adelaide: S.A. Centre for Economic Studies, November 1999.)

Berger, N. and K. Anderson (1999), "Consumer and Import Taxes in the World Wine Market: Australia in International Perspective", CIES Discussion Paper 99/03, February 1999. (Draft presented at the 43rd Annual Conference of the Australian

Agricultural and Resource Economics Society, Christchurch, 20-22 January 1999. Since published in *Australian Agribusiness Review* Vol. 7, June.)

Spahni, P. (1999), "World Wine Developments in the 1990s: An Update on Trade Consequences", CIES Discussion Paper 99/10, June. Paper presented at the CIES's International Workshop on Wine Economics, 2 May 1999. (To be incorporated in the revised edition of the author's book on *The International Wine Trade*, Cambridge: Woodhead Publishing, forthcoming 2000.)

Wittwer, G. and K. Anderson (1999), "Accounting for Growth in Australia's Grape and Wine Industries, 1986 to 2003", CIES Seminar Paper 99-02, March. (Draft presented at the 43rd Annual Conference of the Australian Agricultural and Resource Economics Society, Christchurch, 20-22 January 1999. Revised version submitted to a journal.)

Wittwer, G. and K. Anderson (1999), "Impact of Tax Reform on the Australian Wine Industry: a CGE Analysis", CIES Discussion Paper 99/10, May. (Submitted to a journal.)

(iv) Theses

Berger, N. (2000), *An Empirical Model of the World Wine Market for Projections and Policy Analysis*, unpublished Master of Economics thesis, School of Economics, University of Adelaide, February (forthcoming).

Bowes, C (1998), *Uncorking European Wine Policies*, unpublished Honours thesis, School of Economics, University of Adelaide, November.

Kok, S. (1999), *The Economics of Geographical Indications: A Case Study of the Bilateral EU-Australia Wine Agreement*, unpublished Honours thesis, School of Economics, University of Adelaide, November.

Osmond, R. (1998), *Policy Changes and Cycles in the Australian Wine Industry: The Interwar Period*, unpublished Honours thesis, School of Economics, University of Adelaide, November.

Wittwer, G. (2000), *Recent and Prospective Growth and Tax Reform in the Australian Wine Industry: A CGE Analysis,* unpublished PhD thesis, School of Economics, University of Adelaide, July (forthcoming).

(v) Additional reports/conference papers:

Anderson, K. and R. Osmond (1998), "Australia's Wine Boom: An Historical Perspective", special feature article in the Australian Bureau of Statistics' annual publication, *Australian Wine and Grape Industry*, Cat. No. 1329.0, pp. 30-36, released 24 December.

Wittwer, G., K. Anderson and R. Osmond (1998), "Growth and Structural Change in the Australian Wine Industry", paper presented to the 42nd Annual Conference of the Australian Agricultural and Resource Economics Society, UNE, Armidale, 19-21 January.

Wittwer, G. (1999), "Economic Modelling of the Australian Wine Industry and Lessons for Other Industries", paper presented at the 2nd CGE Modelling Workshop, Adelaide, 5-6 July.