Australia's Wine Industry

Recent growth and prospects

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Le secteur viti-vinicole en Australie : croissance et perspectives

Résumé – Dans cet article, nous posons quatre questions. Quelle a été la performance réelle du secteur viti-vinicole australien depuis la fin des années 80 ? Comment ce dernier se positionne-t-il par rapport à ses concurrents étrangers ? Quels sont les défis qui attendent les producteurs australiens pour les années à venir, sachant que la consommation de vin par tête, à l'échelle nationale et mondiale, n'a pas augmenté, et que la production de vin de qualité supérieure se développe dans beaucoup de pays ? Quelles sont les leçons à tirer de l'actuelle vague de prospérité que connaît le secteur viti-vinicole australien ?
En termes absolus, et comparativement aux autres activités de l'économie australienne, le secteur viti-vinicole se porte extrêmement bien, depuis la fin des années 80, quant à sa performance à l'exportation. L'Australie est à présent le second exportateur de vin dans le monde après l'Union européenne. Cependant, si on compare ces résultats à ceux des autres exportateurs de vin du Nouveau Monde, les performances australiennes à l'exportation ne sont pas exceptionnelles. Les exportations des États-Unis, et de plusieurs autres producteurs de l'hémisphère Sud, ont aussi augmenté rapidement, en quantité et en qualité, alors qu'elles partaient d'un niveau plus bas. Etant donné la concurrence des autres pays du Nouveau Monde, et l'amélioration de la qualité dans plusieurs grandes régions viticoles d'Europe, le secteur viti-vinicole australien est confronté à de nombreux défis pour maintenir son actuelle prospérité. Nous suggérons, pour y faire face, plusieurs stratégies. Dans notre conclusion, nous mettons l'accent sur les facteurs-clés qui contribueront au maintien de cette prospérité.

Mots-clés:
secteur viti-vinicole, OMC, accords commerciaux multilatéraux, Australie

Australia's wine industry: recent growth and prospects

Summary – This paper addresses four questions: how well has Australia's wine industry performed since the late 1980s; how does that compare with the performance of its competitors abroad; what are the opportunities and challenges ahead for Australian producers, given that national and global wine consumption per capita has not been growing yet premium wine production is expanding in many countries; and what lessons can be learnt from the current Australian boom? In absolute terms, and relative to other Australian industries, the wine industry has done extremely well since the late 1980s in terms of export-led growth. It is now the world's second largest exporter of wine after the European Union. Relative to other New World wine export suppliers, however, Australia's trade performance is not outstanding. Exports from the United States and several other Southern Hemisphere producers also have grown rapidly in quantity and in quality, albeit from smaller bases. Given that competition from other New World suppliers, and the quality upgrading of several large wine regions in Europe, the continued prosperity of the Australian industry requires numerous challenges to be confronted. Several strategies are suggested. The paper concludes by pointing to the key factors contributing to the success of the current boom.

Key-words:
wine industry, export-led growth, WTO multilateral trade negotiations, Australia

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MORE than 100 years ago it was claimed that "many of the leading wine merchants of London and other important commercial centres admit that Australia promises to become a powerful rival in the world's markets with the old-established vineyards of Europe" (Irvine, 1892, p. 6). That clearly did not happen for almost a century, but to what extent is the Australian wine industry now fulfilling that promise? In particular, how well has the industry performed over the past decade, how does that compare with the performance of its competitors abroad, what are the opportunities and challenges ahead for Australian producers, given that national and global wine consumption per capita has not been growing yet premium wine production is expanding in many countries, and what lessons can be learnt from the current Australian boom? These questions are addressed in turn.

Australian wine exports rose from less than US$50 million per year (less than 5 per cent of production) in the mid-1980s to nearly US$1 billion in 2000, thanks to huge increases in production relative to domestic consumption. As a consequence, export sales for the first time will exceed domestic sales of Australian wine in 2001. Australia is now the world's largest wine exporter after the European Union bloc (or fourth after France, Italy and Spain), having been a net importer of wine as recently as the early 1980s. Yet barely a dozen years ago the government was paying winegrape growers to uproot their vines, so dire were the prospects for the Australian industry perceived to be at that time.

This paper begins by summarizing briefly the 150-year long history of Australia's wine industry, so as to put its latest boom in historical perspective and to contrast key features of the current boom with those of earlier ones. It then compares Australia with other significant countries in the global wine market to provide an international perspective on the expansion of the past dozen years. Some speculation is then provided on the potential sustainability of the industry's recent growth: are Australian wineries or at least winegrape growers likely to experience another "bust" soon? This is done by drawing on results from an economic model used to quantify the relative importance of the main factors contributing to the recent growth in wine output and exports. The paper ends by drawing out key features that have been crucial to the recent Australian success.

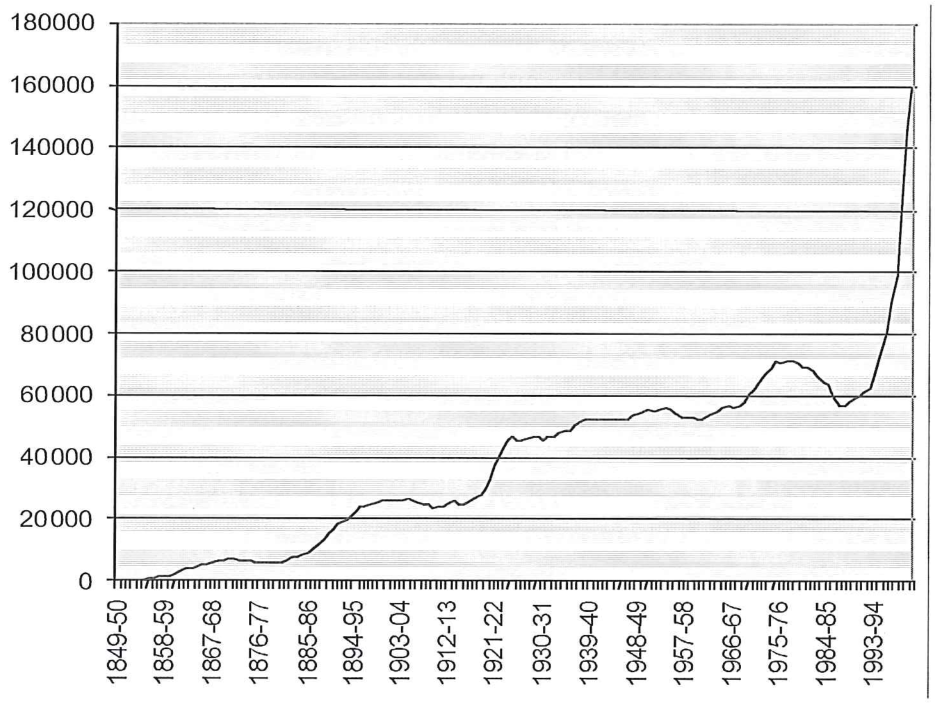
HOW WELL HAS THE AUSTRALIAN WINE INDUSTRY PERFORMED OVER THE PAST DECADE?

While Australia's wine exports have boomed several times in the past, in each case those booms subsequently plateaued and the expanded acreage meant grapegrowers went back to receiving low returns. Indeed in the latter 1970s/early 1980s wine exports were so low that Australia became a net importer of wine, and the industry's prospects were sufficiently dire as recently as 1985 as to induce the government to fund a vine-pull compensation scheme to encourage grapegrowers to move to alternative crops. Yet, like a phoenix, the industry has risen again and grown with renewed vigour during the past decade: the real value of both winegrape and wine production has grown at more than 10 per cent per annum over the past dozen years.

The history of fluctuating fortunes raises the obvious question of whether Australia's export-focused wine boom of the 1990s is to be followed by yet another crash, at least in winegrape prices if not in wine production and export volumes. The wine industry is still bullish, having in 1995 set itself targets of doubling annual exports to A$1 billion by the turn of the century (since achieved) and of trebling the real value of wine production within 30 years. Others, aware of the boom-bust cycles of the past, still need to be convinced that this time the expanded demand is here to stay – at least long enough for growers to recoup a return from new plantings (which have nearly trebled Australia's area of winegrape vineyards). To help resolve this difference in views, consider the features of Australia's previous wine booms.

On the one hand, it is difficult not to be sobered by the past. This is because, as is clear from Figure 1, each of the first four booms in the Australian wine industry finished with a plateau in vineyard area (and winery output) growth. These were periods when returns to grapegrowers and often also winemakers were depressed for years because of the extent of new plantings during the boom. Nor is this phenomenon unique to Australia. On the contrary, it has periodically been the case in grape and wine markets elsewhere in the world for at least two millennia (Unwin, 1991; Johnson, 1989).

Figure 1. Area of vineyards (hectares), Australia, 1849-1950 to 2000-2001



Source: updated from Osmond and Anderson (1998, Table 2)

Yet, on the other hand, our past history also is encouraging, because it shows the current boom to have several positive features that contrast with those of earlier booms. These are summarized in Table 1. The first boom, from the mid-1850s, was mainly driven by domestic demand growth following the gold-rush induced trebling in Australia's population in the 1850s. However, the wine produced from that excessive expansion was unable to be exported profitably, largely because of high duties on inter-colonial trade plus poor marketing and high transport costs in exporting the rather crude product of that time to the Old World. Hence returns slumped quite quickly in that first cycle.

The second boom, from the 1880s, was due to a mixture of domestic and export demand growth, the latter involving better marketing and lower transport costs for what were higher quality but still mostly generic bulk (rather than winery bottled and branded) dry red wines. The relatively open British market absorbed one-sixth of Australia's production early this century, before the first world war intervened. That boom was part of a general internationalization of world commodity markets at that time – something that returned but in much-diminished form after that war.

The acreage boom induced by soldier settlement after World War I provided the basis for the third boom, from the mid-1920s. That third boom was helped by irrigation and land development subsidies, a fortified wine export subsidy, and a 50 per cent imperial tariff preference in the British market for fortified wines. The decline in domestic consumption, induced by the export subsidy and the Depression, added to wine exports in the 1930s – which by then accounted for more than one-fifth of production (Osmond and Anderson, 1998, Figure 4). The subsequent removal of the export subsidy, and the huge hike in UK tariffs on fortified wine in the latter 1940s, then caused a severe decline in export orientation. As well, the return to normal beer consumption after war-induced grain rationing kept down domestic wine sales growth.

The fourth boom, following two post-war decades of slow growth in the industry, was entirely domestic. It emerged as Australian consumer tastes became more European, as licensing and trade practice laws changed with income growth, as corporatization of wineries led to more-sophisticated domestic marketing and new innovations (including casks, or wine-in-a-box), and as Britain's wine import barriers rose again with its accession to the EEC. Initially domestic demand grew for red wine. Then the cask ("wine-in-a-box") attracted a new clientele of white wine drinkers, causing Australia's per capita consumption to more than treble during the fourth cycle. The economy-wide recession of the early 1980s slowed demand growth and caused wine prices to slump to the point that the Federal and South Australian governments intervened with vine-pull subsidies in the mid-1980s.

Table 1. Summary of booms and plateaus in Australian wine industry development, vintage 1854 to 2001

Vintages:	Boom/ plateau/ cycle no.	No. of years	Increase in vine area, Aust. (% *p.a.*)	Increase in vine area, Sth Aust. (% *p.a.*)	Increase in wine prod., Aust. (% *p.a.*)	Increase in wine prod., Sth Aust. (% *p.a.*)	Increase in wine export volume, Aust. (% *p.a.*)	Share (%) of Aust. wine prod. exported	Aust. per capita consumption (litres *p.a.*)
1854 to 1871	1st boom	17	15.5	16.0	18.4[a]	19.9[a]	14.1	1.8	na
1871 to 1881	1st plateau	10	-1.1	-3.5	-0.6	-8.2	-5.2	1.6	na
1854 to 1881	**1st cycle**	**27**	**8.4**	**6.8**	**10.7**	**7.3**	**8.2**	**1.7**	**na**
1881 to 1896	2nd boom	15	9.7	10.1	7.5	8.7	23.0	9.8	na
1896 to 1915	2nd plateau	19	-0.1	1.9	-0.4	4.8	0.4	16.5	5.1
1881 to 1915	**2nd cycle**	**34**	**3.9**	**5.7**	**3.3**	**7.0**	**8.7**	**14.4**	**na**
1915 to 1925	3rd boom	10	7.0	7.0	12.7	16.1	4.5	8.5	5.8
1925 to 1945	3rd plateau	20	0.9	0.9	0.1	-0.4	-1.2	16.4	4.0
1915 to 1945	**3rd cycle**	**30**	**2.4**	**2.4**	**3.6**	**4.1**	**4.9**	**14.9**	**4.7**
1945 to 1968	slow growth	23	0.2	-0.1	2.1	1.8	0.2	5.4	6.2
1968 to 1975	4th boom	7	3.3	3.7	6.2	3.8	-1.4	2.7	10.9
1975 to 1987	4th plateau	12	-1.7	-2.2	1.0	0.1	8.4	2.2	19.1
1968 to 1987	**4th cycle**	**19**	**0.2**	**0.1**	**3.1**	**2.0**	**2.5**	**2.4**	**16.0**
1987 to present[a]	5th boom	>14	7.6	7.9	6.7	5.7	22.1	19.6	19.2

[a] Acreage includes intended plantings in 2000-2001; other data are to the 2000 vintage.

Notes: - *p.a.*: *per annum*
- na: not available.

Source: updated from Osmond and Anderson (1998)

How does the fifth and latest boom, which began in the late 1980s, differ from the earlier booms? One difference is that the current boom is overwhelmingly export-oriented, since Australia's per capita wine consumption has been static over the 1990s. This contrasts with the first and fourth booms at least which were primarily domestic. It also differs from the inter-war boom, when exports were more a way of disposing of soldier-settlement induced surplus low-quality fortified wine production than as a pre-planned growth strategy.

Secondly, the current boom is mainly market-driven, which is not unlike the first two booms but contrasts markedly with the third (inter-war) boom that evaporated once government assistance measures were withdrawn. In the present boom the only form of assistance offered and hence able to be withdrawn is the tax incentive to expand plantings via the tax-reducing accelerated depreciation allowance for some establishment costs (as applies to investment in many other industries).

Another major difference between now and the past is that the quality of wine output has improved hugely during the past decade or so. Moreover, for the first time, the industry is in a position to build brand, regional, and varietal images abroad to capitalize on those vast improvements in the quality of its grapes and wines. That image building has been partly generic, with the help of the Australian Wine Bureau's activities in Europe and elsewhere. It is coming also from the promotional activities of individual corporations and their local representatives abroad as those firms become ever-larger and more multinational via mergers and takeovers during the past dozen or so years. That will be supplemented in future with regional promotion, following the definition of geographical indications. All three forms of promotion have been helped by being able to point to the legislated wine quality standards in the Australian Food Standards Code.

A fourth feature distinguishing the current situation is the health factor. An ever-wider appreciation of the desirability of moderate over heavy drinking, and in particular of the possible health benefits of a moderate intake of red wine[1] are ensuring that the consumer trend towards spending on quality rather than quantity of wine (and on wine in preference to beer and spirits) will continue for the foreseeable future in Australia and abroad.

And fifth, Australian wines are still exceptionally good value for money in Northern Hemisphere markets, despite the real price increases of the 1990s. The depreciation of the Australian dollar during 1997-

[1] Following the broadcast on US television in November 1991 of a 60 minutes segment on possible reasons for 'the French paradox' (concerning their superior health despite high levels of wine consumption), red wine sales in the US shot up 61 per cent that month and have remained higher ever since (Heien and Sims, 2000).

1998 and again in 2000 helped that to continue. The unit value of Australia's wine exports has risen from A$2.80 in 1993 to A$4.80 in 2000 – a period when inflation averaged around 2 per cent per year.

With export sales now accounting for the majority of Australian wine sold, how long the current boom lasts will depend heavily on export demand for Australian wine. That in turn depends both on the export marketing skills and efforts of the industry and on developments elsewhere in the world wine market.

AUSTRALIA'S EXPORT-ORIENTED WINE GROWTH IN INTERNATIONAL PERSPECTIVE

How does growth of Australia's wine production and exports compare with growth of global wine consumption and expansions by other New World wine producers? How well is Australia penetrating traditional and new wine markets abroad, both absolutely and relative to other exporters? And to what extent is Australia upgrading the quality of its exports to different markets, again both absolutely and relative to other exporters?[2]

Background to the global wine market

Wine is still very much a European product. More than three-quarters of the volume of world wine production, consumption and trade involve Europe, and most of the rest involves just a handful of New World countries settled by Europeans (Table 2). In the late 1980s Europe accounted in value terms for all but 5 per cent of wine exports and three-quarters of wine imports globally. However, Europe's dominance is beginning to weaken. In the ten years to 1997, the rest of the world's share of wine export dollars rose ten percentage points, with virtually all of it coming from California and six Southern Hemisphere countries (column 1 of Table 3). When intra-European Union (EU) trade is excluded, the decline in Europe's share of global exports is even greater over that decade: a fall from 88 per cent to 70 per cent (column 3 of Table 3).

[2] The data referred to in this section have been painstakingly compiled by the author and his previous co-authors from a combination of United Nations Statistical Office bilateral trade statistics and OIV production and consumption statistics. Information on obtaining copies of our statistical compendia are detailed at our website *(www.adelaide.edu.au/CIES/wine.htm)*. At the time the latest data available for all series and countries was 1997, hence many of the tables and figures do not go beyond that year.

Table 2.
Shares of major regions in world wine production, consumption, and trade, by volume, 1988-1990 and 1997
(per cent)

	Production	Consumption	Exports	Imports
Western European Exporters [a]				
1988-1990	56.0	42.3	79.2	16.7
1997	54.4	38.9	66.9	11.8
Other Western Europe				
1988-1990	7.4	16.5	10.2	62.8
1997	6.0	20.0	6.8	56.6
Europe's Transition Economies [b]				
1988-1990	13.2	14.3	4.9	2.7
1997	12.5	13.9	11.7	9.8
North America				
1988-1990	6.8	9.1	1.3	10.2
1997	9.4	9.9	2.8	10.4
Australia				
1961-1965	0.6	0.6	0.3	0.0
1971-1975	1.0	0.9	0.2	0.1
1981-1985	1.2	1.2	0.2	0.2
1988-1990	1.6	1.3	1.2	0.3
1997	2.3	1.6	3.0	0.2
Other Southern Hemisphere Wine Exporters [c]				
1988-1990	12.4	13.3	1.6	0.4
1997	12.2	10.5	8.0	1.6
Rest of World				
1988-1990	2.6	3.1	1.6	6.9
1997	3.2	5.2	0.8	9.5
WORLD TOTAL (%)				
1988-1990	100.0	100.0	100.0	100.0
1997	100.0	100.0	100.0	100.0
WORLD TOTAL (billion litres)				
1988-1990	28.3	24.0	4.0	4.0
1997	26.9	22.9	5.8	5.8
Rate of growth (% *p.a.*)	-0.8	-0.4	4.1	4.1

[a] France, Italy, Portugal and Spain

[b] Central and Eastern Europe and the former Soviet Union

[c] Argentina, Brazil, Chile, New Zealand and South Africa

Sources: Berger, Spahni and Anderson (1999, Tables 5-7) and, for pre-1988 data, Berger, Anderson and Stringer (1998)

The rapid growth in wine exports from the New World over the past decade is ironic, in that it coincides with a decline in world wine consumption. Over the decade to 1997, global wine production and consumption fell at 0.8 per cent and 0.4 per cent per year, respectively, and yet global wine trade rose by 4.1 per cent per year in volume terms and 6.5 per cent in value terms – or 9.7 per cent if intra-EU trade is excluded (final rows of Tables 2 and 3).

Table 3. Shares of major regions in world wine exports and imports, including and excluding intra-European Union trade, by value, 1988-1990 and 1997 (per cent)

	Including intra-EU15		Excluding intra-EU15	
	Exports	Imports	Exports	Imports
Western European Exporters[a]				
1988-1990	84.8	8.0	75.4	0.7
1997	72.3	5.7	54.8	0.9
Other Western Europe				
1988-1990	8.6	64.1	7.4	27.1
1997	6.8	57.8	5.0	28.9
Europe's Transition Economies[b]				
1988-1990	2.1	0.8	5.5	2.1
1997	5.6	4.6	10.7	8.9
North America				
1988-1990	1.3	17.8	3.4	46.3
1997	3.3	18.2	6.4	34.9
Australia				
1988-1990	1.5	0.6	3.8	1.5
1997	4.8	0.5	9.2	0.9
Other Southern Hemisphere Wine Exporters[c]				
1988-1990	1.1	0.7	2.7	1.8
1997	6.7	1.3	12.9	2.5
Rest of World				
1988-1990	0.7	7.9	1.7	20.5
1997	0.5	12.0	1.0	23.0
WORLD TOTAL (%)				
1988-1990	100.0	100.0	100.0	100.0
1997	100.0	100.0	100.0	100.0
WORLD TOTAL (US$billion)				
1988-1990	7.1	7.1	2.7	2.7
1997	12.3	12.3	6.4	6.4
Rate of growth (% *p.a.*)	6.5	6.5	9.7	9.7

[a] France, Italy, Portugal and Spain
[b] Central and Eastern Europe and the former Soviet Union
[c] Argentina, Brazil, Chile, New Zealand, South Africa, and Uruguay
Source: Berger, Spahni and Anderson (1999, Table 14)

Traditionally the countries producing wine were also the countries consuming it, with only about one-tenth of global sales being across national borders, and most of that was with near neighbours. The proportion traded rose a little over the 1980s but has since risen much more, so that now about one-quarter of the volume of sales is international (Table 4).

Table 4. Volume of wine production and consumption per capita and trade orientation, by region, 1988-1990 and 1997

	Volume of prod. *per capita* (litres *p.a.*)	Volume of consom. *per capita* (litres *p.a.*)	Exports as a % of prod.	Imports as a % of consom.	Prod. as a % of consom.
Western European Exporters [a]					
1988-1990	98	63	20	7	156
1997	88	54	27	8	164
Other Western Europe					
1988-1990	10	19	20	64	53
1997	7	21	25	72	35
Europe's Transition Economies [b]					
1988-1990	9	8	5	3	108
1997	8	8	20	18	106
North America					
1988-1990	7	8	3	19	89
1997	8	8	6	27	112
Australia					
1988-1990	27	20	11	3	137
1997	34	20	29	4	168
Other Southern Hemisphere Wine Exporters [c]					
1988-1990	15	14	2	1	110
1997	12	9	14	4	137
Rest of World					
1988-1990	0	0	9	38	96
1997	0	0	5	46	73
WORLD TOTAL					
1988-1990	5.5	4.6	14	17	118 [e]
1997	4.6	3.9	22	25	118 [e]
Memo item: EU-15					
1988-1990	35	31	5 [d]	2 [d]	129
1997	30	21	7 [d]	5 [d]	123

[a] France, Italy, Portugal and Spain

[b] Central and Eastern Europe and the former Soviet Union

[c] Argentina, Brazil, Chile, New Zealand and South Africa

[d] Excluding intra-EU trade from national and global totals

[e] Production exceeds consumption globally because consumption is net of distillation and other industrial uses

Note: p.a.: per annum

Source: Berger, Spahni and Anderson (1999, Tables 5, 7 and 8)

That is, despite a slight decrease in the per capita volume of consumption globally, wine is becoming much more of an internationally traded product. This is reflected in the final column of Table 3, which shows production tending to outpace consumption in the wine-exporting countries and vice versa in the wine-importing countries. Trade is also becoming more inter-regional: in the late 1980s, 62 per cent of international wine trade was among the 15 members of the European Union, whereas by 1997 the intra-EU share was only 48 per cent (final rows of Table 3).

How well is Australia doing relative to other wine producers?

In terms of global wine production, Australia has always been a small player. Prior to the 1970s it accounted for less than 1 per cent of world production, and as recently as 1987 its share had barely risen to 1.2 per cent. During the following ten years the share doubled, to 2.3 per cent, but on its own that statistic still makes Australia look rather insignificant.

In terms of exports, Australia was even less significant until the 1990s. As recently as the first half of the 1980s the country accounted, in volume terms, for only 0.2 per cent of global wine exports, the same as its share of global wine imports. The import share has changed little, but the export share has shot up to 3 per cent in volume terms (Table 2) and 4.8 per cent in value terms (Table 3). In fact Australia's wine exports grew more than three times faster than the global average: at annual rates of 16 per cent in volume terms and 21 per cent in value terms over that period (Table 5). That was sufficient to ensure the industry reached its target of A$1 billion of wine exports in 1999 (with exports in 2000 reaching A$1.5 billion thanks to the strengthened US dollar that year).

Rapid though Australia's export growth has been, it is not as fast as that for other Southern Hemisphere wine exporters, who as a group enjoyed a growth rate about ten percentage points faster (27 per cent p.a. for volume and 30 per cent for value in the decade to 1997). Nor was it much faster than that for North America or Europe's transition economies (columns 1 and 2 of Table 5). It is simply faster than that for Western Europe, which is still the dominant exporter group. Certainly Australia's comparative advantage in wine has strengthened as Western Europe's has weakened somewhat, as has that of other New World wine exporters. The final column of Table 4 indicates the extent of those changes. The final row shows that wine's share of merchandise exports has fallen for the EU from 2.1 to 2 times the global average, whereas for Australia that index has risen from 1.3 to 4.5 over the decade to 1997 and to close to 10 by 2000. The latter increase raises Australia's index to more than that of the European Exporters.

Table 5. Growth in wine production, consumption and export volume and in export value, major regions, 1988 to 1997 (per cent per year, from log-linear regression equations)

	Export volume	Export value	Production volume	Consumption volume
Western European Exporters [a]	2.0	4.7	-0.7	-0.0
Other Western Europe	0.2	3.9	-3.5	1.1
Europe's Transition Economies [b]	14.9	18.2	-1.9	-1.1
North America	13.4	17.9	1.5	-0.0
Australia	16.1	21.1	4.6	1.0
Other Southern Hemisphere Wine Exporters [c]	26.5	29.9	-1.5	-3.2
Rest of World	-3.6	3.2	2.2	4.9
WORLD TOTAL	4.1	6.5	-0.8	-0.4

[a] France, Italy, Portugal and Spain
[b] Central and Eastern Europe and the former Soviet Union
[c] Argentina, Brazil, Chile, New Zealand, South Africa and Uruguay
Sources: Anderson and Berger (1999), based on a raw data in Berger, Spahni and Anderson (1999)

What is striking from the right hand columns of Table 5 is the different reasons for these high rates of New World export growth. Australia's exports grew rapidly because its production growth was much faster than its consumption growth. By contrast, in North America much slower production growth accompanied no growth in the aggregate volume of consumption. Meanwhile, in the other New World countries production actually declined, but much less so than domestic consumption, allowing exports to boom. Volumes of consumption per capita have become somewhat more equal across regions as a result but, as column 2 of Table 4 shows, there is still a wide variance.

The world's top ten wine exporters account for 90 per cent of the value of international wine trade, with Europe's economies in transition from socialism accounting for most of the rest (left-hand column of Table 6). Of those top ten, half are in Western Europe and the other half are New World suppliers, led by Australia. Australia is the world's fourth largest exporter of wine in value terms, after France (alone accounting for more than 40 per cent), Italy (17 per cent) and Spain (9 per cent). The share of France has dropped ten percentage points since the late 1980s, which with smaller drops for Italy and Germany have ensured that Australia's and others' shares have risen substantially.

Table 6. Shares of exports of major wine exporters going to various wine importing regions, by value, 1988-90 and 1997 (per cent)

Exports from*	Exports to:	Western European Exporters[a]	Other Western Europe	Europe's Transition Economies[b]	North America	Southern Hemisphere Exporters[c]	Rest of World	WORLD
1. France	(41.7%) [27]							
1988-1990		4	69	0	17	1	9	100
1997		3	61	1	19	1	16	100
2. Italy	(17.2%) [26]							
1988-1990		15	57	0	25	1	2	100
1997		7	59	2	25	2	5	100
3. Spain	(9.2%) [24]							
1988-1990		6	70	1	16	1	6	100
1997		10	71		10	1	8	100
4. Australia	(4.8%) [29]							
1988-1990		0	46	0	27	13	14	100
1997		1	57	0	26	7	9	100
5. Portugal	(4.3%) [43]							
1988-1990		32	49	0	10	2	8	100
1997		28	47	0	12	3	9	100
6. Germany	(3.8%) [28]							
1988-1990		1	67	1	17	2	12	100
1997		4	62	6	11	2	16	100
7. Chile	(3.6%) [54]							
1988-1990		2	19	0	43	8	28	100
1997		3	40	0	40	3	14	100
8. United States	(3.3%) [7]							
1988-1990		2	38	0	24	1	36	100
1997		2	59	1	17	1	21	100
9. South Africa	(1.5%) [11]							
1988-1990		3	92	0	0	0	5	100
1997		2	81	0	9	1	7	100
10. Argentina	(0.9%) [7]							
1988-1990		4	37	6	20	8	25	100
1997		2	31	1	17	20	29	100
ETEs[b]	(5.6%) [20]							
1988-1990		1	70	14	10	0	5	100
1997		1	29	64	2	0	3	100
WORLD	(100%) [22]							
1988-1990		8	64	1	18	1	8	100
1997		6	58	5	18	1	12	100

* The country's 1997 share of the value of global wine exports is shown in round brackets; its percentage of volume of production exported is shown in square brackets.

[a] France, Italy, Portugal and Spain

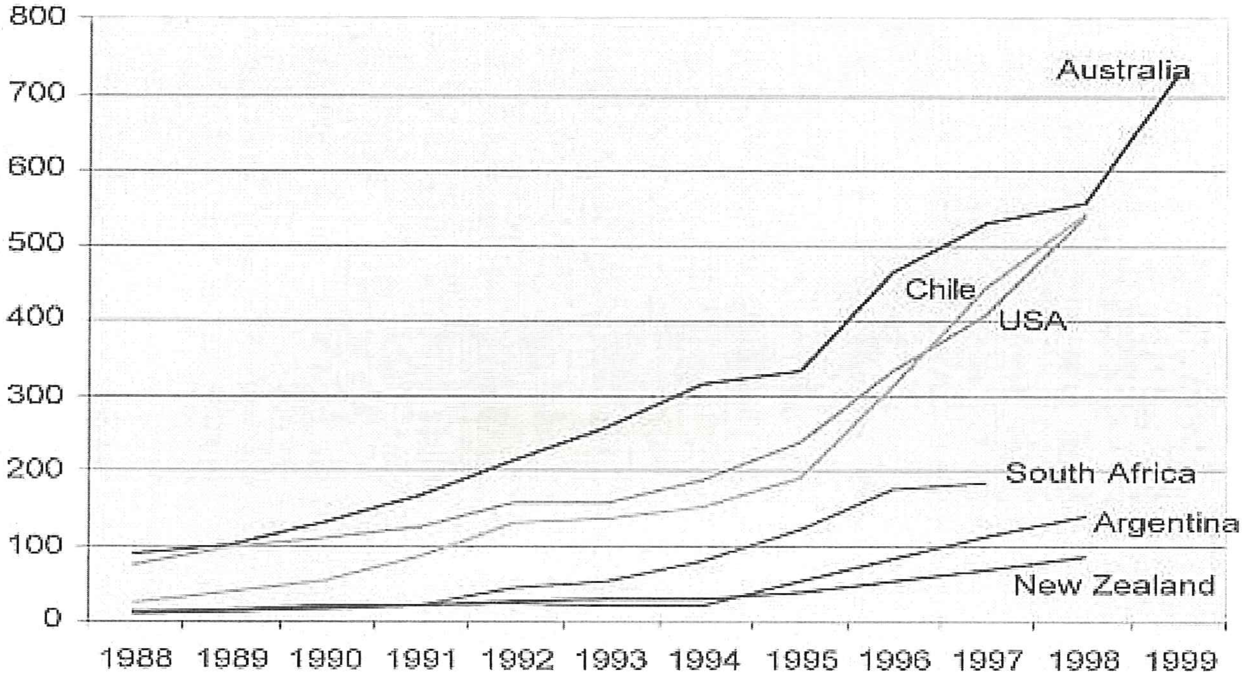
[b] Europe's Transition Economies: Central and Eastern Europe and the former Soviet Union

[c] Argentina, Australia, Brazil, Chile, New Zealand and South Africa

Source: Berger, Spahni and Anderson (1999, Table 12)

If the European Union is treated as a single trader and so intra-EU trade is excluded from the EU and world trade data, the EU's share of world exports shows a much bigger fall, from 82 per cent to 59 per cent in the decade to 1997. With that adjustment, Australia moves to number two in the world. Its share of global exports rises from less than 5 per cent to more than 9 per cent. It is this fact, in spite of Australia's small share of global production, which has made Australia suddenly a much more significant player in the world wine market. Meanwhile, the share of the other main New World exporters in Table 6 (Argentina, Chile, New Zealand, South Africa, and the US) rose even faster, from 6 per cent to 19 per cent. That is, while Australia has done very well as an expanding wine exporter, it is not alone: the world wine market as a whole is becoming more internationalized and far more competitive, and most key New World suppliers are expanding their export sales (albeit from a lower base) nearly as fast or even faster than Australia, as is clear from Figure 2.

Figure 2. Value of wine exports by major New World producers (US$ million *p.a.*)

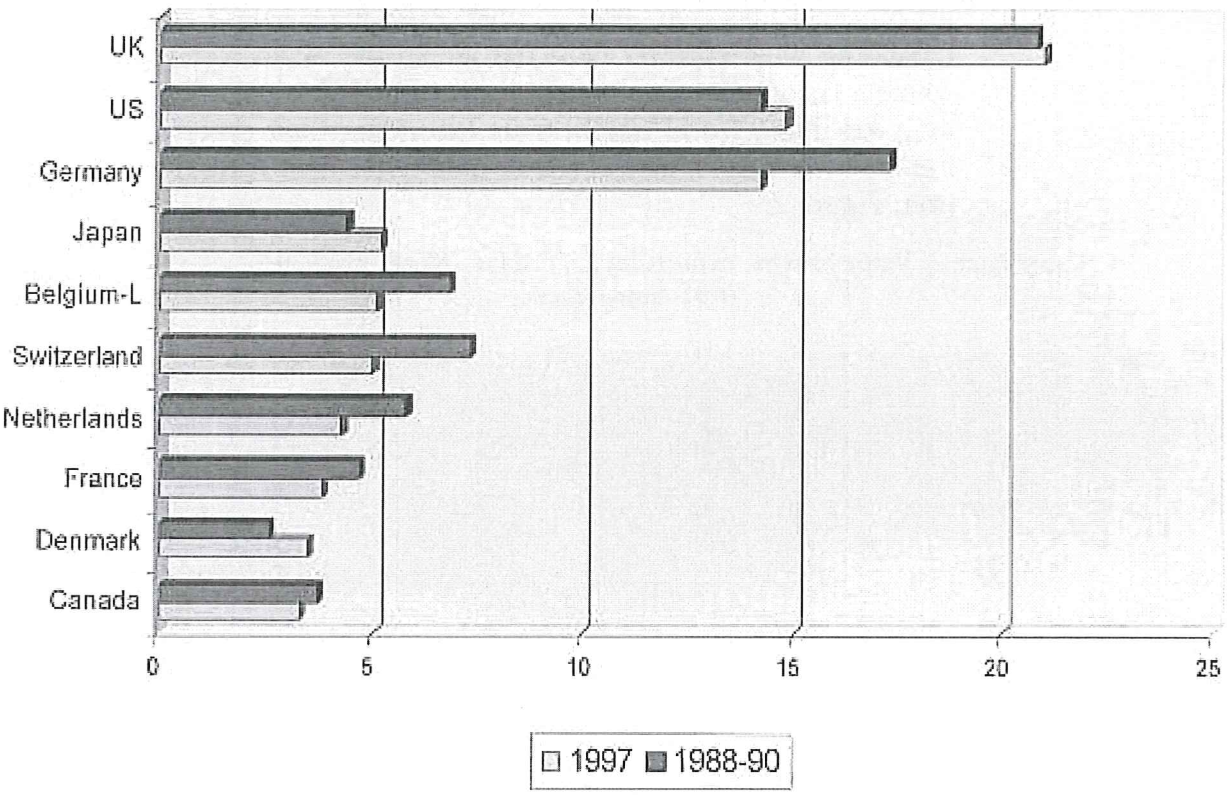


Source: Anderson and Berger (1999, Figure 1)

How well is Australia penetrating wine markets abroad?

Just as wine exports are highly concentrated, so too are imports. The ten top importing countries accounted for all but 15 per cent of the value of global imports in the late 1980s. That 15 per cent residual had risen to 20 per cent by 1997, due mainly to Germany's reduced import share, indicating some growth of new markets. But in 1997 more than half the value of all imports continued to be bought by the three biggest importers: the UK (with 21 per cent), the US and Germany (each with about 14 per cent. See Figure 3). In volume terms, Germany is the largest importer of wine (19 per cent of the world total), followed by the United Kingdom (17 per cent), France (10 per cent) and the United States (8 per cent).

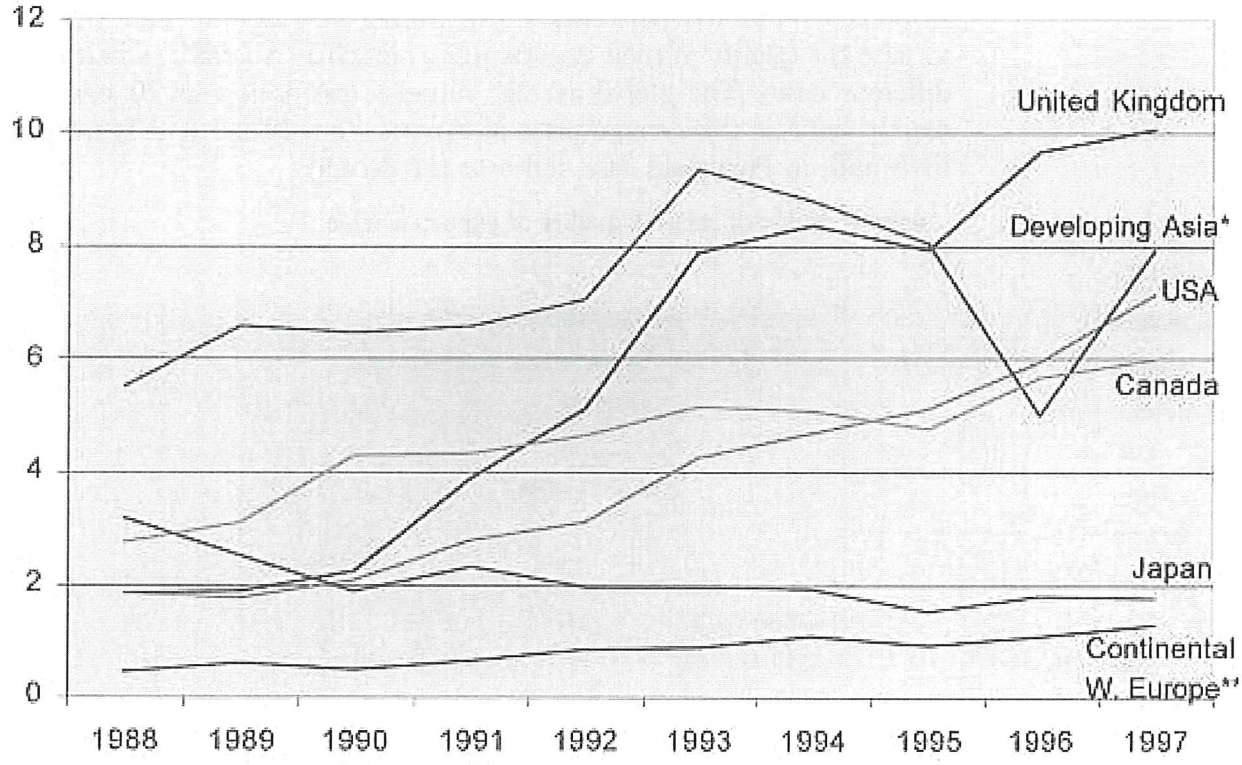
Figure 3. **Share of world wine import value** (per cent)



Source: Anderson and Berger (1999, Figure 2)

Despite that concentration, the ten top exporters are quite different in their penetration of those and other import markets. This is evident from Table 6. In Australia's case, it has concentrated on four English-speaking rich countries: the United Kingdom, the United States, Canada and New Zealand. When depicted as shares of Australia's total wine exports, it appears Australia has not diversified its exports much over the past decade: since 1993 those four countries have accounted for between 75 per cent and 85 per cent of Australian sales abroad. Certainly Australia has gradually increased its dominance as an importer in all four of those markets, especially the UK and US; but it has done so only by not boosting greatly its shares in continental Western Europe (most notably Germany, the world's biggest importer of red wine) and in the emerging markets of East Asia (Figure 4).

Figure 4. Australia's share of value of wine imports by selected importing countries
(per cent)



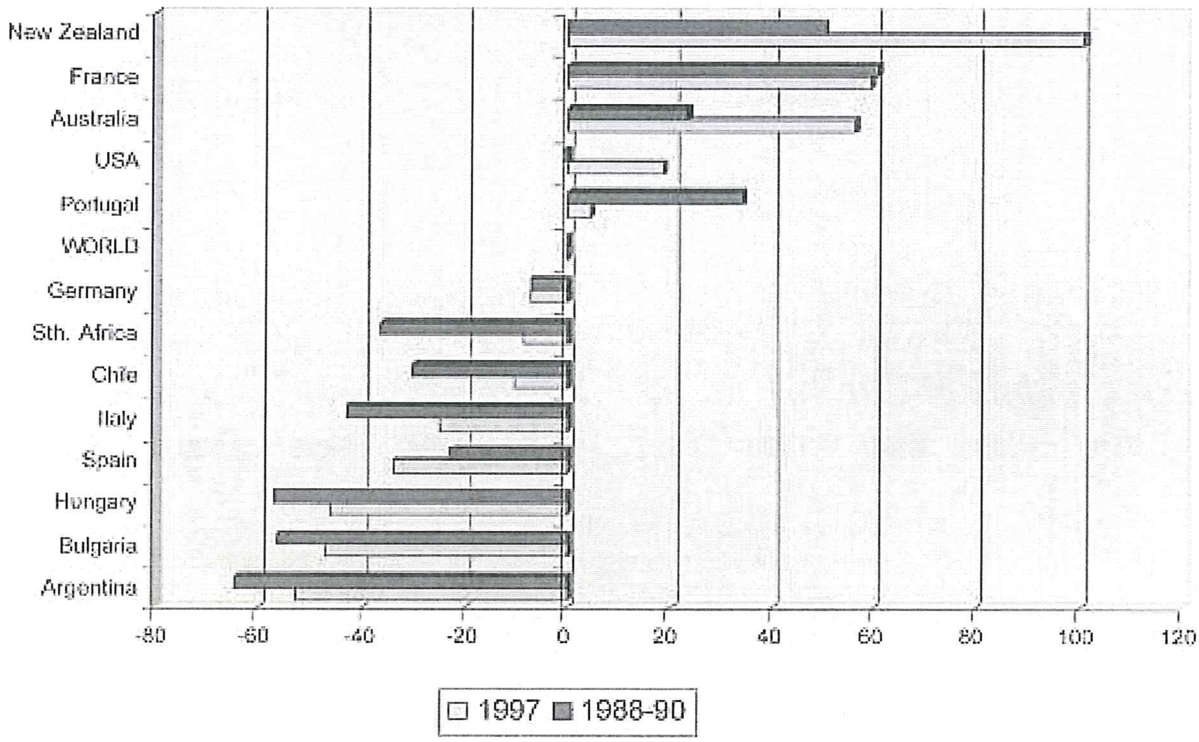
* Developing Asia comprises NIE4, ASEAN4 and China
** Continental Western Europe excludes the United Kingdom and Ireland
Source: Anderson and Berger (1999), based on raw data from Berger, Spahni and Anderson (1999, Table 22)

How well is Australia doing in upgrading wine export quality?

A crude index of the quality of a country's wine exports is the average export price. To see how different exporting countries are faring relatively, Figure 5 shows each exporter's average price as a percentage of the global average, minus 100, at the beginning and end of the decade to 1997. While France's strong position has changed little, Australia and New Zealand have improved their positions hugely to rival the quality dominance of France's exports. New Zealand's average export price is well ahead of France's now, and Australia is just a few cents per litre behind France. Meanwhile, the price of exports from other Southern Hemisphere suppliers in 1997 was only half the Australian average.

However, even though the Australian average unit export price rose 52 per cent over the decade to 1997 when the global average rose only 20 per cent, complacency is not called for. The rise for Australia was exceeded by Chile (55 per cent), Italy (59 per cent), New Zealand (61 per cent), and Argentina (63 per cent), and not far behind were the United States (44 per cent), South Africa (39 per cent) and even Europe's transition economies (31 per cent). Clearly, other new exporters are striving to raise the quality of their exports just as much as Australia, albeit from different bases. The global average increase was as low as 20 per cent mainly because the average price of exports from France and Spain rose little and, in Portugal's case, fell over the decade.

Figure 5. **Index of relative quality of exported wine**



The relative quality index is defined as the unit value of a country's exports expressed as a percentage of the unit value of total world exports, minus 100. Note that the unit value of world exports rose by about 20% over the ten years to 1997, so it is possible for a country's unit value to have risen while its relative quality index as measured here falls (*e.g.* France and Spain).
Source: Anderson and Berger (1999, Figure 4).

How will trends in wine retailing alter Australia's export prospects?

Another significant change emerging in the world wine market is the agglomeration of retail firms into giant supermarket chains (Geene *et al.*, 1999). First in the UK, but now also in continental Europe, the shares of large supermarkets (including the US giant Wal-mart) in the retail food and beverage market keep rising. Those wine retailers are able to market large volumes of uniform wine at low cost, which has contributed hugely to the growth in low-end premium wine sales globally. Their buying power is such, though, that they may choose to market more and more under their own brands, potentially depriving exporting countries of value-added activities beyond just producing wine per se. It is not certain as to the extent Australia will leave that lower end of the market to other countries and go further up in the premium range, but that is certainly the direction it has moved in recent years.

WHAT ARE THE OPPORTUNITIES AND CHALLENGES AHEAD FOR AUSTRALIAN WINE PRODUCERS?

The absence of growth in demand for wine in aggregate, nationally and globally, need not in itself be a cause for concern. This is because the demand for premium wine has been growing rapidly, at the expense of non-premium wine, and Australia's production is being increasingly oriented towards higher-quality products. However, other New World producers are also upgrading the quality of their product, as are previously low-quality regions of traditional supplying countries (the south of France, La Mancha in Spain, northern Italy, Southeastern Europe). And the ever-strengthening retail giants in Europe are looking increasingly at own-brand packaging and marketing, which would lower the extent of high value-adding activities (bottling, labeling, marketing) in countries exporting at the lower end of the premium range. The key challenge for Australian producers is to remain internationally competitive in the wake of those export supply and retailing responses elsewhere.

Projected growth to 2003

Where might the industry be by, say, 2003? A recent study by Wittwer and Anderson (1999) provides some projections using a model of the Australian economy. That involves making use of macroeconomic projections plus projections of grape and wine supplies and demands. The domestic supply projections are relatively easy to 2003 at least because they can draw on the predictable grape supply effect of known actual and intended plantings in the late 1990s. Domestic and export wine demand growth is assumed to continue but at half the pace of the 1993-98 period. Two other important assumptions have to do with the exchange rate and the domestic consumer tax on wine. To test its effect on the results, first the assumption of no real exchange rate change between 1998 and 2003 is varied to allow a 10 per cent real depreciation. Then the base case is compared to a scenario in which the domestic consumer tax on premium wine is lowered from the rate of 48 per cent to

16 per cent (which is still double the average of rates in OECD countries. See Berger and Anderson (1999, Table 2)).

Table 7. **Projected growth in the Australian grape and wine industries, vintages 1998 to 2003, without and with (a) a different exchange rate and (b) wine sales tax rate**

	1998 actual	Base 2003 (1)[a]	2003 (2)[b]	(2)-(1)	2003 (3)[c]	(3)-(1)
Domestic consumption (Ml)						
Red premium wine	53.4	95.1	91.1	-3.9	107.1	12.0
White premium wine	65.0	89.9	86.1	-3.8	102.1	12.2
Non-premium wine	248.6	266.6	262.6	-4.0	266.5	-0.1
Wine, total	**367.0**	**451.6**	**439.9**	**-11.7**	**475.7**	**24.1**
Production (Ml)						
Red premium wine	227.0	512.5	531.4	18.8	514.6	2.1
White premium wine	240.0	336.0	348.7	12.7	337.0	1.0
Non-premium wine	210.0	219.3	222.9	3.6	219.2	-0.1
Wine, total	**677.0**	**1067.8**	**1102.9**	**35.1**	**1070.9**	**3.1**
Wine exports (Ml)						
Red premium wine	77.4	328.2	356.6	28.4	310.7	-17.5
White premium wine	74.1	130.3	144.1	13.9	122.9	-7.4
Non-premium wine	40.9	40.8	54.8	14.0	40.8	0.0
Wine, total	**192.4**	**499.3**	**555.5**	**56.3**	**474.3**	**-25.0**
Wine imports (Ml)						
Red premium wine	9.1	12.9	12.2	-0.7	14.6	1.7
White premium wine	4.7	6.0	5.7	-0.3	6.8	0.8
Non-premium wine	11.2	12.7	11.9	-0.8	12.6	-0.1
Winegrape prices($/tonne)						
Red premium grapes	1,606	1,106	1,150	44	1114	8
White premium grapes	985	825	860	35	830	5
Non-premium grapes	381	387	423	36	388	1
Wine consumer prices($/l)						
Red premium wine	13.87	12.22	12.87	0.65	10.46	-1.76
White premium wine	11.31	10.59	11.19	0.60	9.03	-1.56
Non-premium wine	3.68	3.62	3.75	0.13	3.62	0.00
Wine stocks (Ml)						
Red premium wine	364.0	604.8	560.0	-40.8	601.1	-3.7
White premium wine	386.0	391.8	457.2	-34.6	388.0	-3.8
Non-premium wine	150.0	113.6	109.7	-3.9	116.4	2.8

[a] Base case (including no change in the real exchange rate, 1998 to 2003).
[b] Real depreciation of Australian Dollar (AUD) by 10 per cent between 1998 and 2003.
[c] The consumer tax rate for premium wine is reduced from the current 48% to 16% (the average for OECD countries), while the non-premium wine remains unchanged at 48% (which also approximates the OECD average for non-premium wine, and is about the same tax rate in volumetric terms as is the 16% tax on premium wine).

Source: Wittwer and Anderson (1999)

With these assumptions, the model's base projection has domestic premium red wine consumption increasing from 53 Ml (megalitres) in 1998 to 95 Ml in 2003 (Table 7). In the same period, domestic premium white wine consumption is projected to increase from 65 Ml to 90 Ml, with non-premium wine consumption increasing only slightly from 249 Ml to 267 Ml. Not surprisingly, the domestic producer and consumer prices are projected to fall. Premium red grape prices are projected to fall from A$1,606 to A$1,106 per tonne (-31 per cent) between 1998 and 2003 (Table 7). That projected 2003 price approximates the real prices recorded during the 1994 vintage, adjusting for inflation. Over the same period, premium white grape prices are projected to fall from A$985 to A$825 per tonne (-16 per cent), still higher than the real price recorded during the 1994 vintage. These projected falls in grape prices are similar to those forecast by the Australian Bureau of Agricultural and Resource Economics (ABARE), who expect the real price of Riverland Chardonnay and Cabernet Sauvignon to fall by around one third between 1998 and 2003 (Shepherd, 1999). Consumer prices for premium wines fall correspondingly, but by smaller proportions than grape prices. The per litre price of premium red wine falls from A$13.87 to A$12.22 (-12 per cent) and premium white wine from A$11.31 to A$10.59 (-6 per cent) in the five years to 2003 (Table 7)[(3)].

Due to the rapid projected increase in premium red grape production between 1998 and 2003, the export supply of premium wine is projected to escalate in this period. Premium red wine exports increase from 77 Ml in 1998 to 328 Ml in 2003, while premium white wine exports increase from 74 Ml to 130 Ml, with little change in non-premium exports. The increase of 250Ml of premium red sounds huge, but because Australia still supplies only a small fraction of global exports it represents a small percentage of world imports. For example, Germany by 2003 will be importing more than 1200Ml of mostly red wine, of which Australia up until the late 1990s had supplied barely 0.3 per cent. Fully half of the projected increase in Australia's red exports could be absorbed by Germany alone if Australia's share of that market were to be raised from less than 1 to 10 per cent (the same as for the United Kingdom in 1997).

Two important assumptions in arriving at that base projection have to do with the exchange rate and the domestic consumer tax on wine. To test its effect on the results, first the assumption of no real exchange rate change between 1998 and 2003 is varied to allow a 10 per cent real depreciation. That real depreciation reduces projected growth in the domestic consumption of premium wine (cf. columns (1) and (2) of

[(3)] It is possible that the price downturn could be delayed if the stockholding ratio were to fall less quickly than modeled. The model projects an increase in premium red wine stocks from 364 Ml in 1998 to 631 Ml in 2003, which represents a decline in stocks as a proportion of annual production from 1.60 to 1.23.

Table 7). Since a real depreciation also encourages domestic production of wine, the industry is projected to become more export-oriented. The real depreciation also reduces the decline in Australian dollar grape prices brought about by the massive increase in the supply of premium winegrapes. Consumer prices for wine also are higher than in the base case. While production is higher by around 4 per cent for each wine type with the devaluation, much of the increase in exports is brought about through a smaller than otherwise build-up of premium red wine stocks (bottom rows of Table 7).

The second assumption worth varying is the wholesale sales tax on wine. Consumers of wine in Australia are taxed at a very high *ad valorem* rate compared with other OECD countries (Berger and Anderson, 1999). What would be the effect of cutting Australia's tax on premium wine to just double the OECD average (leaving the non-premium rate unchanged so that, in volumetric terms, the latter tax is about the same as for premium wine)? With such a tax reform consumer prices drop significantly for premium wine, by over A$1.50 per litre, and domestic consumption of premium wine increases from 95 Ml to 107 Ml for red wine, and from 90 Ml to 102 Ml for white wine. The impact on industry output is small, with the premium segment expanding by less than 0.5 per cent relative to the base case. This small change is due to the assumption that land in the winegrape industries and capital in all the winegrape and wine industries is the same in this as in the base scenario, leaving labour as the only variable factor within these industries. Importantly for producers, however, the volume of premium exports required to maintain the same total volume of sales as in the base case is significantly less in this scenario.

Clearly Australia's export dependence looks set to grow rapidly, albeit slightly less rapidly if the industry were to be successful during the 2001 national election campaign in getting wine taxes lowered. To ensure these projected developments do not result in another slump in grape and wine prices, what strategies are being put in place?

Strategies to maintain export growth and prices

In addition to seeking a reduction in the Australian Government's wine tax, the industry is to continue to expand its investment in the production and dissemination of new ideas in winegrape and wine production and in wine marketing and distribution. In recent decades 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 per tonne on producers by more than one-third from 1999 is boosting 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 winemakers exporting their services through spending time abroad as consultants (Williams, 1995; Smart, 1999). Another is via direct foreign investment (DFI) by Australia's bigger wine companies in grape production, wine making, and/or wine marketing and distribution in other countries. For example, Mildara Blass has planted more than 120 hectares to red wine grapes in the Napa Valley in California, Southcorp has its own vines and a joint venture on California's Central Coast, and BRL Hardy have a major winery (La Baume) in the South of France and a big joint venture in Sicily. These developments will help to keep profits of Australian-based multinational wine companies higher than they otherwise would be. However, eventually that will tend to put more downward pressure on the currently very high prices for winegrapes in Australia, since those wine companies would otherwise source grapes from growers in other countries and expand their wine production there. Even so, those individuals and firms so engaged as consultants and investors abroad are continually bringing back new ideas to Australia too, some of which could lower grapegrowers' and winemakers' costs of production or improve their wine marketing.

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. That in turn has been aided by reforms to restrictions on DFI and by the fall in communication costs thanks to the digital/information 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 rewards (Carr *et al.*, 2000). 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 (which source three-quarters of their grapes from independent growers) 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. 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. To repeat the previous point, however, there is the offsetting prospect that internationally engaged Australians will bring back new ideas that can be exploited to good effect in Australia.

Another 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, as a supplement to generic promotion at a national level. Recent empirical research suggests there is still considerable scope for Australia to gain from generic promotion in the United States at least, as its wines continue to attract lower prices than wines from Napa Valley that receive similar sensory ratings in magazines such as the *Wine Spectator* (Schamel, 2000). Thanks to the WTO's trade-related intellectual property rights agreement ("TRIPs"), Australia is now able to register and get its own geographical indications recognised globally. The Schamel's (2000) study also shows that equally rated wines attract different prices according to their regional origin (Napa being the highest in the United States), which suggests regional promotion is indeed effective in building reputation. Similar results have been found within Australia too (Oczkowski, 1994).

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 for signing the European Union-Australia Wine Agreement in January 1994, Australia now has less certification requirements to meet when exporting to the EU, and its wine is categorized there as 'quality' wine, a recognition of Australian blending rules. Because of that development, the Australian industry can now capitalize on its head start over other New World producers before South Africa, the United States and others catch up in this respect (Kok, 1999). 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. Domestically, better definition of regions also is leading to more information-sharing among producers, and to better coordination with wine (and food) tourism activities.

A further strategy involves diversifying the destinations for Australia's exports as more exportable production comes on stream. The current narrowness of that distribution is clear from Figure 4, and from the fact that more than three-quarters of Australia's wine export earnings still come from just four English-speaking countries. 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 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 (Anderson and Berger, 1999, Table 8). 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, despite it being the world's biggest red wine importer. To date that 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. At present Germany buys mostly from France and Italy. But since its red imports are more than ten times Australia's current premium red wine export volume, there is ample scope for that market alone to absorb all of Australia's expected output increase without reducing very much German imports from other EU countries or Australian producers' prices.

Finally, attention needs to focus as well on the numerous barriers to wine imports abroad. Fortunately, a new round of agricultural trade negotiations got under way at the World Trade Organization (WTO) in 2000. 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 (Berger and Anderson, 1999). 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 are abused to provide hidden forms of protection to the EU industry. History shows that governments can be persuaded to use such covert protection when more obvious forms are being phased down, including in the wine industry – see, for example, what happened in Canada after the signing of the Canada-US free trade agreement (Heien and Sims, 2000).

As well, it needs to be kept in mind that a tax on wine consumption in a country that does not produce wine is equivalent to an import tax. Should consumption of wine be taxed more heavily than that of other drinks on a per litre of alcohol basis in such importing countries, as occurs in some East Asian countries, a case could be made that this is a form of import barrier that violates Article III of GATT on national treatment of internal taxation (whereby consumption of a foreign, in this case alcoolique, product is taxed more heavily than a domestically produced "like" product). National treatment also may be violated in the United States where the wine sales of smaller domestic wineries are taxed at less than the normal rate whereas imported wine are all taxed at the normal rate regardless of the size of the foreign winery producing it.

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 (column 3 of Table 3). 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 (Battaglene, 1999). 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 the next round of WTO trade talks.

To summarize, if Australia's wine industry were to do no more than produce wine from the current vineyards with available technology, its profitability would almost certainly decline over the next few years as the quantity and quality of wine from other countries keeps rising in the international wine market. But Australian producers are continuing to strive to raise the quality of their product, and to strengthen their marketing and distribution networks so as to exploit niches in markets abroad and boost the generic 'Brand Australia' image. To ensure productivity growth remains high, the industry agreed in 1998 to raise its R&D levy by about one-third, and is contemplating a further rise in that levy. It also agreed to introduce a formal set of geographical indications, which provide scope for another layer of promotion and encourage quality improvement and wine tourism at the regional level within Australia. Wineries are beginning to diversify their markets abroad now that production growth is accelerating. As part of that, new alliances between Australian and overseas (especially Californian) wine companies are being explored with a view to capitalizing on their complementarities, particularly between their respective distributional networks. Australia's wineries are also putting more effort into developing better long-term relationships with winegrape growers so as to ensure more-consistent supplies of higher-quality grappes[(4)]. And the industry has joined with its wine-exporting counterparts in other Southern Hemisphere countries to share information on and develop strategies for dealing with Europeans and others in trade negotiations either bilaterally or under the World Trade Organization. All of these initiatives will contribute to

[(4)] See Hoole (1997) for the Orlando Wyndham experience, and Steiman (1999) for Southcorp's approach. Southcorp rates the grapes from every plot of land and the wine that results on a sophisticated 30-point scale, and contract growers are paid accordingly. In turn, the wine point scores are used to determine under which label (and hence price bracket) a particular batch will be sold (Steiman, 1999, page 130).

prolonging the Australian industry's boom, even if at somewhat lower average winegrape prices and profitability levels than have characterised the past decade.

CRUCIAL FACTORS CONTRIBUTING TO AUSTRALIA'S CURRENT WINE BOOM

The success of Australia's current wine boom is attributable not just to one or two factors but to at least six key features that are worth drawing out in this final section.

Identification of new market opportunities

What caused the growth in export demand for Australian wine from the 1980s? An important trigger was the change in liquor licensing laws in the United Kingdom in the 1970s, allowing supermarkets to retail wine. By the mid-1980s supermarkets, dominated by Sainsbury's, Marks and Spencer, Waitrose and Tesco, accounted for more than half of all retail wine sales in the United Kingdom (Unwin, 1991, p. 341). Given also Australia's close historical ties with Britain, it is not surprising that Australian companies recognised and responded to this new market opportunity faster than others. To exploit this market required large volumes of consistent, low-priced premium wine. Land- and capital-abundant Australia had the right factor endowments to supply precisely that. High labour costs were overcome for larger firms by adapting and adopting new techniques for mechanical pruning and harvesting, thereby generating economies of size. That stimulated a number of mergers and acquisitions that led to substantial ownership concentration(5). This concentration has provided the opportunity to reap large economies of scale not only in grape growing and wine making but also in viticultural and oenological R&D, in brand promotion and related marketing in-

(5) On the one hand, there has been a huge increase in the number of Australian wine producers (currently more than 1200, compared with fewer than 200 in the early 1970s and 300 in the early 1980s – see Winetitles (2000 and earlier issues)), but most of them are very small. On the other hand, there have been numerous mergers and takeovers by larger firms to form even larger conglomerates (see Halliday (1994, p. 59) for a chronology of ownership changes since the early 1980s). The net result has been a substantial increase in firm concentration. Whereas in 1978 those crushing more than 1000 tonnes accounted for 17 per cent of wine firms, now they account for just 4 per cent of all wine firms. The top three producers now account for about 50 per cent of the annual vintage, of the number of bottles of wine sold, and of the value of domestic sales, and for 70 per cent of wine exports; for the top nine producers those shares are about 75 and 95 per cent, respectively (Osmond and Anderson, 1998, Tables 11 and 12).

vestments, and in distribution systems including through establishing their own sales offices abroad rather than relying on distributors [6]. The large volumes of grapes grown and purchased by these firms from numerous regions enable them to produce large volumes of consistent, popular wines, with little variation from year to year, for not only the UK but also North American markets. Indeed some types (*e.g.* Lindemans Bin 65 Chardonnay) were specifically developed for and only sold in those markets initially, being released in Australia several years later only after sufficient expansion in production of the required grapes.

The success of those large firms in providing wines that cover a wide spectrum of quality, including the large-volume lower end of the premium quality (*i.e.* bottled) range, is a reminder that attaining higher quality is not an appropriate goal per se. Rather, the goal should be providing a product that is desired by consumers because it is seen as "good value for money". Australia has the technical capacity to produce some ultra-premium and icon wines, but the skilled labour-intensity of that activity is so great as to make it difficult to cover costs even at high prices per bottle. Presumably the main purpose of such star performers is to market the company's lesser wines: it raises the profile of the brand, allowing the brand's premium and super premium types to sell at slightly higher prices than otherwise.

The timing of the initial export surge was helped by the devaluation of the Australian dollar in the mid-1980s, which was due to a sharp fall in international prices of Australia's coal, grain and other major primary export products. That devaluation, together with low domestic prices for premium red grapes at the time (due to a domestic fashion swing to whites from the mid-1970s), increased substantially the incentive for investing in developing overseas markets for Australian wine. Other factors expanding foreign demand for Australian wine at the time were food-safety scares associated with Chernobyl in April 1986 and scandals involving additives in Austrian and Italian wines (Rankine, 1996). Meanwhile, competition was minimal from South Africa because of anti-apartheid sentiment and from Argentina and Chile because their domestic and trade policies for a long time had discriminated against exportable agricultural products.

Given the growth in wine demand in the UK in particular, why did Europe's traditional wine exporters not cater more to that market? Aus-

[6] The corporatization of firms has helped in raising the enormous amounts of capital required for rapid expansion. In Australia the capital intensity of winegrape growing is about 50 per cent above that of other agriculture and that of winemaking is more than one-fifth higher than that of other manufacturing.

Australia's four biggest wine firms are listed in the world's top 20 producers of wine, but they are ranked 13th (Southcorp), 16th (BRL Hardy), 18th (Mildara Blass) and 20th (Pernod Ricard, strictly a French company but whose main wine holding is Orlando Wyndham). Southcorp has only one-quarter the sales of each of the top two firms globally (LVMH of France and E&J Gallo of the United States). See Rachman (1999).

tralia's share of the value of the UK's wine imports between 1988 and 1997 grew from 2 to 10 per cent, while the share of the four traditional West European exporters fell from 78 to 65 per cent and that of Central and Eastern Europe remained flat at less than 2 per cent (Berger, Spahni and Anderson, 1999, p. 90). It is understandable that exports from the economies in transition from communism have yet to be dramatic, given the myriad adjustment difficulties producers face in those countries. As for the European Union producers, they have been slow to respond because of the Common Agricultural Policy (CAP). The CAP has insulated EU producers from market forces, making it less profitable for them to respond to changes in consumer preferences. Specifically, the CAP has provided such high prices for non-premium EU wine (largely destined for distillation, as its direct demand has slumped) that they have not found it worthwhile to make the considerable investments necessary to upgrade their product and to market it abroad. True, some policy reforms have been introduced via the CAP's Agenda 2000, but the changes are expected to have only a minor effect (Tracy, 1998). More likely to lead to export growth are (a) the regional funds being paid to support the upgrading of vineyards in places such as La Mancha in Spain (which involves grafting premium varieties onto old vines and introducing irrigation for the first time); and (b) some mimicking of the Australian response, which has occurred in Southern Europe where appellation controls are less (thanks mainly to investments such as at BRL Hardy's La Baume winery in the south of France, which is now exporting much of its production of low-priced premium wine to the UK). These two phenomena will certainly add to Australia's competition in the coming decade, but by how much is difficult to tell at this stage.

Finally on market opportunities, the wine industry saw in the transformation of consumer tastes in the 1980s the scope for developing wine (with food) tourism. This offered scope for not only boosting consumer knowledge but also for lucrative cellar-door sales, especially for smaller boutique wineries. This high value-added part of the industry has flourished in the past decade or so, with lots of spillovers for regional Australia (Sutton, 1999). Activities range from classical and jazz music concerts to food and wine festivals in vineyards and wineries and to the Tour Down Under international bicycle race through the grape-growing regions surrounding Adelaide, first held in January 2000.

Development of a long-term vision for sustainable growth

Given the above factors whose coincidence helped *launch* Australia's export-led wine boom, what other attributes have been responsible for *sustaining* the industry's growth through the 1990s? Champion entrepreneurs can take some of the credit, for developing and launching a long-term strategic plan called *Strategy 2025* (see AWF 1995). It was developed with nothing more in mind than providing a 30-year vision for the future so as to stimulate a steady flow of investment. At the time the targets in that document were considered by many observers as rather optimistic, since they involved a three-fold increase in the real value of wine production, 55 per cent of it for the export market. Getting half way to those targets requires having a crush of 1100 kt to produce 750 million litres of wine at a wholesale pre-tax value of A$3 billion (A$4/litre). Yet so convincing was that document (helped by the provision of tax incentives to high-income investors in the form of accelerated depreciation of vineyard construction costs), and so intense has been the subsequent investment (see Figure 1 above), that the industry has virtually reached that half-way point towards its 30-year target – that is, in just five vintages.

An important ingredient for long-run strategic planning is a constantly updated statistical database that captures developments at home and abroad. The smaller an industry, the less likely such data will be available at low cost. Yet for industries with long lead times and large up-front costs such as grapes, information on planting intentions of others in one's own country and elsewhere is especially pertinent for those contemplating investing, given that full bearing may not occur until 5+ years after beginning to invest. The grape and wine industry recognised this and spent some of its R&D funds on commissioning (a) the Australian Bureau of Statistics to collect more information including on growers' planting intentions in the coming year (ABS, 2000), and (b) Australian Bureau of Agricultural and Resource Economics to use that information to project supplies several years ahead (see, *e.g.*, ABARE, 1997).

Also crucial for long-run strategic planning by firms and the industry is an active system of producer organisations. The Australian wine industry has an excellent system involving more than 80 organisations at the national, state and regional levels, with a well-developed hierarchy of interaction between them[(7)]. Among them is the Australian Wine and Brandy Corporation (with its Australian Wine Export Council). One of its tasks is to ensure that exported wine meets the product standards of the importing country, so that the reputation of the industry as a whole is not jeopardised by any sub-standard shipments. Another is to supervise the Label Integrity Program. A third is to establish the regional boundaries for the purpose of registering Geographical Indications. And a fourth is to lobby directly and via Australia's Department of Foreign Affairs and Trade for greater market access abroad through a lowering of tariff and non-tariff import barriers.

[(7)] For this and all key aspects of the Australian Wine industry, see *http://www.wineaustralia.com.au*.

Attracting the necessary resources

Once a market opportunity is identified and a long-term strategy for exploiting it has been developed, investment funding is likely to be attracted relatively easily in a world of open capital markets. In the case of wine this was even easier because of favourable tax rules that allow, for example, high-income people to enjoy accelerated depreciation of their capital investment in vineyards (and numerous other primary sectors). Nor has it been difficult to purchase enough land for vineyard expansion, given the smallness of the winegrape industry as a user of land in aggregate[8]. Low-skilled labour also is not difficult to find at least for the majority of producing areas that are close to the cities, nor are marketing personnel. True, high-skilled winemakers are not readily available from other occupations. However, the 4-year delay between decisions to construct new vineyards and an expansion in grape crush allows enough time for students to undertake oenology courses, as it does to invest in expanded crushing and other wine-making facilities.

The one other critical input is water. As it happens, vines need relatively very little water per year once they are established; yet having that water is essential for producing quality winegrapes every year over the long term in a drought-prone environment. That means Australia's wine industry has been able to afford to pay much more than many other rural users for water rights (*e.g.* four times as much as graziers wishing to irrigate pasture. See Smith, 1998, Tables 3 and 6). Partly as a consequence of demands from the booming wine industry, major improvements to water property rights and water policies have been introduced over the past fifteen years. That has allowed investors in vineyard expansion to obtain the necessary water from other users.

Investment in new production and processing technologies

Australia has had a long history of investing in formal grape and wine research, education and training, dating from the establishment of Roseworthy Agricultural College (now part of the University of Adelaide) in 1883 and of its Diploma in Oenology in 1934, plus the creation of the Australian Wine Research Institute adjacent to the University of Adelaide's agricultural research campus in 1955 (Halliday, 1994

[8] Even after the huge expansion of vines in the 1990s (see Figure 1), Australia in 1999 had less than 0.2% of its cropland under winegrapes. This is similar to the United States, New Zealand and China but small relative to the shares for South Africa (0.6%), Argentina (0.7%) and Chile (1.3%), and miniscule relative to France (4.5%), Italy (7.6%), Spain (6.1%) and Portugal (8.0%).

pp. 109-111). In that same precinct, but involving several interstate participants as well, is a Cooperative Research Centre for Viticulture. And the industry since 1988 has had its own Grape and Wine Research and Development Corporation (called a Council until 1991). Its current budget is over $10 million per year, and growing rapidly not only because output is expanding but also because in 1999 growers and wineries agreed to raise the research levy by more than one-third. The Federal Government matches producer levies dollar-for-dollar.

Rankine (1996) claims that even though Australia has supplied less than 2 per cent of the world's wine until very recently, it contributes 20 per cent of the global flow of research papers on viticulture and oenology. Much of that research involves the adaptation for Australian conditions of technologies and plant varieties imported from abroad.

Formal education in viticulture and oenology has spread from the University of Adelaide to Charles Sturt University. Also, the University of South Australia and several other universities are now getting involved in wine marketing. As well, numerous Technical and Further Education (TAFE) campuses are offering vocational training both for employees and for boutique vineyard/winery proprietors and hobby farmers.

Having such a long history of applied research and associated post-secondary education and training courses, the industry has been able to remain at the global frontier of wine research and technology. More than that, it has been able to successfully export its technologies both via individual consultants operating abroad (Williams, 1995), and via the larger companies becoming multinational through direct foreign investment in other wine-producing countries.

The payoff from investments in R&D is higher the more readily and rapidly new information is disseminated, trialed and adopted. That requires active journal, magazine and website publications, specialized publishers/distributors, and regional, state and national associations of producers whose culture is to share new information, ideas, and results of field experimentation[9]. The role of the grower liaison officers employed by the wineries to interact with contract growers, in disseminating new information and helping to appraise grape quality, has been considerable. Those officers now insist on the use of diaries to record irrigation, spraying and fertilizing activities, they encourage lower yields so as to intensify grape colour and flavours, and they help monitor baume (sugar) levels in the grapes. In short, "precision viticulture" is being adopted as producers strive for quality improvements (Polkinghorne, 1999).

[9] For a comprehensive listing of participants in the industry, and of the wide array of journals and magazines dedicated to grape and wine producer (not to mention consumer) information, see Winetitles (2000) and the websites *www.winetitles.com.au* and *www.wineaustralia.com.au*.

Investment in product differentiation via promotion

One of the classic ways to try to boost profitability is to promote one's product as being different from what others produce. For Australian wine this has been done in two key ways since the 1980s. One is generic promotion abroad by the Australian Wine Export Council's London-based Australian Wine Bureau. The other is brand promotion. Both have been made more cost-effective by the huge increase in the quantity and quality of Australia's exportable wine, and together they have greatly enhanced the reputation of the Australian industry as a producer of high-quality and good-value-for-money wines (10).

The industry's own Label Integrity Program, together with its moves to define regions precisely through its Geographical Indications Committee and to change descriptors in response to the agreement with the European Union to phase out European names for wine types (Kok, 1999), will all add to the marketability of Australian wines as consumers become ever-more sophisticated. That image building has been partly generic, with the help of the Australian Wine Bureau's activities in Europe; but increasingly, especially since the late 1980s, it is coming also from the promotional activities of individual firms and their overseas representatives. Some firms have done that by becoming ever-larger and more multinational via mergers and takeovers; other, smaller ones have joined forces informally and/or hired distribution agencies who through pooling can reap sufficient economies of scale.

An unusual feature of the brand promotion of wine is the inclination to continue using particular brands even after the company that created it is bought by a larger corporation. Southcorp, for example, has absorbed numerous wine companies in the past two decades and yet continues to market its wines under at least eighteen separate brands (Winetitles, 2000, page 422). The same pattern applies to much smaller groups such as Petaluma, which now has six other brands in addition to the Petaluma label itself (11). Ownership concentration even of the groups is very weak for wine compared with that of other beverages. In 1996, for example, the four largest groups in the beer industry had a global market share of 20 per cent, for spirits it was 44 per cent, for tobacco 60 per cent, and for soft drinks 78 per cent, compared with a mere 7 per

(10) The focus on quality upgrading is very evident even from the industry's volume data: in 1990 only 43 per cent of Australia's wine production and less than half of its exports were of premium quality (*i.e.* sold in bottles of a litre or less), whereas in 2000 more than half of production and four-fifths of exports were premium. In value terms those differences are even larger. See Osmond and Anderson (1998).

(11) There is clearly a difference between the demand for wine and that for, say, coffee: the latter has perhaps just as much variation in flavour as wine, and yet a small number of brands market the bulk of global production.

cent for wine, according to SBC Warburg. All this suggests there is plenty of scope in the wine industry for firms surviving without getting large.

Establishing good relationships between growers and processors/marketers

As with so many horticultural products, processing and marketing of winegrapes are needed before the product reaches the final consumers. For many winegrape producers, they have chosen to do some or all of those manufacturing and service activities themselves. But there are far more winegrape growers than there are wineries, with the former depending heavily on the latter to process their highly perishable and virtually non-tradable product. This has not been an issue during the past dozen years when winegrape demand has grown much faster than supply. Should that reverse in the next few years, as widely expected, the vulnerability of the grower will return. Not surprisingly, the shortage period has led to the widespread signing of long-term (often ten-year) contracts, providing wineries with security of supply in the 1990s and growers with greater security of demand into the next decade.

The apparent maturing of the grower/processor relationship (see Hoole, 1997 and Steiman, 1999) has yet to be tested during a downturn in winegrape prices, but participants are optimistic that there will not be the same degree of acrimony in the future as there was in the past. One reason for that view is the greater quality and diversity of the raw material now being produced, and the way that is tied to a winery through its past investments in promotion of its wines and its viticultural advise to its growers. That tie encourages winery liaison officers to continue to visit contractees' vineyards through the growing season to ensure the product is grown appropriately. As well, means of measuring the quality of grapes delivered for crushing are improving so there is less uncertainty about the appropriate bonus or discount that should be applied to the indicator price per tonne, and hence more incentive for growers to aspire to higher-quality production. The use of a 30-point system for grading grapes by Australia's biggest wine producer is an important symptom of this change (Steiman, 1999, p. 130).

Collaborating and speaking with one voice

As is evident from the above, there has been a great deal of collaboration among participants in the Australian wine industry, particularly during the past dozen or so years. Nowhere was this more noticeable – nor more crucial – than during the debate over how wine would be taxed when the goods-and-services tax reform package was eventually introduced in July 2000. But it touches every major dimension of the industry. Marsh and Shaw (2000) highlight three key dimensions that have been deliberately cultivated: internationalisation (the export push), innovation (the expanding commitment to R&D spending), and a shared vision (*Strategy 2025*). The continuing commitment of industry participants to such collaboration is evidence that firms judge it to add value to their firm's operations.

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