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**AUSTRALIA'S GRAPE AND WINE INDUSTRY INTO THE
21ST CENTURY**

Kym Anderson

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**AUSTRALIA'S GRAPE AND WINE INDUSTRY
INTO THE 21ST CENTURY**

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SUMMARY

This chapter addresses three questions: how well has Australia's wine industry performed over the past decade; how does that compare with the performance of its competitors abroad; and what are the opportunities and challenges ahead for Australian producers, given that national and global wine consumption per capita has not been growing?

In absolute terms, and relative to other Australian industries, the wine industry has done extremely well since the late 1980s, providing a wonderful example 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. As well, Australia has confined its exports mostly to just four English-speaking markets (the UK, the US, Canada and New Zealand).

Given that competition from other New World suppliers, and the quality upgrading of several large wine regions in Europe (the south of France, La Mancha in Spain, northern Italy, Southeastern Europe), the continued prosperity for the Australian industry requires numerous challenges to be confronted. Five strategies are discussed: lobby for the reduction/removal of the so-called 'wine equalization tax' to be imposed when the GST is introduced in Australia next July; continue to invest in the production and dissemination of new ideas in winegrape and wine production and in wine marketing and distribution; complete the definition of boundaries for the various regions and sub-regions ('geographical indications') so as to increase the payoff to producers from promoting their products on a regional basis; diversify the destinations for Australia's exports, especially of premium red wine to Germany; and use the next round of WTO negotiations, expected to be launched next month, to seek reductions in existing barriers and to reduce the prospect of the introduction of new barriers to wine imports abroad.

Keywords: Wine industry, export-led growth, WTO multilateral trade negotiations

JEL codes: F13, F14 Q13, Q17, Q18

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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). 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, and what are the opportunities and challenges ahead for Australian producers? These questions are addressed in turn.

I. How well has the industry performed over the past decade?

While 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; and nearly one-third of annual wine sales are now in export markets, up from just 2 or 3 per cent in the mid-1980s.

The history of fluctuating fortunes raises the obvious question of whether the 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 \$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, are sceptical or at least still need to be convinced that this time the expanded demand is here to stay long enough for growers to recoup a return from the doubling in Australia’s area of winegrape vineyards during the 1990s. To help resolve this difference in views, what can we learn from the past?

Brief history

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 -- 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 millenia. Surely Australia’s current boom will have to plateau or at least slow down soon?

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 not able 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 (Baldwin and Martin 1999; Bordo, Eichengreen and Irwin 1999).

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 attracted a new clientele of white wine drinkers, causing Australia's per capita consumption to more than treble during the fourth cycle.

How does the fifth and latest boom, which began in the late 1980s, differ from the earlier booms?

Differences between Australia's current and previous booms

One difference is that the current boom is overwhelmingly export-oriented, since per capita 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 which took on exports more as a way of disposing of soldier-settlement induced surplus 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 third boom 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 vineyard construction costs.

Another major difference between now and the past is that the quality of wine output has improved vastly 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 (see below).

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, 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.

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 1997-98 has allowed that to continue.

These are all reasons to be optimistic about Australia's long-term future as a successful exporter of premium wines. However, within the next five years export sales could well account for the majority of Australian wine sold. So how long the current boom lasts depends heavily on export rather than domestic demand for Australian wine. That in turn depends not only on the export marketing skills and efforts of the industry but also on developments elsewhere in the world wine market.

II. Australia's export-oriented growth in international perspective¹

In exploring the key features of Australia's evolving position relative to other players in the international wine trade, pertinent questions to address include the following:

- How is Australia ranking as a world wine producer and exporter?
- How does growth of Australia's wine production and exports compare with that of other New World wine producers?
- How well is Australia penetrating traditional and new wine markets abroad?
- To what extent is Australia upgrading the quality of its exports relative to other exporters?

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% 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, virtually all from California and six Southern Hemisphere countries (column 1 of Table 3). When intra-European Union trade is excluded, the decline in Europe's share of global exports is even greater over that decade: a fall from 88% to 70% (column 3 of Table 3).

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,

¹ This section draws on Anderson and Berger (1999).

global wine production and consumption fell at 0.8% and 0.4% per year, respectively, and yet global wine trade rose by 4.1% per year in volume terms and 6.5% in value terms -- or 9.7% if intra-EU trade is excluded (final rows of Tables 2 and 3).

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). 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% of international wine trade was among the 15 members of the European Union, whereas by 1997 the intra-EU share was only 48% (final rows of Table 3).

How well is Australia doing relative to other producers?

In terms of global wine production, Australia has always been a small player. Prior to the 1970s it accounted for less than 1% of world production, and as recently as 1987 its share had barely risen to 1.2%. During the following ten years the share doubled, to 2.3%, 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% 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% in volume terms (Table 2) and 4.8% 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% in volume terms and 21% 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 this 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% p.a. for volume and 30% 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.

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% 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%), Italy (17%) and Spain (9%). 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.

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% to 59% 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% to more than 9%. 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) rises even faster, from 6% to 19%. 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 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.

How well is Australia penetrating the various markets abroad?

Just as exports are highly concentrated, so too are imports. The ten top importing countries accounted for all but 15% of the value of global imports in the late 1980s. That 15% residual had risen to 20% by 1997, due mainly to Germany's reduced import share, indicating some growth of new markets. But more than half the value of all imports continue to be bought by the three biggest importers: the UK (with 21%), the US and Germany (each with about 14% -- see Figure 3).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% and 85% 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 at the expense of boosting 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).

How well is Australia doing in upgrading its 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 is now only half the Australian average.

However, even though the Australian average unit export price rose 52% over the decade to 1997 when the global average rose only 20%, complacency is not called for. The

² In volume terms, Germany is the largest importer of wine (19% of the world total), followed by the United Kingdom (17%), France (10%) and the United States (8%).

rise for Australia 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%). 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% mainly because the average price of exports from France and Spain rose little and, in Portugal's case, fell over the decade.

III. What are the opportunities and challenges ahead for Australian 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). The key challenge for Australian producers is to remain internationally competitive in the wake of that supply response elsewhere. To that end, a number of strategies suggest 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 (Anderson and Wittwer 1999), and will make Australia one of the highest taxing of the wine-producing countries in the world (Berger and Anderson 1999). 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 lower the volume of premium wine that would need to be exported.

A second 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 winemakers exporting their services thorough spending time abroad as consultants (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. 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 higher rewards (Carr, Markusen and Maskus 1999). 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).³ 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 third 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 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.

A fourth 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 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 (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 (the world's biggest red wine importer), 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.⁴

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 (Berger and Anderson 1999). However, Old World fears of growing competition in the European and East Asian wine markets from New World

³ 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.

⁴ Or at least not in foreign currency terms. If the expected appreciation of the Australian dollar during 2000 and beyond materializes (perhaps to 72-75 US cents, compared with about 63-65 US cents in 1999), that would mean a constant US dollar price would translate to a 15 per cent lower Australian dollar value.

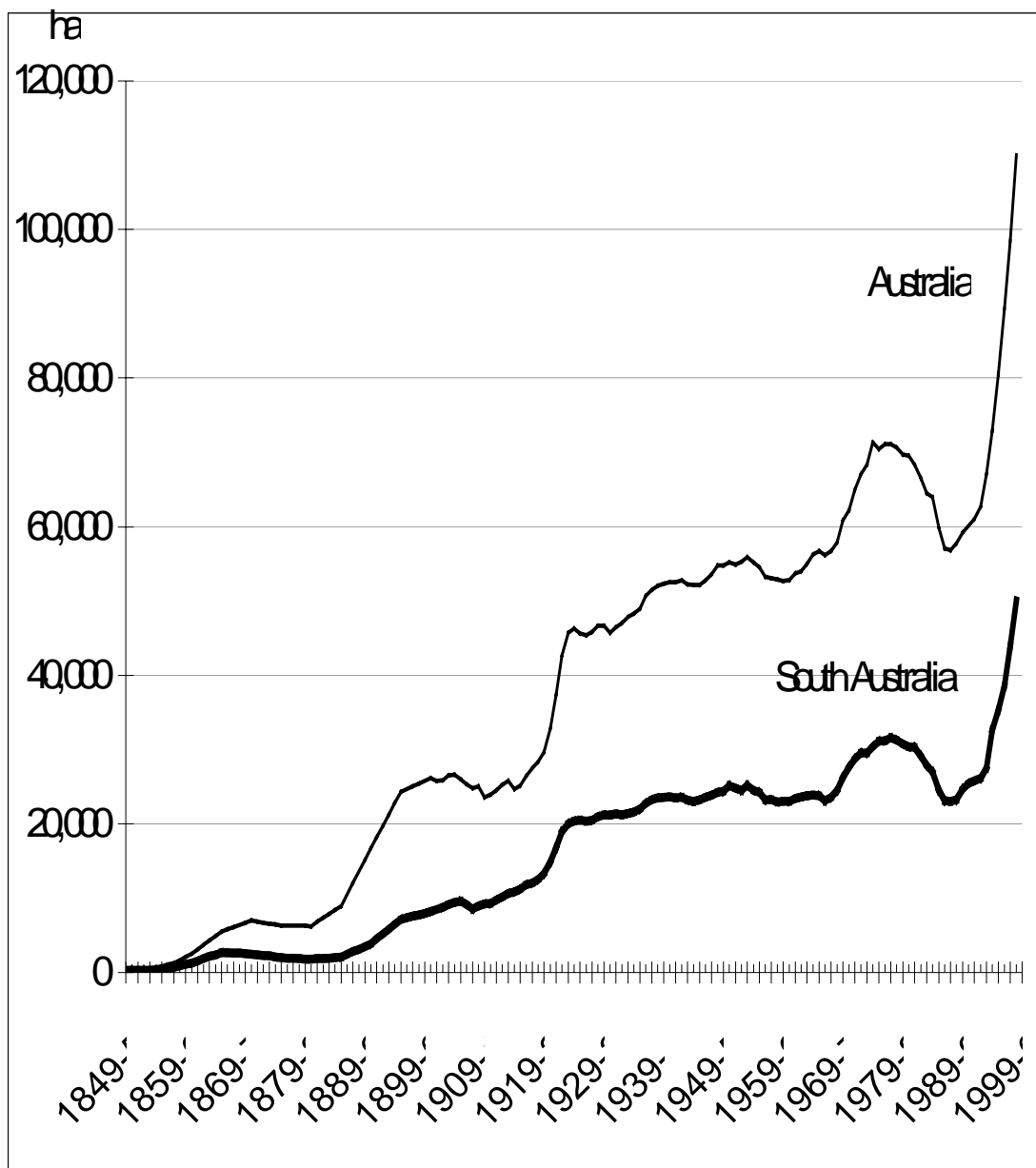
suppliers could lead to the provision of more subsidies and protection via non-tariff measures by the European Commission. Already recent subsidies to producers in the EU to help upgrade their wine industry are reputed to be of the order of US\$2.3 billion, over which negotiations could be targeted. 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 (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 this next round of WTO trade talks.

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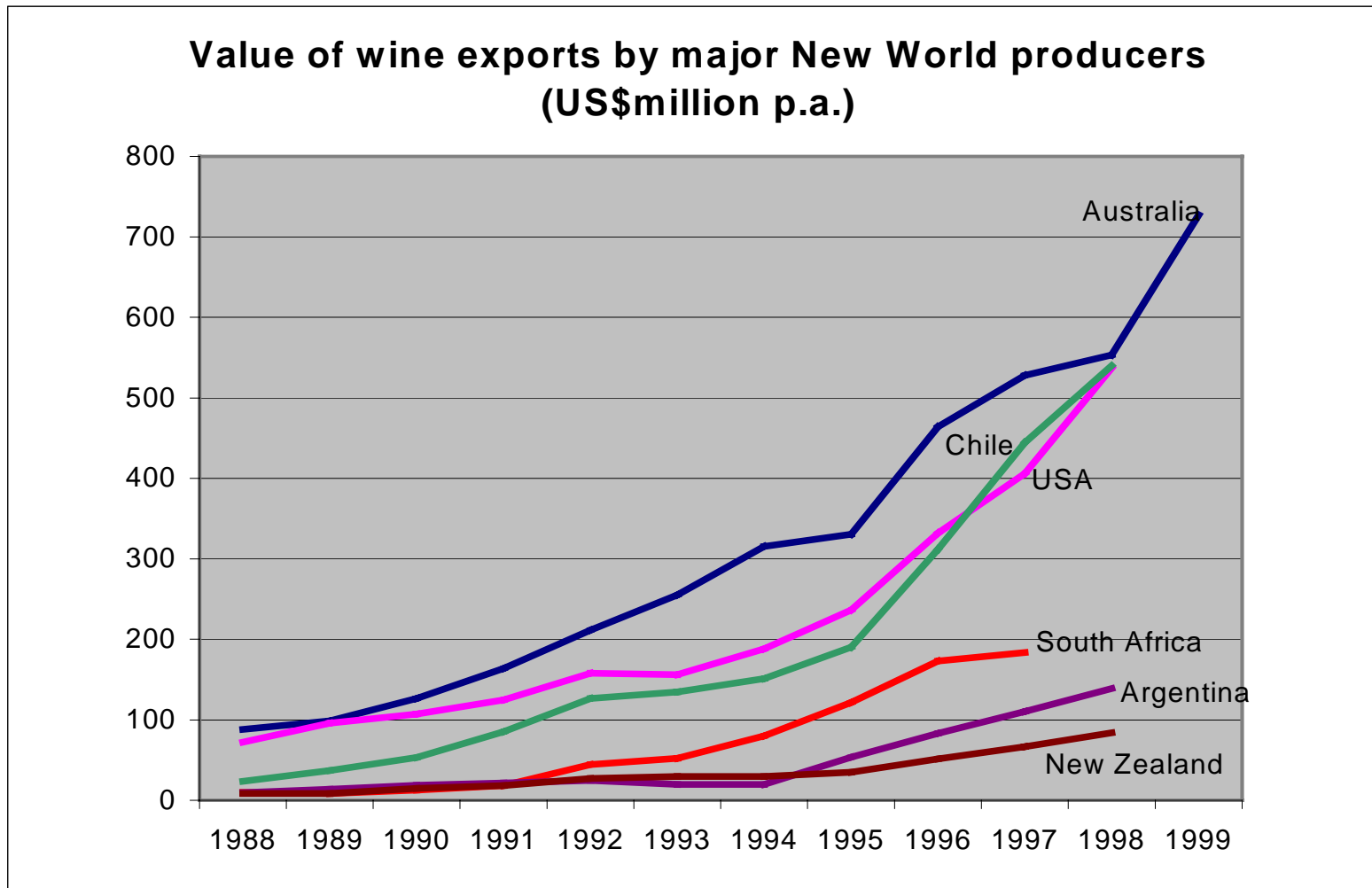
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Figure 1: Area of vineyards, Australia and South Australia, 1849-50 to 1998-99



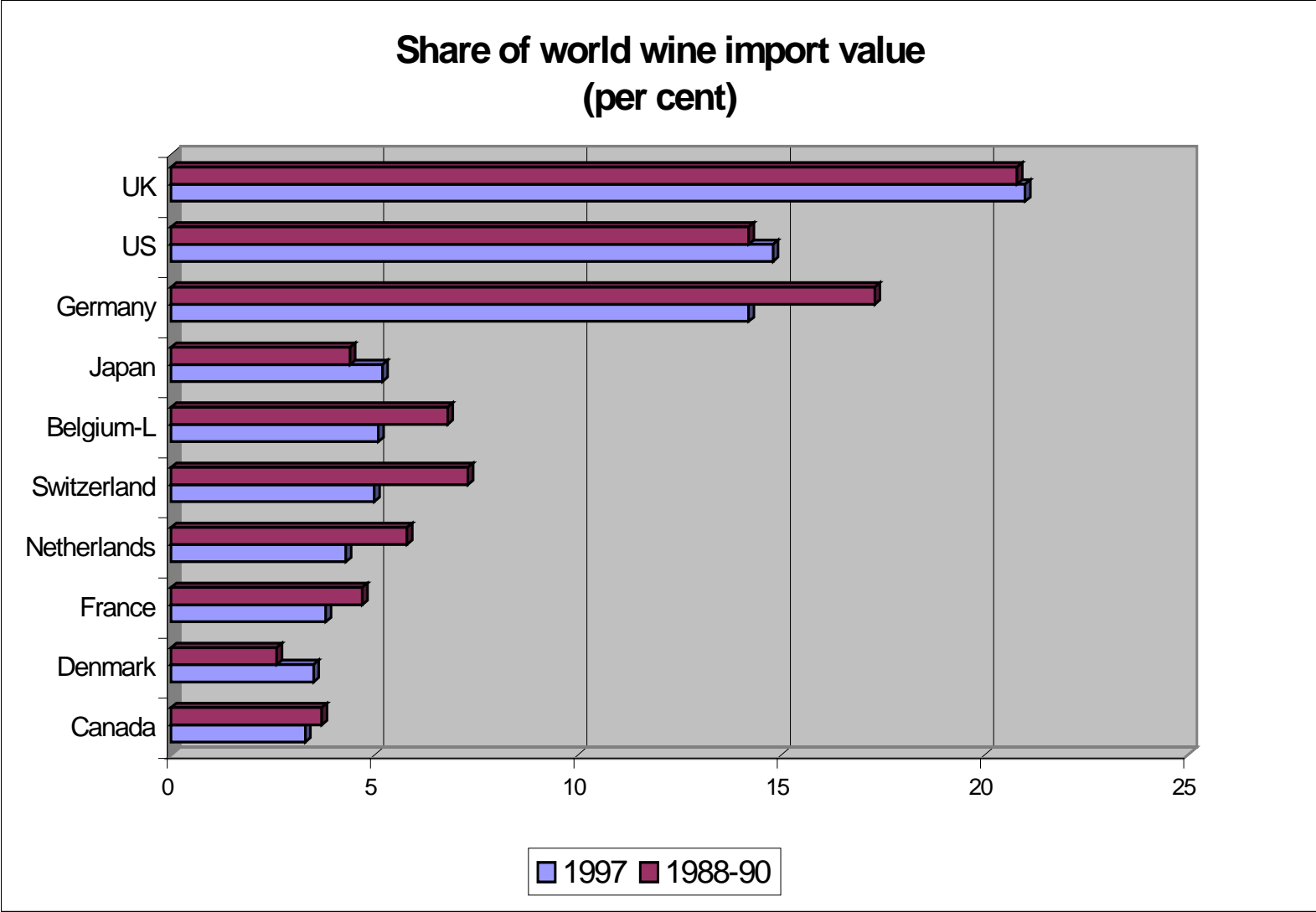
Source: Updated from Osmond and Anderson (1998, Table 2).

Figure 2



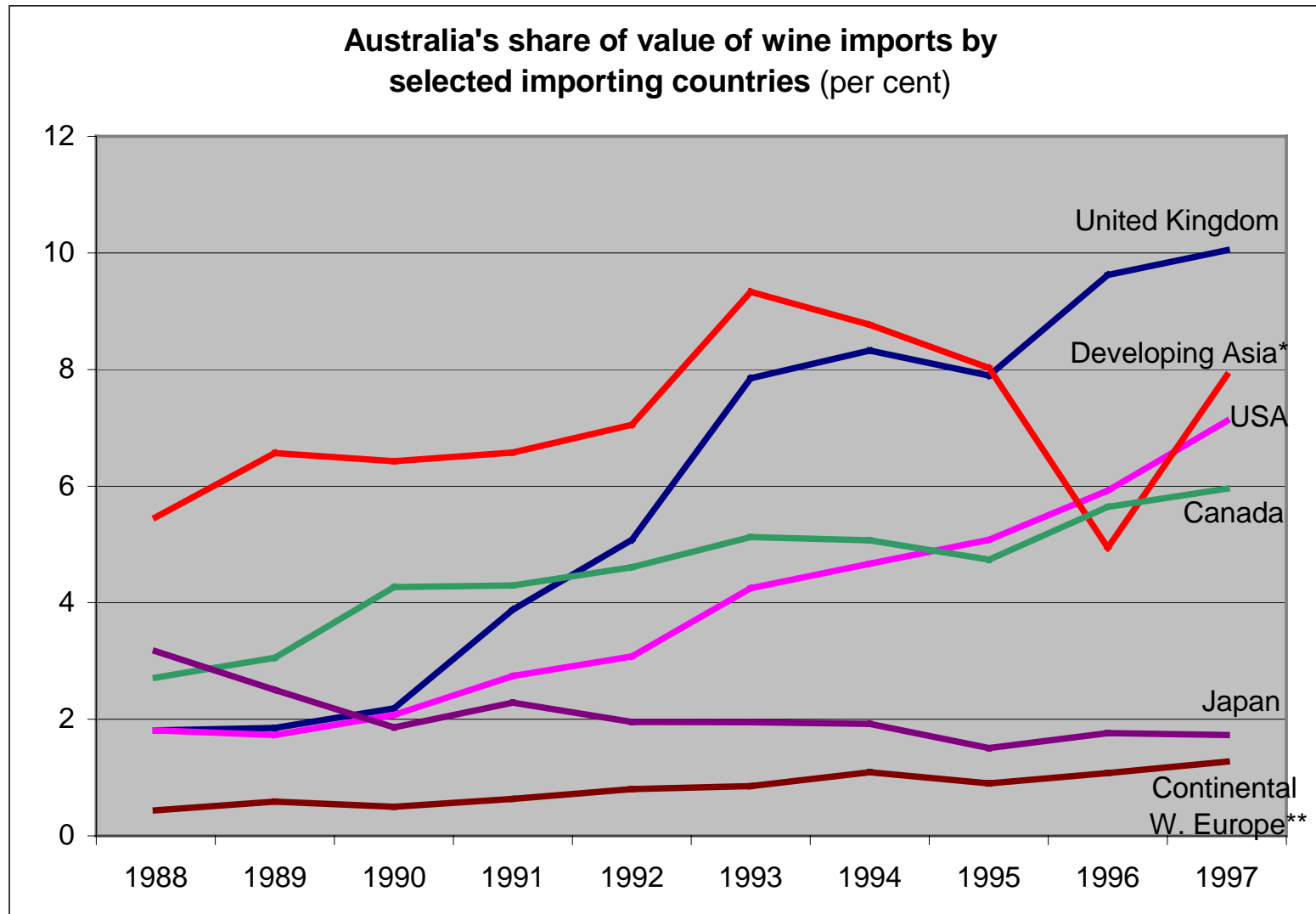
Source: Anderson and Berger (1999, Figure 1)

Figure 3



Source: \ Anderson and Berger (1999, Figure 2)

Figure 4

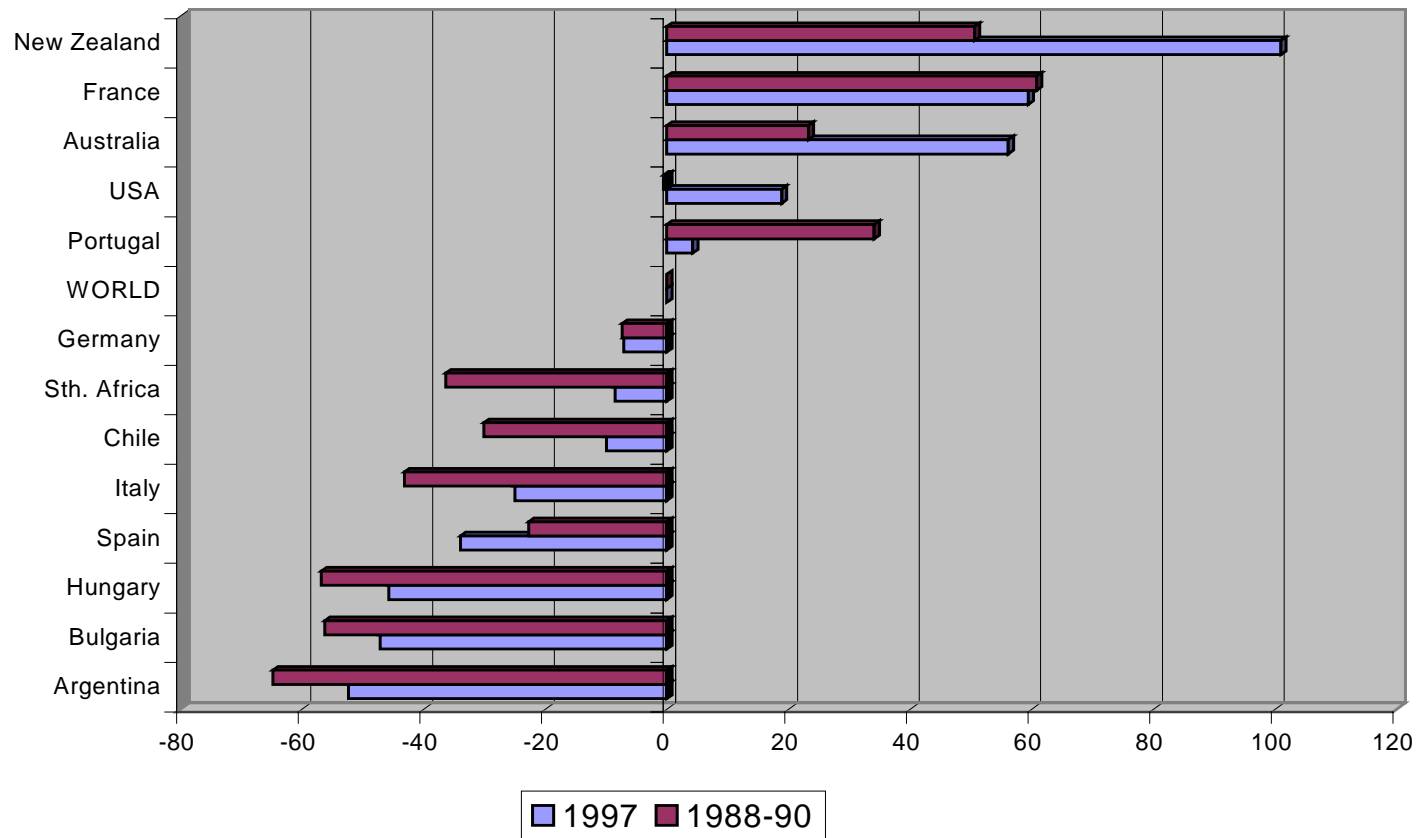


* Developing Asia comprises NIE4, ASEAN4 and China.

** 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)

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 (eg France and Spain). Source: Anderson and Berger (1999, Figure 4).

TABLE 1: SUMMARY OF BOOMS AND PLATEAUS IN AUSTRALIAN WINE INDUSTRY DEVELOPMENT, 1849-50 TO 1997-98

Vintages:	Boom/ Plateau/ Cycle no.	No. of years	Increase in vine area, Aust. (% pa)	Increase in vine area, Sth Aust. (% pa)	Increase in wine prodn, Aust. (% pa)	Increase in wine prodn., Sth Aust. (% pa)	Increase in wine export volume, Aust. (% pa)	Share (%) of Aust. wine prodn. 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	2 nd boom	15	9.7	10.1	7.5	8.7	23.0	9.8	Na
1896 to 1915	2 nd 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	3 rd boom	10	7.0	7.0	12.7	16.1	4.5	8.5	5.8
1925 to 1945	3 rd 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	4 th boom	7	3.3	3.7	6.2	3.8	-1.4	2.7	10.9
1975 to 1987	4 th 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 1998	5 th boom	14	4.6	5.3	5.3	4.4	18.8	17.9	21.0

Source: Osmond and Anderson (1998).

Table 2: Shares of major regions in world wine production, consumption, and trade, by volume, 1988-90 and 1997

(per cent)

	Production	Consumption	Exports	Imports
Western European Exporters ^a				
1988-90	56.0	42.3	79.2	16.7
1997	54.4	38.9	66.9	11.8
Other Western Europe				
1988-90	7.4	16.5	10.2	62.8
1997	6.0	20.0	6.8	56.6
Europe's Transition Economies ^b				
1988-90	13.2	14.3	4.9	2.7
1997	12.5	13.9	11.7	9.8
North America				
1988-90	6.8	9.1	1.3	10.2
1997	9.4	9.9	2.8	10.4
Australia				
1961-65	0.6	0.6	0.3	0.0
1971-75	1.0	0.9	0.2	0.1
1981-85	1.2	1.2	0.2	0.2
1988-90	1.6	1.3	1.2	0.3
1997	2.3	1.6	3.0	0.2
Other Southern Hemisphere Wine Exporters ^c				
1988-90	12.4	13.3	1.6	0.4
1997	12.2	10.5	8.0	1.6
Rest of World				
1988-90	2.6	3.1	1.6	6.9
1997	3.2	5.2	0.8	9.5
WORLD TOTAL (%)				
1988-90	100.0	100.0	100.0	100.0
1997	100.0	100.0	100.0	100.0
WORLD TOTAL (billion litres)				
1988-90	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.

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

Table 3: Shares of major regions in world wine exports and imports, including and excluding intra-European Union trade, by value, 1988-90 and 1997

(per cent)

	Including intra-EU15		Excluding intra-EU15	
	Exports	Imports	Exports	Imports
Western European Exporters ^a				
1988-90	84.8	8.0	75.4	0.7
1997	72.3	5.7	54.8	0.9
Other Western Europe				
1988-90	8.6	64.1	7.4	27.1
1997	6.8	57.8	5.0	28.9
Europe's Transition Economies ^b				
1988-90	2.1	0.8	5.5	2.1
1997	5.6	4.6	10.7	8.9
North America				
1988-90	1.3	17.8	3.4	46.3
1997	3.3	18.2	6.4	34.9
Australia				
1988-90	1.5	0.6	3.8	1.5
1997	4.8	0.5	9.2	0.9
Other Southern Hemisphere Wine Exporters ^c				
1988-90	1.1	0.7	2.7	1.8
1997	6.7	1.3	12.9	2.5
Rest of World				
1988-90	0.7	7.9	1.7	20.5
1997	0.5	12.0	1.0	23.0
WORLD TOTAL (%)				
1988-90	100.0	100.0	100.0	100.0
1997	100.0	100.0	100.0	100.0
WORLD TOTAL (US\$billion)				
1988-90	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).

Table 4: Volume of wine production and consumption per capita and trade orientation, by region, 1988-90 and 1997

	Volume of prod'n per capita (litres pa)	Volume of cons'm per capita (litres pa)	Exports as a % of prod'n	Imports as a % of cons'm	Prod'n as a % of cons'm
Western European Exporters ^a					
1988-90	98	63	20	7	156
1997	88	54	27	8	164
Other Western Europe					
1988-90	10	19	20	64	53
1997	7	21	25	72	35
Europe's Transition Economies ^b					
1988-90	9	8	5	3	108
1997	8	8	20	18	106
North America					
1988-90	7	8	3	19	89
1997	8	8	6	27	112
Australia					
1988-90	27	20	11	3	137
1997	34	20	29	4	168
Other Southern Hemisphere Wine Exporters ^c					
1988-90	15	14	2	1	110
1997	12	9	14	4	137
Rest of World					
1988-90	0	0	9	38	96
1997	0	0	5	46	73
WORLD TOTAL					
1988-90	5.5	4.6	14	17	118^e
1997	4.6	3.9	22	25	118^e
Memo item: EU-15					
1988-90	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.

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

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.

Source: Anderson and Berger (1999), based on raw data in Berger, Spahni and Anderson (1999).

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: ^d	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]								
1988-90		4	69	0	17	1	9	100
1997		3	61	1	19	1	16	100
2. Italy (17.2%) [26]								
1988-90		15	57	0	25	1	2	100
1997		7	59	2	25	2	5	100
3. Spain (9.2%) [24]								
1988-90		6	70	1	16	1	6	100
1997		10	71	1	10	1	8	100
4. Australia (4.8%) [29]								
1988-90		0	46	0	27	13	14	100
1997		1	57	0	26	7	9	100
5. Portugal (4.3%) [43]								
1988-90		32	49	0	10	2	8	100
1997		28	47	0	12	3	9	100
6. Germany (3.8%) [28]								
1988-90		1	67	1	17	2	12	100
1997		4	62	6	11	2	16	100
7. Chile (3.6%) [54]								
1988-90		2	19	0	43	8	28	100
1997		3	40	0	40	3	14	100
8. United States (3.3%) [7]								
1988-90		2	38	0	24	1	36	100
1997		2	59	1	17	1	21	100
9. South Africa (1.5%) [11]								
1988-90		3	92	0	0	0	5	100
1997		2	81	0	9	1	7	100
10. Argentina (0.9%) [7]								
1988-90		4	37	6	20	8	25	100
1997		2	31	1	17	20	29	100
ETEs ^c (5.6%) [20]								
1988-90		1	70	14	10	0	5	100
1997		1	29	64	2	0	3	100
WORLD (100%) [22]								
1988-90		8	64	1	18	1	8	100
1997		6	58	5	18	1	12	100

^a France, Italy, Portugal and Spain.

^b Central and Eastern Europe and the former Soviet Union.

^c Argentina, Australia, Brazil, Chile, New Zealand and South Africa.

^d 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.

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

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