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The New World in Globalizing Wine Markets: Lessons from Australia

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Abstract

Twenty five years ago, the Southern Hemisphere contributed 12 percent of the world's wine production and North America added another 5 percent. Together those countries accounted for less than 2 percent of global exports. By 2009, however, the New World accounted for 26 percent of global output and almost one-third of global wine exports. Australia's export-led growth is particularly striking, its shares rising from barely 1 percent to more than 4 percent of global production and from a mere 0.2 percent to 9 percent of global exports. Australia now exports two-thirds of its output (up from 2 percent in 1980-84) and is currently the world's fourth largest wine exporter after France, Italy and Spain. The huge vineyard expansion that delivered that dramatic transformation led to output expanding faster than sales in recent years, causing stocks to accumulate. In the light of the current over-supply situation, and drawing also on lessons from past booms, this paper focuses on how the Australian wine industry's international competitiveness and market shares might evolve over the next two decades and its implications for other wine-exporting countries. Climate change is certainly one of the challenges facing local producers, but that is affecting overseas competitors as well. Other prospective challenges include changes to tax and water policies, the recent fashion swing against Australian wine, and the strong Australian dollar associated with the country's mining boom that is linked to China's industrialization. Nonetheless, appropriate adjustments are beginning to be made, including to plantings and to marketing efforts. The longer term should see Australia trading its way out of the current surplus and back to expanding its global market share, especially in value terms as producers seek to differentiate their product more and focus on raising quality.

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The spurt of vineyard plantings from the early 1990s in first Australia and then other New World countries has led to wine production growing far faster than wine consumption in the Southern hemisphere. Initially that output growth was driven by perceived export growth prospects as baby boomers reached middle age and supermarkets became a major outlet for retail wine sales. However, the expansion in those export markets has been temporarily halted by the recessions on each side of the North Atlantic, just as the product from newly planted vines was ready to market. The Southern hemisphere has thus added to the chronic surpluses in Europe's wine-exporting countries – the latter due to steeply declining domestic wine consumption and slow adjustment by producers. The global oversupply has resulted in major declines recently in prices of grapes and wine and in values of vineyard and winery assets in Australia, New Zealand and elsewhere.

Booms and crises are not new to Southern hemisphere wine producers, nor to wine markets in the rest of the world. Indeed they are normal for capital-intensive perennial crops, albeit with long cycles.¹ That does not make the pain any easier for current producers though. Nor does it mean the pathway and speed of return to profitability are obvious, for the forces behind the latest cycle are different from those associated with previous cycles. In particular, the world's wine markets have become far more globalized over the past two decades, which has both broadened the opportunities and increased the challenges from international competition. Meanwhile, two other globalization phenomena are adding to wine-producers' challenges: climate change, and the supermarket revolution's impact on wine retailing.

This paper begins by summarizing data on the contributions of New World producers to wine's globalization to date. It then focuses on lessons from the leader of the New World's export surge, namely Australia (see Figure 1). It argues that a return to prosperity for the Australian wine industry is certainly possible, but it may be neither fast nor easy. Among other things it will require a willingness to continue investing for the long term, especially in R&D and marketing. It concludes by speculating on the prospects for the Southern Hemisphere continuing to expanding their share of global wine markets.

¹ Booms are often triggered by a positive shock that attracts new investors who are less than fully aware of the cyclical nature of perennial crop production. Their exuberance in high-priced periods leads to excessive supplies and low prices a decade or so later, to which the required negative supply response is slow in coming because of the fixed nature of the capital invested in vineyards and wineries. Historical examples include the supply responses following (a) the eruption of Mt Vesuvius in 79AD and (b) the frosts in and near northern France in January-February 1709 – each of which were followed 15 years later by government bans on new vineyard plantings (Unwin 1991).

Southern hemisphere contributions to wine's globalization of the past two decades

The focus of this section is on the five largest wine-exporting countries of the Southern hemisphere, namely Argentina, Australian, Chile, New Zealand and South Africa. They are compared with the other main New World supplier, the United States, as well as the five largest wine-exporting countries of the Old World, namely, France, Germany, Italy, Portugal and Spain.

The period 1980-84 was just prior to the beginning of the take-off in Australia, and so serves as the basis for comparison with the most recent year (2009). At that earlier time, the five key European suppliers accounted for nearly half the world's vineyard area including those used for non-wine purposes. They also accounted for 58 percent of global wine production and 53 percent of global wine consumption. By 2009, those countries' shares of vineyards and wine production had fallen five percentage points – but their share of global consumption had fallen 15 percentage points as people diversified their beverage intake (Table 1). Part of that difference between production and consumption has been absorbed through distilling the surplus, but the rest has been exported. As a result, the volume of exports, as a percentage of the volume of production, has doubled since the early 1980s to 37 percent in 2009. Even so, the share of global exports from those five European suppliers has fallen from just over three-quarters to just under three-fifths (Table 2).

The reason for those declining global shares of production and exports for the old World is almost entirely due to the export-led growth in the New World, particularly those in the Southern hemisphere: their share of global wine production has increased by half since the early 1980s (to 18 percent), and their share of global exports has risen from 1 to 27 percent (and the US's from 1 to 4 percent). That export growth has been at the expense of not only Western European suppliers but also the rest of the world, whose share of global wine exports has dropped from 22 to 9 percent (Table 2).

As for consumption, the decline in traditional wine-exporting countries (and in Argentina and Chile) has been matched by growth in other New World countries, in many wine-importing countries of Europe and, most recently and from a small base, in East Asia.

In assessing the past 25 years and prospects for the next couple of decades, it is helpful to think of not only 3 country groups but also 3 quality categories (non-premium, commercial premium, and super premium), 3 paths to consumers (direct sales such as cellar door, via a wholesaler/distributor, or direct to a supermarket), and 3 types of producers (growers who sell to a winery, many small/medium wineries, and a few very large listed wineries).

One other important feature that distinguishes the Old and New World producers is the size distribution and ownership of wineries. In the New World, it is not uncommon for the largest firm to account for one-quarter of sales. In the cases of Chile and South Africa the biggest firm's share is close to one-third – and in India it is two-fifths. The share of the two or three next-biggest firms also is huge except in South Africa, such that the many medium and small wineries account for only a minority of sales. The latter are mainly family companies, but the large firms are typically listed national companies or multinationals operating in several countries. By contrast, in the traditional producing countries of Europe, the shares of the four largest wineries are tiny, accounting for between 4 and 20 percent of total sales. In China concentration is increasing but as of 2010 the top four accounted for 28 percent (Table 3).

This difference in firm concentration may well be important as both the Old and New World producers seek to obtain retail shelf space in a world in which large supermarkets are

becoming ever-more dominant as outlets for wine sales. If negotiating strength is related to size, small and medium-sized wineries may struggle in their negotiating with such retailers. As well, in the United States the number of wholesale distributors in each state has fallen dramatically, so there too it may be the biggest wineries that capture the lion's share of the importers' attention. On the other hand though, listed companies are always under pressure to deliver good news in their quarterly reports to shareholders, so some of the large wineries may look to shed assets or even vacate the industry if it looks like having a long recovery period from the current over-supply situation. Such moves could provide opportunities for those smaller, often unlisted firms that are in the business for the long haul: they may be able to acquire selected assets at fire-sale prices, thereby underwriting their prosperity as the industry recovers from its current surpluses.

To conclude this section, it is sobering to look at one indicator of the current over-supply situation. It is the share of bulk wine in a country's still wine exports. For Australia since its latest boom began this was always below 15 percent, and for New Zealand below 5 percent. In recent years that share has been rising steadily, and by 2004 it was 20 percent for Australia, the US and Argentina. By 2009 it was 20 percent even for New Zealand and was almost 40 percent for Australia and even higher for other Southern hemisphere exporters (Figure 2). Some of that recent growth is in response to consumer concerns about the carbon footprint from shipping wine in bottles around the world, so a few large firms have established bottling plants close to their markets in importing countries. Some of these bulk sales are to supermarkets that are developing their own labels. But much of that trade is a symptom of over-supply, and therefore provides a rough indication over time of how far the industry is out of equilibrium. In Australia's case, in 2009-10 about 45 percent of bulk sales were to the UK, 20 percent to the US, and 10 percent each to Germany and China.

Lessons from past booms in Australia

The boom in Australian vineyard plantings since the late 1980s was the longest and largest in its history, and it was by far the most export-focused (Table 4). Even though several New World suppliers sought to emulate the Australian export-led experience, and several Old World suppliers have expanded their exports because of declining domestic consumption, Australia's shares of global wine markets have grown enormously. Table 5 reveals its production share has risen from barely 1 percent to more than 4 percent, and its share of world exports is now 9 percent compared with a mere 0.2 percent in 1981-85 – despite that fact that the share of global wine production exported over that period has grown from less than 15 percent to more than 35 percent. As a result, Australia now exports two-thirds of its output and is the world's fourth largest wine exporter after France, Italy and Spain (OIV 2010).

Australia's wine exports have boomed several times in the past. In each case those booms subsequently plateaued and the expanded acreage meant grapegrowers and winemakers went back to receiving low returns. Indeed the industry's prospects were sufficiently dire as recently as 1985 as to induce the federal and South Australian governments to fund a vine-pull compensation scheme to encourage grapegrowers to move to alternative crops. That long history of fluctuating fortunes gave reason to expect Australia's latest wine boom would be followed by yet another crash, at least in wine export prices (and thus winegrape prices) if not in wine production and export volumes – as indeed has begun to happen (Figure 3).

Yet the industry's past history also is encouraging, because it shows the latest boom differs from the earlier booms in several respects. One difference is that the latest boom is overwhelmingly export-oriented (Figure 4). 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 a well-prepared development strategy.

Secondly, the latest boom is mainly market-driven, which is not unlike the first two booms in the 19th century but contrasts markedly with the third (inter-war) boom that evaporated once government assistance measures (an export subsidy and preferential tariff access to the United Kingdom market) were withdrawn. What triggered the recent growth in export demand for Australian wine was the change in UK liquor licensing laws in the 1970s, allowing supermarkets to retail wine to the post-war baby boomers (by then adults). Given also Australia's close historical ties with Britain, and the exceptionally low value of the Australian dollar in the mid-1980s (Figure 5), it is not surprising that Australian companies recognised and responded to this new market opportunity. They were able to do so faster than EU suppliers because the latter have been hamstrung by myriad regulations and insulated from market forces by price supports. To exploit this rapidly growing market required large volumes of consistent, low-priced branded 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 large economies of size, especially in warm irrigated areas where water was (as in most countries) greatly underpriced. That stimulated a number of mergers and acquisitions among Australia's wine firms that resulted in several large and four (now three) very large wine companies able to reap scale economies not only in grape growing and wine making but also in viticultural and oenological R&D, in innovative brand promotion and related marketing investments, and in distribution. It has also enhanced their capacity to bargain with emerging retail giants, including the two dominant ones in Australia. The volumes of grapes grown and purchased from numerous regions by these large firms enable them to provide massive shipments of consistent, popular wines, with little variation from year to year, for the UK and now also North American and German supermarkets.

The third major difference between the recent and earlier booms is that the quality of wine output has improved hugely during the past two decades, relative to the cost of production. Moreover, for the first time, the industry was in a position to build brand, regional, and varietal images abroad to capitalize on those improvements in the quality of its grapes and wines. That image building has been partly generic, but mostly from the promotional activities of individual corporations and their local representatives abroad. The promotion efforts have been helped by being able to point to the legislated wine quality standards in the Australian and New Zealand Food Standards Code, and to the fact that Australian wines over-delivered in terms of value for money in Northern Hemisphere markets in the latter 1990s and early this decade before exports from other Southern Hemisphere and Southern European producers began to offer stiffer competition. Australia's average export price rose three times greater than the global average over the 1990s. However, Australia was not alone, as that rise was exceeded by other New World wine exporters, albeit from different bases (and in the case of Argentina only after it devalued in late 2001 – see Figure 5). Furthermore, since 2001, its average export price even in nominal terms has fallen (see Figure 3), and the volume of exports has grown only for wine priced below A\$2.50 a litre fob since 2006 (Figure 6). The latter is a consequence in part of bulk wine sales growth (40 percent of all exports in 2009-10 by volume but only 14 percent by value), and in part of the phenomenal expansion of the Yellowtail brand, which accounts for half the volume of

Australia's exports to the US. Exports under that label now amount to more than 10 million cases a year, having started from scratch in 2001.

Current challenges and prospects

The Australian wine industry is not alone in feeling challenged at present. Common contributing factors include the following:

- deep economic recession on both sides of the North Atlantic,
- the chronic oversupply of winegrapes and wine in the European Union,
- the retail concentration of supermarkets in many high- and middle-income countries, with the largest developing their own labels by buying bulk wine,
- the tight regulatory environments for wine distribution in such settings as Ontario, many of the US states and Scandinavia,
- the expansion of supplies in emerging markets such as China and India,
- consumer health and environmental concerns,
- anti-alcohol campaigns by health and road safety lobbyists, and
- the great uncertainties resulting from climate change and associated policy responses.

On top of those common challenges, Australian producers currently are dealing also with such things as:

- a high-valued currency (thanks to the boom in industrial raw material exports to China) that makes Australian wines less competitive abroad as well as at home in competition with imports,
- very large stocks of unsold wine (thanks to the rapidity of its recent vineyard acreage expansion coupled with a slowdown in global demand),
- a fashion swing against Australian wine especially in the UK but even domestically – particularly from New Zealand wineries which, since 2005, have been able to enjoy the same rebate on the wine equalization tax as Australian wineries,
- major reforms to water institutions and policies, and
- the threat of reform to wine taxation.

Symptoms of those difficulties include large declines in winery profits, the cut in winegrape prices in the hot irrigation areas by 30 percent in 2009 and by a similar amount in 2010, around 15 percent of domestic sales being supplied by imports (more than twice the historical norm), and 40 percent of Australia's wine exports in 2009-10 being in bulk containers compared with 15 percent in 1996-2003.²

Climate change also is likely to be a bigger challenge for Australia than for many other wine-producing countries. The majority of Australia's winegrapes are produced in the hot irrigated regions around the Murray and Murrumbidgee rivers. Those regions, like most of southern Australia, are becoming warmer and drier, and are seeing a slowdown in river flows. There is also an increasing demand from the community for a larger share of those reduced river volumes to be saved for environmental flows and urban uses, so there will be less scope in the future for irrigation to compensate for reduced precipitation. The quality of the main international winegrape varieties currently grown in that region deteriorates as the growing temperature rises (Webb, Whetton and Barlow 2008, Anderson et al. 2008), and

² Rabobank reported recently that of the 42 million cases-equivalent of wine imported by the US in 2009 from Australia and Chile, one-third was in bulk at an average value of US60 cents per litre.

there appear to be few alternative varieties that will be even nearly as profitable. By contrast, in much of temperate Europe global warming will improve the quality of winegrapes. Ashenfelter and Storchmann (2010a,b) estimate that in the Mosel region of Germany, for example, an increase of 3 degrees C would improve winegrape quality so much as to double the value of vineyards there.

Daunting though the above lists of challenges look, some of those developments are only short term. Also, there are several positive signs already emerging. One is the cautious optimism of recovery that is showing up in the recessed economies of Europe and the United States, even though it is masked by continuing nervousness in financial markets.

A second encouraging sign is the reportedly rapid take-up of the European Union's offer to pay winegrape growers to grub up vines: during 2009-11 that scheme is expected to reduce the EU-27's vine area by 5 percent and its wine production by around 3 percent (European Commission 2009). There has also been some grubbing out of unprofitable vineyards in the hot irrigated areas of California in recent years, and also in Australia over the past year.

Thirdly, a recent assessment of the impact of expected demographic changes in the United States over the next two decades suggests wine consumption there will grow considerably faster than overall population: as the age and ethnic profiles alter, Lapsley (2010) concludes that wine sales could rise from 280 million cases in 2009 to around 400 million by 2030. Lapsley also believes growers in the Central Valley of California, like those in the hot irrigated areas of Australia, will find rising temperatures and water prices make it difficult for them to compete with suppliers in poorer Southern Hemisphere countries.

Fourthly, the Asian market is promising to grow steadily. Not only is its population expected to rise by about 750 million people by 2030, but its share of global income (ignoring Japan) is expected to double, to around 23 percent. Already the middle classes in the booming economies of India and especially China are looking for imported fine wines in addition to locally produced labels – and in China those local wines are often coming from firms partly owned by producers in the Old or New World and/or using imported wine that is blended with local product prior to bottling. Not only are Asian household incomes growing very rapidly and their preferences becoming more westernized, but also they are seeking relatively highly priced imported wines. In China, for example, wine from grapes reportedly accounts currently for just 2 percent of the volume of alcohol consumption but for 8 percent of the value of alcohol sales.

How will Australia strengthen its competitive edge over the next two decades?

Looking beyond the immediate difficulties, there are reasons to be cautiously optimistic about the Australian wine industry's future. Recovery won't be easy, and may not be as quick as the resurgence from its mid-1980s slump. Certainly major adjustments will be required for many participants. However, if there is a willingness to continue to invest for the long term (rather than just focusing on quarterly returns to shareholders), and if the earlier spirit of collaboration within the industry can be re-invigorated, a return to at least normal levels of profitability should be possible.

One adjustment already under way is in marketing. The earlier emphasis in generic marketing by the Australian Wine and Brandy Corporation on Brand Australia providing simply sunshine in a bottle has switched to a marketing strategy that gives far more emphasis to regional characteristics and higher quality wines. AWBC has also initiated a website allowing individual producers of fine wines to tell a story about their wines

(www.australiaplus.com). That idea is taken further with the recent creation, by a dozen long-established, mid-sized, quality-driven, high-profile, family-owned Australian wineries, of the First Families of Wine: together they represent 16 Australian regions across four states and between them have more than 1200 years of winemaking experience (www.australiasfirstfamiliesofwine.com.au).

In terms of private-sector promotion by individual large wine companies, they already have well-recognized labels, including 6 of the top 15 wine brands globally according to Intangible Business (2010). The first four represent rather low bottle prices though (Yellowtail at number 4, Hardy's at 5, Jacob's Creek at 7 and Lindemans at 9), while Wolf Blass and Penfold's are ranked 13 and 15. Most of those labels have been retailing wine in the key UK supermarkets at less than £4 a bottle over the past year or so, which is almost certainly not profitable. Since competition from Argentina, Chile and South Africa at that non-premium commodity end of the wine quality spectrum is strengthening, and will continue to do so as global warming proceeds, improved profit margins require graduation to higher quality, more differentiated wines of place. An example is the greater emphasis being given by Pernot Ricard to their Regional Reserve range of Jacob's Creek wines. Also helpful is the embracing of environmental stewardship by an ever-larger number of Australian wineries, in the expectation that retailers and their consumers will be increasingly looking for evidence at all stages of production of sustainable use of natural resources.³

Policy reforms can contribute to that transition to finer wines. The gradual creation of better property rights for water and the increasing opportunities for them to be tradable is allowing water to be attracted to its most-profitable uses. Within agriculture, vineyards have been among the more profitable crops to irrigate, and rising prices for water will ensure vignerons use it sparingly and hence produce higher quality fruit. If Australia were to switch from an ad valorem to a volumetric tax on domestic wine consumption, as recently recommended by the Henry Review and as used in most other countries, that too would encourage that transition to finer wines (Anderson 2010a). In particular, it would make it easier for smaller fine-wine producers to sell all their product on the domestic market, thereby avoiding the high fixed costs of breaking into new export markets (bearing in mind that successful exporting firms typically are larger and more productive – Bernard 2007). Both policy changes will harm hot winegrape regions more than those in the higher latitudes and altitudes though (Anderson, Valenzuela and Wittwer 2010).

Another needed change that is beginning to show up in the statistics involves diversifying exports beyond the four English-speaking countries that have been the dominant destinations for Australian exports in the past. The Asian region in particular shows great promise for Australian wineries: it is relatively close, Australia already has a strong trade and investment presence there in other product areas, it is booming economically, and the number of alumni returning there from Australian educational institutions is growing rapidly. The region accounted for barely 5 percent of Australia's wine exports until a few years ago, but since then sales have grown rapidly. For example, Australia is a close second to France in supplying imported wines to China, which is now Australia's 4th biggest market, ahead of New Zealand. Those exports are not just bulk wine used for blending with Chinese juice. Indeed by 2008-09 their unit value was slightly above the average for all Australian wine exports. Moreover, Australia's exports to other Asian countries enjoyed even higher premia: 50 percent above our average export price in the case of sales to Japan, 120 percent above for Hong Kong, 150 percent above for Singapore and 190 percent above for Malaysia prices. All

³ This mirrors the surge in focus by major food corporations on the sustainability of all stages of production along the food value chain, as reflected in the membership of the Sustainable Agriculture Initiative (see www.saipatform.org).

five of those East Asian countries are now among the top 14 destinations for Australian wine, having grown far faster than sales to the rest of the world (Table 5). With per capita consumption still very low in Asia, the potential for steady long-term growth in demand and in returns from marketing investments there is very considerable.

Of course other wine-producing countries also are adjusting to changing market realities, so for Australia to re-build its competitive edge and export prices it will need to be responding more nimbly than other countries. If its earlier climatic advantage in irrigated viticulture is now waning because of global warming, it needs to shift the centre of gravity of its winegrape production to land with more-appropriate *terroir* and more-reliable water. But at least as important as those natural resources are skilled viticulturalists and oenologists, and stocks of pertinent production and marketing knowledge. During the past two decades, the Australian wine industry improved its competitiveness in no small measure by large investments not only in vineyards, wineries and wine marketing but also in the creation and dissemination of production and market knowledge. Plenty of that is done at the firm level, but high rewards came from supplementing that through collaboration, particularly when many firms were new to the industry and when new markets abroad were being targeted.

Especially important in that respect has been investments in R&D. Australia's investment in formal grape and wine education and training dates from the establishment in 1883 of Roseworthy Agricultural College (now part of the University of Adelaide). Viticulture was compulsory and oenology was an optional field of study in its Diploma in Agriculture, with a Diploma in Oenology being added in 1936. Formal wine research began in 1934 with funding to the University of Adelaide from (what soon became) the Australian Wine Board. The Board's annual reports indicated high rates of return from its initial research investments, and this led in 1955 to the creation of the Australian Wine Research Institute and in 1988 to the establishment of the Grape and Wine Research and Development Corporation (GWRDC, although called a Council until 1991. The GWRDC is funded by producer levies which the Federal Government matches dollar-for-dollar up to a maximum of 0.5 per cent of the gross value of output of grapegrowers (in the case of growers) and of the winegrape crush (in the case of wineries). Producers initially opted for low levies, but they were raised in 1999 and again in 2005 such that they now nearly reach 1 percent of value added in these two activities. That represents a modest investment in R&D compared with the averages for OECD countries of around 2 percent of agricultural and 3 percent of manufacturing value added (Pardey et al. 2006).

The impact and payoff from those investments is impressive. Data from the Web of Science database suggest Australia was 2.8 times as intense in producing research papers on viticulture and oenology as the rest of the world (exceeded only by the United States – see Table 6). The latter intensity has since dropped as Australia's wine production rapidly expanded, but it may be higher if the quality of publications were to be taken into account. In terms of research payoff, a benefit-cost study found that the 2002 portfolio of GWRDC research projects was expected to yield a 9:1 benefit/cost ratio, and that a sample of past projects yielded ratios ranging from 7:1 to 76:1 (McLeod 2002).

The return to R&D in the next two decades may be even higher than in the past, bearing in mind marketplace changes and long-term uncertainties such as climate change, water and other environmental policy reforms, and prospective alcohol tax changes. Transgenic biotechnology offers much promise for accelerating the research discovery process, but consumer resistance to genetic engineering is limiting the exploitation of that opportunity (Pretorius and Hoj 2005). The scope for collaboration across scientific disciplines could be exploited more, as could the scope for collaboration between scientists at the basic and applied ends of the spectrum, and between scientists in various countries. As one step

toward that end, the University of Adelaide recently established its *Wine 2030* Research Network (see www.adelaide.edu.au/wine2030), but many more such steps will be needed.

Meanwhile, if Australia's resilient producers remain attuned to the market and flexible enough to respond to future external shocks, as well as remain willing to try promising new technologies as soon as they become available, their long-term prospects for a return to prosperity look good.

What will global markets look like in 2030?

Unfortunately the type of crystal balls needed to forecast the future have yet to be invented, so the best that can be done is to develop models of the world's wine markets. That too is notoriously difficult, given the heterogeneous nature of wine, but it may be better than the alternatives. The database for a model developed earlier this decade (see Wittwer, Berger and Anderson 2003) is currently being updated and expanded, and hopefully will be able to provide an opportunity to explore various scenarios by year's end.

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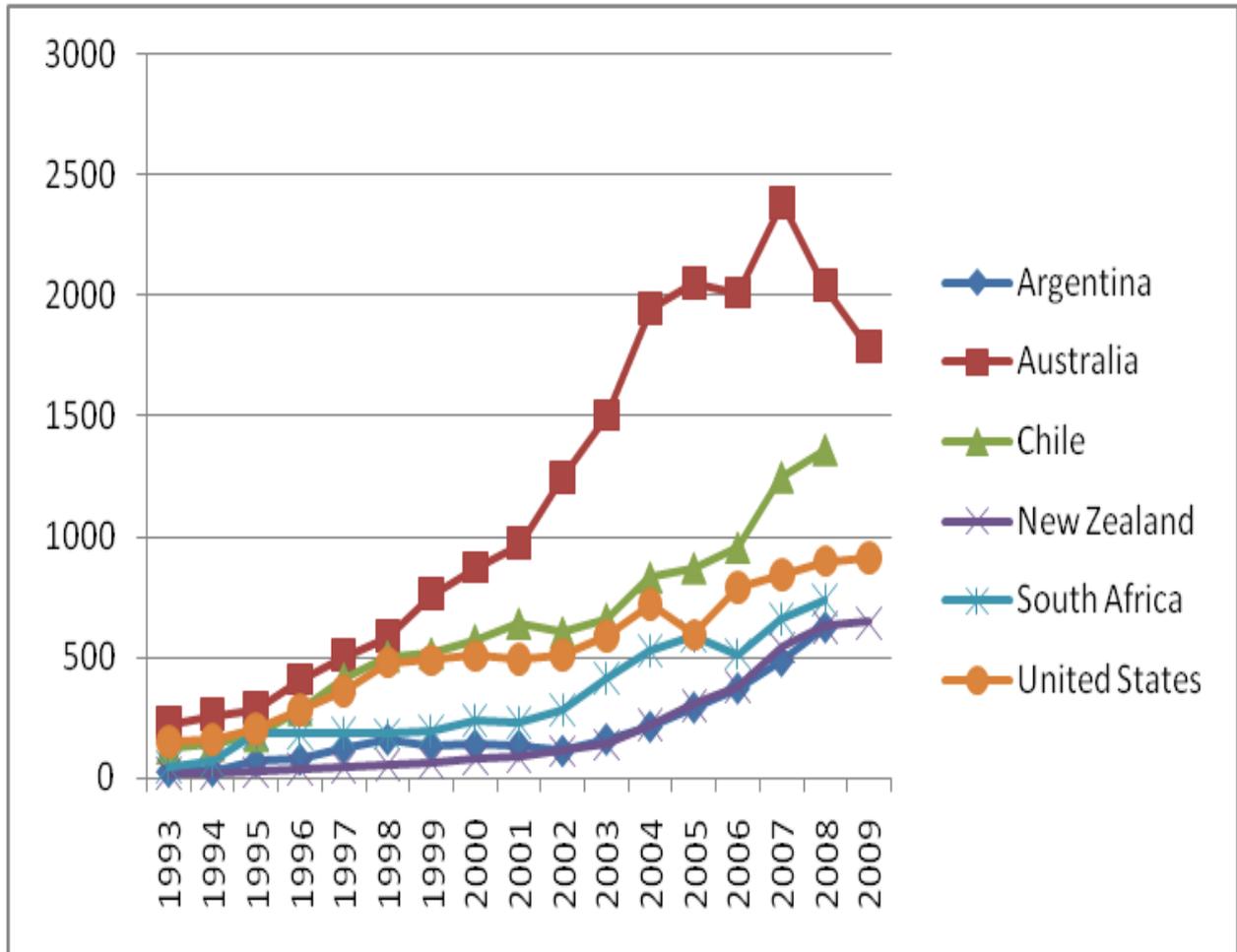
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Figure 1: Value of still wine exports, Southern hemisphere countries and the United States, 1993 to 2009

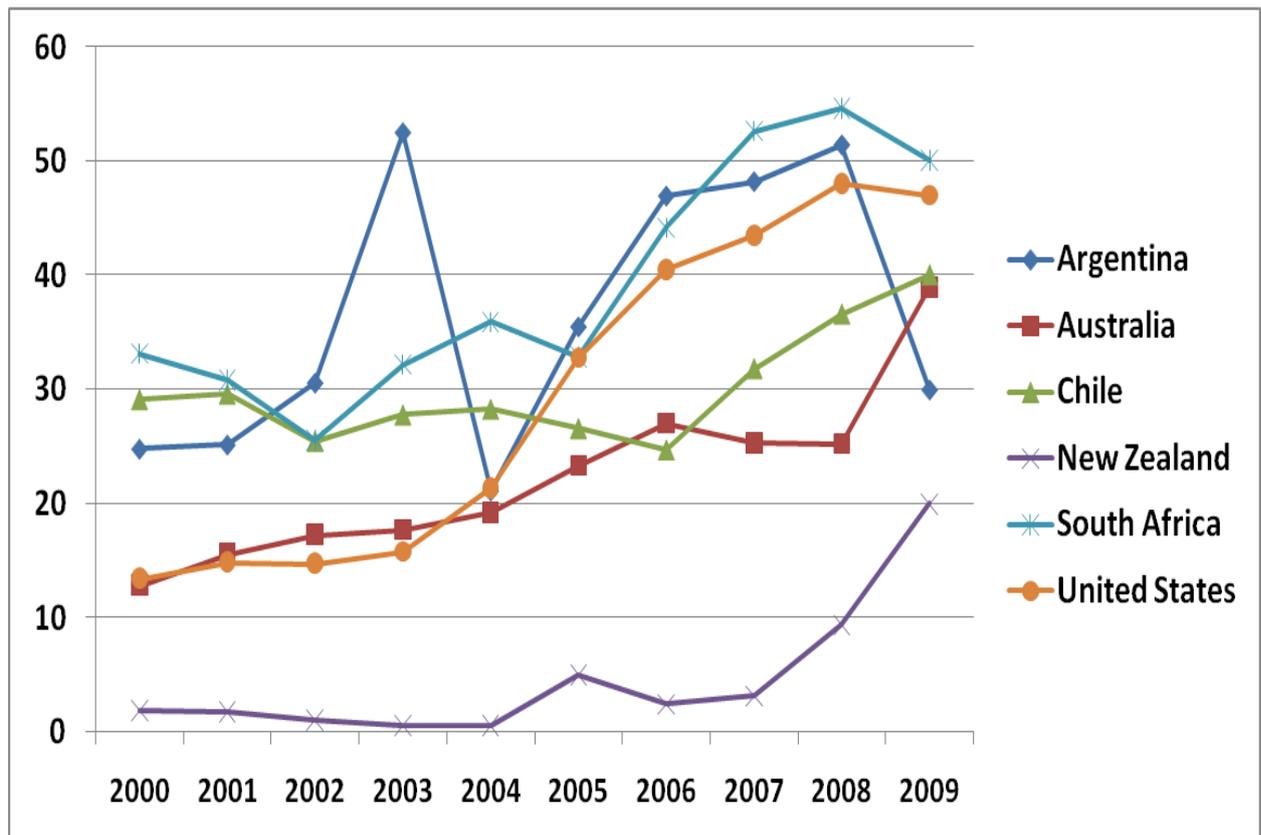
(nominal US\$m)



Source: World Bank (2010).

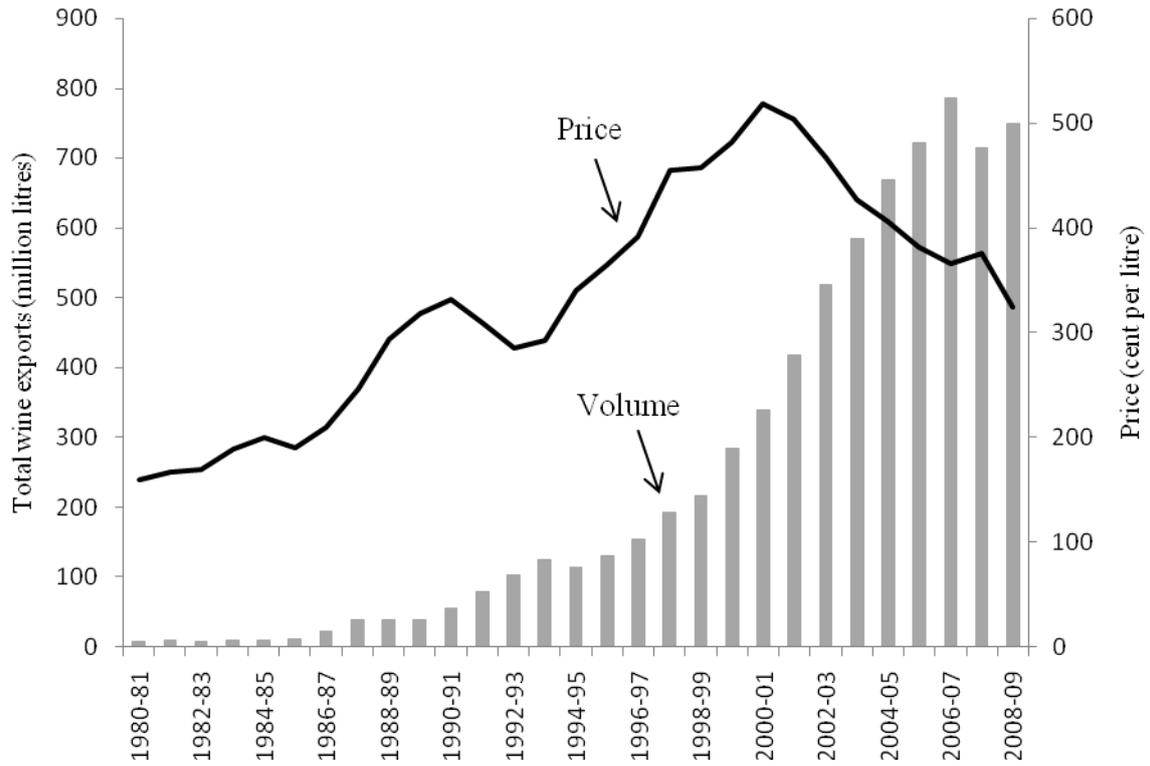
Figure 2: Share of export sales of still wine shipped in bulk containers, Southern hemisphere countries and the United States, 2000 to 2009

(percent)



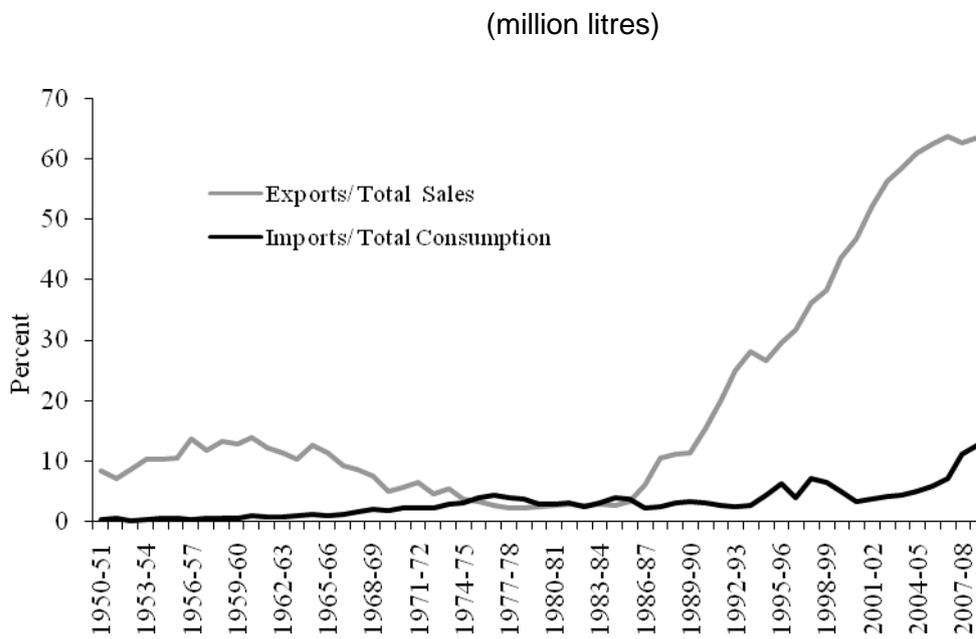
Source: World Bank (2010a).

Figure 3: Volume and average price of export sales of Australian wine, 1980-81 to 2008-09
(million litres and Australian cents per litre)



Source: Authors' derivation from data at www.wineaustralia.com

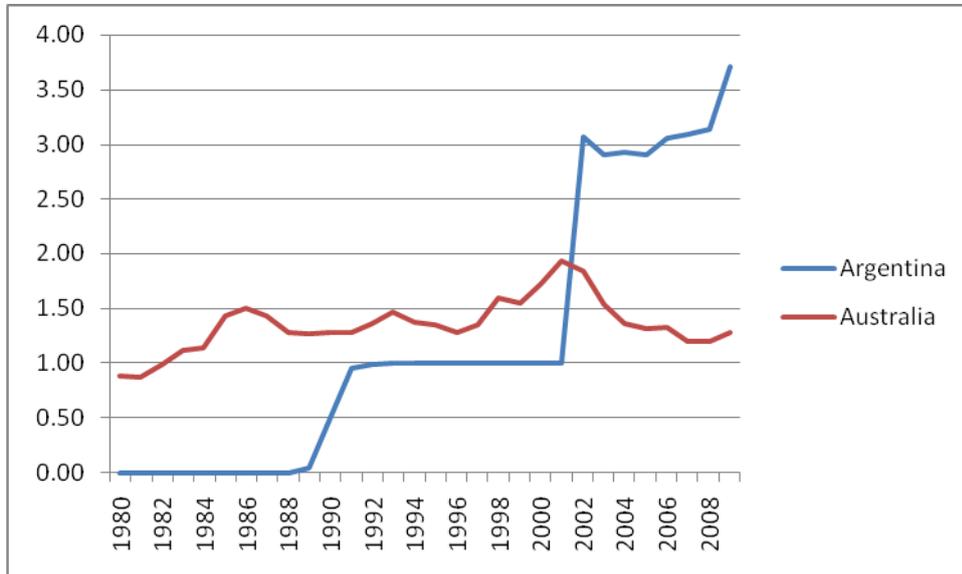
Figure 4: Export share of total sales of Australian wine and import share of total consumption of wine in Australia, by volume, 1950-51 to 2008-09



Source: Updated from Anderson (2004), using data from www.wineaustralia.com

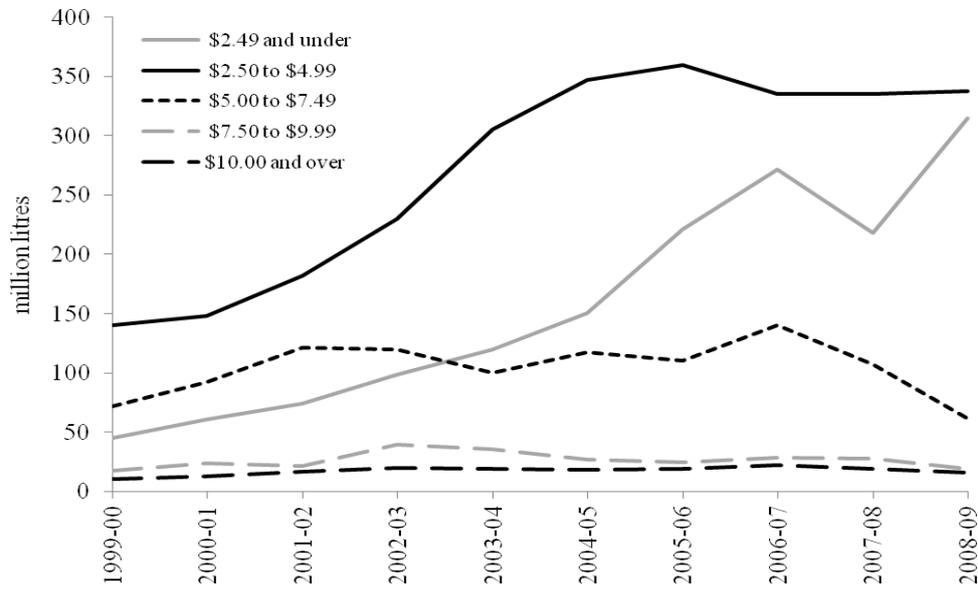
Figure 5: Foreign exchanges rates, Argentina and Australia

(local currency per US dollar)



Source: World Bank (2010b).

Figure 6: Volumes of wine exports by price segment, Australia, 1999-00 to 2008-09
(A\$ per litre, fob prices)



Source: Authors' derivation from data at www.wineaustralia.com

Table 1: Old and New World shares of global vine area and wine output and consumption, 1980-84 and 2009

(percent)

	Vineyard area		Production volume		Consumption volume	
	1980-84	2009	1980-84	2009	1980-84	2009
Old World (France, Italy, Spain, Portugal, and Germany)	45.5	40.8	58.0	53.0	53.3	38.3
Southern Hemisphere (Argentina, Australia, Chile, NZ and Sth Africa)	6.3	10.1	12.4	18.3	11.9	9.2
USA	3.1	5.2	5.2	7.7	7.2	11.4
Rest of world	45.1	43.9	34.4	21.0	27.6	41.1
TOTAL WORLD	100.0	100.0	100.0	100.0	100.0	100.0
<i>(World total, mha & mhl</i>	<i>9,912</i>	<i>7,636</i>	<i>344</i>	<i>266</i>	<i>272</i>	<i>237</i>

Source: Wittwer and Anderson (2009) and OIV (2010)

Table 2: Old and New World shares of global wine exports and exports as a percent of wine production, 1980-84 and 2009

	(percent)			
	Export volume		Exports as % of prod'n volume	
	1980-84	2009	1980-84	2009
Old World (France, Italy, Spain, Portugal, and Germany)	75.8	59.9	17.8	36.9
Southern Hemisphere (Argentina, Australia, Chile, NZ and Sth Africa)	1.1	26.9	1.8	18.9
USA	0.7	3.9	2.8	49.7
Rest of world	22.4	9.3	10.6	13.4
TOTAL WORLD	100.0	100.0	13.9	32.4
<i>(World total, mhl</i>	<i>48</i>	<i>86)</i>		

Source: Wittwer and Anderson (2009) and OIV (2010)

Table 3: Share of four largest wineries in sales, selected countries, 2009
(percent)

(a) Southern hemisphere and Asia

	Argentina	Australia	Chile	New Zealand	South Africa	USA	China	India
Largest firm	27	23	31	24	34	21	11	41
2 nd - 4 th largest	32	39	51 ^a	24	4	35	17	34
Rest	41	38	18	52	62	44	72	25

(b) Europe

	Austria	France	Germany	Italy	Portugal	Spain
Largest firm	5	11	1	6	62	11
2 nd - 4 th largest	7	5	3	4	23 ^a	10
Rest	88	84	96	90	15	79

^a 2nd and 3rd largest firms only.

Source: Euromonitor (2010)

Table 4: Booms and plateaus in the development of Australia's wine industry, vintages 1854 to 2010

Vintages:	Boom/ plateau/ cycle no.	No. of years	Increase in vine area (% pa)	Increase in wine production (% pa)	Increase in wine export volume (% pa)	Av. share (%) of exports in Australian wine sales(%)	Av. domestic per capita consumption (litres p.a.)
1854 to 1871	1st boom	17	15.5	18.4 ^a	14.1	1.8	na
1871 to 1881	1st plateau	10	-1.1	-0.6	-5.2	1.6	na
1854 to 1881	1st cycle	27	8.4	10.7	8.2	1.7	na
1881 to 1896	2 nd boom	15	9.7	7.5	23.0	9.8	na
1896 to 1915	2 nd plateau	19	-0.1	-0.4	0.4	16.5	5.1
1881 to 1915	2nd cycle	34	3.9	3.3	8.7	14.4	na
1915 to 1925	3 rd boom	10	7.0	12.7	4.5	8.5	5.8
1925 to 1945	3 rd plateau	20	0.9	0.1	-1.2	16.4	4.0
1915 to 1945	3rd cycle	30	2.4	3.6	4.9	14.9	4.7
1945 to 1968	slow growth	23	0.2	2.1	0.2	5.4	6.2
1968 to 1975	4 th boom	7	3.3	6.2	-1.4	2.7	10.9
1975 to 1987	4 th plateau	12	-1.7	1.0	8.4	2.2	19.1
1968 to 1987	4th cycle	19	0.2	3.1	2.5	2.4	16.0
1987 to 2004	5 th boom	17	18	11	22	32	20
2004 to ??	5 th plateau	??					

Source: Updated from Anderson (2004), using data from www.wineaustralia.com

Table 5: Share and average price of Australian wine exports to East Asia and to traditional markets, 2008-09, and growth in value of shipments since 2005-06

	Share of Australian export value (and ranking), 2009	Unit value of exports (A\$ per litre), 2009	% change in value of exports, 2005-06 to 2008-09
East Asia:	12.6	5.32	72
China (mainland)	5.7 (4 th)	3.22	350
Hong Kong	2.0 (9 th)	7.27	72
Japan	2.1 (8 th)	4.97	20
Malaysia	1.0(14 th)	9.06	13
Singapore	1.8(11 th)	8.13	9
Traditional markets:	70.2	2.89	-20
United States	30.4(1 st)	2.84	-18
United Kingdom	27.8(2 nd)	2.42	-25
Canada	8.9 (3 rd)	4.34	-14
New Zealand	3.1 (5 th)	3.36	-18
All destinations	100.0	2.97	-13

Source: Author's compilation using data from www.wineaustralia.com

Table 6: Grape and wine research publications^a per litre of wine production, 1992 to 2006
(relative to the world average)

	1992-1996	1997-2001	2002-2006
France	0.71	0.67	0.62
Italy	0.45	0.57	0.67
Spain	1.41	1.20	1.22
United States	3.87	2.65	2.15
Argentina	0.19	0.15	0.21
Australia	2.80	1.63	1.45
Germany	1.31	1.50	1.39
South Africa	0.41	0.33	0.52
Chile	0.27	0.36	0.50
Portugal	1.00	1.61	1.76
Others	0.92	1.14	1.09
WORLD	1.00	1.00	1.00

^a No adjustment is made for the quality, relevance or impact of publications (as measured by, for example, citations). The source includes predominantly English-language journals and so understates the contributions of continental European and South American countries.

Source: Anderson (2010b), drawn from OIV wine production data and from wine publication data compiled from the Web of Science of the Institute for Scientific Information by Cassi, Morrison and Rabellotti (2010).