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Cabernet's Evolving Place in Australia's Wine Regions

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make history.

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Cabernet's Evolving Place in Australia's Wine Regions

Kym Anderson

Cabernet Sauvignon in 2016 was the world's most-planted winegrape variety, up from 8th in 1990 (Figure 1). Australia has one of the largest vine areas of this noble variety: in 2016 it was ranked 5th in the world, which compares with it being ranked the world's 10th largest in terms of total winegrape bearing area. However, that ranking is down from 3rd largest in 2000 (Figure 2), because the rest of the world has expanded its plantings of this variety more rapidly this century than Australia.

Currently Cabernet Sauvignon (hereafter CS) is second only to Shiraz in wine industry importance in Australia, having had very little bearing area in the 1950s and 1960s. Its rise in Australia contributed to the share of red varieties in the nation's total bearing area rising from 36% to 58% between 1985 and 2000, and to 66% by 2023 (Figure 3).

The recent shrinking of the red-dominant China market (Anderson 2023a) and the consumer drift away from red wine globally (OIV 2023) have generated an excess supply of red wine globally and especially in Australia. That, plus the longer-term impacts of climate change, are potentially altering the optimal area and mix of grape varieties in Australia's various wine regions (Puga and Anderson 2024). How is that impacting on CS-dominant regions?

To begin to address that question, this article reports on a range of indicators of the evolution of CS's place in the Australian wine industry, using a new annual dataset that covers all Australian wine regions over the past two-plus decades, and drawing comparisons with the rest of the world. Those indicators serve as background for considering the future for this noble variety in the key CS-dominant regions of Australia.

The article begins by briefly describing the newly compiled Australian data set (Anderson and Puga (2023a) that is comparable with the global winegrapes database compiled by Anderson and Nelgen (2020a). It then provides six more facts about CS in Australia, in addition to those mentioned at the start of this article. Trends in demand for this variety are then discussed, followed by a discussion of supply issues. In the light of that, the article concludes by speculating on immediate and longer-term regional prospects for this variety.

The data

A comprehensive new data set has been compiled by Anderson and Puga (2023a, 2023b) that expands and updates Anderson (2015) and includes estimates of the bearing area of winegrapes in each of Australia's wine regions from 2001 to 2023. Such data have been available for South Australia from Vinehealth Australia (previously the Phylloxera and Grape Industry Board of South Australia) as published by Wine Australia (2023a and earlier), but for the rest of Australia there have been no official data on the bearing area of winegrapes by variety and region since 2015. That was when the Australian Bureau of Statistics stopped collecting data on national, state and regional vine areas. Neither did the ABS collect them in 2009, 2011, 2013 and 2014. To compile a database for wine regions outside South Australia and thus for the nation as a whole, Anderson and Puga (2023a) brought together available annual data from Wine Australia (2023 and earlier) and other sources for winegrape crush

volumes and prices by variety and region,[1] and then made a series of assumptions to estimate the missing bearing area data so as to provide a complete set from 2001 to 2023.

In total there are 72 regions in this national data set, and area, crush and price data (and hence yield and gross revenue per hectare) are available for 118 'prime' varieties as defined by Anderson and Nelgen (2020a) based on Robinson, Harding and Vouillamoz (2012) or otherwise www.vivc.de. There are also another 62 more-minor prime varieties whose data are aggregated into 'other red' or 'other white' for confidentiality reasons.[2]

The Australian area data are benchmarked against those in other countries and the world as compiled and analysed by Anderson and Nelgen (2020a, 2020b).

Six more facts about Cabernet Sauvignon in Australia

Myriad details can be extracted from these recently compiled data. For space reasons just six more facts are noted in this section before turning to explain key ones and speculating on prospects for this variety in Australia.

First, CS has accounted for between 1/5th and 1/6th of Australia's total area, crush volume and crush value since 2000. That area share was 4.3 times the share of CS in the global winegrape area as of 2000; but it was only 2.6 times by 2016, because the rest of the world's CS area has grown rapidly this century (Anderson and Nelgen 2020a). That means Australian producers of CS are facing increasing competition in global markets.

Second, Australia is second only to Chile in terms of the share of its bearing area devoted to CS. In 2016 Chile's share was 4.2 times the global share of 6.9%, when Australia's share was 2.6 times greater (followed by Bulgaria and the United States, both at 2.5 times).

Third, within Australia the share of CS in regional areas is highest in South Australia's limestone coast, most notably Coonawarra and Wrattonbully (Figure 4). Coonawarra's recent share of 64% (3.5 times the national share) is equal first in the world with the Red Mountain region, both 9.2 times the 2016 global share, followed by Walla Walla (7.7) and Columbia Valley (7.6), all of Washington State. Other notable regions high on that list are Chile's Metropolitana region (7.5), Wrattonbully (6.8), California's Napa (6.4), Margaret River (3.7), and France's Bordeaux (2.5).

Fourth, Coonawarra also now has the largest area of CS winegrapes in the country, closely followed by the Riverland and the combined Murray-Darling-Swan Hill(NSW+Vic) regions (Figure 5(a)). It is still the case that hot irrigated regions dominate in terms of the national crush *volume* (Figure 5(b)) but, because average regional yields and prices are negatively correlated, Coonawarra now matches the Riverland in them being the first-ranked regions in terms of the *value* of the crush. Note from Figure 5(c) that the CS crush value is much lower in 2021-23 than in 2001-03 for the hottest regions, for Langhorne Creek and McLaren Vale, and for the smaller regions aggregated at the right-end of that Figure.

Fifth, in almost all regions, CS gross revenue *per hectare* is slightly below the regional average over all varieties. Several possible reasons for this revealed preference of vignerons come to mind. One is that production costs may be relatively low for CS, perhaps because it requires less pesticide sprays. Another may be the desire to have some CS in order to blend with other red varieties. It also may be easier to access clean planting material for CS, and/or to market CS. There may also be less year-to-year variation in net profits from

[1] With much-appreciated help from Wine Australia's Sandy Hathaway.

[2] Of that total of 183 varieties, 178 of them have been exported at some time in the past 22 years – but just five have accounted for around four-fifths of the total volume of Australia's wine exports in the past five years. For an analysis of emerging varieties in Australia, see Anderson and Puga (2024).

CS. To test this last hypothesis, comparable comprehensive data on at least variable costs would be needed. Unfortunately we don't have access to such a data set.

Sixth, the concentration on CS in Coonawarra is greater than in California's Napa Valley, although both have become more focused on this variety since 2000. In both regions Merlot takes a distant third place, after Shiraz in Coonawarra and after Chardonnay in Napa (Table 1(a)). The lower concentration on CS in Margaret River is nonetheless greater than in Bordeaux, where Merlot is the dominant variety. In Margaret River three whites plus Shiraz are the next ranked after CS, whereas in Bordeaux Merlot has been displacing some CS and Cabernet Franc this century but those three reds still made up more almost four-fifths of the region's total bearing area in 2021 (Table 1(b)). In the hot irrigated regions of both Australia and California, CS and Merlot are ranked third and fourth behind the top red (Shiraz in Australia, Zinfandel in San Joaquin) and Chardonnay (Table 1(c)).

Trends in demand

The future for CS vignerons in Australia depends heavily on trends in its demand in both domestic and export markets (as well as on supply responses to them and the current surplus, discussed in the following section).

The rise in red's share of Australia's total bearing area from one-third to two-thirds since the late 1980s, due mostly to expanding the area of CS along with Shiraz (Figure 3), contrasts with the trend in global wine consumption which is away from reds. In 2000-04, reds' share of world consumption was 51% but in 2017-21 it averaged 48% (OIV 2023) – and since then China's wine consumption, which is mostly reds, has shrunk further (Anderson 2023a). This trend away from reds is also reflected in local sales of Australian wine: between 2018-19 and COVID-affected 2022-23, for example, those sales volumes fell 18% for reds but only 10% for whites (Wine Australia 2023).

This decline in demand for red wines would be less worrying the more overall demand for wine was growing. However, global alcohol consumption per adult has fallen by more than one-ninth over the past decade. Wine's share of that declining global alcohol consumption continues to fall, having halved in the last four decades of the 20th century and falling from 16% to 13% since then (Anderson and Pinilla 2023).

Part of the move in demand from red to white wines is because the alcohol content of reds relative to whites has been rising with global warming yet consumers are increasingly seeking lower-alcohol beverages for health and lifestyle reasons. This has been encouraged by the World Health Organization, which claims there is no safe level of alcohol consumption.[3]

Two other pertinent trends are increasing consumer preferences for premium products (quality rather than quantity) and for products that are produced, packaged and distributed in more environmentally sustainable ways. Grape growers and wineries are thus under pressure to raise the quality of their product and at the same time lower their use of chemical inputs and heavy bottles and move toward becoming carbon-neutral.

Supply issues

How the future for CS vignerons plays out depends, in the short term, on how the industry adjusts to the huge current surplus of red wine in Australia and abroad and, in the longer

[3] The WHO claim seems to be based on a *Lancet* study (Griswold et al. 2018), yet that study's Figure 5 suggests the health risk begins to rise exponentially not from none but from one standard daily alcohol drink.

term, on its responses to the above-mentioned trends in demand and to on-going climate changes.

The red wine surplus has depressed average red winegrape prices substantially over recent vintages here and abroad. In Australia that has been concentrated in the hottest inland irrigated regions, where the average price nearly halved in the past three years. By contrast, the average price has held up in the more temperate regions, although their white winegrape prices have risen (Figure 6). This will encourage the most marginal red winegrape growers to downsize their red area particularly in Australia's hot regions, which are also the regions most vulnerable to climate change. Downsizing is also happening abroad, including in Bordeaux where financial incentives from the government are being provided to growers to encourage the uprooting of up to 10,000 hectares.

Lowering alcohol levels and raising wine quality, as well as working toward environmental sustainability and carbon-neutrality, are certainly possible. While they add to production and distribution costs, which are more difficult to bear when product prices are falling, it would appear CS producers in prime regions such as Coonawarra and Margaret River have been endeavouring to raise the quality of their product so as to offset a generic decline in demand for (especially commercial) reds. This is reflected, for example, in their much larger falls in yields than for other Australian producers this century (Figure 7).

Global warming, however, is affecting all wine regions. The recently published Climate Atlas for Australia (Remenyi et al. 2020) suggests the average growing season temperature (GST) in the final two decades of this century could be 2 to 3 degrees warmer than in the past two decades. That would then make Margaret River warmer than the hot irrigated regions recently (Table 2). It could also push both Coonawarra and Margaret River beyond the GST range suggested by Jones et al. (2012) as being desirable for premium CS production. This matters because the price of CS grapes tends to be lower the higher the region's GST (Figure 8). Projected warming between 1997-2017 and 2041-60 could lead to an average CS grape price decrease over that period of one-eighth in both Coonawarra and Margaret River, assuming other things equal (Puga et al. 2022).

Prospects

Evidently Australia's more-temperate regions have already pulled away from the hotter inland irrigated regions in terms of CS yields and prices. The longer it takes for the global demand/supply imbalance in red wine markets to disappear, the more red vines in Australia's hottest regions are likely to be uprooted and thereby reduce the surplus in Australia. Even prime CS regions will need to continue to adapt though: to the demands for more-sustainable production methods and lower-alcohol levels, and to projected climate changes. The latter may require changing practices in the vineyard and even the mix of winegrape varieties in some regions. Taking on novel emerging varieties is one possible response (Anderson and Puga 2024).

These needed changes are likely to have raised the return to more investment in grape and wine R&D. Yet the current (volume-based) system of levying vignerons to fund generic R&D is leading to less funds for research due to the lowering of yields via premiumization. That suggests the need to switch to a value-based levy system (Anderson 2023b).

To finish on a brighter note, the prices of CS vineyards in Australia's best regions are still very low compared with those in, for example, Napa and Bordeaux. That suggests there remains much scope for raising the quality of CS wines in this country so as to better compete with higher-priced CS wines in the Northern Hemisphere.

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Table 1: Mix of varieties in key Australian and Northern Hemisphere Cabernet-dominant regions, 2000/01 and 2022/23 (% by bearing area)

(a) Coonawarra vs Napa					
Coonawarra				Napa	
	2001	2023		2000	2022
Cab Sauv	53	64	Cab Sauv	31	50
Shiraz	20	20	Chard	24	15
Merlot	5	6	Merlot	18	9
Chard	9	4	Sauv Blanc	6	6
Sauv Blanc	1	2	Pinot Noir	6	6
Riesling	6	1	Zinfandel	3	3
Others	6	3	Others	12	11
'000 ha	*3.8*	*5.6*	*'000 ha*	*12.3*	*17.7*
(b) Margaret River vs Bordeaux					
Margaret River			Bordeaux		
	2001	2023		2000	2021
Cab Sauv	26	26	Merlot	46	53
Chard	14	18	Cab Sauv	22	18
Sauv Blanc	11	17	Cab Franc	12	8
Shiraz	17	14	Semillon	9	7
Semillon	13	13	Sauv Blanc	5	6
Merlot	10	5	Malbec	1	2
Others	*9*	*7*	Others	5	6
'000 ha	*3.4*	*5.6*	*'000 ha*	*150.3*	*139.5*
(c) Australia's hot irrigated regionsa vs California's San Joaquin					
	Aust HIRs			San Joaquin	
	2001	2023		2000	2022
Shiraz	17	24	Zinfandel	36	22
Chard	12	20	Chard	22	18
Cab Sauv	13	14	Cab Sauv	12	18
Merlot	5	7	Merlot	10	10
Pinot Gris	0	5	Pinot Gris	0	7
Muscat of Alex.	5	3	Pinot Noir	0	4
Others	48	27	Others	20	21
'000 ha	*55.2*	*52.9*	*'000 ha*	*20.9*	*27.1*

[a] Aust HIRs are the country's hot large irrigated regions, namely Murray Darling-Swan Hill (NSW+Vic), Riverina and Riverland.

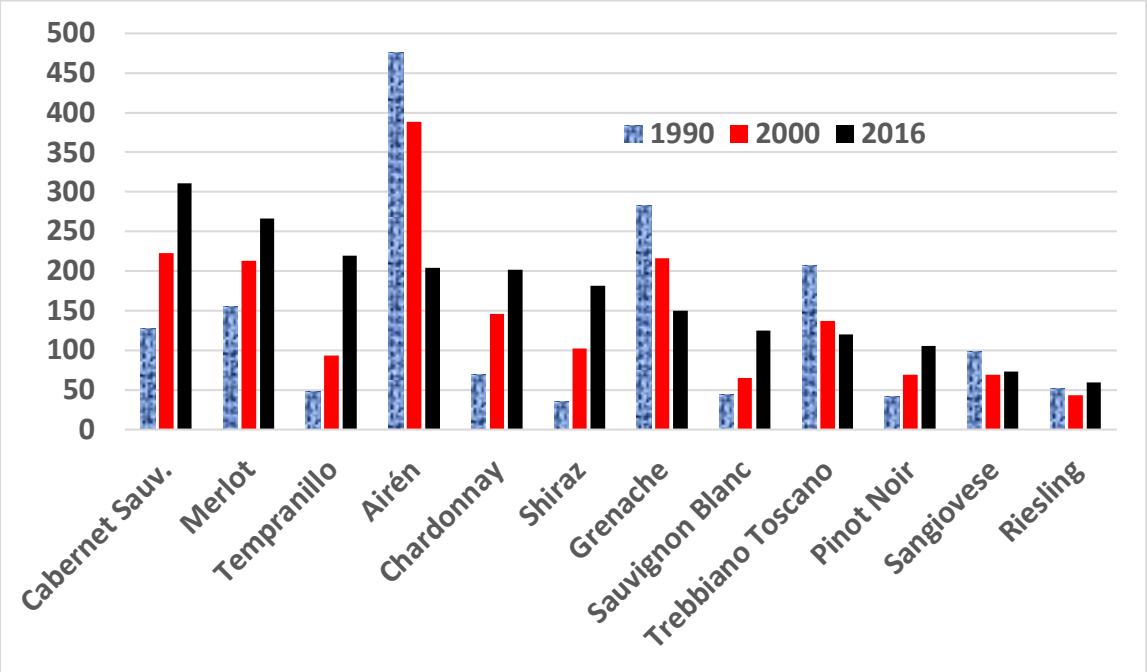
Sources: Anderson and Puga (2023a) and an update of Anderson and Nelgen (2020a).

Table 2: Average growing season temperature by wine region, recent and prospective (°C)

	1997-2017	2041-2060	2081-2100
Coonawarra	17.3	18.7	20.3
Margaret River	18.9	20.3	22.1
McLaren Vale	18.6	19.8	21.3
Barossa Valley	19.0	20.3	21.8
Langhorne Creek	19.2	20.1	21.3
Riverland	21.1	22.4	23.9
Riverina	21.8	23.3	25.3
Murray Darling (NSW+Vic)	21.9	23.2	24.9

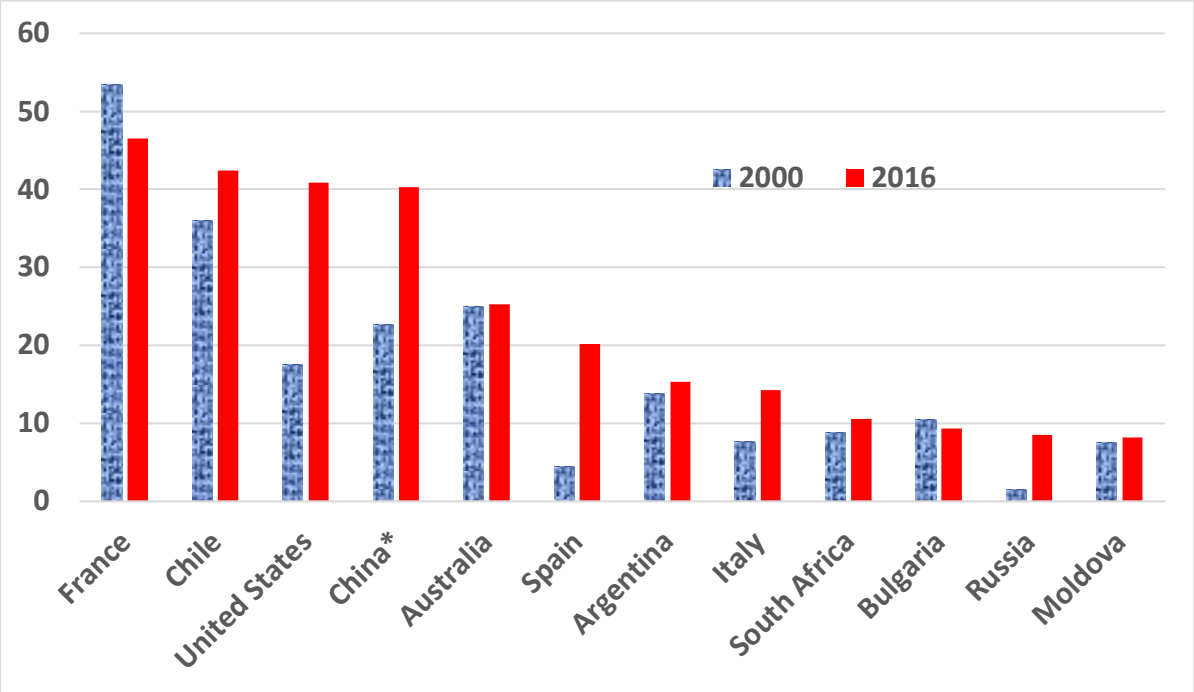
Source: Remenyi et al. (2019).

Figure 1: Global bearing area of world's top dozen winegrape varieties, 1990, 2000 and 2016 ('000 hectares)



Source: Anderson and Nelgen 2020a).

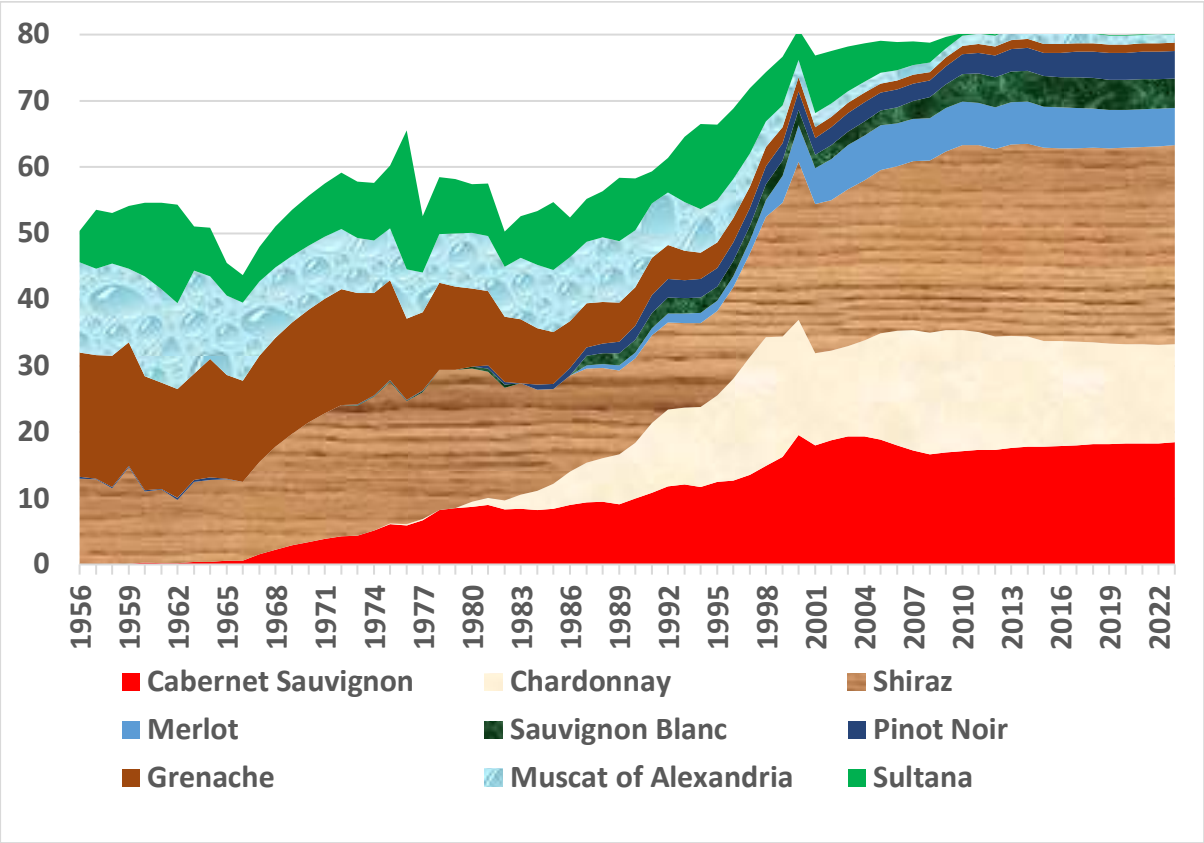
Figure 2: Bearing area of Cabernet Sauvignon, world's top dozen countries, 2000 and 2016 ('000 hectares)



* First China bar is 2010, not 2000.

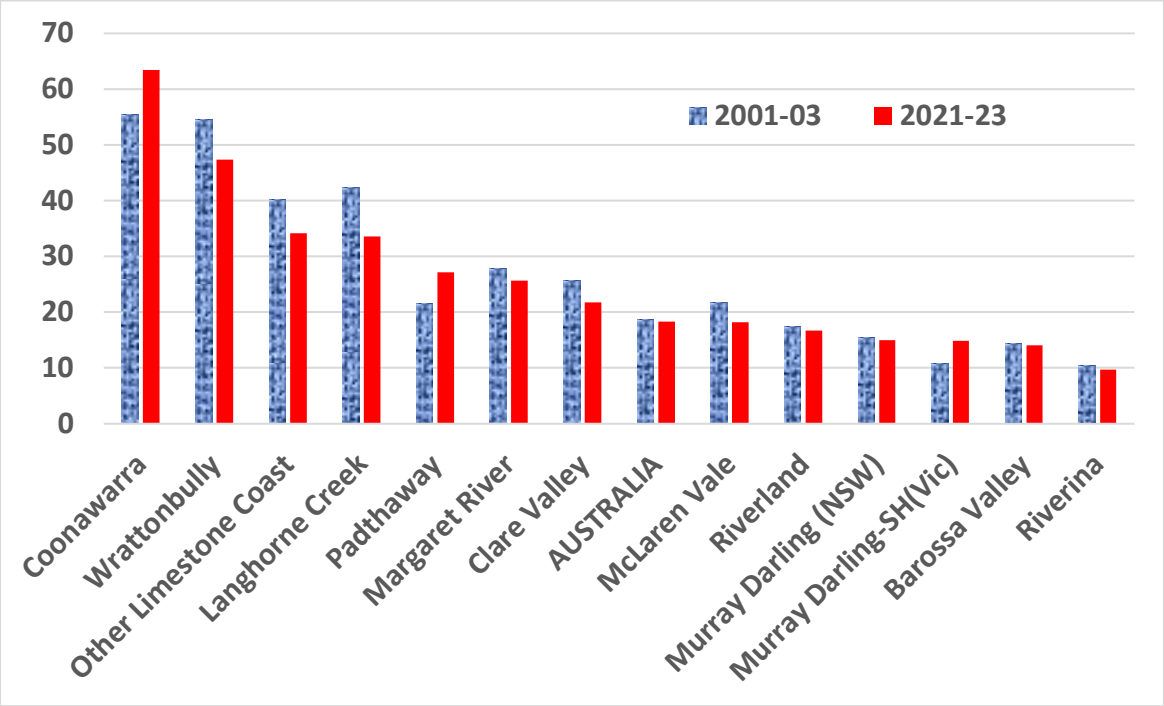
Source: Anderson and Nelgen (2020a).

Figure 3: Shares of total winegrape bearing area, by variety, Australia, 1956 to 2023 (%)



Source: Anderson and Puga (2023a).

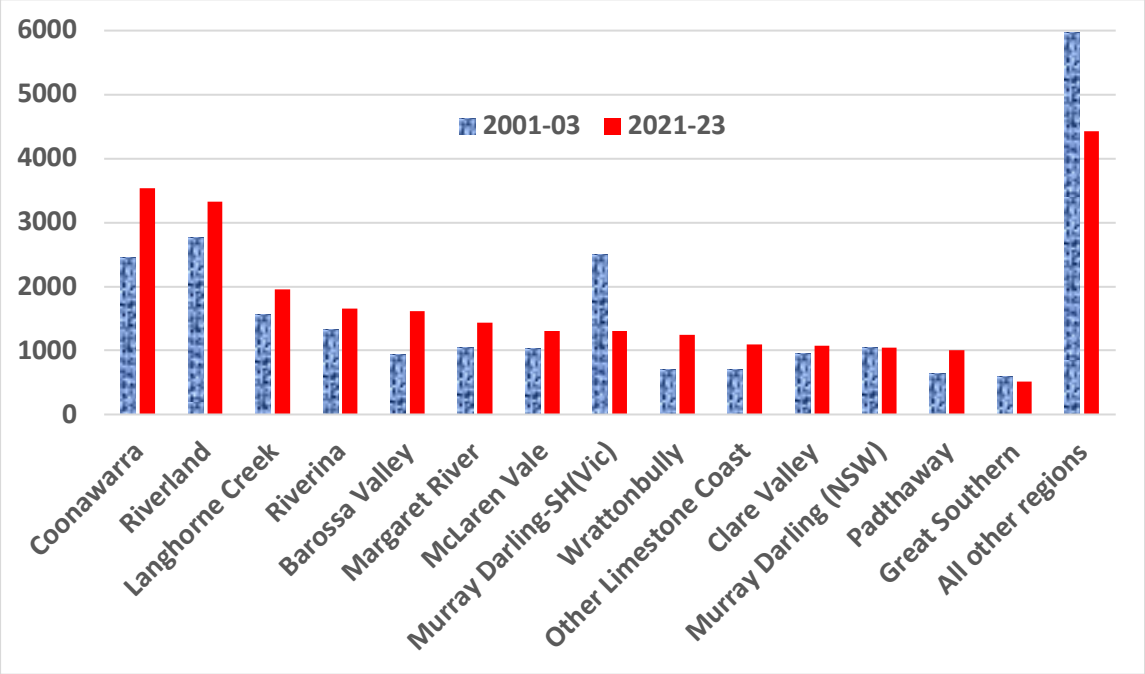
Figure 4: Shares of Cabernet Sauvignon in the bearing area of Australia's key Cabernet-intensive regions, 2001-03 and 2021-23 (%)



Source: Anderson and Puga (2023a).

Figure 5: Cabernet Sauvignon bearing area and crush volume and value of Australia's most Cabernet-intensive regions, 2001-03 and 2021-23 (hectares, tonnes/year and $m/year)

(a) Bearing area (ha)



(b) Crush volume (tonnes/year)

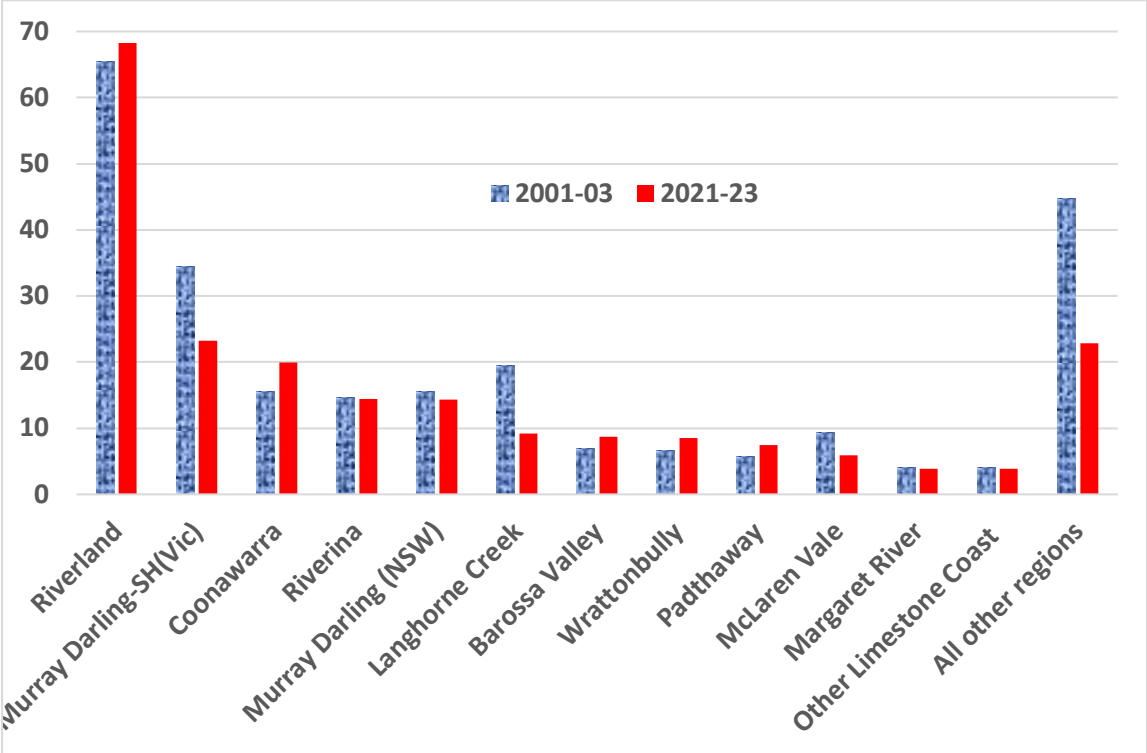
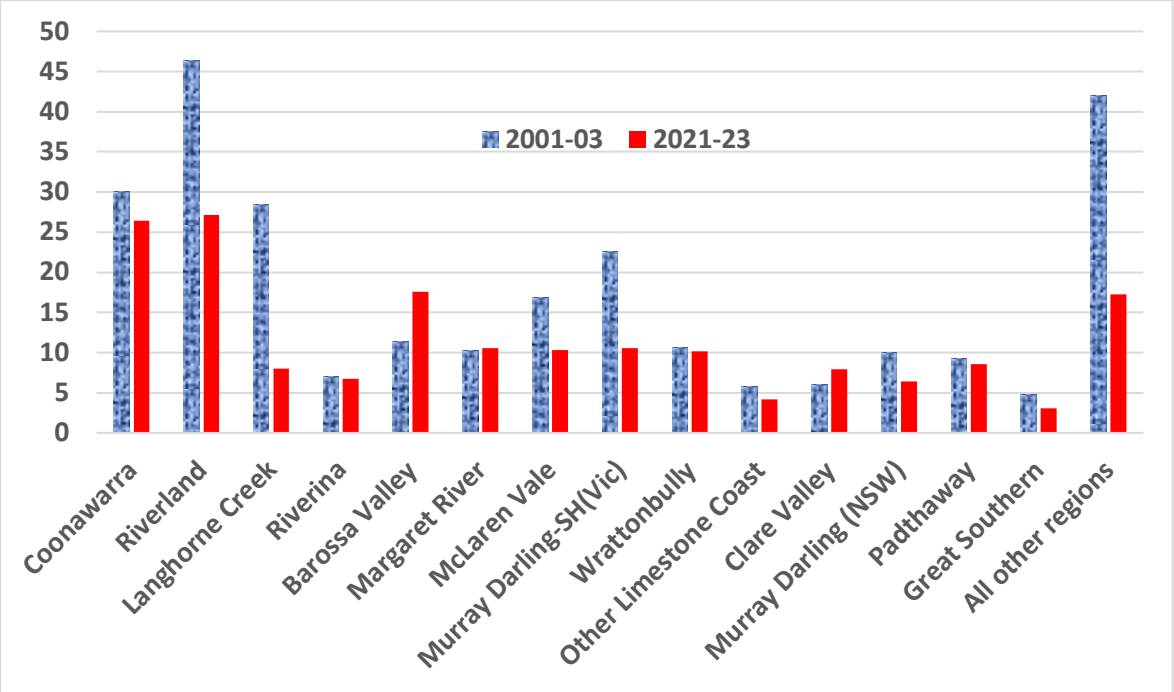


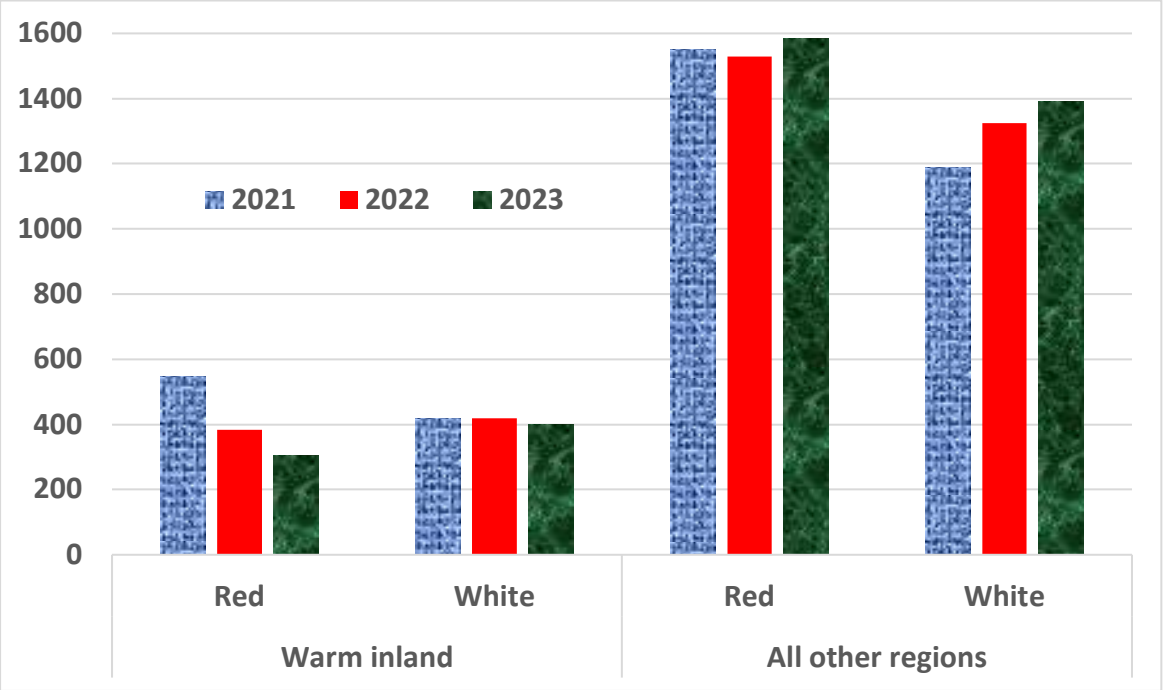
Figure 5 (cont.): Cabernet Sauvignon bearing area and crush volume and value of Australia's most Cabernet-intensive regions, 2001-03 and 2021-23 (hectares, tonnes/year and $m/year)

(c) Crush value ($ million/year)



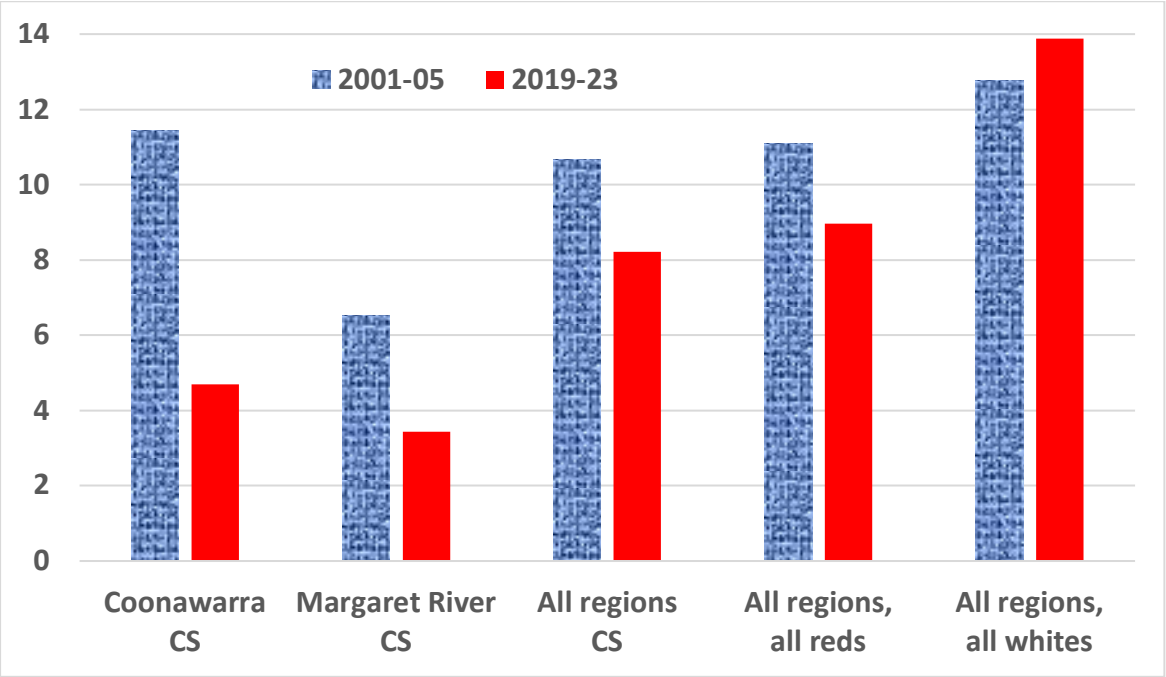
Source: Anderson and Puga (2023a).

Figure 6: Prices of red and white winegrapes by region, Australia, 2021, 2022 and 2023 ($/tonne)



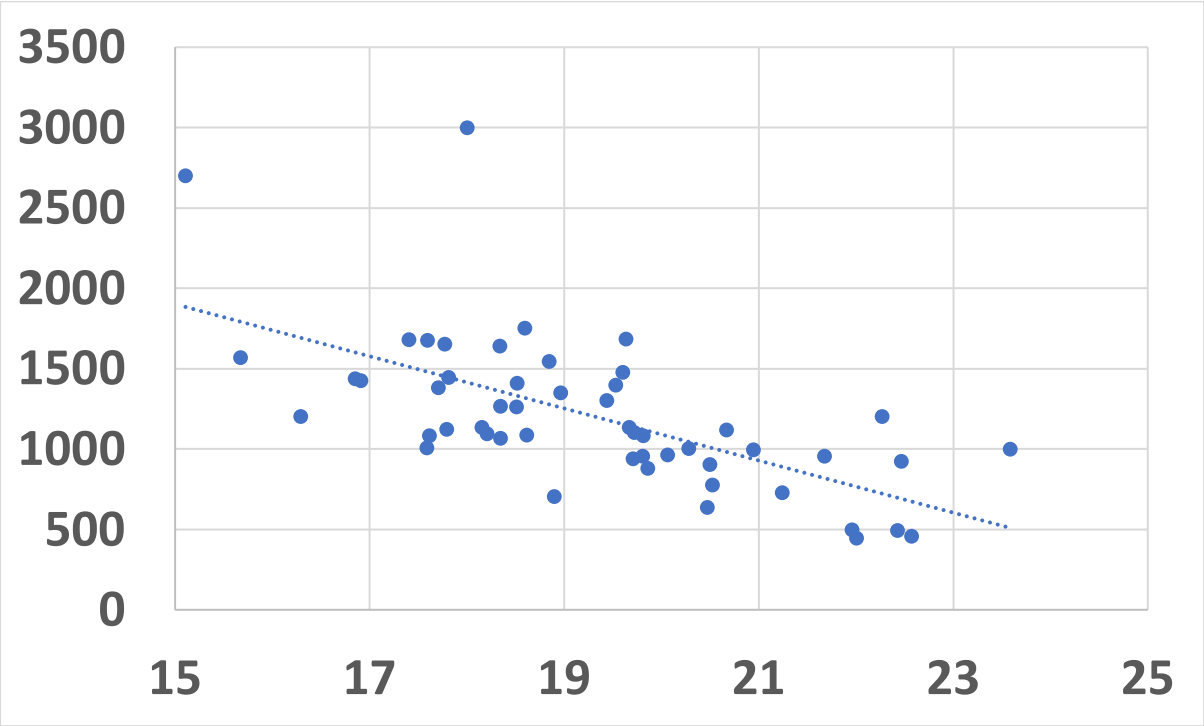
Source: Wine Australia (2023 and earlier).

Figure 7: Average yields of winegrapes by variety and region, Australia, 2001-05 and 2019-23 (tonnes per hectare)



Source: Anderson and Puga (2023a).

Figure 8: Relationship between the price of Cabernet Sauvignon winegrapes and the growing season temperature, Australian regions, averages of vintages 2001 to 2023 ($/tonne on vertical axis and ºC on horizontal axis)



Source: Derived from results in Puga, Anderson and Doko Tchatoka (2022).