



Wine Economics Research Centre

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How much have exchange rate movements reduced competitiveness of Australian wines?

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Because the wine industry has become more globalized in the past two decades, and most countries now have flexible exchange rates, winemakers in most countries are highly exposed to exchange rate movements. They are affected by an appreciation or depreciation not only in their own country's currency but also that of their competitors and their import markets. The extent of direct exposure varies among the main wine-exporting countries partly because of large differences in the share of national production that is exported (shown in Figure 1). However, even those countries with a relatively low export-to-production ratio, such as the United States, are also exposed to the extent their wine markets are open to import competition. And if winemakers are vulnerable, then so too are grapegrowers: even though winegrapes themselves are not traded internationally, their prices are soon adjusted when wine price prospects alter.

Exchange rate changes since 2007 have been large. One reason is that the global financial crisis has affected countries differently, not least because governments have responded to it differently. Another reason is that the international terms of trade (the price of all imports relative to the price of all exports) have changed dramatically for some countries because of rapid industrialization and urbanization of emerging economies in Asia, most notably China. Rapid growth in such natural resource-poor economies boosts the demand for primary products and hence imports from resource-rich economies such as Australia's.

How important have recent exchange rate changes been in altering (a) the competitiveness of the Australian wine industry vis-à-vis the industry in other wine-exporting countries and (b) domestic wine consumption and the demand for imported wine in key markets?

To answer that question requires an economic model of the world's wine markets. We have therefore revised and updated a model we built a decade ago (Wittwer, Berger and Anderson 2003), compiled data on nominal exchange rate changes and inflation rates so as to obtain changes in real exchange rates between 2007 and 2011, and then 'shocked' the model with those (and no other) changes to get estimates of just their effects on various countries' wine markets. This paper provides a non-technical summary of those results. (Technical details and more-extensive results are freely available in Anderson and Wittwer 2012.)

Exchange rate changes, 2007 to 2011

It is clear from column (1) of Tables 1 and 2 that Japan and China (like other rapidly emerging East Asian economies) and natural resource-rich Australia have appreciated their real exchange rates heavily against the US dollar (by 29-35 percent) during the 2007 to 2011 period. Other Southern Hemisphere wine exporters (Chile, New Zealand, South Africa) also saw their real exchange rates appreciate, albeit more moderately (by 9-24 percent). By contrast, the British pound *depreciated* heavily against the US dollar (by 18 percent), while for other West European countries – both wine-exporting and wine-importing – their real exchange rates have remained close to the US dollar.

If there were no other shocks to the world's wine markets over this 2007-11 period, what would those real exchange rate changes lead one to expect? Since Australia has experienced the

largest real appreciation among the wine exporters, its wineries are likely to have been affected most adversely: receiving less AUD for their exports, and facing more foreign competition in their home market. As for wine-importing countries, those whose real exchange rates appreciated most (notably China and Japan) would be expected to import more wine, if all other things were equal, while for those experiencing a real depreciation, most notably the United Kingdom, wine imports would be expected to fall.

Estimated effects of exchange rate changes

The model of the world's wine markets enables us to depict changes in international competitiveness by imposing on it the changes in exchange rates summarized in column (1) of Tables 1 and 2. The impacts on key domestic wine markets of that set of shocks – leaving aside all other influences – are shown in the other columns of Tables 1 and 2, and the impacts on bilateral wine trade are summarized in Table 3.

Not surprisingly, the real exchange rate changes are responsible for declines in grape and wine production in the southern hemisphere where real exchange rates appreciated, and for slight production increases in the United States and Europe where real exchange rates changed relatively little.

Since Australia has had the largest appreciation of all wine-exporting countries, its winemakers and hence grapegrowers are estimated to suffer the largest reduction in domestic prices in real local currency terms from this shock: winegrape and commercial premium wine producer prices are reduced by almost one-third, and super premium wine prices by one-quarter. Associated with that is a 10 percent decline in the volume of Australia's commercial wine

production, and a 6 percent decline in the output of super premium wine. Real prices in domestic currency terms decline in the other Southern Hemisphere countries shown in Table 1 as well, but by between only one- and two-fifths as much as in Australia. Furthermore, real grape and wine prices (again in domestic currency terms) *rise* in the United States and Western Europe, by between 3 and 8 percent, so output is estimated not to have been reduced at all in those regions as a consequence of recent exchange rate movements. Clearly those real exchange rate shocks have been a major contributor to the decline in the international competitiveness of Australian wine producers since 2007.

The trade consequences of that set of real exchange rate shocks also depend on how it affects wine consumption. With lowered prices for both domestic and imported wines, Australian consumption has been boosted by 3 percent because of these exchange rate changes. That is also the proportional change in actual consumption during that period (see final two columns of Table 1), suggesting the net effect on domestic consumption of all other influences over the four years since 2007 was zero.

In Europe's key wine exporting countries and in the United States, by contrast, the rise in wine prices would have reduced domestic wine consumption in the absence of other influences. Other influences evidently were not absent, however, as wine consumption actually rose by 2 percent in the United States over that period (perhaps as the economy there began recovering from the global financial crisis by 2011), and yet it fell by 10 percent in Western Europe's wine-exporting countries (perhaps because those economies have yet to rebound from the financial crisis).

Estimated changes in consumption in wine-importing countries are shown in Table 2. The 18 percent real depreciation of the UK pound against the US dollar on its own is estimated

to have caused the consumer price of wine in that market to rise by nearly 50 percent more than the CPI. This contributes to a decrease in wine consumption of 8 percent, which is very close to the actual decrease over that period of 7 percent. Discrepancies arise when the net effect of economic changes other than in real exchange rates is non-trivial. For example, China's rapid income growth and increasing absorption of western tastes meant that there was a substantial increase in wine demand there between 2007 and 2011, so that observed wine consumption grew by 22 percent over that period despite almost no contribution (0.2 percent) from real exchange rate changes. In the case of nations that went into recession, income deterioration between 2007 and 2011 affected actual consumption markedly. For example, Japan's actual wine consumption declined 2 percent even though real exchange rate changes are estimated to have induced a 14 percent increase.

The negative impact on consumption of the real depreciation in the United Kingdom is bad news for all wine-exporting countries, but the impact is even worse for Australia (which was the 2nd most important supplier in volume terms of wine to the UK market after Italy, and 3rd in value terms after France and Italy). The first set of rows of Table 3 shows the impact on the UK's import volumes by country of origin. Australia and other Southern Hemisphere countries (most notably South Africa) are the standout losers in this scenario, with annual demand for their wine falling by nearly 100 ML half of which is borne by Australia. By contrast, the Old World's annual sales fall by only 10 ML as a consequence of real exchange rate movements between 2007 and 2011, and US sales *rise* by 3 ML.

The modeled reduction in wine consumption in the United States is borne almost entirely by Australian and other Southern Hemisphere producers, whose wines become more expensive than US or Old World wines in the US market. That set of currency shocks reduces the Southern

Hemisphere's share of US total wine consumption from 21 to 18 percent. The pattern of impact on bilateral wine trades with Canada, Germany and other Western European wine-importing countries is not quite as severe, but in all those cases Australian and other Southern Hemisphere producers lose out to US and Old World suppliers.

China remains the market in which wine exporters anticipate the highest rate of import growth in the future. China's renminbi appreciated in real terms more than most major currencies between 2007 and 2011, the effect of which in isolation would be for China to increase its share of global wine consumption. Table 2 shows that real local currency prices of wine in China fell by one-sixth due to observed real exchange rate movements. This induces increased imports of wine from all sources, with similar increases from both the New World and Old World (23 ML including USA versus 21 ML). Those imports substituted for domestic wine, whose consumption is discouraged by the real appreciation: consumption of domestic wine decreases by 42 ML while imports increase by 45 ML.

As for other Asian markets and the rest of the world, Australia loses while the US and Old World wine exporters gain. In aggregate the real exchange rate movements over the 2007-2011 period are estimated to have reduced Australia's annual wine exports by 131 ML. This is larger than the loss to all other Southern Hemisphere exporters of 118 ML, and it contrasts with export gains of 33 ML to the United States and just over 300 ML to Western Europe's key wine-exporting countries. . This reverses somewhat the massive gains of the Southern Hemisphere exporters at the expense of the Old World over the past two decades (Figure 2). It also strengthens the competitiveness of the US wine industry relative to other New World wine producers in both the US and European markets.

Import competition too

Clearly, Australia is the country whose wine trade has been most adversely affected by real currency changes since 2007. But in addition to losing export sales, it has also seen a considerable increase in imports. One-third of the estimated extra imports due to currency changes are from New Zealand, because of the greater real appreciation of the AUD compared with the NZD. The bracketed numbers in Table 4 show that New Zealand's extra penetration of the Australian market is especially strong in the super-premium category (predominately Sauvignon Blanc and Pinot Noir, while France's is in sparkling wine and Italy's is in commercial-premium wines).

We can check modeled outcomes against observed market changes in Australia. Available data indicate that between 2006-07 and 2010-11, the volume of Australia's wine exports fell only slightly, from 768 ML to 727 ML; but, in domestic currency terms, exports dropped from almost \$2.9 billion to just under \$2.0 billion over that period (www.wineaustralia.com). Therefore, the modeled effect of exchange rate changes slightly overstates the drop in the volume of wine exports, but the modeled drop in value is close to the observed change (Table 4).

These results suggest real exchange rate changes go a long way towards explaining why market shares and producer prices have changed so much for some New World wine-exporting countries in recent years, and in particular the improvement in competitiveness of the US and the decline for Australia. This does not necessarily mean that the era in which the New World has gradually increased its share of global wine exports is over, because real exchange rate changes can easily reverse. What it does mean, however, is that if exchange rates are going to continually

be realigned in our ever-more-globalizing world, more wine producers in the New World are likely to benefit from hedging against currency movements in the years ahead.

References

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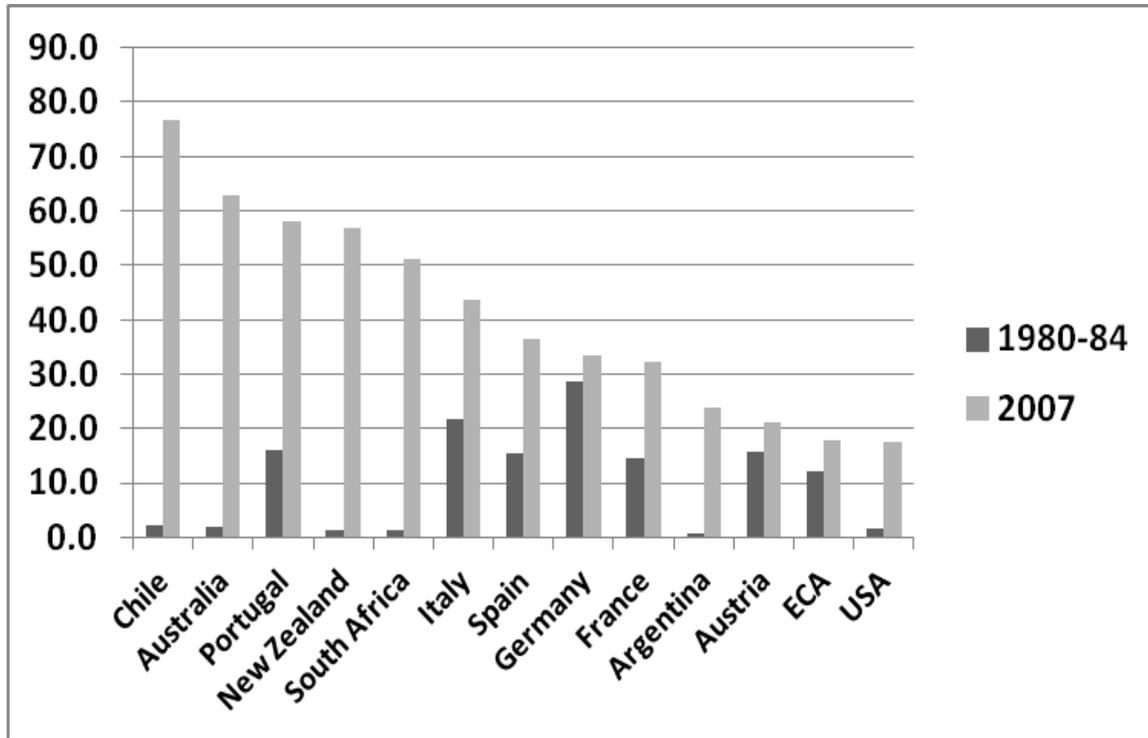
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Figure 1: Export volume as a percent of production volume, 1980-84 and 2007^a

(percent)

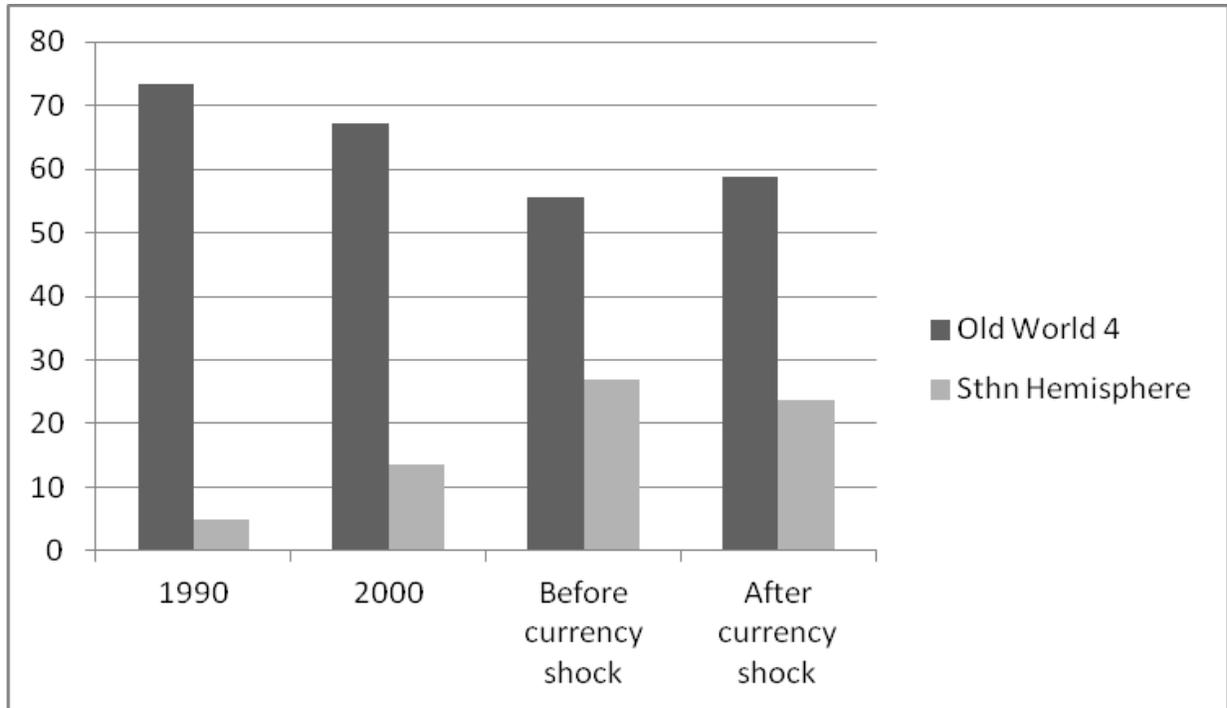


^a For 2007 the Australian number refers to 2006-08, because 2007 was a severe drought year

Source: Anderson and Nelgen (2011, Tables 51 and 120)

Figure 2: Shares in global wine export volume,^a 1990, 2000, and before and after real exchange rate changes during 2007-11

(percent)



^a 'Old World 4' refers to France, Italy, Portugal and Spain.

Source: Authors' model results

Table 1: Changes in real exchange rates and their estimated impact on domestic prices (in real local currency) and quantities of wine, main exporters, 2007 to 2011

	(percent)									
	Real exchange rate	Grape price	Comm. premium wine ^b producer price	Super premium wine ^b producer price	Comm. premium wine ^b volume	Super premium wine ^b volume	Domestic wine consum. volume (model)	<i>Domestic wine consum. volume (actual)</i>	Domestic wine consum. volume (model)	<i>Domestic wine consum. volume (actual)</i>
Western Europe 6 ^a	0	5	7	5	2	1	-1	<i>(-10)</i>	-1	<i>(-10)</i>
United States	0	4	8	3	1	0	-4	<i>(2)</i>	-4	<i>(2)</i>
New Zealand	9	-8	-5	-7	-1	-2	-1	<i>(0)</i>	-1	<i>(0)</i>
Chile	16	-13	-11	-13	-3	-4	-2	<i>(-5)</i>	-2	<i>(-5)</i>
South Africa	23	-8	-4	-1	-9	-7	0	<i>(-1)</i>	0	<i>(-1)</i>
Australia	33	-32	-31	-26	-10	-6	3	<i>(3)</i>	3	<i>(3)</i>

^a France, Italy, Spain, Portugal, Germany and Austria.

^b Commercial-premium wines are defined by Anderson and Nelgen (2011) to be those between US\$2.50 and \$7.50 per litre pre-tax wholesale or at a country's border.

Source: Authors' model results

Table 2: Changes in real exchange rates and their estimated impact on domestic prices (in real local currency) and quantities of wine consumed, main importers, 2007 to 2011

(percent)

	Real exchange rate	Comm. premium wine ^b consumer price	Super premium wine ^b consumer price	Domestic wine consum. volume (model)	<i>Domestic wine consum. volume (actual)</i>
United Kingdom	-18	49	47	-8	(-7)
Other W. Europe ^a	4	-6	-12	-0	(na)
Japan	29	-41	-43	14	(-2)
China	35	-17	-18	0	(22)

^a Other W. Europe = Belgium, Denmark, Finland, Ireland, the Netherlands, Sweden and Switzerland

^b Commercial-premium wines are defined by Anderson and Nelgen (2011) to be those between US\$2.50 and \$7.50 per litre pre-tax wholesale or at a country's border.

Source: Authors' model results

Table 3: Impact of real exchange rate changes on export volume of Australia and other wine-exporting countries, 2007 to 2011

(ML)

<i>Importer:</i>	<i>Exporter:</i> Australia	Other Southern Hemisphere	United States	Western European exporters
United Kingdom	-48	-49	3	-10
United States	-52	-44	0	6
Canada	-8	-10	7	8
New Zealand	-2	0	0	0
Germany	-4	-25	1	1
Other W. Europe ^a	-11	-29	2	40
China	4	14	5	21
Other Asia	-4	0	8	43
Other countries	-6	25	15	197
TOTAL WORLD	-131	-118	33	306

^a Other W. Europe = Belgium, Denmark, Finland, Ireland, the Netherlands, Sweden and Switzerland

Source: Authors' model results.

Table 4: Impact of real exchange rate changes on Australia's wine export and import volumes and values, by wine category, 2007 to 2011

	<u>Volume (ML)</u>		<u>Value (AUS\$m)</u>	
	Exports	Imports (and % from NZ)	Exports	Imports
Non-premium wine	-37	0.8 (50)	-106	0
Commercial-premium ^c	-77	3.2 ^a (31)	-635	6
Super-premium wine	-10	1.5 (85)	-107	12
Sparkling wine	-6	2.9 ^b (3)	-42	3
Total	-130	8.3 (34)	-890	21

^a 32 percent of the increase in commercial-premium wine is from Italy.

^b 39 percent of the increase in sparkling wine is from France.

^c Commercial-premium wines are defined by Anderson and Nelgen (2011) to be those between US\$2.50 and \$7.50 per litre pre-tax wholesale or at a country's border.

Source: Authors' model results