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Kym Anderson

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University of Adelaide, Adelaide SA 5005 AUSTRALIA www.adelaide.edu.au/wine-econ

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Contact details:

Wine Economics Research Centre School of Economics University of Adelaide Adelaide SA 5005 AUSTRALIA

Email: kym.anderson@adelaide.edu.au

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Kym Anderson

University of Adelaide and Australian National University kym.anderson@adelaide.edu.au

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The US-China trade war, and on-going diplomatic tensions between China and Australia, are causing some wine exporters to doubt the wisdom of concentrating their wine marketing efforts in Asia. The fact that Hong Kong's wine imports fell by one-quarter in the first half of 2019 has added to those concerns. So too have Japan's new trade agreements with the US and EU that will phase out Japan's tariff on those countries' wines over the next seven years. This article argues that these short-term influences should not hide the fact that there is huge scope for wine consumption to continue to grow in Asia for decades to come.

Asia's alcohol consumption, and its retail expenditure on each of beer, distilled spirits and grape-based wine, have more than doubled so far this century. In the process, the mix of beverages in Asia's consumption of alcohol has been converging on that in the rest of the world as wine's share rises.

Because Asia's beverage production has not kept up with its expansion in demand, imports net of exports are increasingly filling the gap. This is especially so for wine, notwithstanding the rapid growth in China's wine production. This can be seen from trends in consumption and imports for key Asian countries, and from projections to 2025 using a new model of global beverage markets.

With Asia's relatively rapid income growth and opening up to the rest of the world since the 1960s, one would expect the quantity, quality and world shares of Asia's beverage consumption to grow, along with intra-industry trade in these differentiated products so as to broaden the varieties and qualities available to consumers. One might also expect the mix of beverage consumption in Asian countries to converge on that of other countries with similar per capita incomes if all countries had the same taxes on beverage consumption. Also, one would not expect any country to have a strong comparative advantage in grain-based beverages, since grain is relatively freely traded globally and beer and spirits production technologies are well known and easily replicable. Grape-based wine, however, would be expected to be produced in and exported from mainly those countries best suited to produce nontradable winegrapes (which tend to be in the non-humid, temperate-climate parts of the world's 30°-50° latitude zones) and to be imported by all other (including most Asian) countries.

Newly assembled data (Anderson, Nelgen and Pinilla 2017; Holmes and Anderson 2017) support all of these expectations. This article looks first at Asia's overall alcohol consumption and imports, to reveal how minor is wine in that overall picture. It then focuses on recent growth in the region's wine consumption, production and imports, to show how important is Asia –

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especially China – in global wine import growth. This provides a basis for projecting those markets to 2025, reported in the final section.

Asian alcohol consumption and imports

Rapid economic growth in Asia has drawn attention to developments in its markets for virtually all products, including beverages. Retail expenditure on each of beer, distilled spirits and grape wine has more than doubled so far this century, as has the overall volume of alcohol consumption. As a result, between 1998 and 2018 Asia's share of global alcohol consumption volume has risen from 31% to 46%, and of retail expenditure from a little over 20% to 34% (Anderson 2019).

In per capita terms, recorded alcohol consumption in Asia has grown as average incomes have moved from relatively low to middle and higher levels. For Asia as a whole, the volume of alcohol consumption has grown less rapidly than real income since 1960, and appears to have plateaued in the most-recent decade – not unlike in the rest of the world (Holmes and Anderson 2017). But it is too early to conclude that consumption per capita of any of beer, spirits or wine has permanently peaked for Asia. One reason not to draw such a conclusion yet is that China (by far the most significant country in the region) introduced an austerity drive at the end of 2012 that caused alcohol consumption volume to temporarily plateau from 2013.

Commensurate with its rise in average income relative to the rest of the world, Asia moved from less than one-quarter to two-thirds of the global average recorded volume of alcohol consumption per capita between 1961-63 and 2016-18, thanks especially to a large rise in China.

Over the same period, the beverage mix has altered considerably: the share of spirits in Asia's consumption has fallen from 90% to 70%, beer's share has trebled from 9% to 27%, and wine's has risen five-fold – but only from 0.5% to 2.5%. While the shares of beer and spirits varied considerably between Asian countries in the 1960s, they are more similar now. By contrast, the share of wine was extremely low in all Asian countries in the early 1960s, whereas it is much more varied across Asia now (Figure 1). These changes translate to rises in Asia's shares of the global volume of alcohol consumption from 31% to 67% for spirits, from 4% to 33% for beer, and from 0.1% to 9% for wine between 1961-63 and 2016-18.

The region's transition away from a very strong preference for spirits has occurred gradually over the past half-century. In the rest of the world, the preference for spirits has increased, so the two have converged. Asia's beer and wine shares also have converged on the rest of the world's, but from below. The change in wine's share of total alcohol is particularly striking in that Asia's is rising rapidly whereas the rest of the world's has fallen by nearly two-thirds. Within Asia, it is the more affluent economies of East Asia where the per capita level of and growth in wine consumption have been greatest (Figure 2).

China overwhelmingly dominates Asia's increase in aggregate wine consumption: it accounted for barely half of Asia's wine consumption in 2000, but in recent years it has accounted for more than three-quarters. Equally populous India, by contrast, has a wine market that is less than one-seventieth $(1/70^{th})$ the size of China's, notwithstanding its very rapid income growth during the past two decades.

China's reduction in its wine import tariffs when it joined the World Trade Organization at the end of 2001, from 65% to 20% for bulk wine and to 14% for bottled wines, contributed to the surge in its wine imports over the past dozen years – at a time when India has retained its 150% import tariff on wine. China's share of global wine consumption has risen from less than

2% prior to 2005 to 7% since 2015. As of 2016-18 it was ranked fifth in the world in terms of overall wine consumption volume.

The consumption of beer and spirits in Asian countries has been mostly supplied by domestic production. Net imports of both of those beverages, compared with levels of domestic consumption, have been very minor (2% for beer, 4% for spirits in 2015-17). By contrast, apart from China, almost all grape-based wine consumption in Asia is supplied by imports. Hence Asia's wine imports are far more important to wine-exporting countries than might be suggested by the small share of wine in Asian alcohol consumption or of Asia in global wine consumption. Indeed since early this century, the value of Asia's wine imports net of its exports has exceeded Asia's net imports of either beer or spirits.

Asia's shares of global imports of wine have grown dramatically: in volume terms from 1% in the mid-1980s to 3% in the mid-1990s and 11% in 2017-18, and double those shares in US\$ value terms, from 2% to 6% and 21%, respectively. If intra-European Union trade is excluded, Asia's share of the world's wine import value is now close to half.

Asia's wine production and import growth

Prior to this century, grape wine was consumed only by Asia's elite, and produced only in tiny quantities and mostly in just Japan and – from the late 1980s – China. China is the only Asian country that has been able to significantly expand its area of winegrapes and volume of wine production in response to that rapidly emerging demand. By 2012 it was the world's 5th largest producer of grape wine, up from 17th as recently as 2000. But after 2012 China's wine production growth reversed as some new producers left the industry, so that by 2018 China was ranked 10th in world wine production. That decline in competitiveness was not immediately accompanied by increased wine imports though, because the Chinese leadership introduced austerity and anticorruption measures from December 2012 that dampened high-quality banquets and gift-giving. China's wine import growth returned during 2014-17, but dipped again from 2018, presumably in part as a consequence of the confidence-sapping trade war between the US and China. China's self-sufficiency in wine, measured in volume terms (domestic production as a percent of consumption), fell from its average of above 80% until 2010 to below 50% in 2018 (Figure 3).

By 2018 China represented most of Asia's grape and wine production² and around twothirds of the volume and half of the value of Asia's wine imports. Since 2009 China has overwhelmingly dominated Asia's overall value of wine imports (net of exports) and its growth (Figure 4).³

² Official data suggest Japan also is a significant wine producer, but Anderson and Harada (2018) reveal that most of the wine 'produced' on the east coast of Japan is based on unfermented grape juice concentrate that is imported and converted to alcoholic wine by adding sugar and water, while another fraction simply involves packaging imported bulk wine. A new law ensures that from October 2018 such wines no longer can be labelled 'Product of Japan', a term that is now preserved only for wine made using 100% Japanese grapes. Since 2000, the share of Japan's wine consumption that is produced from Japanese winegrapes has averaged less than 6%.

³ Net imports of wine provide a more useful indicator than gross imports because of the non-trivial entrepôt role of Singapore and Hong Kong. An average of 40% of the volume of Hong Kong's wine imports over the period 2010-18 were re-exported, mostly to China. During that period Hong Kong's (gross) wine imports averaged 12% of the volume and 70% of the value of China's wine imports. Singapore is the biggest Asian importer not shown separately in Figure 4. During 1990-2007 the value of Singapore's net wine imports averaged almost the same as Hong Kong's, but in 2008-18, following Hong Kong's abolition of wine import tariffs, Singapore's annual value has averaged just 15% of Hong Kong's.

East Asia has attracted the attention of wine exporters not only because of the volume growth in imports but also because – unusually for developing countries – those imports include high-quality wines. The average US dollar price of Asia's wine imports has remained close to double the world average even in the decade from the mid-1990s when China chose to import mostly low-priced bulk wine. Over the past three decades, Singapore's import price was more than four times the world average. Furthermore, shortly after removing its tariff on wine imports in February 2008, Hong Kong's average import price rose above Singapore's. Within the decade since that liberalization, Hong Kong has become the world's most important market for ultra-premium and iconic wines.

China's import volume and value shares grew steadily over the decade to 2006, but then accelerated once China began importing more ultra-premium wines for gift-giving and banqueting. Since the mid-1990s China has imported a lot of low-priced wine in bulk (whereas most imports by the rest of developing Asia are in bottle), which it would often blend with wine made from Chinese grapes. This was legally possible because national labeling laws, at least up until new regulations came into effect in 2004, were such that a bottle marked 'Product of China' could have as little as 10% local content. Prior to 2008 the average price of those bulk imports was between 60 and 70 US cents per litre. Low as that price is, the quality of those imports may still have been above the average quality of the local product with which it was being blended. However, between then and 2013 the bulk wine import unit value averaged close to US\$1 per litre, rising well above the average price in the rest of the world. Over that same period the share of bulk wine in the total volume imported by China fell from more than two-thirds to just one-fifth. That contrasts greatly with the trend elsewhere in the world, where bulk wine has accounted for between 35% and 40% of wine import volumes. However, the annual volume of China's bulk wine imports remained roughly the same between 2007 and 2017, at around 120 million litres.

Who supplies China's wine imports

The volatility in the quality of wine imported by China is reflected in rapidly changing shares of various supplying countries in China's volume and value of wine imports. Nonetheless, just six wine-exporting countries have dominated that trade over the past decade. France has been ranked first in both value and volume terms. Australia ranked second in value terms, and equal third with Spain in volume terms in 2011-13 before returning to 2nd place in 2018. Chile has been ranked third in value terms but second in volume terms. The other two exporting countries, Italy and the United States, have had considerably smaller shares than the top four (Table 1). Initial indications are that in the first half of 2019, imports by China from not only the United States but also France have slumped and Australia has taken first place in value terms and Chile has taken first place in volume terms. One contributor to the changing shares of partners in China's imports is preferential tariffs: both Australia and Chile have signed free trade agreements with China in the past decade and now have duty-free access to its wine market.

What lies ahead?

Since Asia is currently consuming less than half the per capita volume of alcohol consumed in the rest of the world, its consumption is expected to keep rising as its economic growth continues. While its mix of alcohols is now much closer to the world average than it was in earlier decades, the share of grape wine in that mix is still very low by world standards (Figure 1). A key question

in contemplating future market growth is the speed and extent to which wine consumption will continue to increase in Asia.

There are plenty of precedents for a rapid preference shift toward wine for countries in which wine historically has been an exotic beverage. In northwestern European countries that are net importers of wine, only a very small share of their alcohol consumption was accounted for by wine in the early 1960s. By 2016-18, though, wine accounted for around one-third of their alcohol consumption.

To get a sense of what might happen to alcohol consumption in Asia relative to the rest of the world, a new model of the world's alcoholic beverage markets, built by Wittwer and Anderson (2019), is helpful. The model draws on their earlier model of the world's wine markets, to which beer and spirits have been added. The model's database is calibrated initially to 2016, based on the comprehensive volume and value data and trade and excise tax data provided in Anderson, Nelgen and Pinilla (2017). The model has been projected forward to 2025, using anticipated growth in aggregate national household consumption (a measure of real disposable income) and population together with anticipated changes in real exchange rates, plus a number of additional assumptions concerning trends in consumer preferences and production technologies.

Concerning preferences, there is assumed to be a considerable swing towards all wine types in China, as more Chinese earn middle-class incomes. For the rest of the world, the long trend preference swing away from non-premium wines and toward commercial and superpremium wines is assumed to continue.

Both grape and wine industry total factor productivity is assumed to grow at 1 percent per year everywhere, while grape and wine industry capital is assumed to not grow net of depreciation. China's production is assumed to rise by one-fifth above its 2016 level, so well above its slumped 2018 level. Of course if China's wine production from domestic grapes were to return to more-rapid growth, its wine imports would increase less than projected below.

Given the uncertainty associated with economic growth in developing Asia due to the US-China trade war, two scenarios are presented as baseline projections to 2025: one with aggregate household incomes growing a little less than in recent years, and the other with those in developing Asian countries growing only two-thirds as fast. If national incomes, populations and real exchange rates change as in the first scenario, then by 2025 China's shares of global beverage consumption are projected to be 2.3 percentage points higher for wine, 4.3 points higher for beer and 3.5 points higher for spirits than in 2016. The shares for the rest of Asia would be up too, but only by about 0.5 of a percentage point. By contrast, shares of countries in Europe, North America and Latin America are projected to be lower in 2025 than in 2016, especially Europe's share of global wine consumption.

Projected changes in the shares of the global value of imports of wine are shown in Figure 5. Again China stands out, suggesting that its domestic wine production continues to grow slower than its wine consumption: its share of global wine import value rises by 3.7 percentage points between 2016 and 2025 in the baseline scenario, and the rest of Asia's rises by 1.2 percentage points. If developing Asia's economies were to grow only two-thirds as fast over this period though, the Asian shares would rise only half as much. Africa is the only other region projected to enjoy substantial growth in its share of world wine imports, while Europe is the region whose share is projected to fall, by 4-5 percentage points for Western Europe and one percentage point for Eastern Europe.

Implications for Australia

It is the sheer size of China's adult population of 1.1 billion – and the fact that grape wine still accounts for less than 4% of Chinese alcohol consumption – that makes this import growth opportunity so substantial. It would be somewhat less if China's own winegrape production increases faster than currently expected, but that is unlikely to be able to reduce the growth in China's wine imports very much, especially at the super-premium end of the quality spectrum.

Of course slower income growth in Asia than assumed even in the slower-growth projection would dampen growth in Asia's wine (and many other) imports. How exchange rates move will be additional key determinants of the actual changes in market shares over the coming years. So will any future bilateral and regional free trade agreements. Should the EU sign an FTA with China, for example, Europe's share in China's wine imports would increase, as also in Japan following the signing in December 2017 of the EU-Japan Economic Partnership agreement (Anderson and Wittwer 2018). Also important are taxes and other regulations on alcohol consumption (Meloni et al. 2019). India potentially could be much more important as an importer of beverages, but very high internal and external trade restrictions and excise taxes on alcohol to date have greatly confined the growth in sales in that populous country.

Finally, there is always the possibility of diplomatic events disrupting trade. That has been happening over the past few months between the US and China, and did also in a small way for Penfold's wines over a few weeks in 2018. Hopefully current tensions will fade rather than escalate and allow trade to continue to grow in the years ahead.

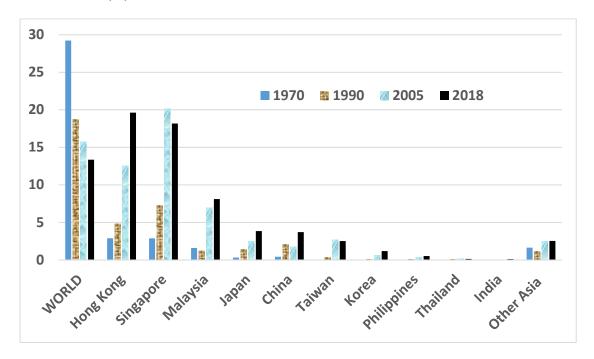
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^{*} This article draws on part of a presentation to the Biennial Conference of the *Singapore Economic Review*, Singapore, 5-7 August 2019. Thanks are due to the Conference, Wine Australia and the University of Adelaide for financial support. Author contact details: Kym Anderson, Wine Economics Research Centre, University of Adelaide, Adelaide SA 5005, kym.anderson@adelaide.edu.au

Figure 1: Wine's share of national volume of alcohol consumption, key East Asian economies, 1970 to 2018 (%)

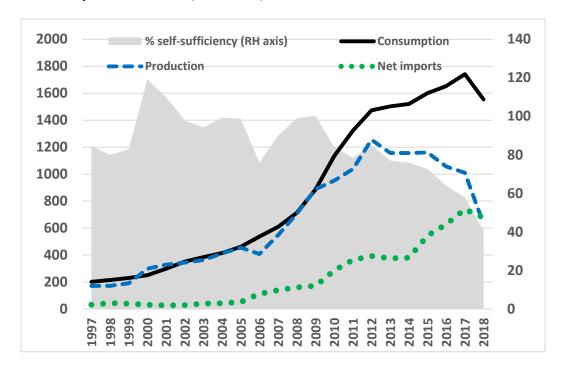


Source: Updated from Anderson and Pinilla (2017).

Figure 2: Wine per capita consumption, key East Asian economies, 2000 and 2018 (litres)

Source: Updated from Anderson and Pinilla (2017).

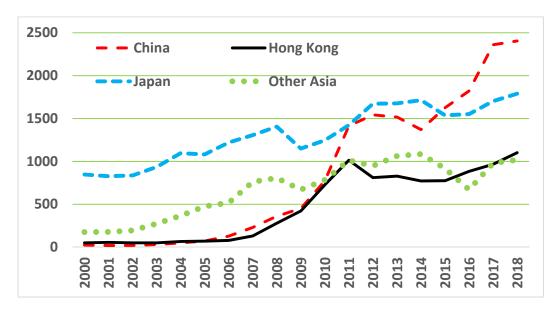
Figure 3: Volume of China's wine production, consumption and net imports, and wine self-sufficiency, a 1997 to 2018 (ML and %)



^a Defined as production as a % of consumption volume

Source: Updated from Anderson and Pinilla (2017) and Anderson and Harada (2018).

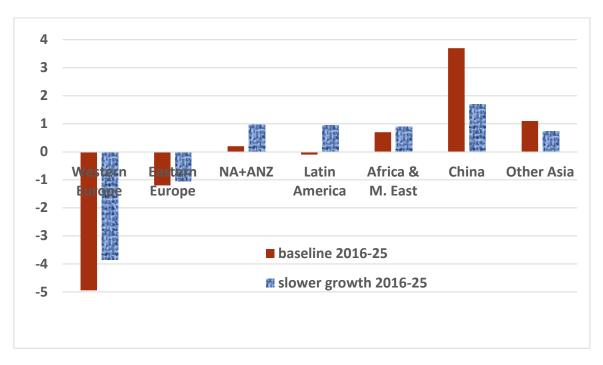
Figure 4: Value of net imports of wine, China, Hong Kong, Japan^a and other Asian economies, 2000 to 2018 (current US\$ million)



^a For Japan, imports of unfermented grape juice are included, which is mostly converted into basic wine. It adds about 6% to the value of Japan's wine imports.

Source: Updated from Anderson and Pinilla (2017).

Figure 5: Projected changes in regional shares of the real value of global wine imports, 2016-25 (percentage points)



Source: Wittwer and Anderson (2019).

Table 1: Sources of China's wine imports by value and volume, 2008 to 2018 (%)

		Value			Volume		
	2008-10	2011-13	2018	2008-10	2011-13	2018	
France	43	49	37	23	36	25	
Australia	18	15	25	17	11	18	
Chile	12	9	9	27	17	11	
Spain	5	7	6	10	17	9	
Italy	6	6	6	6	8	5	
United States	5	5	3	5	4	2	
Others	10	9	14	12	8	30	
Total	100	100	100	100	100	100	

Source: Author's calculations based on data from United Nations (2019).