

# **Global Wine Markets, 1961 to 2009: A Statistical Compendium**

**Kym Anderson and Signe Nelgen**

University of Adelaide Press



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**University of Adelaide Press**



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Freely available as an e-book at [www.adelaide.edu.au/press/titles/global-wine](http://www.adelaide.edu.au/press/titles/global-wine). The annual time series data are also available as an Excel spreadsheet at [www.adelaide.edu.au/wine-econ](http://www.adelaide.edu.au/wine-econ)

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The authors welcome comments on how to improve the quality and coverage of data and the way they have been summarized. Please send feedback to:

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## Technical notes

This section provides definitions of products, indicators and measures used throughout the compendium and an explanation of how national and global wine markets are valued by quality categories.

### *Definitions of products*

*Wine* (FAO CODE 0564; SITC 112.12; Harmonised System Tariff Heading 2204)  
Beverage wines of fresh grapes of all qualities, including still, sparkling, fortified and dessert wines. Beverage wines are sometimes divided into the following three sub-categories:

*Bottled still wine* (Harmonised System Tariff Heading 220421)  
Still grape wines traded in containers of two litres or less (further sub-divided into 'commercial premium' or 'CP' and 'super premium' or 'UP' wines in Sections VI and VII);

*Bulk (or other) wine* (Harmonised system tariff headings 220429)  
Still grape wines traded in containers exceeding two litres (also called 'non-premium' or 'NP' wine in Sections VI and VII); and

*Sparkling wine* (Harmonised System Tariff Heading 220410)  
Grape wines, sparkling.

*Non-beverage wine*  
Grape wines used for distillation and industrial uses.

### *Definitions of indicators*

*GDP*  
Gross Domestic Product, the total market value of all goods and services produced within a country in a year.

*Wine self-sufficiency*  
Calculated as the volume of wine production divided by beverage wine consumption, times 100 so as to be expressed as a percentage.

*Exports of wine*  
Wine exports include re-exports of foreign wine.

*Net imports of wine*  
Wine imports minus wine exports (including any re-exports of foreign wine).

*Wine trade volume (value) specialization index*  
Calculated in volume (value) terms as the ratio of minus the net imports of wine to the sum of wine imports plus exports, so that the index ranges between -1 and +1.

### *Index of revealed comparative advantage in wine*

Calculated in value terms as the share of a country's or region's wine exports in its total merchandise exports divided by the share of world wine exports in total world merchandise exports. Thus the higher a country's index is above (below) 1, the stronger its comparative advantage (disadvantage) in wine, as revealed from the trade data assuming the government has not distorted producer or consumer incentives.

### *Unit value of wine exports (imports)*

Calculated as the value of a country's wine exports (imports) by region divided by the volume of its wine exports (imports) by region, expressed in current US\$ per litre.

### *Index of bilateral wine trade intensity*

Calculated in volume or value terms as the share of country i's wine exports going to country j [ $x_{ij}/x_i$ ] divided by the share of country j's imports ( $m_j$ ) in world wine imports ( $m_w$ ) net of country i's imports ( $m_i$ ). That is, [ $x_{ij}/x_i$ ]/[ $m_j/(m_w - m_i)$ ]. If j is a country group and country i is part of country group j, it is necessary to subtract country i's imports from  $m_j$  (in the numerator of the second expression in square brackets). Where the exporter also is a region, the following adjustments are made to allow for intra-regional trade: (a) exclude only  $1/n^{\text{th}}$  of i's imports from the denominator where n is the number of countries in the region, and (b) also multiply the numerator of the second expression in square brackets by  $(n-1)/n$  in the case where the index is for intra-regional trade.

### *Annual growth rates*

Growth rates are computed using the least-squares method. The least-squares growth rate,  $r$ , is calculated by fitting a linear regression trend line to the logarithmic annual values of the variable in the relevant period. The regression equation takes the form

$$\ln X_t = a + bt + u_t$$

which is equivalent to the logarithmic transformation of the compound growth equation,

$$X_t = X_0(1 + r)^t.$$

In this equation  $X$  is the variable,  $t$  is time and  $a = \ln X_0$  and  $b = \ln(1 + r)$  are the parameters to be estimated, where  $X_0$  is the value in the first year of a series. If  $b^*$  is the least-squares estimate of  $b$ , then the average annual growth rate,  $r$ , is obtained as [ $\text{antilog}(b^*) - 1$ ] and multiplied by 100 for expressing as a percentage. The calculated growth rate is an average rate that is representative of the available observations over the period. It does not necessarily match the actual growth rate between any two periods within the range of the time series. If the series starts later or finishes earlier than the full period shown in a table, the growth rate for that row refers to the shorter period.

### *Definitions of unit measures*

<i>Variable</i>	<i>Unit (per year)</i>
Grape vine area	'000ha
Volume of grape production	kt
Grape yield	tonnes/ha
Volume of grape production for wine	kt
Volume of wine production	ML
Volume of wine consumption	ML

Wine consumed per capita or per adult	L
Beer consumed per capita or per adult	L
Spirits consumed per capita (alcohol content)	lal
Alcohol consumed per capita or per adult	lal
Domestic wine sales	current local currency units and US\$
Volume of wine exports and imports	ML
Value of wine exports and imports	current \$US million
Unit value of wine exports and imports	current \$US/L

### *Explanations of unit measures*

<i>Abbreviation</i>	<i>Definition</i>	<i>Conversion</i>
ha	hectare	10,000 square metres or 2.471 acres
t	tonne	1,000 kilograms or 2,205 pounds
kt	kilotonne	1,000 tonnes
L	litre	1,000 millilitres or 0.2642 US gallons
lal	litres of alcohol	Assumed 12% for wine, 4.5% for beer
ML	megalitre	1 million litres
US\$	US dollar	
US\$m	million US dollars	
US\$/L	US dollars per litre	
1 million	1,000,000	
1 billion	1,000,000,000	

### *Derivation of national and global wine market valuation by quality categories, 2009 (Section VI)*

Estimates are reported, in Section VI, of the shares of national wine markets made up of non-premium (NP), commercial-premium (CP) and super-premium (UP) still grape wines and also sparkling wines, by volume and value. Estimates of national shares of global markets for each of those categories also are reported. Those estimates are derived from limited data and a number of assumptions, as follows.

Commercial-premium still wines are defined to be between US\$2.50 and US\$7.50 per litre pre-tax at the national border. (This is equivalent to around AUD4 and AUD12 per 750ml bottle retail in Australia including all taxes and distributor/wholesaler-to-retail mark-ups of 25% for non-premium wines and 33% for other wines.) This definition is used to get shares of the **volume of domestic consumption** of the three still wine categories, from Euromonitor's volume of sales by price range data. Euromonitor also provides the volume and value (hence unit value or average price) of sparkling wine consumption, so aggregate still wine consumption is derived from total wine consumption less sparkling consumption. The raw data on price ranges for still wine refer only to off-trade, which is helpful as it does not include the additional mark-ups associated with on-trade sales in restaurants, hotels, bars and pubs. However, it requires that we assume the on-trade has the same quality distribution as the off-trade sales. Euromonitor's prices are at the retail level though ( $P_r$ ), so they first need to be reduced to a **pre-tax price at the national border** ( $P_b$ ). This is done using the

following formula and assuming there are no production or export taxes or subsidies or import subsidies:

$$P_b = P_r/(1+t)(1+e)(1+m)(1+g)$$

where  $t$  is the import tariff rate if any,  $e$  is the wine wholesale excise tax rate (in Australia, the Wine Equalization Tax of 0.29),  $m$  is the distributor/wholesaler-to-retail mark-up (assumed to be 0.25 for non-premium wines or otherwise 0.33), and  $g$  is the goods-and-services or value-added tax (in Australia, the GST of 0.1). Once the prices defining the price ranges in Euromonitor's volume of still wine sales are so converted, we use the shares for those ranges to obtain estimates of the shares and volume-weighted average prices ( $P_b$ ) of domestic consumption for the three still wine categories by fitting the share data to a statistical frequency distribution function, from which the volume-weighted average border price ( $P_b$ ) for each of the three categories is estimated. That estimated average price is then multiplied by the estimated volume to generate the **value of domestic consumption** for each of the three still wine categories. We are grateful to Jagath Dissanayake for statistical research assistance in generating these consumption estimates.

United Nations COMTRADE data provide **export and import volumes and values (hence unit values)** for sparkling wine, for still wine in bottles of less than 2 litres, and for other still wine. The latter is assumed to be equal to non-premium still wine. To split data for trade in premium still wine (bottles of less than 2 litres) into its two categories, we assume  $\lambda_x$  and  $\lambda_m$  are the shares of bottled still (<2l) export and import volumes that are commercial-premium (hence  $1-\lambda$  is the super-premium share), and guess the  $\lambda$  value for each country from trade unit value data, consumption shares by price range, and the shares of production exported and consumption imported. We then calculate the prices of commercial-premium and super-premium exports and imports such that the weighted average of the two premium wine types' export or import prices equals the unit value of the country's exports or imports of all bottled still wine (<2l).

Having estimated the trade and consumption volumes and values and the domestic prices of the four grape wine categories, we then assume for sparkling wine that its volume of production = consumption + imports – exports and subtract that from total wine production to get the volume of still wine production. Typically still wine production in any year will differ from beverage consumption that year because some output may be used for industrial or other purposes, and because there may be changes in stocks (positive or negative). The proportional difference between still wine production and beverage consumption of still wine is assumed to be the same for all three still wine categories. That proportion is used to inflate/deflate 'consumption + imports – exports' for each of the three still wine types to obtain estimates for their **volume of production**. These volumes are then multiplied by their respective estimated pre-tax domestic prices at the national border to obtain estimates for their **value of production**.

## Geographical regions and their abbreviations

The compendium separately identifies the 44 most important individual countries in global wine markets plus 7 regional groupings of other countries. It also provides sub-totals for 8 regions (summing to the world) which have the following acronyms:

### *Wine regions of the world*

WEX	Western European wine net exporters
WEM	Western European wine net importers
ECA	Central and Eastern Europe and Central Asia
ANZ	Australia and New Zealand
USC	United States and Canada
LAC	Latin America and Caribbean
AME	Africa and Middle East
APA	Asia and Pacific Islands

### *Individually reported countries in each wine region*

WEX: France, Italy, Portugal, Spain

WEM: Austria, Belgium-Luxembourg, Denmark, Finland, Germany, Greece, Ireland, Netherlands, Sweden, Switzerland, United Kingdom

ECA: Bulgaria, Croatia, Georgia, Hungary, Moldova, Romania, Russia, Ukraine

ANZ: Australia, New Zealand

USC: Canada, United States

LAC: Argentina, Brazil, Chile, Mexico, Uruguay

AME: South Africa, Turkey

APA: China, Hong Kong, India, Japan, (Republic of) Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand

### *Residual country groups*

#### **Other Western European wine net importers (OWEM)**

Andorra, Channel Islands, Cyprus, Faeroe Islands, Gibraltar, Greenland, Holy See, Iceland, Isle of Man, Liechtenstein, Malta, Monaco, Norway

#### **Other Central and Eastern Europe and Central Asia (OECA)**

Albania, Armenia, Azerbaijan, Belarus, Bosnia Herzegovina, Czech Republic, Estonia, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Mongolia, Poland, Russia, Serbia, Montenegro, Slovakia, Slovenia, Tajikistan, Turkmenistan, Uzbekistan

#### **Other Latin America and Caribbean (OLAC)**

Anguilla, Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, Bermuda, Bolivia, British Virgin Islands, Cayman Islands, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Falkland Islands, French Guiana, Grenada, Guadeloupe, Guam, Guatemala, Guyana, Haiti, Honduras, Jamaica, Martinique, Montserrat, Netherlands

Antilles, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, Saint Kitts and Nevis Islands, Saint Lucia, Saint Pierre & Miquelon, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Turks and Caicos Islands, U.S. Virgin Islands, Venezuela

**North Africa (NAFR)**

Algeria, Egypt, Libyan Arab Jamahiriya, Morocco, Tunisia

**Other Africa (OAFR)**

Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Congo (Democratic Republic of), Congo-Brazzaville, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Reunion, Rwanda, Saint Helena, Sao Tome and Principe, Senegal, Seychelles, Sierra Leone, Somalia, Sudan, Swaziland, Tanzania, Togo, Uganda, Western Sahara, Zambia, Zimbabwe

**Middle East (MEST)**

Afghanistan, Bahrain, Gaza, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Occupied Territories, Oman, Palestine, Qatar, Saudi Arabia, Syrian Arab Republic, United Arab Emirates, Yemen

**Other Asia and Pacific Islands (OAPA)**

American Samoa, Bangladesh, Bhutan, Brunei Darussalam, Cambodia, Cook Islands, Fiji, French Polynesia, Indonesia, Kiribati, (Democratic People's Republic of) Korea, Laos, Macao, Maldives, Marshall Islands, (Federated States of) Micronesia, Myanmar, Nauru, Nepal, New Caledonia, Niue, Northern Mariana Islands, Pakistan, Palau, Papua New Guinea, Pitcairn Island, Samoa, San Marino, Solomon Islands, Sri Lanka, Timor-Leste, Tokelau, Tonga, Tuvalu, Vanuatu, Vietnam, Wallis and Futuna Islands

***Memo items: other country groups***

**European Union members as of March 2004 (EU15)**

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom

**European Union members as of January 2007 (EU27)**

Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxemburg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom

**New World wine exporters (NWE8)**

Argentina, Australia, Canada, Chile, New Zealand, South Africa, United States, Uruguay

## Statistical sources

As with the earlier compendia, the key data drawn upon are the United Nations' agricultural and trade sources, namely FAOSTAT and COMTRADE, supplemented by the World Bank for GDP data and Euromonitor International for domestic alcohol beverage consumption and sales data, plus EUROSTAT and various national statistical agencies and wine industry organizations to check individual country data and to obtain winegrape plantings by grape variety. Where possible the latest available revised time series are used to replace former series. There have been some changes of data from previous editions due to changes in data availability and organizational developments affecting data providers. For example, the OIV is now deferring to the FAO on vineyard and wine statistics. Following the listing of key sources, notes are provided below for the various sections of tables.

### Key data sources

UN FAO (<http://faostat.fao.org>)

World Bank (<http://econ.worldbank.org>)

Euromonitor International, country beverage sector briefings ([www.euromonitor.com](http://www.euromonitor.com))

International Organisation of Vine and Wine (OIV), State of the Vitiviniculture World Market Report in 2009, *Note on the World Situation*, March 2010 and earlier issues ([www.oiv.int](http://www.oiv.int))

EUROSTAT (<http://ec.europa.eu/eurostat>)

Australian Bureau of Statistics, *Australian Wine and Grape Industry 2010*, (ABS Catalogue No. 1329.0) and earlier issues. ([www.abs.gov.au/ausstats/abs@.nsf/mf/1329.0](http://www.abs.gov.au/ausstats/abs@.nsf/mf/1329.0))

New Zealand Wine Growers, *Statistical Annual 2009* and earlier issues ([http://wineinf.nzwine.com/statistics\\_outputs.asp?id=89&cid=6&type=n](http://wineinf.nzwine.com/statistics_outputs.asp?id=89&cid=6&type=n))

Wine Institute, California ([www.wineinstitute.org/resources/statistics](http://www.wineinstitute.org/resources/statistics))

South African Wine Industry Information and Systems ([www.sawis.co.za](http://www.sawis.co.za))

Wines of Argentina ([www.winesofargentina.org/en](http://www.winesofargentina.org/en))

Wines of Chile ([www.winesofchile.org](http://www.winesofchile.org))

### Parts I to III:

Data on **grape vine area, yield/ha and production** are derived from FAOSTAT at: <http://faostat.fao.org/site/567/DesktopDefault.aspx?PageID=567#anchor>

To get the **share of cropping land under vines**, grapevine area is divided by the total area of agricultural land (arable land and land used for permanent crops), as derived from FAO's ResourceSTAT database: <http://faostat.fao.org/site/377/DesktopDefault.aspx?PageID=377>

The FAO only publishes total grape production, which includes grapes used for wine-making and grapes used for other purposes. For those countries and regions for which national data were not readily available, **grapes used for wine** data are estimated from the volume of wine production assuming one tonne of wine grapes yields 750 litres of wine. These should be thought of as grape equivalent data in the case of countries such as China that import juice and wine for blending with locally grown product.

Estimates of **winegrape area by grape variety** are from Anderson, K. “Varietal Intensities and Similarities of the World’s Wine Regions”, *Journal of Wine Economics* 5(2): 270-309, Winter 2010 (pre-circulated as Working Paper 0410, Wine Economics Research Centre, University of Adelaide, March 2010). They draw on national sources for the 12 largest winegrape-producing countries which account for all but one-eighth of world winegrape production. Thanks are due to Lachlan Deer and Claire Hollweg for research assistance in generating these shares.

FAO data have been used to update grape **wine production** data with the exception of the United States (which are taken from [www.wineinstitute.org/resources/statistics/article83](http://www.wineinstitute.org/resources/statistics/article83)) and Asian countries. FAO estimates for China appear to be high, reflecting perhaps also rice wine production, so we have used consumption minus net imports of grape wine. For 2008 our estimate of 812ML is close to the production estimate in Euromonitor International’s Country Sector Briefing for China, which mentions 689ML but states that, according to the China Alcoholic Drinks Industry Association ([www.winechina.com](http://www.winechina.com)), this is an underestimate because it excludes the output of hundreds of small producers. Production is very minor in other Asian countries and is assumed to be consumption minus net imports there also.

Previous editions of the Compendium have drawn heavily on **wine, beer and spirits consumption** data from *World Drink Trends*, which was formerly compiled and produced by the UK-based World Advertising Research Centre. That publication has been discontinued. The data source for data from 2004 onwards is Euromonitor International Country Sector Briefings ([www.portal.euromonitor.com/Portal/Magazines/IndustriesHeavy.aspx](http://www.portal.euromonitor.com/Portal/Magazines/IndustriesHeavy.aspx)). Login details are required in order to access the data online. The change of data source has resulted in a reduction in per capita consumption figures for some countries from 2004, notably France and some Eastern European countries. As extreme examples, the Georgian figures fell by two-thirds from 2003 to 2004 due to the change to Euromonitor data (which are considered to be more reliable than the previous estimates). Data are not available for Moldova from Euromonitor, so we assume it has the same per capita consumption for wine, beer and spirits as Georgia from 2007. For the residual regions OWEM, OECA, OLAC, NAFR, OAFR, MEST and OAPA, estimates are obtained based either on the per capita consumption and population data available from the Wine Institute of California ([www.wineinstitute.org/resources/statistics](http://www.wineinstitute.org/resources/statistics)), or on wine production plus net imports. The wine and beer consumption data are converted to litres of alcohol (lal) assuming their alcohol contents are 12 and 4.5 percent by volume, respectively. Non-grape wines are ignored, as they are a small fraction of total alcohol consumption (even though they are a non-trivial share of wine consumption in a small number of countries, as noted at the top of the next page). All consumption data, like production data, are ‘recorded’, that is, no account is taken of informally produced or homemade (legal or illegal) alcoholic beverage production or consumption. The World Health Organization estimates that 29 percent of world alcohol consumption was unrecorded in 2005, and that estimate is 48 percent in low-income countries and 69 percent in South and Southeast Asia, compared with 11 percent in high-income countries (see WHO, *Global Status Report on Alcohol and Health*, Geneva: World Health Organization, 2011, [www.who.int](http://www.who.int)).

Data on **non-beverage wine uses and stock changes** were previously taken from the OIV’s annual “Situation Report for the World Vitivinicultural sector”. However, as they are no longer available from there, an estimate for them is provided from 2000 simply as wine production minus beverage wine consumption plus net imports.

Data from Euromonitor International are used to compile the **shares of off-trade in total wine consumption**. Off-trade refers to wine purchased and consumed off the premises and therefore includes sales from retail outlets including grocery and liquor outlets but not from restaurants, hotels, bars and pubs. Unlike in other tables, the off-trade figures include non-grape wine. Non-grape wine accounts for more than a 5 percent share of wine sales in seven of the featured countries. In 2009 it was higher than 50 percent in China, Japan, South Korea and Taiwan (made up predominantly from rice wine, sake and takju), was one-fifth in Azerbaijan, and was about one-eighth of wine sales in Austria (mostly fruit wines) and Hong Kong.

The **shares of the largest firms in total wine sales** are based on volumes of ‘still light grape wine’ as defined by Euromonitor International.

Data on the **world’s most powerful wine brands** are sourced from Intangible Business (2010), *The Power 100: The World’s Most Powerful Spirits and Wine Brands, 2010*, London: Intangible Business ([www.drinkspowerbrands.com/The-Power-100-2010.pdf](http://www.drinkspowerbrands.com/The-Power-100-2010.pdf)).

**Population** data by country was sourced from the FAO (<http://faostat.fao.org>). The share of the population that is adult (greater than 14 years of age) is from the World Bank. The World Bank website also provides **GDP** data at current prices and **exchange rates**, measured in current US\$ (<http://databank.worldbank.org/ddp/home.do?Step=12&id=4&CNO=2>). Taiwan’s GDP, population and exchange rate data are from the Taiwan’s Council for Economic Planning and Development publication, the *Taiwanese Statistical Data Book 2009* ([www.cepd.gov.tw/encontent/dn.aspx?uid=6984](http://www.cepd.gov.tw/encontent/dn.aspx?uid=6984)) and the Taipei Foreign Exchange Market Development Foundation ([www.tpefx.com.tw/htm/02ntd02.htm](http://www.tpefx.com.tw/htm/02ntd02.htm)).

The World Bank’s World Development Indicators website also provides gross national income (**GNI**) data converted to current international dollars using purchasing power parity (PPP) exchange rates as part of its International Comparisons Program. An international dollar has the same purchasing power as a U.S. dollar has in the United States. GNI is the sum of value added by all resident producers plus any product taxes (less subsidies) not included in the valuation of output plus net receipts of primary income (compensation of employees and property income) from abroad.

#### **Parts IV and V:**

The UN Commodity Trade Statistics database (COMTRADE) was used to obtain bilateral **value and volume of trade** data for all countries (whose ratio provides the unit value, or average price). COMTRADE distinguishes sparkling wine, still wine in bottles of less than 2 litres (split into commercial- and super-premium as detailed at the end of the Technical Notes section above), and other still wine (assumed to be equal to non-premium still wine). COMTRADE also is the source for the sum of all merchandise trade (<http://comtrade.un.org>). Taiwan’s trade data are from <http://cus93.trade.gov.tw/ENGLISH/FSCE> and <http://wits.worldbank.org/wits/>.

The bilateral trade matrices are based on export data, but they would be very similar if they have been based on import data.

## Parts VI and VII:

The **shares of national and global wine markets by quality** are derived for 2009 as explained at the end of the Technical Notes section above, using data from Euromonitor International plus several assumptions. The methodology used has allowed the comprehensive estimation of the value of wine production and consumption at pre-tax prices and also of expenditure in total, per capita and per adult at tax-inclusive retail prices, and as a percentage of current (2009) national income. It does so in such a way as to also provide the national and regional shares of global markets for non-premium, commercial-premium, super-premium and sparkling wines separately and in combination. The raw data on price ranges for still wine refer only to off-trade, which is helpful as it does not include the additional mark-ups associated with on-trade sales in bars and restaurants. However, it requires that we assume the on-trade has the same quality distribution as the off-trade sales.

**Wine and other alcohol taxes** are very complex and thus difficult to summarize, because the excise and import taxes (but not VAT/GST) are typically per unit of beverage or of alcohol, and hence vary with the price and alcohol content of each beverage. They have been converted to an average ad valorem equivalent (AVE) rate as of 2008 using various assumptions in a paper by Kym Anderson, “Excise and Import Taxes on Wine vs Beer and Spirits: An International Comparison”, *Economic Papers* 29(2): 215-28, June 2010 (pre-circulated as Working Paper 0510, Wine Economics Research Centre, University of Adelaide, March 2010). Thanks are due to Jayanthi Thennakoon for research assistance in generating these AVEs.

## Part X:

The production and export volume data used to generate Tables 266 to 269 and Charts 49 and 50 are from the following sources: Tables 1 to 3 of Pinilla, V. and M.I. Ayuda, ‘The Political Economy of the Wine Trade: Spanish Exports and the International Market, 1890-1935’, *European Review of Economic History* 6: 51-85, 2002, Tables 1.2 and 4.5 of Simpson, J., *Creating Wine: The Emergence on a World Industry, 1840-1914*, Princeton NJ: Princeton University Press, 2011 (forthcoming); the Appendix in A.D. Francis, *The Wine Trade*, London: Adam and Clark Black, 1972; Great Britain Central Statistical Office, *Annual Abstract of Statistics*, London, various issues; and various tables in Mitchell, B.R., *International Historical Statistics*, London: Macmillan, 1998.

In cases where information is not available, or where a number is not applicable for a particular country, na is inserted. Lack of information is mainly a problem for small and poor countries, especially ones that are not wine-focused. Their omission thus has almost no impact on the regional and especially global aggregates reported in those tables.

## Authors' preface

This latest edition of our *Statistical Compendium* is the ninth version to be prepared since 1998. It has been compiled by the new Wine Economics Research Centre of the University of Adelaide. It updates data to 2009 but also revises past data, and it expands on earlier editions in a number of ways. For example, we now separately identify the new 27-member European Union as a group (as well as the former EU15) plus eight Asian emerging economies (Hong Kong, India, Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand) in addition to China and Japan. We also include more than 50 new tables to cover such items as the volume and value of wine markets by price category; excise and import taxes; per capita and per adult expenditure on wine; the off-trade share of domestic sales; the shares of the largest firms in national markets and globally; the most powerful wine brands globally; the shares of different winegrape varieties in national and global production; and some pre-1940 wine production and trade data. This edition is thus a major improvement over previous editions, which were compiled by the Centre for International Economic Studies (CIES) at the University of Adelaide, and by the Centre of Policy Studies (CoPS) at Monash University, as follows:

- Rothfield, J. and G. Wittwer (2007), *The Global Wine Statistical Compendium, 1961 to 2006*, Adelaide: Australian Wine and Brandy Corporation for CIES and CoPS.
- Wittwer, G. and J. Rothfield (2006), *The Global Wine Statistical Compendium, 1961 to 2005*, Adelaide: Australian Wine and Brandy Corporation for CIES and CoPS.
- Wittwer, G. and J. Rothfield (2005), *The Global Wine Statistical Compendium, 1961 to 2004*, Adelaide: Australian Wine and Brandy Corporation for CIES and CoPS.
- Wittwer, G. and Anderson, K. (2004), *The Global Wine Statistical Compendium, 1961 to 2003*, Adelaide: Australian Wine and Brandy Corporation for CIES and CoPS. Re-published in 2009 by the University of Adelaide Press.
- Anderson, K. and Norman, D. (2003), *Global Wine Production, Consumption and Trade, 1961 to 2001, A Statistical Compendium*, Adelaide: Centre for International Economic Studies.
- Anderson, K. and Norman, D. (2001), *Global Wine Production, Consumption and Trade, 1961 to 1999, A Statistical Compendium*, Adelaide: Centre for International Economic Studies.
- Berger, N., Spahni, P. and Anderson, K. (1999), *Bilateral Trade Patterns in the World Wine Market, 1988 to 1997*, Adelaide: Centre for International Economic Studies.
- Berger, N., Anderson, K. and Springer, R. (1998), *Trends in the World Wine Market, 1961 to 1996*, Adelaide: Centre for International Economic Studies.

We acknowledge and thank the Grape and Wine Research and Development Corporation and the University of Adelaide's Wine2030 Network for assisting with funding the project to produce this Compendium. We are also grateful to Nicola Chandler and Ernesto Valenzuela who helped with the initial updating of consumption and trade data, respectively, for this edition, to Jagath Dissanayake and Jayanthi Thennakoon for research assistance with Parts VI and VII, respectively, to Lachlan Deer and Claire Hollweg for research assistance with winegrape varietal data compilation, and to former co-authors of previous editions for the earlier time series.

While the authors have made every effort to ensure the accuracy and currency of information within this compendium, we accept no responsibility for information which may later prove to be misrepresented or inaccurate, or for any reliance placed on the information by readers.

## **Wine's globalization: the next phase**

A decade ago, a conference was held in Adelaide to examine the rapid globalization of the world's wine markets over the previous decade.<sup>1</sup> One clear indicator of that phenomenon was the growth in the volume of exports as a percentage of world wine production, which rose from 15 to 25 percent between 1988-90 and 2001. For the big four European wine exporters that ratio rose from 20 to 30 percent, which was impressive by historical standards; but for the New World exporters (North and South America, South Africa, Australia and New Zealand), the ratio rose from just 3 percent in the late 1980s to 20 percent by 2001.

It was obvious at the time of the 2001 conference that the dramatic entry onto the international stage by New World producers presented a serious challenge to producers in Europe. It was also argued then that the rapid expansion in New World vineyard plantings in the latter 1990s/early 2000s would cause New World regions also to face challenges once grapes from those new plantings were added to the stocks of wine available for sale – especially if there was not a reversal in the previous two decades' decline in global wine consumption (see Chart 6).

With a second decade of rapid globalization of the industry now behind us, it is again an appropriate time for an evidence-based assessment of recent developments as participants move forward. The volume of exports as a percentage of world wine production has continued to rise, from 25 to 32 percent between 2001 and 2009. For the big four European wine exporters it rose by one-fifth (from 30 to 35 percent), while for the New World exporters it doubled (rising from 20 to 40 percent between 2001 and 2007), before falling back to 37 percent in 2009 (Table 51 of this compendium). For Australia and Chile those shares are now more than two-thirds (Chart 25). Thus in both Old and New World wine-exporting countries, production is growing faster or falling less than consumption (Chart 28).

Looking from the importing countries' side, between 2000 and 2009 the share of wine consumption supplied by imports has risen, from 28 to 37 percent globally and from 23 to 34 percent for the European Union (Table 52). This is partly because, within Europe, the countries where wine consumption is declining (rising) fastest are the countries that are net exporters (importers) of wine (Charts 14 and 15).

Australia led the export charge for ten or so years from the mid-1990s, but in more-recent years it has been New Zealand and Argentina that have enjoyed the fastest export growth (Table 63 and Chart 29). That, together with continued high growth for Chile and South Africa, has ensured the New World continues to take global market share from the Old World (Tables 56 and 69). Indeed, when intra-EU trade is excluded, the New World has almost caught up with the EU-15 in export value terms, and has surpassed the EU-15 in volume terms (Charts 27 and 24).

But this second decade of rapid globalization of the wine industry has several characteristics that distinguish it from the 1990s. One is that export volume growth more than

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<sup>1</sup> Summaries, including projections to 2005, were subsequently published in Anderson, Norman and Wittwer (2003), and more detailed analyses of developments in each of the world's main wine regions up to that time, by authors from those regions, are available in Anderson (2004).

halved for the Old World, dropping from 3.8 percent in the 1990s to 1.8 percent in the most recent decade, whereas for the New World it dropped by only two-fifths, from 18 to 11 percent (Table 117). However, the unit value of wine exports in the past decade hardly changed for the New World, whereas it grew by 7 percent per year for the four big European exporters, which meant the value of the latter's exports grew almost as fast as for the new World (Tables 127 and 132).

Second, exports peaked for Australia in 2007, and growth has slowed in New Zealand too as marketers in both countries struggle to dispose of burgeoning stocks in the wake of the North Atlantic recession and their appreciating currencies (Table 90). Local prices of grapes and especially of vineyard and winery assets have plummeted even more than unit values of their exports, which fell between 2007 and 2009 alone by one-quarter in nominal US dollar terms (Table 79). Australia's appreciating currency (thanks to its boom in mining exports to China) also encouraged import growth. That meant its wine self-sufficiency fell from its peak of 337 percent in 2004 to 236 percent by 2009, its revealed wine comparative advantage index almost halved, and its wine trade specialization index fell from 0.9 to 0.66 (Table 228). By contrast, New Zealand's boom, which began several years later than Australia's showed no sign of slowing by 2009: its wine self-sufficiency rose from around 80 percent early in the century to 240 percent by 2009, and its revealed wine comparative advantage index more than trebled as did its wine trade specialization index in value terms – both of which now exceed Australia's (Table 229).

Third, the sleeping giant of the Southern Hemisphere was abruptly awakened when Argentina abandoned its peg to the US dollar and devalued by two-thirds at the end of 2001. The share of Argentina's production that is exported rose from 4 to 29 percent by 2008 (Table 51). Initially the quality of those exports was low, but it has been rising rapidly: the unit value of exports almost trebled between 2003 and 2010, from US\$0.88 to \$2.67 per litre, and the share of bulk in total wine exports halved, falling from 52 to 26 percent (Tables 79 and 41). By contrast, the shares of Australian, New Zealand and United States wine exports shipped in bulk has roughly quadrupled between 1999 and 2010 (Table 41). New World exporters as a whole now ship a slightly larger share in bulk than does the EU-15, in contrast to the turn of the century when the New World share was half the Old World's (Chart 37). That partly reflects decisions by large firms to bottle cheaper wines at their destination rather than in a distant country of origin, but it is also a symptom of a rising over-supply situation in Australia and New Zealand.

Fourth, this past decade has seen the wine market grow rapidly in the region where it had its smallest presence, namely Asia. While wine's share of recorded alcohol consumption has not changed much from 18 percent globally, its share in Asia has doubled over the past decade, albeit to just 3 percent. The growth has been concentrated mostly in China, where it trebled to 3.7 percent (Table 31). That resulted in China's aggregate consumption almost quadrupling over the decade, so that it now dwarfs consumption in the rest of Asia including Japan (Chart 18) and by 2009 almost equalled United Kingdom consumption (Table 186). On a per adult basis, wine consumption volume growth has been equally impressive in the much less populous but more affluent economies of Hong Kong, Korea, Malaysia and Singapore, while lacklustre in Japan (Charts 16 and 17).

Fifth, even more striking is the rapid emergence of Asian countries as importers of super-premium wines. By 2009, seven of the 15 top-ranked countries in terms of unit value of wine imports were Asian (Table 202). The growth in their average price of imports has varied though, being highest for China and Hong Kong but also for Japan (Chart 17). Particularly

notable is the rapid decline in the share of Asia's wine imports that are bulk (Chart 38). As a result, Asian imports are now very much higher priced than those of traditional importers (compare Charts 35 and 36).

Sixth, China (and to a far smaller extent India)<sup>2</sup> is not only expanding wine consumption but is also planting more vines and expanding domestic wine production (in part with the help of imported juice and bulk wine). Certainly China's wine self-sufficiency has fallen, but only marginally, from around 93 percent a decade ago to 85 percent by 2009 (Table 54). Whether the one percentage point difference over the past decade in the annual rates of growth of China's wine consumption and production will increase is a moot point, but many exporting countries are focusing their marketing efforts increasingly on China in the apparent hope that it will. One sign that has encouraged them is the growth in the quality of China's wine imports: their unit value doubled in the second half of the past decade (Table 83). Another encouraging sign is the rapid rise in China's share of global income (Table 87), which is expected by many international agencies to more than double over the next two decades. As of 2009, France held the dominant position as a wine exporter to both China and India, followed by Australia (Tables 148 and 149).

Seventh, China is not the only former planned economy to see a surge in interest in wine. Over the past decade the share of wine in Ukraine's recorded alcohol consumption has, like Asia's, doubled and Russia's has gone up by one-half such that in both countries wine accounted for one-tenth of their recorded alcohol consumption in 2009 (Table 31). Domestic wine production also has grown there, but even so net imports accounted for 33 percent of Russian consumption in 2009 compared with only 15 percent in 2000 (Table 53). Meanwhile, production in the rest of Eastern Europe and the former Soviet Union has declined, so Russia is buying more from other regions (Table 143 and Chart 30). The unit value of its imports is rising only one-third as rapidly as that for China though (Table 83). As a result, China's share of the value of world wine imports has risen from one-tenth to almost four-fifths of Russia's since 2001 (Table 70).

Eighth, there remains a wide spectrum of expenditure per adult on wine – and even more so on different quality categories of wine (Chart 19 and Table 165). There is only slightly less discrepancy when those average expenditures for different countries are expressed as a share of national income (Chart 20 and Table 166).

Ninth, alcohol consumption patterns of traditional wine-exporting countries and those of neighbouring countries within Europe are converging (Charts 14 and 15). The former was only 46 percent above the latter in 2009, compared with 220 percent above in 2000 (Table 21). The growth in wine demand in non-traditional wine-consuming countries of Europe and Asia has contributed to a halting of the rapid decline in wine's share of recorded alcohol consumption globally, which halved between the 1960s and 1990s (Chart 11). The contrasting changes in that share for individual countries are clear from Chart 13.

Just as the differences within Europe are diminishing, so too are the differences between the Old World and the New World. The specialization of the New World in exporting commercial-premium wines and of the Old World in exporting super-premium

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<sup>2</sup> India's wine production and consumption grew at a faster rate than China's during the past decade, but its wine market is still barely 1 percent of China's (Tables 13 and 16). India's imports have been growing at more than 25 percent a year over the past decade, but from a low volume and remain hampered by a 150 percent import duty.

wines (and consuming mainly non-premium wines) is less obvious now (Tables 156 and 160). One aspect that is still very different, though, is the extent of firm concentration within each country group. Wine is the least concentrated of the beverage and tobacco industries. According to Rabobank, the world market share of the three largest firms in the late 1990s was just 6 percent in the wine industry compared with 35 percent for beer, 42 percent for spirits, and 78 percent for soft drinks (Chart 26 in Anderson and Norman 2003). Certainly mergers and acquisitions within the global wine industry are happening continually, and between 2003 and 2009 the shares of global sales held by the four, and 30, largest firms both rose by almost one-third. Even so, in 2009 the three largest wine firms held only 7 percent of global sales, and the next five need to be added before the share rises to one-eighth (Table 35). That firm concentration is predominantly in the New World, where the majority of sales are by the four biggest firms. By contrast, in the Old World barely one-eighth of sales are from the four largest firms (Table 33).<sup>3</sup> Even in this respect, though, there are signs of change: more large firms are emerging in Europe, and the large publicly listed firms that dominate the New World (see Table 34) are coming under shareholder pressure to be sold as profitability falls following rapid expansions there.<sup>4</sup> On the one hand, it is conceivable that buyers for some of those wineries will be long-established family companies. On the other hand, the buyers might be large Asian firms seeking security of supply for their domestic market and/or rapid acquisition of technological and marketing knowledge.

As of 2009, global wine sales, totalling the equivalent of 30 billion 750ml bottles, had a wholesale pre-tax production value of US\$98 billion. That represents an average price of \$3.27 per bottle wholesale pre-tax, or US\$5.50 retail including taxes (Table 161).

As defined here, commercial-premium still wines account for two-fifths of global sales in both value and volume terms. Super-premium still wines are estimated to account for one-third of the global still wine market's value but only one-tenth of its volume, whereas non-premium wines account for just one-seventh of global wine in value terms but almost half in volume terms. Sparkling wines make up the rest, accounting for 13 percent by value and half that share by volume (Tables 167 and 168).

France is still the clear leader in super-premium still wine, supplying two-fifths of the value of the world's exports, which is more than three times the share of second-ranked Italy at 17 percent (Table 177). Perhaps more surprising is that New Zealand is ranked third in this category, with 9 percent, ahead of Portugal (6 percent) and Australia and Spain (each 3 percent). South Africa and Argentina trail behind Chile, Germany and the United States.

It is Italy that has the number one rank in terms of value of exports of commercial-premium wines, ahead of France, while Spain is first ranked in non-premium wine exports,

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<sup>3</sup> This difference in firm concentration between the Old World and the New World was evident as early as the 19<sup>th</sup> century, for a complex set of environmental, technological and institutional reasons (Simpson 2011).

<sup>4</sup> Fosters, Australia's largest beverage company, spun off its wine business in May 2011 under a new name, Treasury Wine Estates. Fosters had made a series of acquisitions during the first half of the past decade, including paying US\$1.1 billion for Beringer, a Californian label, in 2000 and culminating in the purchase of Southcorp (owner of Penfolds, Lindemans and Rosemount) in 2005 for A\$3.2 billion. Having cost around A\$7 billion to put together, a private-equity firm reportedly offered to pay between A\$2.3 and 2.7 billion for it in September 2010. Its valuation on 10 May 2011, the first day of listing as Treasury Wine Estates, was just A\$2.15 billion. In December 2010, Champ, a Sydney-based private-equity firm, took an 80% stake in the Australian and British wine business of New York-based Constellation Brands (which Constellation had paid around A\$1.9 billion for in 2003), in a transaction valued at just A\$290 million.

well ahead of Italy and then France. Together these three account for half the commercial-premium and non-premium global still wine export value, and over 70 percent of super-premium still wine. The next-ranked commercial premium exporters are Australia, Chile, the United States, Argentina and South Africa, and the same ordering (apart from Argentina) applies to non-premium exports (Chart 44).

Those export shares are not closely related to value of world production shares, because of the large differences across countries in the extent to which national production is exported and consumption is imported. Most notable is the jump to first place for the United States followed by France and then Italy in the value of world super-premium still wine production. The super-premium shares of Australia, Spain and New Zealand are similar but well behind Italy's (Chart 41).

Global import value shares are best sub-divided into European and then others. In the super-premium still wine category, Switzerland, Belgium-Luxembourg and the United Kingdom take the first three places, before there is a step down to the next three Europeans, namely Denmark, Germany and France (Chart 45). The United States and Japan have even larger shares of super-premium imports by value though, at 17 and 12 percent, respectively; and Canada is slightly ahead of the United Kingdom in this category (Chart 46). The East Asian markets were still rather minor as destinations for super-premium wine as of 2009, although they have grown very rapidly since then. The United Kingdom and United States are almost equally dominant importers in the commercial-premium category, and with Germany account for just over half of the value of those world imports. As for non-premium, China is the only significant East Asian importer: by 2009 it was ranked 11<sup>th</sup> but has almost certainly joined the top ten list since then.

The shares of super-premium consumption values are dominated by the United States, followed by France. The next three are Japan, Canada and Switzerland, and then Germany, Denmark and the United Kingdom. As for commercial-premium wines, the United States and then the United Kingdom are ranked highest, followed well behind by France and then China, Germany and Canada (Charts 42 and 43).

Those value share rankings are at pre-tax prices. They would be somewhat different if they were at tax-inclusive prices, since tax rates differ across countries. Furthermore, in all but the few countries such as Australia that have only ad valorem taxes, tax rates differ across the quality categories because volumetric excise and import taxes raise the retail price more on lower-quality wines. Taxes are especially high in developing Asia other than Hong Kong, Scandinavia, Turkey, and the United Kingdom and Ireland, and are very low in Europe's wine-exporting countries (Tables 178-180). And there is a virtual ban on wine (and other alcohol) consumption in many Islamic countries. If the ad valorem equivalent tax rates were as low everywhere else as in Europe's wine-exporting countries, the latter's dominant shares of global wine consumption would be much lower.

Clearly the world's wine markets have been changing just as dramatically in the past decade as they did in the previous decade. Producers in the Old World are continuing to adjust, with some segments doing well (Bordeaux super-premium exporters) while others are still over-supplied and require diversion to non-beverage uses (Table 18). In the New World, growth in output has slowed for some in the wake of stock build-ups and price declines (Australia and New Zealand), but recent growth in the value of exports by others (most notably Argentina but also the United States) has been strong. Over the next decade eyes will be on Asian import demand growth, but there will be new or expanding suppliers there also.

Finally, it is worth noting that the current wave of globalization over the past two decades is not a first for the world's wine markets. There was an earlier wave, from 1860 to 1913, which was due not only to a decline in international trade costs that boosted most merchandise trade during that period, but also to vine diseases. The spread of phylloxera devastated French vineyards in the last third of the 19<sup>th</sup> century, and along with mildew damage led to France becoming a major importer of wine from the 1980s (Tables 267 and 269). Export-oriented viticulture boomed in North Africa as a consequence, thanks also to the French colonies in the region being provided with highly preferential access to the French market. By the early 20<sup>th</sup> century Algeria accounted for about 40 percent of global wine exports and, with Tunisia, for 6 percent of global wine production (Tables 266 and 267). North Africa's share of world production was still 6 percent in 1961-64, when its share of world exports was a huge 54 percent – before dwindling to less than 4 percent in the 1980s and almost nothing from the 1990s (Chart 23). That region certainly will not regain its earlier share of world exports now that the New World has so strongly exerted itself, but nonetheless wine could become again a major rural export industry for those Islamic states if they chose to rejoin the world's wine markets.

A summary of the change in the extent of globalization of the world's wine markets can be seen by graphing the national shares of world production and export volumes cumulatively. The less-steep the rise in such a graph and the larger the number of countries required to get near to 100 percent, the more globalized the industry could be considered. Charts 49 and 50 indicate the changing situation from 100 years ago (just prior to World War I, after a half-century of dramatic globalization) to the early 1960s and then to the most recent five years for which global data are available. According to those two measures, the industry is certainly more globalized now than it was at the end of the previous major wave of globalization. Yet the wide dispersion across countries in wine expenditure per adult (Charts 19 and 20) and in taxes on wine consumption (Charts 47 and 48), and the fact that both the Old World and the New World are still exporting only about one-third of their wine production, suggests there is plenty of scope for globalization to progress further in the future.

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