

**Mid, Low- and No- is all go:
Moving toward lower-alcohol beers in Australia**

Kym Anderson

School of Economics and Public Policy, University of Adelaide, and
Crawford School of Public Policy, Australian National University
kym.anderson@adelaide.edu.au

16 December 2022

Prepared for the Brewers' Association of Australia.

Contents

| | Page |
|---|------|
| Executive summary | iii |
| Introduction | 1 |
| Background: Impacts of new technologies, globalization and increasing affluence on global beer markets | 3 |
| Responding to the demand for lower-alcohol beers | 7 |
| The role of excise taxation of beer, wine and spirits | 10 |
| Prospects for lower-alcohol beer consumption | 11 |
| References | 15 |
| Appendix: Estimating Australian beer consumption from ABS and ATO data | 17 |
| Figures | 18 |
| Tables | 33 |

Executive summary

Another quiet revolution is taking place in the alcoholic beverage markets of the world's higher-income countries: a trend toward lower-alcohol and even no-alcohol beverages (hereafter Lo-No for short). This new trend adds to the long-term consumer trend in affluent countries of substituting quality for quantity in many of their purchases (**premiumization**) which, in the case of alcoholic beverages, has been driven in part by a desire for a healthier lifestyle. More-affluent consumers also desire a greater variety than is typically available from large producers of regular products, which has led to a **craft beverage revolution**. Both desires – for lower-alcohol beverages and for a greater variety of quality offerings – are driving the Lo-No revolution.

This report reveals that Australian brewers are leading the way in building the Lo-No beer categories. This latest trend adds to the beer industry's already massive contribution to lowering national alcohol consumption, which began with consumption per adult (over 14 years) steadily declining from its peak in 1975 of 6.3 litres of alcohol (LAL). Now just 3.0 LAL per year are consumed as beer.

Brewers have been much quicker than distillers and winemakers in responding to this new Lo-No demand. That has involved fine-tuning or creating new techniques, developing new products, and mass-marketing them successfully. This development is still in its infancy globally, with the share of no-alcohol, low-alcohol and mid-strength beers respectively accounting in 2021 for just 2.0%, 0.7% and 1.0% of the volume of global beer sales. However, that 3.7% total is nearly double the world's 2.0% of a dozen years ago.

Australia is among the world's leaders in the low- and mid-strength categories. The share of those two categories in Australia was 23% in the 1990s and 28% in the 2000s, compared with only 1% in the rest of the world, and by 2021 those shares were over 30% for Australia compared with 1.7% for the world.

Australia's share of global sales of low-alcohol beer was a massive 30% in the 1990s. True, it had fallen to 20% in the 2000s, and it is now less than 5% as a consequence of this category growing in the rest of the world.

Most striking is Australia's share of global consumption of mid-strength beer, which grew in the 2000s to more than half. It too has since declined, but is still one-fifth of global sales of that category. No-alcohol beer is now also beginning to grow, but as yet is only 1% of beer sales in Australia. Meanwhile, the share of full-strength beer in Australia's total beer sales volume has fallen from 80% in the 1990s to 75% in the 2000s and to 69% by 2021. Of that, one-seventh is craft beers.

Only Germany and Sweden have had higher low-alcohol shares than Australia and only Sweden has a substantial share like Australia (around one-quarter) of mid-strength beer.

Had the mix of beers in 2012-13 remained unchanged in the subsequent decade, instead of there being some substitution to lower-alcohol beers, an additional 3 ML of alcohol (4% more) would have been drunk in 2021-22.

Looking ahead, the total volume of Australian beer consumption is not expected to grow much over the next five years, but the low-alcohol share is projected to grow by one-ninth, and the no-alcohol share to almost double.

The no-alcohol category has the highest potential to grow because of its current small base in Australia as compared with some other OECD countries. Its growth to date has been mainly at the expense of higher-alcohol beers, but as it becomes better known it may also attract some alcohol abstainers and some drinkers of wine and spirits who see it as a substitute for occasions when they seek a non-alcoholic beverage. Potentially that growing demand could be met with imports but, as/when local firms develop more/better no-alcohol beers, they should be able to pick up on that expanding domestic sales opportunity – and may even get to also export some, for example to New Zealand.

So-called ‘light’ beers, which were developed in the 1980s, may continue to be displaced by new and more-flavoursome low-alcohol beers, in which case sales of the latter can be expected to grow considerably faster than the overall low-alcohol beer category in Australia. How rapidly that share grows locally will depend though to a considerable extent, as in the recent past, on developments in the mid-strength category.

The mid-strength beer category has enjoyed very rapid growth in Australia over the past three decades, its share rising from 10% in the 1990s to 17% in the 2000s to more than 25% in recent years. This is remarkable, as mid-strength is not a significant beer category in any other country except Sweden (where there is a concessional VAT (12% instead of 25%) on beer up to 3.5% ABV). Yet further growth in this category is possible given that standard full-strength beer still accounts for three-fifths of Australian beer sales, and that these days mid- and full-strength beers are seen as relatively close substitutes in terms of flavour. Should the excise duty on mid-strength be lowered relative to that on full-strength beers, that would open a further opportunity for this category. Moreover, this category’s remarkable local success suggests there may be scope for expanding its exports if and when more beer consumers abroad follow Australia’s increasing trend toward lower-alcohol products.

Consumers are likely to continue to seek premium beers as they reduce their alcohol consumption and look for a greater range of styles and flavours. Craft microbreweries have shown what is possible, and consumers have responded enthusiastically. Most of these craft products are full-strength beers, but their current share is only one-sixth of the share held by standard full-strength beers. Hence there remains plenty of scope to reduce that gap further.

Meanwhile, the standard full-strength beer segment is likely to continue its slow decline. Smaller firms still focused only on this category and without a major point of difference will be under pressure to be absorbed or to close, while the largest ones will continue to broaden their offering beyond this category as they strive to maintain their appeal to consumers.

These trends could be even stronger if Australia’s alcohol excise duty regime were to be reformed. Currently that regime discriminates somewhat in favour of lower-alcohol beers, but much more so for tap than for packaged products. It also taxes wine on an *ad valorem* basis, meaning the effective tax rate is lower the lower the wholesale price of a wine. Should Australia choose to simplify that regime to nudge consumers toward lower-alcohol products, it could have non-trivial impacts on beer sales. In particular, **if the tax on packaged low- and mid-strength beers was lowered to a common rate set at, say, the current one for mid-strength beer on tap, that would encourage more drinkers of full-strength packaged beer to switch to one with lower alcohol.**

Introduction

Another quiet revolution is taking place in the alcoholic beverage markets of the world's higher-income countries. As incomes have grown and with it a greater desire for healthy living, there has been a consumer tendency to move from quantity to quality of beverages since the 1970s. That has been reflected in the premiumization of the beer, wine and spirits as per capita alcohol consumption has fallen. The more-recent revolution – again driven by consumers wishing to make healthier choices by lowering alcohol consumption – involves low- or no-alcohol (Lo-No) beverages that attempt, through new technologies, to have an equally attractive flavour profile as their full-strength counterparts. This was applauded at the most-recent World Health Assembly, which proposed in its Global Alcohol Action Plan ways to increase the uptake of Lo-No beverages (WHO 2022, p.21).

In the case of beer, a category labelled 'light' developed from the late 1970s (see [Light beer - Wikipedia](#)), for beers that had fewer calories. The calorie reduction is accomplished primarily by reducing the carbohydrate content but also by reducing the alcohol content. Because many are less flavoursome and more watery than regular beers, they had only limited appeal to traditional beer drinkers. The new Lo-No beers thus contrast with those earlier 'light' beers by explicitly aiming to be as flavoursome as full-strength beers, and to offer alcohol content ranging from 2% to 3.5%.

The Lo-No revolution, being part of a broader consumer trend that is focused on healthier lifestyles, is already becoming mainstreamed for at least two reasons. One is that, like the premiumization trend, it does not require consumers to abandon the social role that beverages play. Secondly, it is a win-win financially for both consumers and producers in jurisdictions such as Australia's where beverage excise taxes are higher for higher-alcohol beers. Brewers also benefit from providing lower-alcohol beers insofar as it is acknowledged by health groups that lobby for less indulgence in alcohol.

This quiet revolution, along with the premiumization and low-calorie trends, adds to four other beverage consumer trends over recent decades:

- the **consolidation of breweries** into a small number of large corporations, initially within countries and then also through cross-border mergers and acquisitions,
- the embracing of **globalization** in the form of more export orientation and thus rising shares of national beer consumption provided by imports,
- the associated **convergence of beverage mixes** (national shares of beer, wine and spirits in total alcohol consumption) toward the global average, and
- the beer and spirits **craft revolution** as wealthier consumers seek out – in addition to higher quality – greater variety in their purchases than was available from the mass production of homogenous products by large brewers.

The purpose of this report is to examine recent trends in the lower- and no-alcohol sub-sectors of the beer market in Australia, their impact on the national volume of alcohol consumed in the form of beer, the recent and prospective role of product innovation and tax

changes on those developments in Australia as compared with other pertinent countries, and the projected growth of the lower- and no-alcohol beer categories.

By way of background, the report begins with data on the earlier developments in global beer markets mentioned above, so as to put in perspective the emerging Lo-No revolution. It then focuses on recent consumer sales in Australia in the full-strength, mid-, low- and no-alcohol beer categories, the forces behind those trends, and recent producer responses in Australia to these changes in demand. That is followed by a summary of the way in which the country's alcohol excise tax regime affects beverage sales.

The report reveals that Australian brewers are leading the way in growing the Lo-No beer categories, thereby further contributing to reducing alcohol consumption in this country and thus globally. The report concludes with a discussion of prospects for the Lo-No categories of Australia's beer market over the next few years and for the government to add to the noted contributions of the beer industry toward lowering alcohol consumption (e.g., via reform to the alcohol consumer tax regime).

Background: Impacts of new technologies, globalization and increasing affluence on global beer markets

Several beer ‘revolutions’ have occurred over the past dozen or so decades. Understanding the drivers behind them and the consequent beer market outcomes provides a sound background for understanding the latest (Lo-No) revolution. Five that are highlighted below are national brewer consolidation, the emergence of multinational breweries, premiumization of beverages, convergence of the national mixes of alcoholic beverages consumed toward the global average, and the desire for a greater variety of styles of beverages. The latter is manifesting itself in two ways: a rise in the share of imported products in national consumption, and the craft beverage revolution. The Lo-No revolution is a natural extension of these developments.

National brewer consolidation to reap economies of scale

Since the late 19th century the world has seen a long period of consolidation and homogenization in the world’s beer-brewing sector, thanks to technological progress that generated large economies of scale in lager production as compared with ales (Tremblay and Tremblay 2005). Promotion too became more cost-effective for larger firms in the 20th century, especially via mass media such as television. Hence the number of breweries in each country shrank dramatically during the 20th century (Poelmans and Swinnen 2017; Swinnen and Briski 2017).

More brewer consolidation through cross-border mergers and acquisitions

Then globalization improved opportunities for the most-efficient brewers to reap further economies of scale in production and marketing through cross-border mergers and acquisitions. By 2021, the world’s top ten breweries accounted for two-thirds of the volume of beer sold (Table 1(a)). The share of those multinational firms was just under one-half in 2012, one-quarter in 2002 and one-eighth in 1992. Beer is rapidly catching up with soft drinks in terms of the top two firms’ share of world sales volume. That share rose from 27% in 2012 to 37% in 2021 for beer while remaining steady at 63% for carbonated soft drinks. Increasing concentration is even more obvious for the top four firms, whose global share by 2021 had reached 50% for beer (Figure 1).

Consolidation has been occurring equally rapidly in Australia. Three of those top ten global beer firms (Asahi, Kirin and A-B InBev, according to Plato Logic) have increased their shares of Australia’s beer sales volume from 67% in 2016 to 71% by 2021, the next biggest being a much smaller family firm (Coopers) with just a 4% share, up from 3% a decade earlier (Table 1(b)).

Intensifying import competition

With globalization’s lowering of the costs of trading internationally, plus the concentration of production in the hands of ever-fewer multinational brewers, cross-border trade in beer is becoming more common and adding to competition for local brewers everywhere. Between 1991 and 2021, the share of imports in national consumption of beer rose from 4% to 9%

globally and from 0.6% to 9% in Australia – where the share of production exported fell from 4% in 1991 (during the Foster’s craze) to below 2% now (Plato Logic 2022). That decline in Australia’s international competitiveness in beer contrasts with wine where the share of Australian production exported is around three-fifths and of consumption imported is one-fifth, both up from less than 3% in the early 1980s (Anderson and Pinilla 2021).

The increasing consumer preference for quality at the expense of quantity

As incomes grow, people tend to consume more of many things, but as they reach satiation they gradually switch their spending on some goods toward improving the quality rather than quantity of their purchases. This is evident in recorded alcohol consumption, which peaked globally in the mid-1970s at 5 litres of alcohol per adult (LAL per person over 14 years) per year before declining to 4 litres by the 1990s and even less in the present decade. Wine consumption globally has declined most, followed by spirits consumption, while global beer consumption has remained steady at around 1.5 LAL (which is a little over 30 litres of beer per adult per year).

Meanwhile, the average quality of consumed beverages has been rising. This is evident, for example, in the replacement of non-premium bulk or large-container wine with commercial premium wine in 750ml bottles, and in the blossoming of the single malt category of whisky. In the case of beer, Plato Logic (2022) estimates that the share of consumption that is premium rose from 28% in 2011 to 43% in 2018 in Australia and from 24% to 37% in the US.¹ Globally it began to rise above 12% from 2010, and by 2021 had reached 20% (Figure 2). Australia’s annual growth rates are shown in Figure 3, with growth in demand for premium beers reducing the extent of overall beer consumption decline. This tendency is shown for 80 countries for the years 2001–2015 in values of total alcohol consumption per capita, which in Figure 4(a) are plotted against aggregate expenditures per capita in 2015 US dollars. The inverted U-shape that prevails for volume does not for value of alcohol consumption as national aggregate expenditure rises. When the data are confined just to beer expenditure, it too rises with aggregate expenditure as consumers have premiumized their purchases (Figure 4(b)).

Reasons for the decline in the volume of alcohol consumed, in addition to health and lifestyle changes, include ever-stricter drink-driving laws and random breath testing of car drivers, and changing gender roles. In Australia, younger people (Generations Y and Z) are the most inclined to engage in excessive/binge drinking (Srivastava and Zhao 2010; Srivastava, Yang and Zhao 2022), yet in recent years that cohort is choosing to drink less. Furthermore, the share of people 18 years and older whose annual alcohol consumption exceeded lifetime risk guidelines fell from 22% in 2004-05 to 16% by 2017-18 (AIHW 2022).

Convergence in the mix of alcoholic beverages

Those global averages hide much diversity across countries in their alcohol consumption mix. Countries that in the 1960s were focused strongly on spirits consumption have switched more toward beer, and those that were focused strongly on beer consumption have switched more toward wine (Table 2 and Figure 5). Both sets of countries now have a mix of alcohol consumption more similar to the world average (Figures 7 and 8 in Holmes and Anderson

¹ ‘Premium’ is defined by Plato Logic (2022) as those beers (including craft beers) whose price is at least 15% above that of the mainstream beers in each country.

2017). That is, there has been a convergence in national alcohol mixes as consumer preferences have homogenized in the process of globalization.

Australia was heavily focused on beer in the first six decades of its Federation, with beer's share of alcohol consumption peaking at 80% in 1958 and beer consumption per adult peaking in 1975 at 6.3 LAL. (Anderson 2020b). Since then that share has halved and, even though wine's share has more than doubled, the nation's overall consumption of alcohol per adult has fallen by as much as in the rest of the world, that is, by more than one-quarter (Figure 6). Beer consumption per capita peaked in 1975 at 6.3 LAL per adult, but it is now only 3.0 LAL. As a result, Australia's share of the world's beer consumption fell from just over 2% during 1960-80 to 0.9% in recent years (Anderson and Pinilla 2021). Thus beer moderation has been the key contributor to Australia's reduction in per capita alcohol consumption over the past half-century (Figure 7). The country's overall alcohol consumption is now just one-tenth above the OECD average, having declined more than twice as rapidly in the 2010s as in the average OECD country (by 11% compared with 4%, see Figure 8). And the share of alcohol consumed as beer is now the same in Australia as in the rest of the world, at two-fifths (Table 2).

One reason for the decline in beer and rise in wine consumption in Australia is the high rate of immigration from wine-drinking southern Europe. But another has to do with relative price changes: since the early 1980s, the retail wine price index has fallen by more than one-third relative to the overall consumer price index, while the beer and spirits price indexes have increased by about half (Figure 9). Much of that change in relative prices is due to differences in the way consumption of the three beverage types are taxed (discussed in detail later in this report).

The desire for a greater variety of beverage styles: via imports

Apart from the lowering of overall alcohol consumption per head, increased affluence has led also to a desire for a greater variety of styles of beverages. One way that demand has been satisfied is through increased imports (Tremblay and Tremblay 2017). Globally, the share of national beer production that is exported averaged less than 2% in the 1960s and 1970s but it rose to 4.6% in the 1990s, 6.0% in the 2000s, 7.6% in the 2010s and 8.8% in 2020-21 (Plato Logic 2022).² As already mentioned, a similarly rapid increase from a low base has occurred in the share of imports in Australian beer consumption, from less than 2% pre-2000 to around 10% in recent years (Anderson and Pinilla 2021; Euromonitor International 2022), bringing with it a much broader range of styles and qualities.

The desire for a greater variety of beverage styles: via the craft revolution

Another way that preferences for a greater variety of beverage styles have manifest themselves is in the craft beverage revolution. Craft breweries began to emerge from the 1970s, such that in numerous high-income countries the total number of breweries began to reverse its long-run decline in the 1980s (Caravaglia and Swinnen 2017a). Soon thereafter social media and consumer associations were able to spread information about craft beverages at little cost to the large breweries. The difficulties in securing finance and appropriate equipment were initial handicaps but, once enough early entrepreneurs succeeded

² For spirits the share of consumption supplied by imports grew from less than 10% prior to 1995 to 23% by 2021, according to Euromonitor International and UN COMTRADE data.

(often following experimentation in home brewing), more funding flowed from venture capitalists and via crowd-funding.

One indicator of the speed of this craft revolution is the growth in the number of breweries operating (Figure 10). In Australia that number doubled between 2015 and 2019, from 360 to 740 according to Euromonitor International (2022), while it grew almost as fast from 2016 to 2021 in the UK (from 1540 to 1902 for independent breweries) and the US (from 5780 to 9247). Many of those new breweries are tiny though, so the share of craft beer in the total volume of beer sales is small – although those shares have grown steadily each year, reaching 10% in Australia, 12% in Canada and 13% in the US by 2021. Other countries where their share exceeded 3% by 2021 are shown in Figure 11. Globally craft beer accounted for less than 2% of the volume of global beer sales prior to 2009 but that share has since doubled, reaching 3.9% in 2021 according to Plato Logic (2022).

Once it became clear that craft breweries were here to stay and were growing in number, traditional brewers began responding in several ways. One has been to develop their own craft-style beer brands, in some cases not disclosing their connection to a large brewery. Another strategy has been to acquire emerging microbreweries (Caravaglia and Swinnen 2017a,b). Developing a new range of profitable Lo-No beers that is more attractive than the earlier-developed but watery ‘light’ category is a third strategy, to which we now turn.

Responding to the demand for lower-alcohol beers

The demand for Lo-No beers is a natural extension of the developments summarized in the preceding section. New technologies are beginning to allow full-flavoured beers with lower-alcohol levels to be marketed, and at lower retail prices than their full-strength counterparts thanks to lower rates of excise tax. These new beers are proving to be a win-win for producers and consumers.

Lo-No's potential beneficiaries

Consumers looking for new varieties/styles are pleased with this new development, as are those seeking lower-alcohol beverages for health, driver-safety and lifestyle reasons. So are some wine drinkers who are looking for substitutes for their preferred wines as global warming keeps raising the latter's alcohol levels (Alston et al. 2015) and as the wine industry slowly develops appealing Lo-No wines. Some abstainers of alcohol also may be willing to try the new zero-alcohol beers. And many of those beer drinkers who sought out 'light' beers but were disappointed by the bland, watery taste of lots of them will be more enthusiastic about this new alternative.

Breweries stand to gain insofar as the net profits from Lo-No beer sales exceed those lost from the drop in sales of full-strength beer. The most obvious potential contributor to such a favourable outcome is the excise tax regime: since duties are based on the alcohol content (ABV) of each beverage, Lo-No beers attract less taxation. The situation is even more favourable – to consumers as well as producers – in jurisdictions such as Australia's that encourage the Lo-No revolution by imposing lesser tax rates per % ABV on lower-alcohol products (see next section).

Lo-No production methods

Typically, lower-alcohol beers have been produced through the thermal or physical separation of alcohol from regular beers. These methods appeal to brewers because they harness existing beer production and so don't require much additional brew house capacity. The thermal separation technique makes use of the fact that the boiling temperature of alcohol is lower than that of the remaining beer solution. The physical separation technique uses reverse osmosis to separate materials across a semipermeable membrane that separates alcohol and part of the water from a beer but does not remove larger molecules such as flavour compounds. Both methods normally require further re-formulation after alcohol is removed to get an acceptable product.

To date these methods have been more successful with beer than with wine, for two reasons. One is that regular beer starts with just one-third the ABV of wine, so less alcohol needs to be removed. The other is that wine relies on grape juice as its sole ingredient whereas beer's aromas may be enhanced by perfumed hops that can help mask any undesired flavours deriving from the de-alcoholizing process.

The equipment required to take on the above techniques is expensive, and additional skills are required to successfully manage these processes compared with conventional brewing. That is not a major constrain to large brewers, but these extra capital requirements do handicap small microbrewers – which helps explain why no-alcohol beers are not (yet)

hugely cheaper than regular beers. However, attempts are under way to develop alternative technologies for them as well. For example, malt and hop extracts can now be used to formulate a highly drinkable alcohol-free beer without the requirement for brewhouse processes. These alternative methods provide brewers with an opportunity to tailor their recipe to the exact colour, flavour and mouthfeel desired. With no reliance on an existing beer stream, formulations from extracts also provide consistency to the profile of the product from batch to batch.

Range of alcohol contents

While the categories of lower-alcohol beers have varied through time and across countries, a consensus seems to be emerging that corresponds roughly with current usage in Australia. Where data allow, this report focuses on the following categories which align with Australian excise duty rates:

- No-alcohol: $\leq 1.15\%$ of alcohol by volume (ABV),
- Low-alcohol: $> 1.15\%$ but $\leq 3\%$ ABV,
- Mid-alcohol: $> 3\%$ but $\leq 3.5\%$ ABV, and
- Full-strength: $> 3.5\%$ ABV.

The alcohol content of ‘light’ beers, which began to emerge during the 1980s and which focused on calorie reduction (accomplished primarily by reducing the carbohydrate content but also by reducing the alcohol content), is usually $> 2\%$ but $\leq 3.5\%$ ABV, hence this category overlaps the low- and mid-strength beer categories.

Increasing Lo-No uptake, with Australia a leader

So far, brewers have been much quicker than distillers and winemakers in responding to this new Lo-No demand in fine-tuning or creating new techniques, in developing new products, and in mass-marketing them successfully. True, this development is still in its infancy, with the share of no-alcohol, low-alcohol and mid-strength beers respectively accounting in 2021 for just 2%, 0.7% and 1% of the volume of global beer sales, according to Plato Logic (2022). However, that 3.7% total is nearly double the 2.0% from a dozen years ago, hence the interest in these categories’ further growth potential.

Australia has been a laggard in the no-alcohol category but among the leaders in the low- and mid-strength categories globally. According to Plato Logic, the latter two’s combined share in Australia was 23% in the 1990s and 28% in the 2000s, when it was only 1% in the rest of the world, and by 2021 those shares were over 30% for Australia (all but one-tenth of it mid-strength) compared with 2% for the world (Table 3). By contrast, when 2% of beer sales globally were zero alcohol in 2021, that category share in Australia was under 1% (less than 0.3% according to Plato Logic but 0.9% according to Euromonitor International, see Table 3).³ These trends are reflected in Figure 12, showing Australia’s shares of global sales of no-, low- and mid-strength beers: no-alc is barely visible at less than 1%, low-alc has fallen from 30% in the 1990s to 20% in the 2000s and is now less than 5%, and mid-strength grew in the 2000s to more than half but has since declined to a still huge one-fifth of global sales of that category. Meanwhile, the share of full-strength beer in Australia’s total beer sales volume has fallen from 80% in the 1990s to 75% in the 2000s and to 69% by 2021 (row 1 of Table 3).

³ Note that Plato Logic sets the border between low- and mid-strength beer at 2.8% ABV rather than the 3% used in Australia, so its share of low- (mid-)strength is somewhat lower (higher) than reported by ABS.

The Australian shares of no-alcohol, low-alcohol and mid-strength beers in national beer consumption are able to be compared with those of other countries in Table 4. Of those countries, only New Zealand and the Netherlands have lower no-alcohol shares than Australia, only Germany and Sweden have had higher low-alcohol shares than Australia and only Sweden has a substantial share like Australia (around one-quarter) of mid-strength beer. (see Box 1).

Box 1: Beer tax in Sweden

Sweden is unusual in that a higher share of its beer consumption is low-alcohol than is the case in Australia and only in Sweden is a substantial share (around one-quarter) of its beer consumption mid-strength like in Australia. One reason Sweden is exceptional is that it imposes zero excise duty on beer up to 2.8% ABV and there is a concessional VAT (12% instead of 25%) on beer up to 3.5% ABV. As well, no-, low- and mid-strength beers can be bought in regular shops, and full-strength beers are sold only at Systembolaget, the government monopoly liquor store. Mid- and full-strength beers attract an excise tax equivalent of around 60%. Thus the effective beer taxes in Sweden including VAT are 12% for no- and low-alcohol beers, 79% for mid-strength, and 100% for full-strength beers.

The long-term trends for Australia since the mid-1980s are summarized in Figure 13. Overall annual sales volumes have been flat for more than 3 decades, and full-strength beer sales have been steadily declining. The combined share of low- plus mid-strength beers rose from 15% to 24% in the 1990s (when it was mostly ‘light’ beer) before plateauing over the 2000s and then rising again in the 2010s to 31%. By then the low-alcohol share had fallen to around 4% (with ‘light’ making up perhaps half that) while the mid-strength share rose above 25%.⁴

Had the mix of beers in 2012-13 remained unchanged in the decade that followed instead of some substituting to lower-alcohol beers, an additional 3 ML of alcohol (4% more) would have been drunk in 2021-22.

The mix of Australia’s beer and other alcohol consumption is affected by the alcohol consumption tax regime. So before turning to prospects for beer consumption’s various categories, it is worth reviewing recent tax arrangements and possible alternatives.

⁴ Euromonitor International (2022), without explanation, made a major downward adjustment from previous years to its estimated total volumes of consumption in Australia. Since its latest total data that start in 2016 are more in line with the other two sources reported in Table 3, we report only them in that table. Note though that their shares of no- and low-alcohol beers are higher than those provided by ABS and Plato Logic.

Excise taxation of beer, wine and spirits

Beer consumption per person depends on many things, including per capita income, relative retail (tax-inclusive) prices, climate, culture and religion (Colen and Swinnen 2016). Even if differences in income, VAT rates and prices of other beverages are ignored, it is clear from Figure 14 that there is a negative association between beer excise taxes and the volume of beer consumption.

Australia taxes its alcohol consumption as much as the UK and Ireland and more than other affluent economies apart from the Nordic countries, Japan and Korea. But it taxes beer more heavily than all but the lowest-priced wines in Australia. In 2018 the *ad valorem* equivalent of the excise tax on the wholesale price of full-strength packaged beer was 81% in Australia compared with rates in the mid-50s for the UK, Ireland and Sweden, 27% in Norway and 19% in Denmark (Anderson 2020a). Since then a proposal has been put forward in the UK to standardize the tax on all beer below 8.5% ABV at £19.08 per LAL (HM Treasury 2021), or about one-third below the current rates for packaged beer in Australia. True, tax rates in Australia are lower for on-trade tap beer than for packaged beers, and for lower-alcohol beers, but that is true in many other countries as well (see OECD 2020; European Commission 2020).

In Australia the excise on beer and spirits is a specific tax (A\$ per litre of alcohol) whose rate is raised every February and August in line with CPI inflation. Wine, by contrast, is subject to an *ad valorem* tax and so its specific alcohol tax equivalent varies with the price of a wine and its alcohol content. That wine rate has been unchanged from 29% since the GST was introduced in 2000. That is, the rates of taxation on beer and spirits have increased relative to those on wine every half-year since 2000. They are shown for 2002 and 2022 in Figure 15 assuming wine is 12.5% ABV in 2002 and 13.5% in 2022. Clearly, the tax on full-strength packaged beer in Australia is now higher than that on even super-premium wine, and it is ten times that on non-premium (cask) wine.

Lower-alcohol beers are taxed less than full-strength beers in Australia, but only slightly less in the case of packaged beer (which is about three-quarters of total sales) as distinct from tap beer sold on-premise in pubs and clubs (Figure 15). **Given that lower-alcohol beers are becoming more similar in flavour and style to full-strength beers, a decrease in tax on and thus the price of mid- relative to full-strength beers would encourage more substitution away from full-strength beer, and possibly some also from wines and spirits** (Fogarty 2010; Srivastava et al. 2015). In so doing, overall alcohol and calorie consumption would decline, and along with it the health costs and some other costs of antisocial and unlawful activities associated with binge drinking (Srivastava, Yang and Zhao 2022).

Prospects for lower-alcohol beer consumption

The preceding analysis makes two things clear. First, increasing affluence is associated with less alcohol consumption but via higher-quality products and a wider variety of them. Second, globalization is leading to concentration of beer production in a declining number of multinational breweries and to increased international trade in iconic brands of beer. Both drivers (increasing affluence and globalization) may be temporarily halted or even reversed in the short term due to higher inflation and interest rates and a possible recession while the war in Ukraine continues to generate policy and market uncertainty. But now that the share of beer in overall alcohol consumption in Australia matches the global average, in contrast to six decades ago when it was nearly three times that average, it may not fall much lower.

The total volume of Australian beer consumption is not expected to grow much over the medium-term, even if there is a bit of an upturn after the projected dip in 2022. Plato Logic (whose historic numbers are very close to ABS data) projects the total to be about the same in 2025 as in 2021. Both it and Euromonitor International have similar straight-line projections over the next few years (Figure 16). Euromonitor International also provides projections from 2021 to 2026 of the shares of low- and no-alcohol beers in their estimated total: the low-alcohol share is projected to grow by one-ninth, and the no-alcohol share to almost double. Note though that those shares in Figure 16 are much larger than the low- and no-alcohol shares from Plato Logic reported in the first two rows of Table 4, possibly because Euromonitor International use higher break points than Plato Logic in the % ABVs that separate no-, low- and mid-strength beers. Caution is therefore necessary in interpreting the volume of sales that those share projections might indicate.

This expected growth in the Lo-No category in Australia is similar to what is projected by IWSR (the International Wine and Spirits Research) in the world's ten-largest alcohol markets (Gilbert 2023). IWSR expects the category over all beverages – which is just 2% of the overall alcohol beverage market (but just 0.4% of the on-trade) – to grow by one-third (7% per year) between 2002 and 2026, compared with 5% during 2018-22, and with the no-alcohol sub-category to account for 90% of that growth. Beer is the clear leader in this category, with more than 3% of its global sales already Lo-No.

In the absence of other and more-reliable empirical projections, what follows are qualitative comments on prospects for Australia's beer market. It assumes there will be little growth in the overall volume of beer sales in Australia over the rest of this decade, and that the consumer interest in lower-alcohol beverages for health and lifestyle reasons will continue and may even strengthen. Since the preceding analysis suggests the key factors influencing this growth in domestic (and potentially export) demand differ across the five beer categories, each needs to be considered in turn. This report concludes by noting that all of them could be affected if Australia's excise duty regime were to be reformed.

No-alcohol beers

This category has the highest potential to grow from its very small base in Australia – as it does also in New Zealand. Among the countries listed in Table 4, no other country had a

lower no-alcohol share in national beer sales than Australia, based on Plato Logic's data whose Australian share in 2018 was 0.2% and the global average was 1.6%. Other countries with much bigger shares of no-alcohol include Canada (1.1%), Poland (2.3%) and Spain (6.8%). Even if that Australian share is currently close to 1% and were to double over the next five years, that would still be fairly low compared with lots of OECD countries.

To date this category's growth has been mainly at the expense of higher-alcohol beers, but as it becomes better known it may also attract some alcohol abstainers and some drinkers of wine and spirits who see it as a substitute for occasions when they seek a non-alcoholic beverage. The volume of other non-alcoholic drink sales in Australia is roughly double that of total beer sales, so even if only a small fraction of consumers of those other beverages switched to no-alcohol beer, that would add to the overall volume of beer consumed.⁵

Potentially that growing demand could be met with imports such as the popular Heineken Zero but, as/when local firms develop more/better no-alcohol beers (e.g., with the launch of Asahi's Great Northern Zero and Kirin's James Squire Zero in 2021), they should be able to pick up on that expanding domestic sales opportunity – and may even get to also export some, for example to New Zealand.

One caveat is in order though. Currently there is no excise duty in Australia on beers up to 1.15% ABV, while packaged low- and mid-strength beers are taxed almost as highly as full-strength beers (Figure 15). Should there be a reform of that tax regime that lowered the duty on low- and mid-strength beers, it may dampen somewhat the growth in local no-alcohol beer demand.

Low-alcohol beers

The so-called 'light' beers that were developed in earlier decades may continue to be displaced by more-flavoursome low-alcohol beers, in which case sales of the latter can be expected to grow considerably faster than this category overall. But Germany is the only country in Table 4 that in recent times has had a share of this category as high as Australia's. How rapidly that share grows locally will depend to a considerable extent, as in the recent past, on developments in the mid-strength category (including any change to relative rates of excise on the various beer categories).

Mid-strength beers

This category has enjoyed very rapid growth over the past three decades, its share rising from 10% in the 1990s to 17% in the 2000s to more than 25% in recent years. This is remarkable. Mid-strength is not a significant category in any other country except Sweden and, as mentioned earlier, Sweden may be exceptional just because there is a concessional VAT (12% instead of 25%) on beer up to 3.5% ABV in that country and such lower-strength beers

⁵ Australians consumed 1825 ML of beer per year during 2019-21, compared with 3250 ML of non-alcoholic beverages. Almost half of the latter volume was soft drink (so a similar volume to beer), and nearly one-third was bottled water.

can be sold in regular shops whereas full-strength beers are sold only at the government monopoly liquor store.

Further growth in this category is possible given that standard full-strength beer still accounts for three-fifths of Australian beer sales, and that these days mid- and full-strength beers are seen as relatively close substitutes in terms of flavour. An increasing number of brands are therefore likely to launch more mid-strength variants. Should the current difference in the excise duties on mid- and full-strength beers be widened, that would open a further opportunity for this category.⁶

Even if this category's share of the domestic market were not to rise much more, its remarkable local success suggests there may be scope for expanding its exports. Australia has proven in the past that its beers can have global reach (recall Fosters success toward the end of last century). Australia's two largest producers, which are responsible for the mid-strength boom locally, have strong international connections on which to draw. True, those connections are mainly in East Asia, but the larger of those two local firms also has the previous experience of very successfully developing the Fosters brand abroad. Australia's wine industry also has had great success in exporting branded commercial premium products this century, with export sales accounting for 60+% of domestic wine production. By contrast, currently less than 2% of Australian beer is exported (compared with a peak of 5% in 1988).

Craft and other premium beers

Consumers are likely to continue to seek premium beers as they reduce their alcohol consumption and look for a greater range of styles and flavours. Craft microbreweries have shown what is possible, and large breweries are now emulating them or taking over some of them. Most of these craft products are full-strength beers, but their current share is only one-sixth of the share held by standard full-strength beers so there remains plenty of scope to further reduce that gap.

However, unless/until microbreweries can develop or procure affordable equipment and technologies to produce lower-alcohol beers that can compete with those of the large breweries, they will be less able to encroach on that segment of the market. Exceptions such as the new non-alcohol craft brewer Heaps Normal (launched mid-2020) have already begun to appear though.

Standard full-strength beers

As already suggested above, this segment of Australia's beer market is likely to continue its slow decline. Smaller firms still focused only on this category and without a major point of difference will be under pressure to be absorbed or to close, while the largest ones will continue to broaden their offering beyond this category as they strive to maintain their appeal to consumers.

⁶ Srivastava et al. (2015) estimate that the cross-price elasticity of demand between mid- and full-strength beer in Australia is close to one, meaning if the price of mid-strength relative to full-strength beers were to drop by 5%, the volume of mid-strength consumed would rise by 5% at the expense of full-strength beer.

Potential reform to the excise duty regime

Health lobbies will continue to pressure the federal government to take action to limit damaging alcohol consumption. Reforming the alcohol excise duty regime is one possible action. Currently that regime discriminates somewhat in favour of lower-alcohol beers, but more so for tap than for packaged products. It also taxes wine on an *ad valorem* basis, meaning the effective tax rate is lower the lower the wholesale price of a wine. Non-premium (e.g., in-box cask) wine is currently the cheapest form of alcohol in Australia (Figure 14). Should Australia copy the UK proposal⁷ to simplify that regime and nudge consumers toward lower-alcohol products, it could have non-trivial impacts on beer sales. In particular, **if the tax on packaged low- and mid-strength beers was lowered to a common rate set at, say, the current one for mid-strength beer on tap, that would encourage more drinkers of full-strength packaged beer to switch to one with lower alcohol.**

⁷ The UK proposal is to have wine above 8.5% ABV taxed at a specific rate per LAL one-tenth below that for spirits, to have packaged beer above 3.5% ABV taxed about one-tenth below that for wine, to have the low- and mid-strength packaged beer tax rate at just 45% of that for full-strength beer, to exempt drinks with less than 1.3% alcohol, and for just a 5% concession for tap/draught beer (HM Treasury 2021).

References

- ABS (2019), *Apparent Consumption of Alcohol, Australia, 2017–18*, Cat. No. 4307055001DO001, Canberra: Australian Bureau of Statistics, September.
- ABS (2022), *Consumer Price Index*, Cat. No. 6401.0, Canberra: Australian Bureau of Statistics, July.
- Alston, J.M., K. Fuller, J.T. Lapsley, G. Soleas and K. Tumber (2015), “Splendide Mendax: False Label Claims about the High and Rising Alcohol Content of Wine”, *Journal of Wine Economics* 10(3): 275–313.
- ATO (2022), *Beer Clearance Summary Data*, Australian Taxation Office, Canberra. Accessed 25 October at https://data.gov.au/data/dataset/excise-data/resource/f2a889c3-8815-496e-8499-e756288fdc06?inner_span=True
- AIHW (2022), *Australia’s Health Performance Framework*, Canberra: Australian Institute for Health and Welfare, accessed 21 October at <https://www.aihw.gov.au/reports-data/australias-health-performance/australias-health-performance-framework/national/all-australia/behaviours/health-behaviours/>
- Anderson, K. (2020a), “Consumer Taxes on Alcohol: An International Comparison over Time”, *Journal of Wine Economics* 15(1): 42-70, February.
- Anderson, K. (2020b), “Evolving from a Rum State: A Comparative History of Australia’s Alcohol Consumption”, *Australian Journal of Agricultural and Resource Economics* 64(3): 724-49, July.
- Anderson, K. and V. Pinilla (with the assistance of A.J. Holmes) (2021), *Annual Database of Global Wine Markets, 1835 to 2019*. Wine economics Research Centre, University of Adelaide. <https://economics.adelaide.edu.au/wine-economics/databases#annual-database-of-global-wine-markets-1835-to-2019> [accessed 22 October 2022].
- Caravaglia, C. and J.F.M. Swinnen (2017a), “The Craft Beer Revolution: An International Perspective”, *Choices* 32(3): 1-8.
- Caravaglia, C. and J.F.M. Swinnen (eds.) (2017b), *Economic Perspectives on Craft Beer: A Revolution in the Global Beer Industry*, London and New York: Palgrave Macmillan.
- Colen, L. and J.F.M. Swinnen (2016), “Economic Growth, Globalisation and Beer Consumption”, *Journal of Agricultural Economics* 67(1): 186-207.
- Euromonitor International (2022), *Passport: Beer in Australia*, London: Euromonitor International, October.
- European Commission (2020), *Excise Duty Tables: Part 1: Alcoholic Beverages*, Brussels: European Commission.
- Fogarty, J. (2010), “The Demand for Beer, Wine and Spirits: A Survey of the Literature”, *Journal of Economic Surveys* 24(3): 428-78.
- Gilbert, J. (2023), “Low and No Growth in the Fast Lane”, *Harpers Wine and Spirit Magazine*, January.
https://harpers.co.uk/news/fullstory.php/aid/30973/Low___no_growth_in_the_fast_lane_to_2026.html
- HM Treasury (2021), *The New Alcohol Duty System: Consultation*, London: HM Treasury and HM Revenue and Customs, October.

- https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1028702/20211026_Alcohol_Duty_Review_Consultation_and_CFE_response.pdf
- Holmes, A.J. and K. Anderson (2017), “Convergence in National Alcohol Consumption Patterns: New Global Indicators”, *Journal of Wine Economics* 12(2): 117-48.
- OECD (2020), *Consumption Tax Trends*, Paris: OECD.
- OECD (2021), *Health Statistics 2021*, Paris: OECD. <https://www.oecd-ilibrary.org/sites/33fladad-en/index.html?itemId=/content/component/33fladad-en>
- Plato Logic (2022), *World Beer Report 2022*, Basingstoke UK: Plato Logic, October.
- Poelmans, E. and J.F.M. Swinnen (2017), “A Brief Economic History of Beer”, Ch. 1 in C. Caravaglia and J. Swinnen (eds.), *Economic Perspectives on Craft Beer: A Revolution in the Global Beer Industry*, London and New York: Palgrave Macmillan.
- Srivastava, P., K.R. McLaren, M. Wohlgenant and X. Zhao (2015), “Disaggregated Econometric Estimation of Consumer Demand Response by Alcoholic Beverage Types”, *Australian Journal of Agricultural and Resource Economics* 59(3): 412-32.
- Srivastava, P., O. Yang and X. Zhao (2022), “Equal Tax for Equal Alcohol? Beverage Types and Antisocial and Unlawful Behaviours”, *Economic Record*, Vol. 98 (forthcoming). doi: 10.1111/1475-4932.12704
- Srivastava, P. and X. Zhao (2010), “What Do the Bingers Drink? Micro-Unit Evidence on Negative Externalities and Drinker Characteristics of Alcohol Consumption by Beverage Types”, *Economic Papers* 29(2): 229-50.
- Swinnen, J.F.M. (ed.) (2017), *The Economics of Beer*, Oxford: Oxford University Press.
- Swinnen, J.F.M. and D. Briski (2017), *Beeronomics: How Beer Explains the World*, Oxford: Oxford University Press.
- Tremblay, V.J. and C.H.T. Tremblay (2005), *The US Brewing Industry: Data and Economic Analysis*, Cambridge MA: MIT Press.
- Tremblay, C.H.T. and V.J. Tremblay (2017), “Recent Economic Developments in the Import and Craft Segments of the US Brewing Industry”, Ch. 8 in C. Caravaglia and J. Swinnen (eds.), *Economic Perspectives on Craft Beer: A Revolution in the Global Beer Industry*, London and New York: Palgrave Macmillan.
- WHO (2022), “Draft Action Plan (2022–2030) to Effectively Implement the Global Strategy to Reduce the Harmful Use of Alcohol as a Public Health Priority”, Report to the third high-level meeting of the General Assembly on the Prevention and Control of Non-Communicable Diseases, Geneva: World Health Organization, May. <https://www.who.int/teams/mental-health-and-substance-use/alcohol-drugs-and-addictive-behaviours/alcohol/our-activities/towards-and-action-plan-on-alcohol>

Appendix: Estimating Australian beer consumption from ABS and ATO data

The most-recent official data on alcohol consumption from the Australian Bureau of Statistics are for fiscal years 1944-45 to 2017-18 (ABS 2019). They are based primarily on data from the Australian Taxation Office which reports the litres of alcohol that are subject to excise duty each month (ATO 2022). For Australian official data in this report, the calendar years shown in figures and tables refer to fiscal years ending 30 June. Primary reliance is on ABS (2018) for data to 2018, and thereafter ATO data after the following manipulations that are used by the ATO. Both define the categories as follows:

- No-alcohol: <1.15% of alcohol by volume (ABV),
- Low-alcohol: from 1.15% but <3% ABV,
- Mid-alcohol: from 3% but <3.5% ABV, and
- Full-strength: $\geq 3.5\%$ AVB.⁸

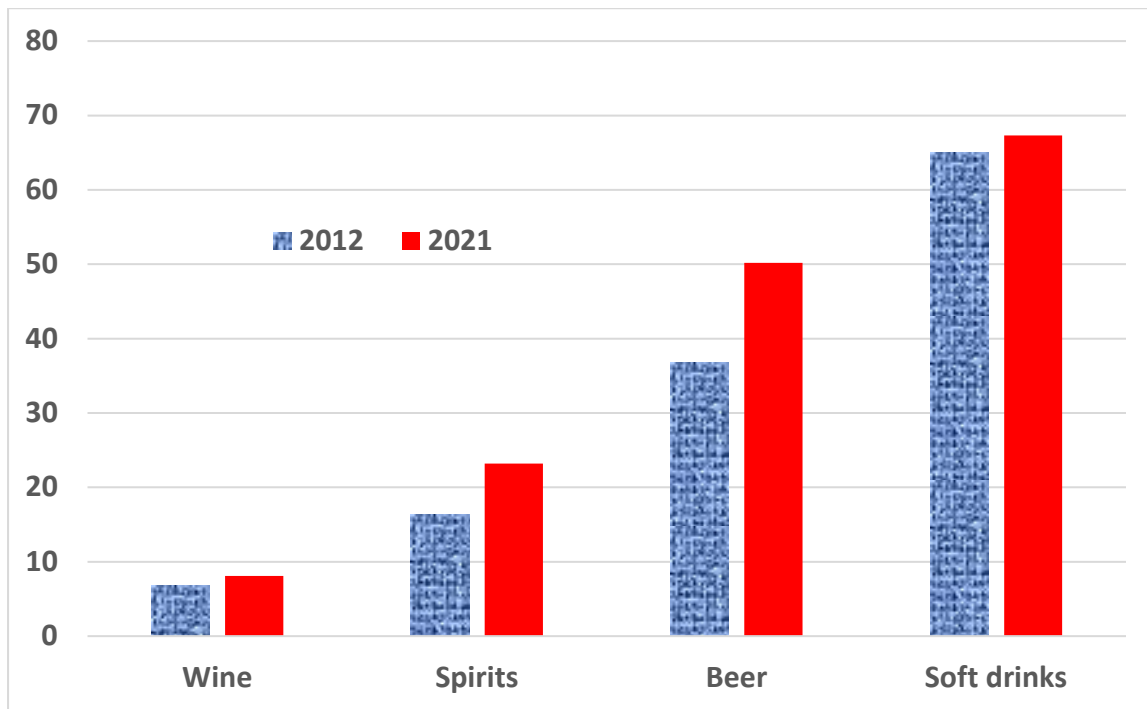
The ATO's beer clearances data provide the amount of alcohol that is taxed from sales of domestically produced beer. To derive the total amount of pure alcohol (LAL) and the shares of low- mid- and full-strength beers in (a) the total volume of beer consumed and (b) the total alcohol consumed as beer, these steps are taken by the ABS:

1. Calculate the beer volumes for low-, mid- and full-strength from the respective LALs. This entails dividing the LAL by (ABV% - 1.15%). Subtracting the 1.15% from the ABV accounts for the fact that the beer excise is only applied to alcohol beyond the first 1.15%. The ABVs are ABS's assumptions based on their industry intel. In 2017-18, ABS assumed:
 - low strength: 2.41% (packaged), 2.46% (tap beer), so $2.45 - 1.15 = 1.3\%$
 - mid strength: 3.44% (packaged), 3.47% (tap beer), so $3.45 - 1.15 = 2.3\%$
 - full strength: 4.60% (packaged), 4.60% (tap beer), so $4.60 - 1.15 = 3.35\%$
 The respective alcohol volumes are divided by the corresponding fractions (0.013 for low-, 0.023 for mid- and 0.0345 for full-strength) and then summed. In 2017-18, that came to 61.49 ML.
2. ABS then accounts for home-brewed beer using the assumption that it equals 2.2% of total domestic beer ($2.2\% * 61.49 = 1.35$ ML).
3. Next ABS uses import clearance data from Home Affairs. Those data are on the same basis as ATO's, so ABS uses the same process as in step 1 above to derive total volumes for low-, mid- and full-strength beers. These volumes are then divided by (ABV% - 1.15%) and the sum of these came to 11.79 ML in 2017-18.
4. The total beer LAL in 2017-18 is thus the sum of the components: $61.49 + 1.35 + 11.79 = 74.63$ ML.

In replicating this process to get shares of low- and mid-strength beers for years after 2017-18, we assumed the mixes of ABVs for home-brewed and for imported beers are the same as the mixes generated as above from ATO data for domestic commercial beers in those latest years. And since the ATO does not collect data on tax-exempt beer (that is, those with ABVs in the range 0% to 1.15%), nor on imported beer, we assume their combined share in those latest years was the same as their combined share in the 3 years to 2017-18, namely 15.7%.

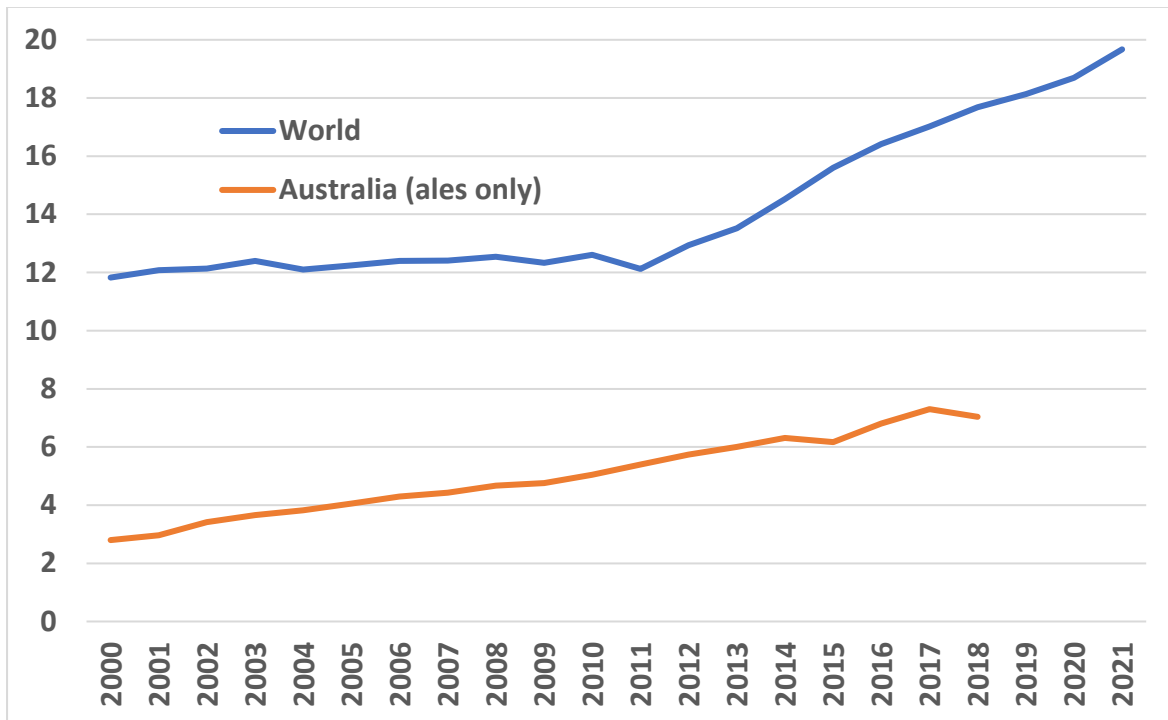
⁸ Prior to 2000-01, the ABS divided low&mid and full-strength at 3.8% ABV. The share of low&mid in the total was 27% in 1999-00 and 24% in 2000-01, so we multiplied the pre-2000 volumes of low&mid beer by 0.843 and transferred the difference to full-strength.

Figure 1: Shares of the top four firms in global beverage sales volumes, 2012 and 2021 (%)



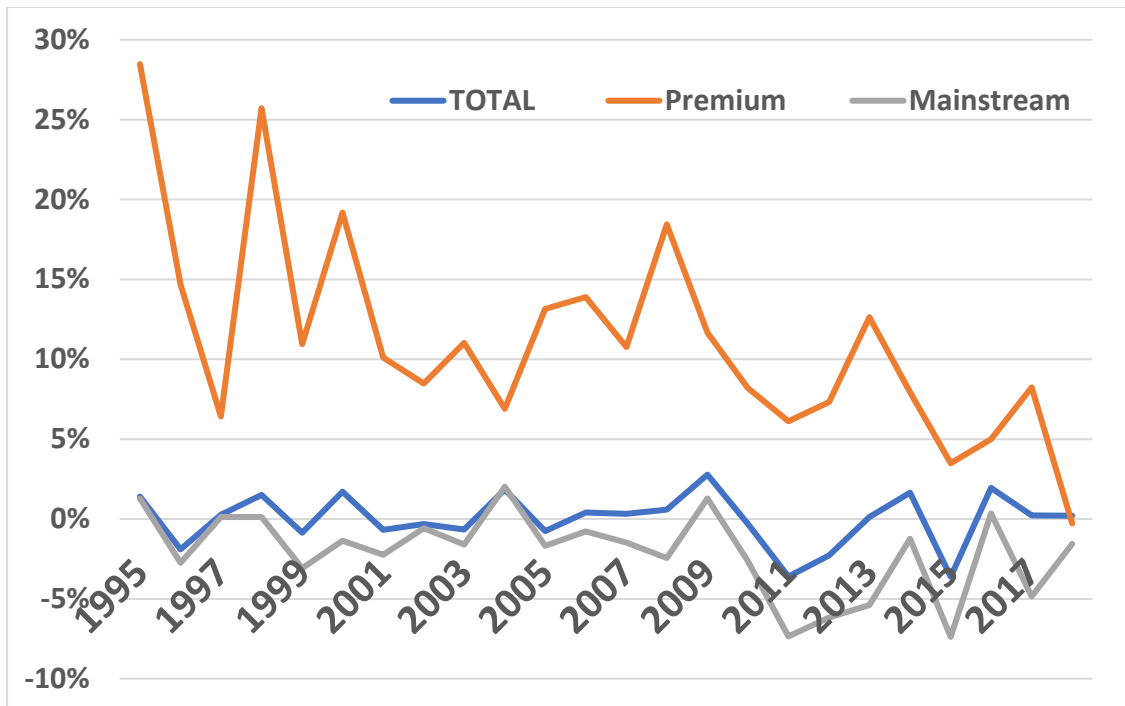
Source: Euromonitor International.

Figure 2: Share of premium beers in total beer sales volume, Australia and the world, 2000 to 2021 (%)



Source: Plato Logic (2022).

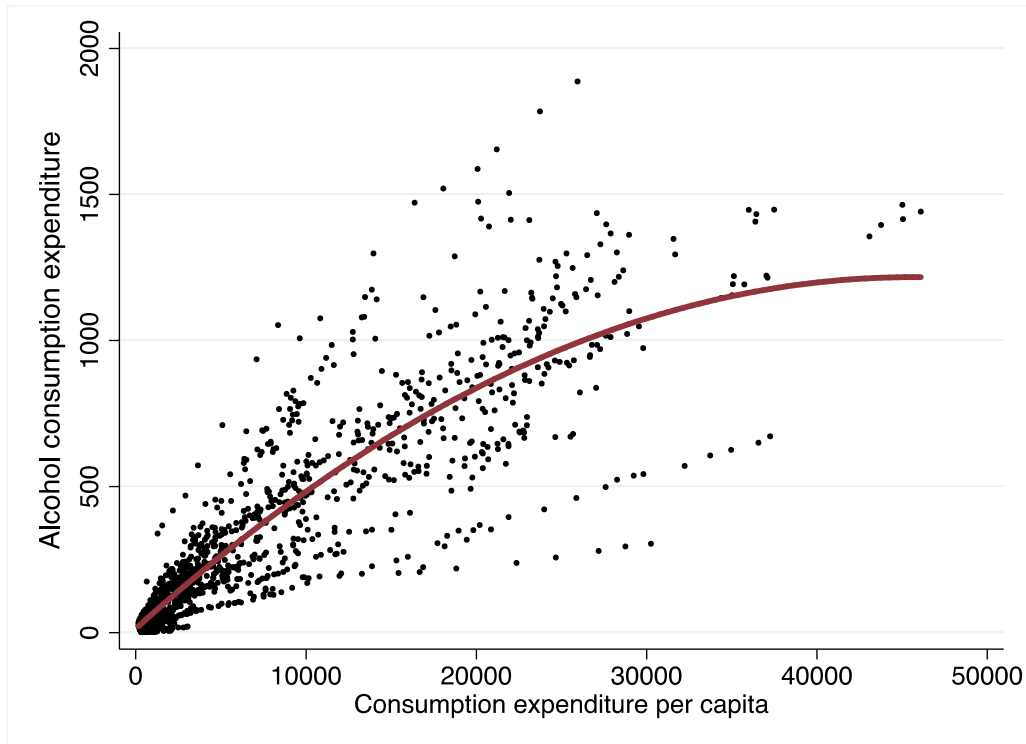
Figure 3: Annual rate of growth in premium, mainstream and total beer consumption in Australia, 1995 to 2018 (% per year by volume)



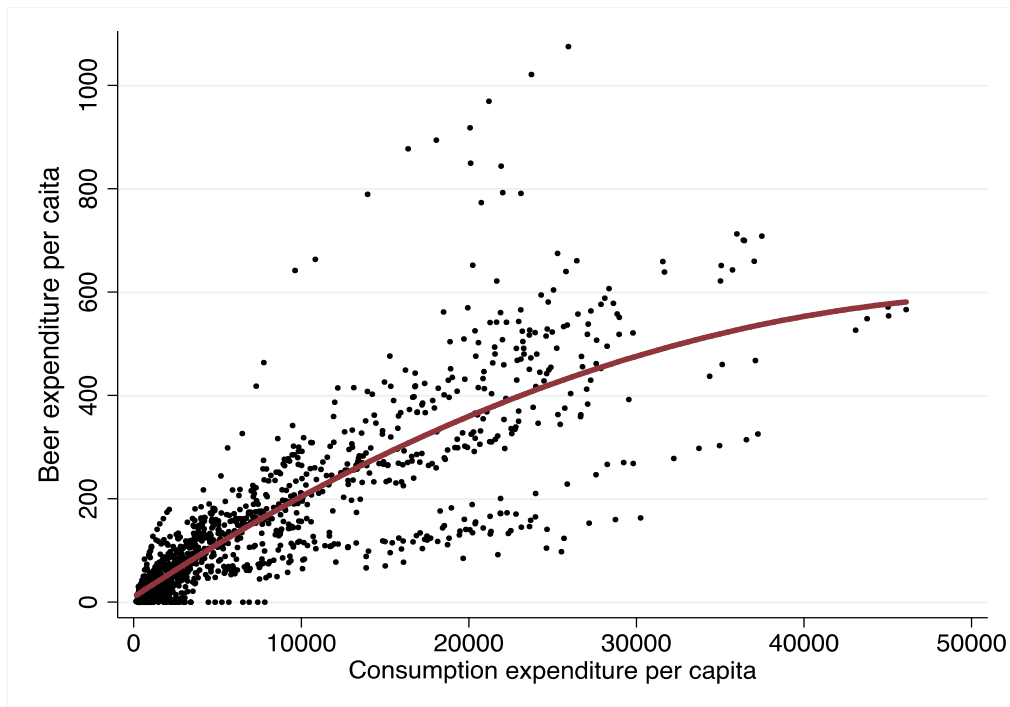
Source: Plato Logic (2022).

Figure 4: Relationship between per capita aggregate expenditure and value of recorded alcohol consumption, 80 countries,^a 2001 to 2015 (one dot per country-year)

(a) Beer, wine and spirits combined



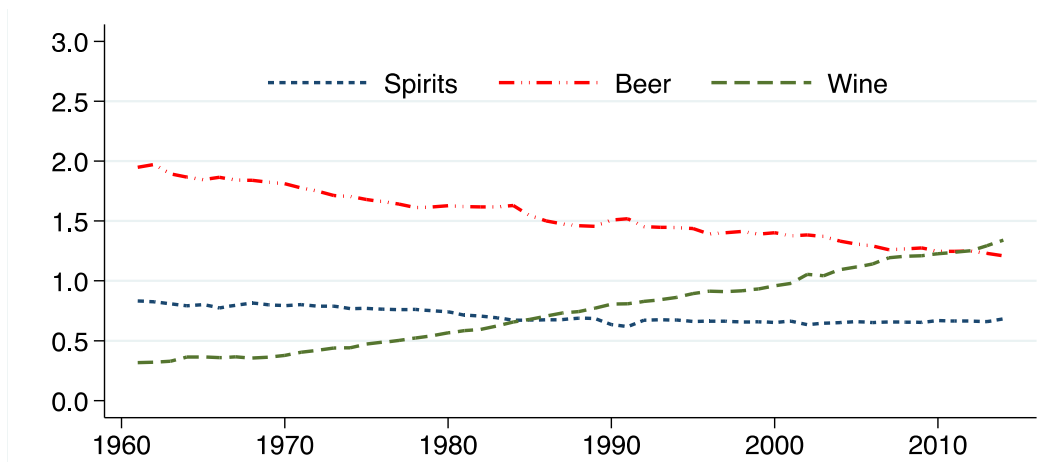
(b) Beer only



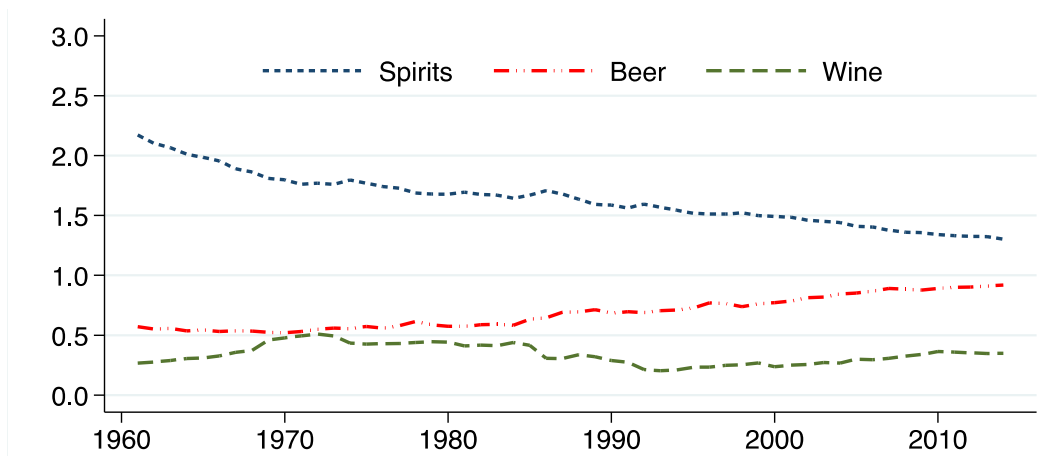
Source: Holmes and Anderson (2017).

Figure 5: Beer, wine and spirits consumption volume intensity indexes^a for beer-focused and spirits-focused countries/regions,^b 1961 to 2014

(a) Beer-focused countries



(b) Spirits-focused countries



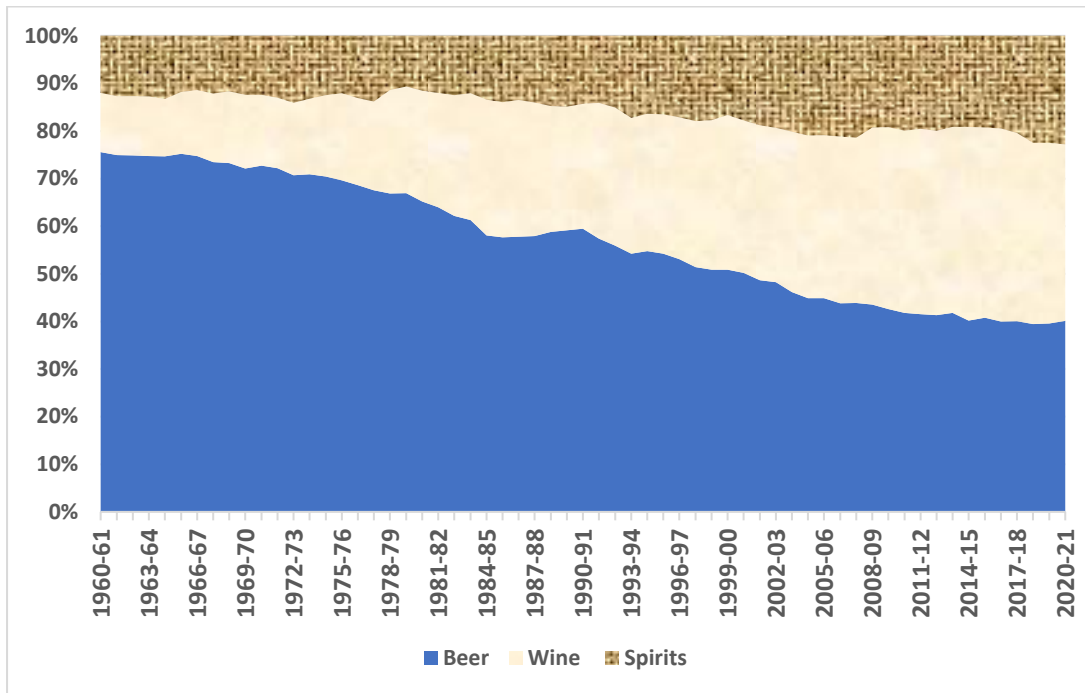
^a The intensity index is defined as the fraction of wine, beer or spirits consumption in total national alcohol consumption volume in country i divided by the fraction for that same beverage in world total alcohol consumption.

^b **Beer-focused:** Australia, Austria, Belgium-Luxembourg, Canada, Denmark, Germany, Ireland, Malaysia, Mexico, Netherlands, New Zealand, Singapore, United Kingdom, United States, Other Eastern Europe, Other Latin America, Other African and Middle East; **Spirits-focused:** Brazil, China, Finland, Hong Kong, India, Japan, Korea, Norway, Philippines, Russia, South Africa, Sweden, Taiwan, Thailand, Ukraine, Other Western Europe, Other Asia. Not included are the wine-focused countries of Algeria, Argentina, Bulgaria, Chile, Croatia, France, Georgia, Greece, Hungary, Italy, Moldova, Morocco, Portugal, Romania, Spain, Switzerland, Tunisia, Turkey, Uruguay;

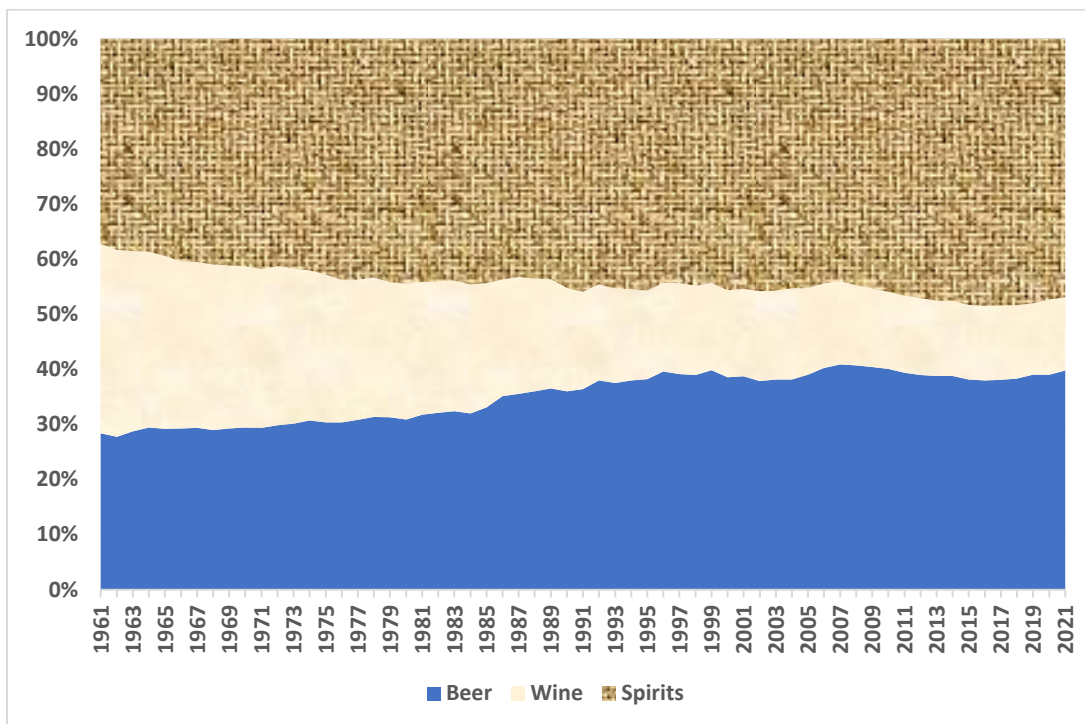
Source: Compiled by Holmes and Anderson (2017) from data in Anderson and Pinilla (2021).

Figure 6: Shares of beer, wine and spirits consumption in total alcohol consumption, Australia and the world, 1960 to 2021 (LAL and %)

(a) Australia



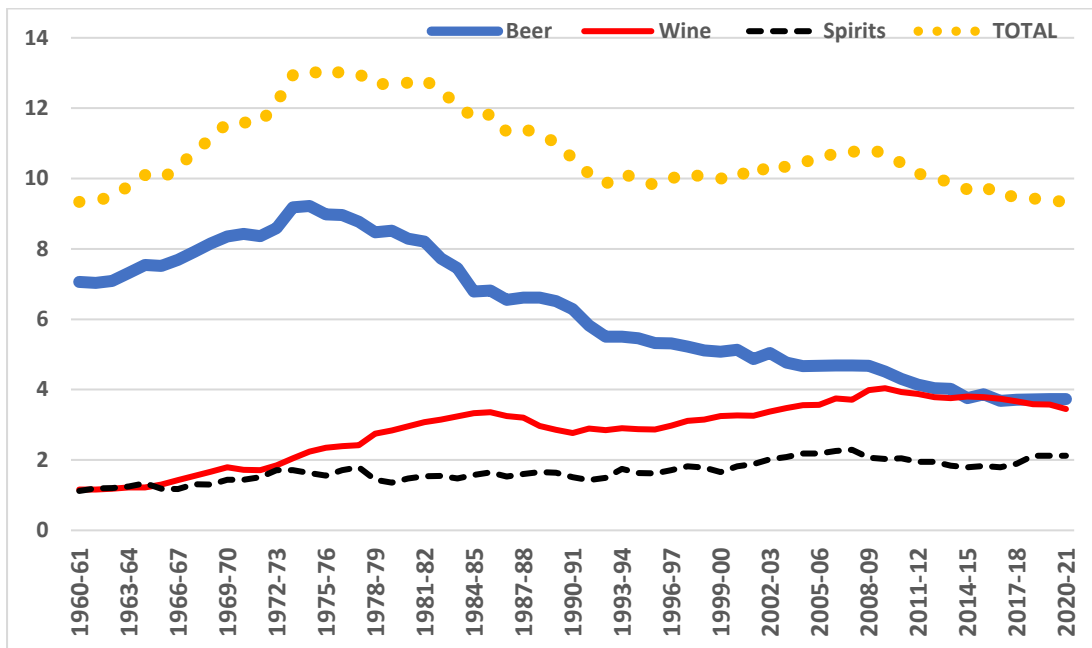
(b) World



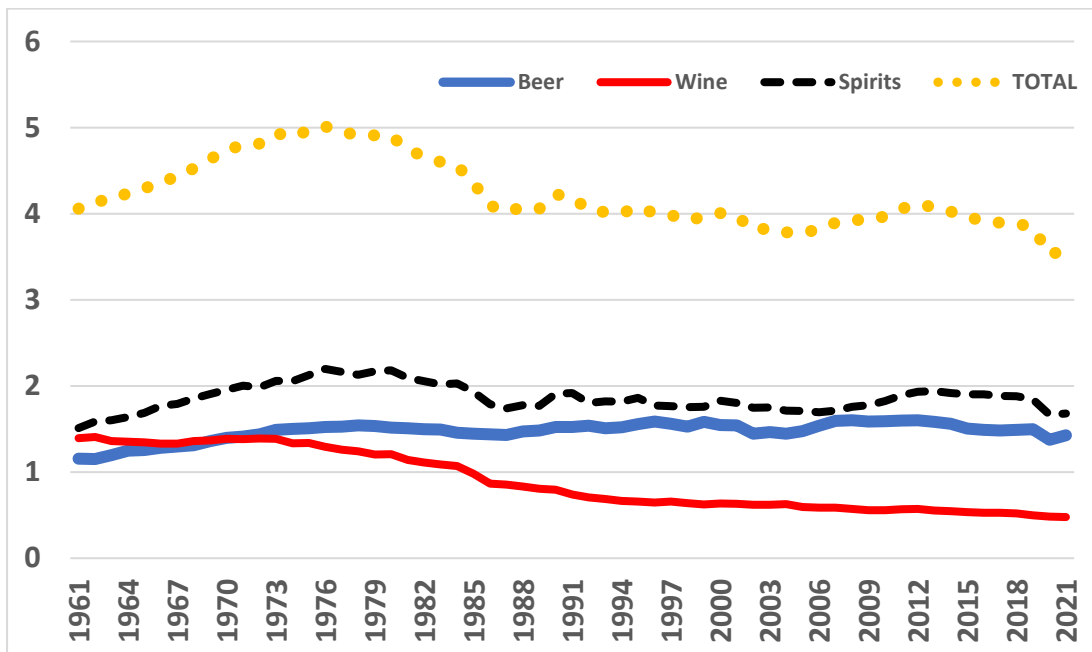
Source: ABS (2019) and Anderson and Pinilla (2021), updated as described in the Appendix to this report.

Figure 7: Volume of alcohol from beer, wine and spirits consumption per adult, Australia and the world, 1961 to 2021 (litres of alcohol per person over 14 years)

(a) Australia

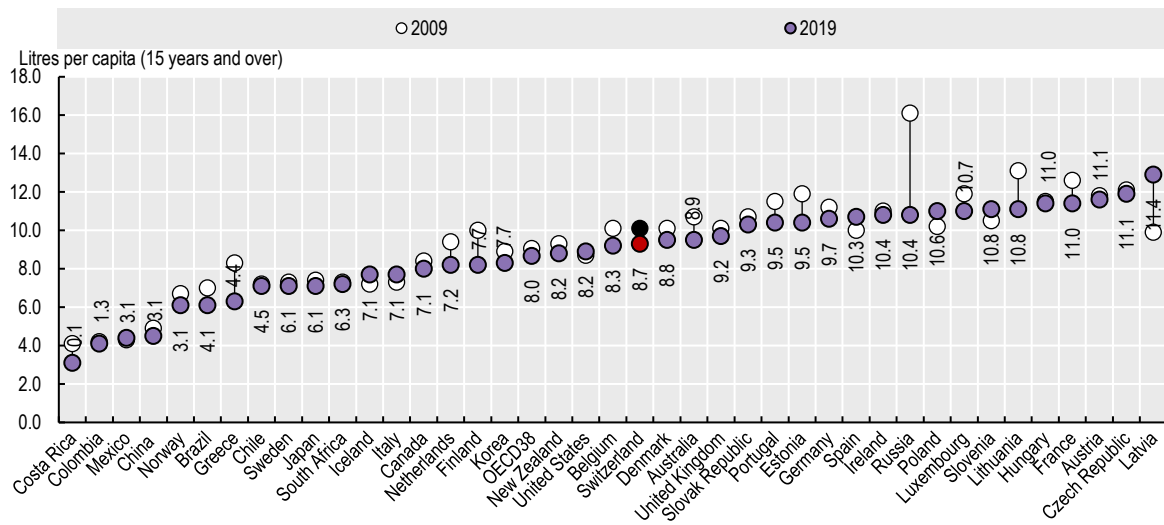


(b) World



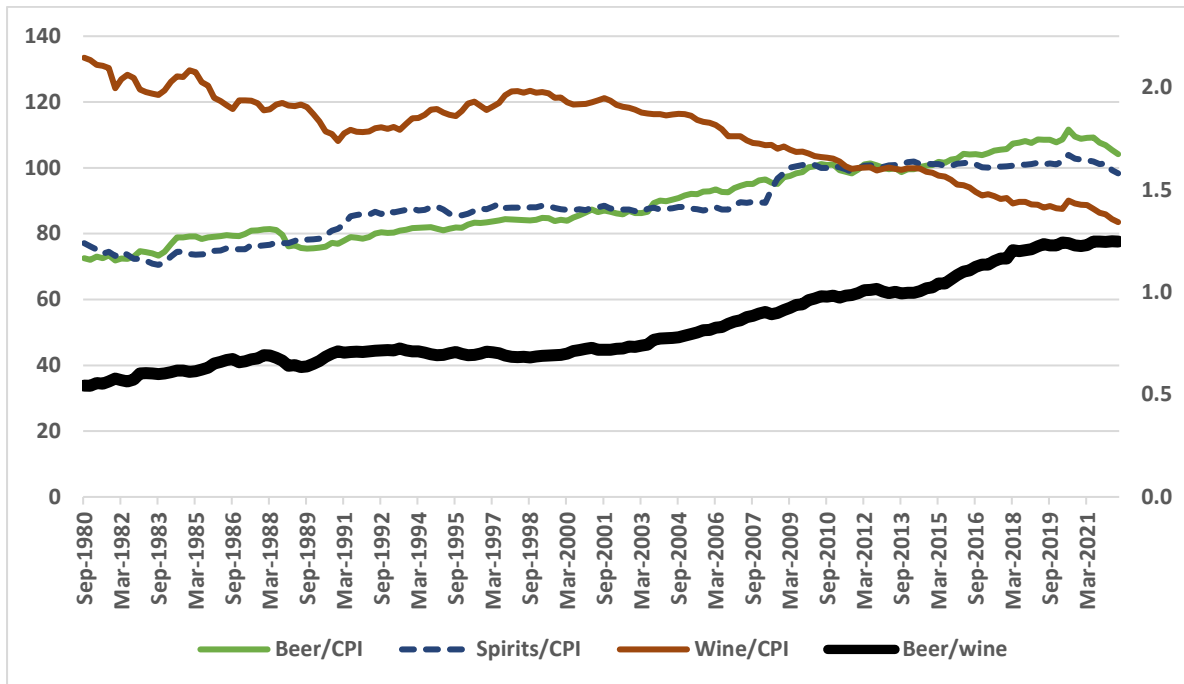
Source: ABS (2019) and Anderson and Pinilla (2021), updated as described in the Appendix to this report.

Figure 8: Litres of alcohol consumption per adult, OECD countries and large emerging economies, 2009 and 2019

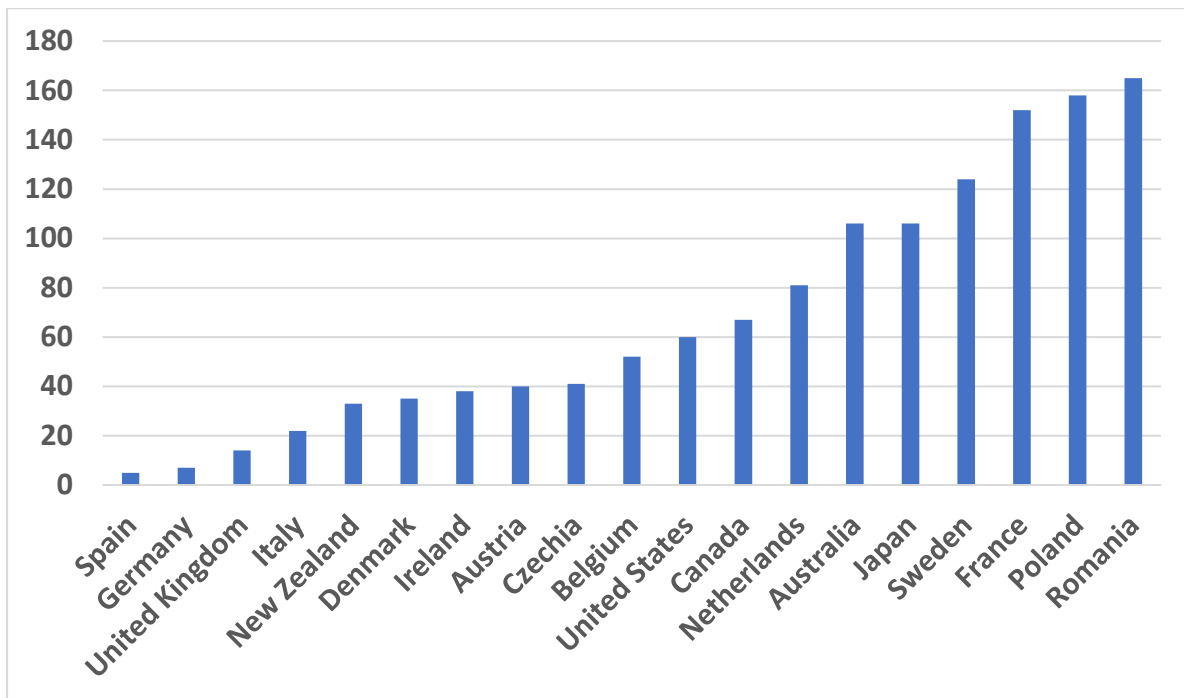


Source: OECD (2021).

Figure 9: Consumer price indexes, beverages relative to all products, Australia, 1980 to 2022 (2011-12 = 100)



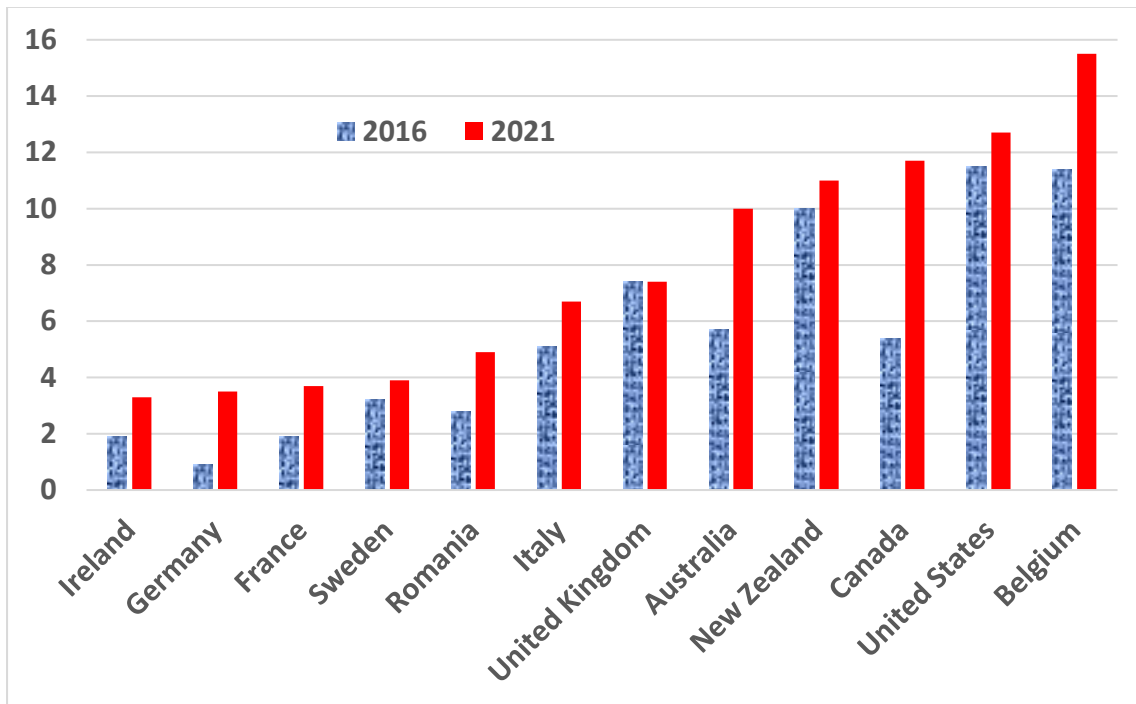
Source: ABS (2022).

Figure 10: Growth in the number of breweries, 2016 to 2021^a (% change)

^a Australia is 2015 to 2019

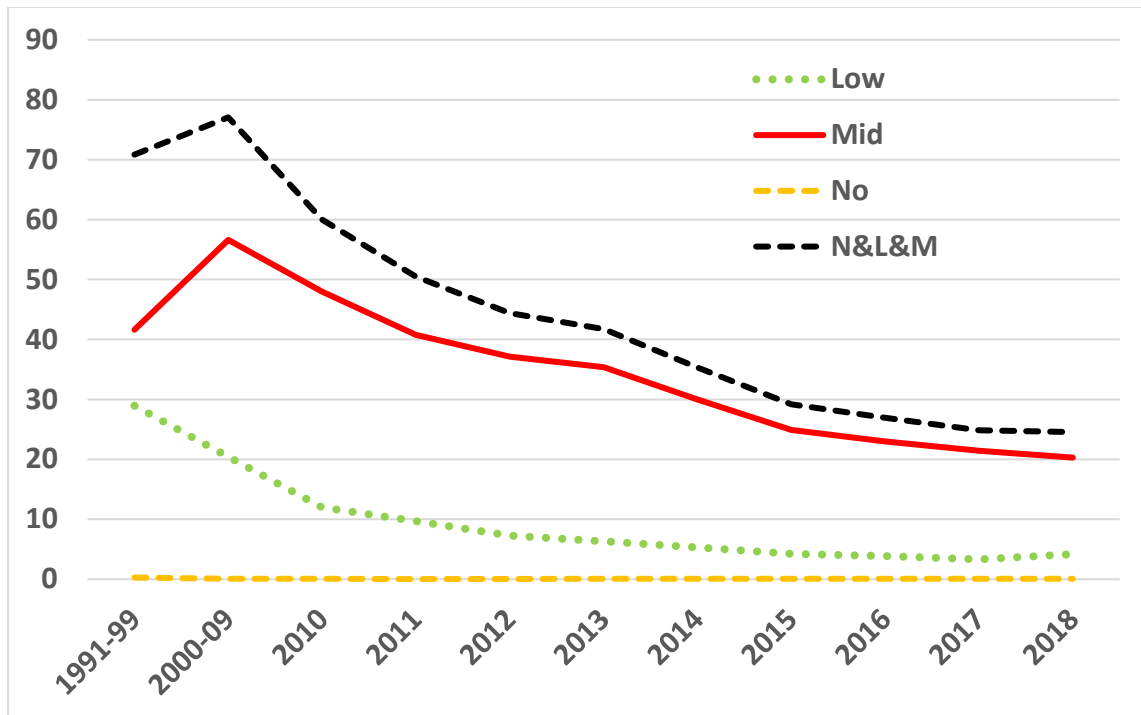
Source: Euromonitor International.

Figure 11: Share of craft beer in total beer sales, Australia and comparator countries, 2016 and 2021 (%)



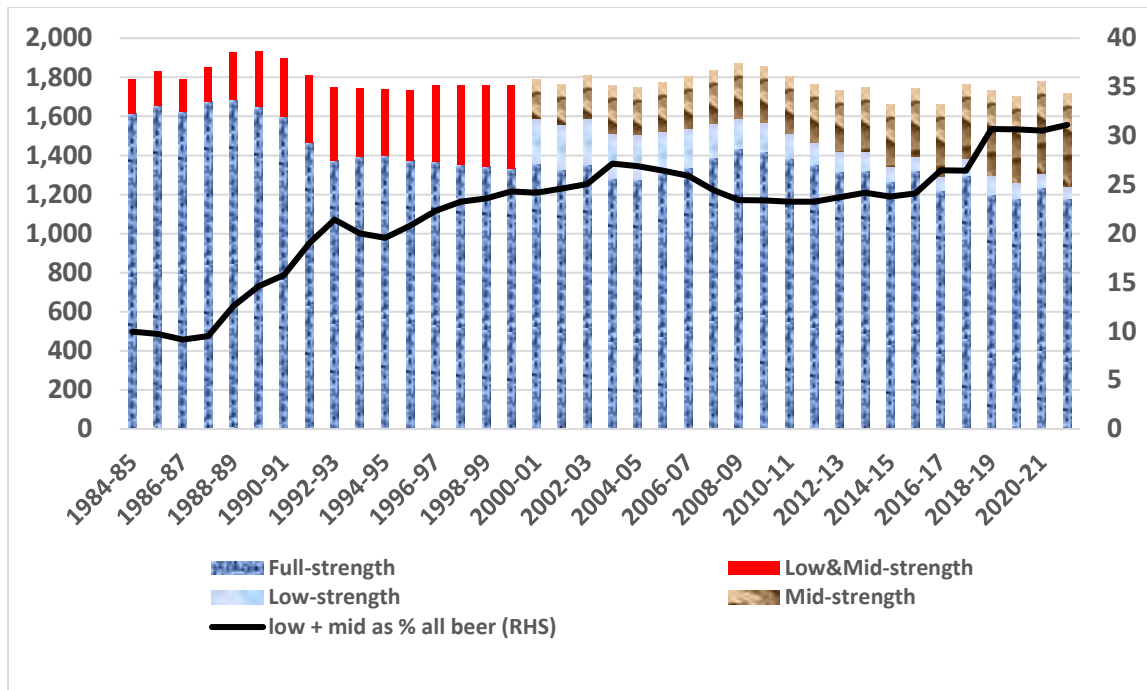
Source: Euromonitor International.

Figure 12: Australia's shares of world Mid-, Lo- and No-alcohol beer sales categories, 1991 to 2021 (%)



Source: Plato Logic (2022).

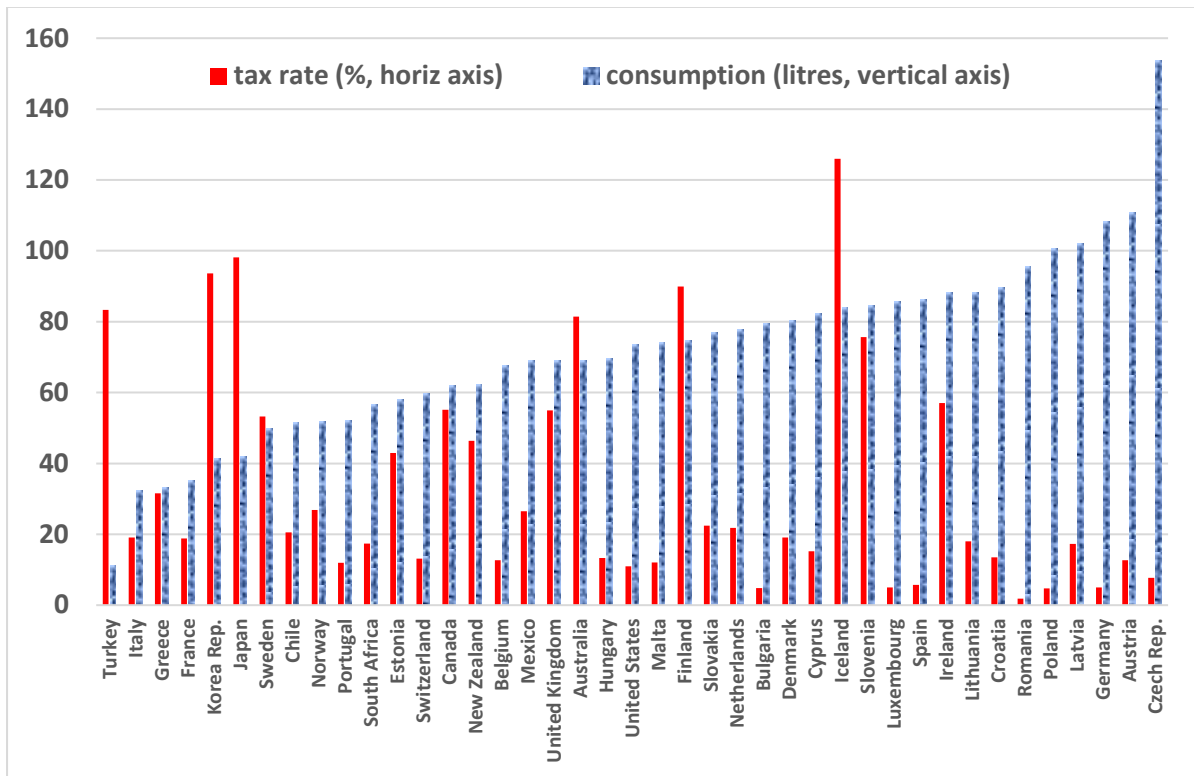
Figure 13: Volume of beer consumed as Full- and as Low- or Mid-strength beer,^a Australia, 1984-85 to 2021-22 (ML)



^a Low-alcohol is from 1.15% but <3% alcohol by volume (ABV); mid-alcohol is from 3% but <3.5% ABV; and full-strength is $\geq 3.5\%$ ABV. No-alcohol beer (defined as <1.15% ABV) is not reported by ABS/ATO because it attracts no tax, but it would add less than 1% to the total volume of beer consumed in Australia in 2021 and less than 0.1% pre-2014 (see Table 3).

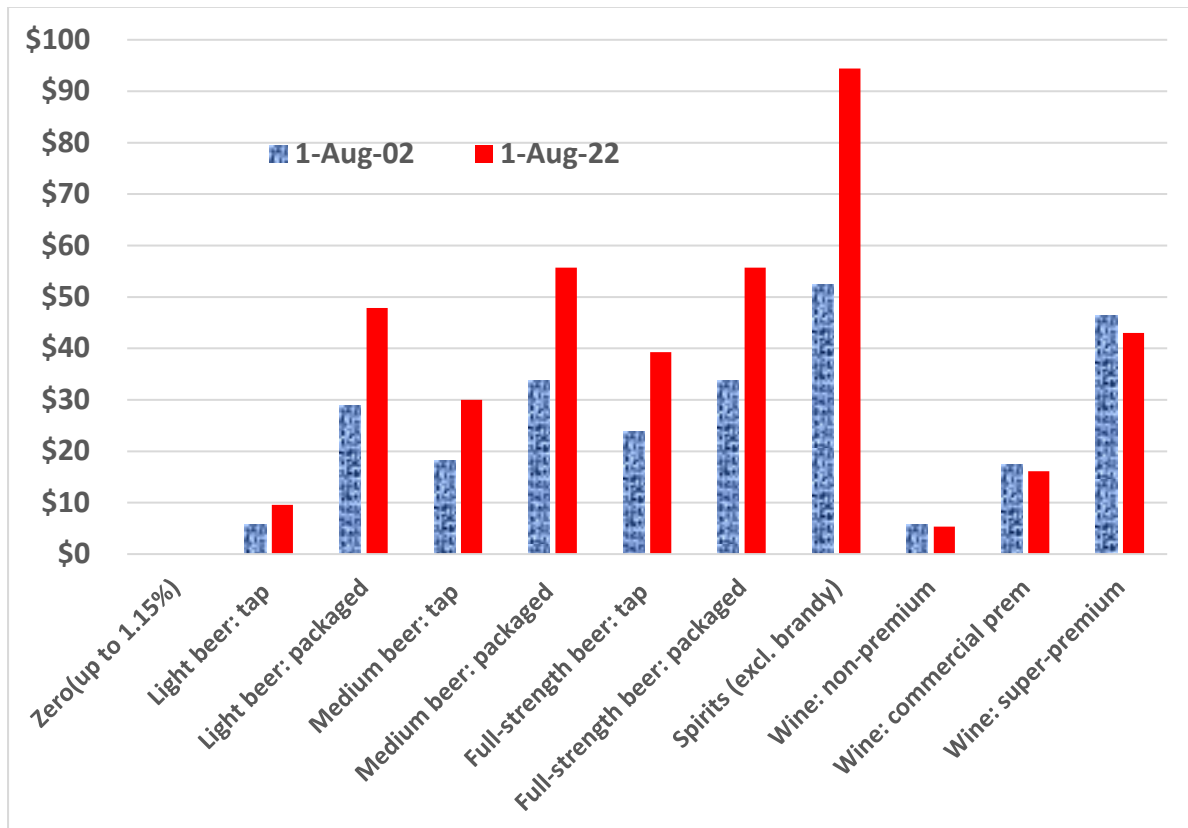
Source: Compiled from data in ABS (2019) and ATO (2022), updated as explained in the Appendix.

Figure 14: Beer consumption per adult (litres) and beer excise tax rate (% of pre-tax wholesale price of US\$2/litre), OECD and EU member countries, 2018



Sources: Anderson (2020a) for tax rates and Plato Logic (2022) for consumption levels.

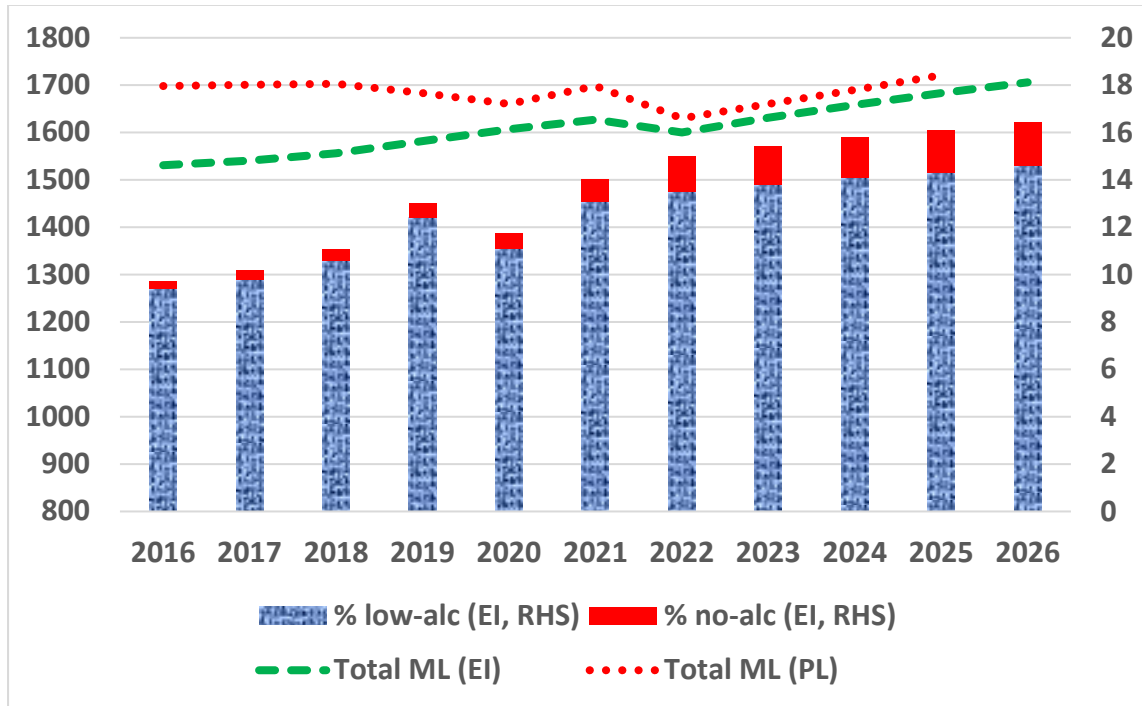
Figure 15: Beer and spirits excise tax rates and Wine Equalization Tax^a, Australia, August 2002 and August 2022 (AUD per litre of alcohol)



^a In the case of wine, the tax is 29% of the wholesale price, and is shown above at the following representative pre-tax prices per litre of A\$2.50 for non-premium, \$7.50 per commercial premium and A\$20 for super-premium wine. Wine's average alcohol level in Australia is assumed to have been 12.5% in 2002 and 13.5% in 2022. The 10% goods-and-services tax on the retail price is not included, as it applies to all beverages and most other products.

Source: ATO (2022) and Anderson (2020a).

Figure 16: Total beer consumption and shares of no-alcohol and low-alcohol in the total, Australia, actual 2016-21 and projected to 2022-26 (ML and %)



Sources: Euromonitor International (2022) and Plato Logic (2022) for total volume lines, Euromonitor International (2022) for share bars. Note that those shares of no- and low-alcohol beers are higher than those provided by ABS and Plato Logic as reported in Table 3.

Table 1: Shares of top breweries in the volume of beer production in Australia and globally, 2012 to 2021^a (%)

| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| (a) World | | | | | | | | | | |
| Anheuser-Busch InBev | 17.9 | 20.0 | 20.9 | 21.0 | 25.9 | 25.7 | 25.7 | 25.4 | 25.9 | 26.5 |
| Heineken | 9.3 | 9.3 | 9.4 | 9.8 | 10.1 | 10.8 | 10.9 | 11.1 | 11.2 | 12.0 |
| Carlsberg | 5.6 | 6.3 | 6.1 | 6.0 | 5.9 | 5.7 | 5.8 | 5.7 | 6.1 | 6.2 |
| China Resources Holdings | - | - | - | 6.0 | 6.1 | 6.1 | 5.7 | 5.6 | 5.8 | 5.5 |
| Molson Coors Brewing | 3.2 | 3.1 | 3.1 | 3.1 | 4.9 | 4.8 | 4.6 | 4.5 | 4.5 | 4.3 |
| Tsingtao Brewery | 4.0 | 4.4 | 4.6 | 4.3 | 4.1 | 4.1 | 4.1 | 4.0 | 4.2 | 4.1 |
| Asahi Group Holdings | 1.2 | 1.1 | 1.1 | 1.1 | 3.2 | 3.2 | 3.1 | 3.2 | 3.3 | 3.2 |
| Beijing Yanjing Brewery | 2.7 | 2.9 | 2.7 | 2.5 | 2.3 | 2.1 | 2.0 | 1.9 | 1.9 | 1.6 |
| Constellation Brands | - | 0.8 | 0.8 | 1.0 | 1.1 | 1.1 | 1.2 | 1.2 | 1.5 | 1.5 |
| Kirin Holdings | 2.3 | 2.2 | 2.1 | 2.1 | 2.0 | 1.3 | 1.3 | 1.3 | 1.3 | 1.1 |
| SUB-TOTAL | 46.2 | 50.1 | 50.8 | 56.9 | 65.6 | 64.9 | 64.4 | 63.9 | 65.7 | 66.0 |
| (b) Australia | | | | | | | | | | |
| Asahi Group Holdings | 0.2 | 0.3 | 0.3 | 0.3 | 0.9 | 1.2 | 1.2 | 10.8 | 36.7 | 39.9 |
| Kirin Holdings | 26.5 | 24.9 | 25.3 | 24.7 | 26.0 | 26.4 | 26.5 | 26.5 | 26.0 | 24.5 |
| Anheuser-Busch InBev | 1.0 | 4.4 | 4.9 | 5.0 | 40.3 | 40.1 | 41.6 | 31.7 | 6.9 | 7.0 |
| SAB Miller (before bought by InBev) | 47.5 | 43.9 | 39.1 | 34.1 | - | - | - | - | - | - |
| SUB-TOTAL | 75.2 | 73.5 | 69.6 | 64.1 | 67.2 | 67.7 | 69.3 | 69.0 | 69.6 | 71.4 |
| Coopers Brewery | 3.1 | 3.3 | 3.4 | 3.8 | 3.9 | 4.3 | 4.1 | 4.0 | 3.7 | 3.8 |
| Heineken | 0.4 | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.7 | 0.9 | 1.9 | 2.1 |
| Diageo | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.7 | 0.8 | 0.8 | 0.8 | 0.8 |
| Molson Coors Brewing | 0.0 | 0.0 | 0.1 | 0.1 | 0.5 | 0.6 | 0.6 | 0.6 | 0.6 | 0.6 |
| Carlsberg | 0.0 | 0.1 | 0.1 | 0.1 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 | 0.4 |

^a Plato Logic's 2021 list of the world's top ten is almost the same and the total share for its top ten is 69.7%.

Source: Euromonitor International (2022 and earlier).

Table 2: Shares of wine, beer and spirits in total alcohol consumption volume, Australia and other high-income countries, 1961 to 2019 (%)

| | Beer % | | | | Wine % | | | | Spirits % | | | |
|------------------|---------------|-----------|-----------|-----------|---------------|-----------|-----------|-----------|------------------|-----------|-----------|-----------|
| | 1961-64 | 1980-84 | 2010-14 | 2018-19 | 1961-64 | 1980-84 | 2010-14 | 2018-19 | 1961-64 | 1980-84 | 2010-14 | 2018-19 |
| Australia | 75 | 64 | 46 | 40 | 12 | 24 | 40 | 37 | 13 | 12 | 14 | 23 |
| Belgium | 76 | 61 | 51 | 48 | 13 | 21 | 35 | 38 | 11 | 18 | 14 | 14 |
| Canada | 60 | 48 | 49 | 46 | 6 | 14 | 25 | 27 | 34 | 38 | 26 | 27 |
| Denmark | 77 | 65 | 38 | 37 | 8 | 19 | 46 | 45 | 15 | 16 | 16 | 18 |
| France | 10 | 16 | 19 | 22 | 77 | 68 | 58 | 56 | 13 | 16 | 23 | 22 |
| Germany | 58 | 56 | 53 | 52 | 18 | 24 | 28 | 29 | 24 | 20 | 19 | 19 |
| Ireland | 77 | 73 | 49 | 45 | 5 | 5 | 28 | 28 | 18 | 22 | 23 | 29 |
| Italy | 3 | 8 | 23 | 25 | 87 | 80 | 66 | 64 | 10 | 12 | 11 | 11 |
| Netherlands | 48 | 49 | 48 | 48 | 9 | 22 | 35 | 35 | 43 | 29 | 17 | 17 |
| New Zealand | 78 | 63 | 43 | 43 | 4 | 17 | 38 | 37 | 18 | 20 | 19 | 20 |
| Switzerland | 38 | 31 | 34 | 22 | 42 | 49 | 47 | 56 | 20 | 20 | 19 | 22 |
| UK | 81 | 69 | 37 | 36 | 4 | 11 | 41 | 36 | 15 | 20 | 22 | 26 |
| United States | 48 | 51 | 48 | 40 | 8 | 13 | 18 | 20 | 44 | 36 | 34 | 40 |
| WORLD av. | 29 | 33 | 43 | 39 | 34 | 24 | 15 | 13 | 37 | 43 | 42 | 48 |

Source: Author's compilation from data in Anderson and Pinilla (2021).

Table 3: Shares of volume of beer consumption that is Low- and Mid-alcohol (L&M), No-alcohol,^a and Craft, Australia and the United States, 2010 to 2021 (%)

| | According to: | 1990s | 2000s | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|-----------|---------------------------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| Australia | <i>ABS/ATO:</i> | | | | | | | | | | | | | | |
| | --Full-stren ^b | 78.8 | 74.7 | 76.5 | 76.7 | 76.8 | 76.2 | 75.8 | 76.1 | 75.7 | 73.3 | 69.1 | 69.1 | 69.1 | 69.2 |
| | --Mid-alc | | 13.2 | 15.6 | 16.1 | 16.8 | 17.8 | 18.8 | 19.2 | 20.1 | 22.3 | 25.1 | 25.1 | 26.0 | 26.4 |
| | --Low-alc | | 12.0 | 7.8 | 7.1 | 6.4 | 5.9 | 5.3 | 4.6 | 4.1 | 4.2 | 5.6 | 5.6 | 4.7 | 4.1 |
| | --L&M alc | 20.0 | 25.2 | 23.4 | 23.2 | 23.2 | 23.7 | 24.1 | 23.8 | 24.2 | 26.5 | 30.7 | 30.7 | 30.7 | 30.5 |
| | --L&M tal ^c | | 17.5 | 17.6 | 17.6 | 17.7 | 17.9 | 18.3 | 18.3 | 18.7 | 19.9 | 21.4 | 21.4 | 21.6 | 21.6 |
| | <i>Euro Int'l:</i> | | | | | | | | | | | | | | |
| | --Low-alc | | | | | | | | 9.4 | 9.8 | 10.6 | 12.4 | 11.1 | 13.1 | |
| | --No-alc | | | | | | | | 0.33 | 0.39 | 0.47 | 0.63 | 0.65 | 0.93 | |
| | --Craft | | | 2.1 | 2.7 | 3.3 | 3.9 | 4.5 | 5.1 | 5.7 | 6.0 | 6.3 | 7.0 | 8.0 | 10.0 |
| | <i>PlatoLogic</i> | | | | | | | | | | | | | | |
| | --Mid-alc | 10.4 | 17.3 | 19.9 | 19.7 | 20.9 | 22.2 | 23.6 | 24.3 | 25.8 | 26.9 | 27.4 | | | |
| | --Low-alc | 12.2 | 10.8 | 6.4 | 5.9 | 5.5 | 5.0 | 4.3 | 3.8 | 3.3 | 2.8 | 3.7 | | | |
| | --L&M alc | 22.6 | 28.1 | 26.3 | 25.6 | 26.4 | 27.2 | 27.9 | 28.1 | 29.1 | 29.7 | 31.1 | | | |
| | --No-alc | 0.20 | 0.05 | 0.06 | 0.06 | 0.06 | 0.08 | 0.10 | 0.12 | 0.13 | 0.15 | 0.20 | | | |
| | --Craft | 2.0 | 3.9 | 5.4 | 5.8 | 6.2 | 6.7 | 7.1 | 7.0 | 7.8 | 8.4 | 8.2 | | | |
| WORLD | <i>PlatoLogic</i> | | | | | | | | | | | | | | |
| | --Mid-alc | 0.36 | 0.33 | 0.38 | 0.41 | 0.45 | 0.49 | 0.62 | 0.73 | 0.87 | 0.96 | 1.01 | | | |
| | --Low-alc | 0.61 | 0.58 | 0.49 | 0.52 | 0.61 | 0.62 | 0.64 | 0.67 | 0.66 | 0.64 | 0.67 | 0.69 | 0.72 | 0.67 |
| | --L&M alc | 0.98 | 0.91 | 0.87 | 0.93 | 1.06 | 1.11 | 1.26 | 1.40 | 1.53 | 1.60 | 1.68 | | | |
| | --No-alc | 1.01 | 1.03 | 1.16 | 1.16 | 1.19 | 1.24 | 1.28 | 1.34 | 1.42 | 1.48 | 1.58 | 1.73 | 1.91 | 2.04 |
| | --Craft | 1.41 | 1.93 | 2.24 | 2.37 | 2.56 | 2.72 | 2.98 | 3.26 | 3.49 | 3.67 | 3.79 | 3.90 | 3.85 | 3.86 |

^a No-alcohol means <1.15% of alcohol by volume (ABV); Low-alcohol is from 1.15% but <3% ABV; mid-alcohol is from 3% but <3.5% ABV; and full-strength is ≥3.5% AVB. The break between low- and mid-strength in Plato Logic data is 2.8%, not 3%.

^b The full-strength share is 100 less the ABS's L&M alc share less the No-alc share as estimated by Plato Logic, so it includes the Craft share.

^c L&M tal is the share of total alcohol from beer that is consumed as low- or mid-strength beer, from ATO (2022).

Sources: Compiled from ABS (2019), ATO (2022), Euromonitor International (2022 and earlier) and Plato Logic (2022).

Table 4: Shares of no-alcohol, low-alcohol and mid-strength^a beers in total beer consumption, Australia, comparator countries and the world, 1991 to 2018^b (%)

| | | 1990s | 2000s | 2010-13 | 2014-17 | 2018 |
|-------------|-----|-------|-------|---------|---------|------|
| Australia | No | 0.2 | 0.0 | 0.1 | 0.1 | 0.2 |
| | Low | 12.2 | 10.8 | 5.7 | 3.5 | 3.7 |
| | Mid | 10.4 | 17.3 | 20.6 | 25.1 | 27.4 |
| Belgium | No | 1.0 | 0.5 | 0.3 | 0.4 | 0.8 |
| | Low | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| | Mid | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Canada | No | 1.2 | 0.6 | 0.4 | 0.6 | 1.2 |
| | Low | 0.3 | 0.5 | 0.4 | 0.5 | 0.7 |
| | Mid | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Denmark | No | 0.4 | 0.6 | 0.3 | 0.4 | 0.7 |
| | Low | 2.7 | 2.0 | 1.2 | 1.2 | 1.4 |
| | Mid | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| France | No | 2.8 | 1.8 | 1.2 | 1.6 | 2.9 |
| | Low | 4.1 | 3.4 | 2.5 | 2.6 | 3.0 |
| | Mid | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Germany | No | 3.2 | 2.9 | 4.1 | 5.3 | 6.1 |
| | Low | 2.2 | 4.6 | 5.3 | 5.3 | 5.3 |
| | Mid | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Japan | No | 0.0 | 0.5 | 3.0 | 4.2 | 4.7 |
| | Low | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Mid | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Netherlands | No | 2.9 | 0.6 | 0.7 | 1.3 | 2.2 |
| | Low | 0.0 | 0.0 | 0.0 | 2.7 | 2.8 |
| | Mid | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| NewZealand | No | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Low | 1.8 | 1.3 | 1.0 | 2.7 | 2.8 |
| | Mid | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Sweden | No | 0.0 | 0.1 | 0.6 | 1.8 | 3.4 |
| | Low | 17.8 | 10.8 | 6.0 | 4.1 | 3.2 |
| | Mid | 52.9 | 42.1 | 32.3 | 29.2 | 24.9 |
| UK | No | 0.4 | 0.3 | 0.4 | 0.6 | 1.1 |
| | Low | 0.0 | 0.0 | 0.2 | 0.3 | 0.3 |
| | Mid | 0.0 | 0.0 | 0.0 | 0.1 | 0.8 |
| USA | No | 1.2 | 0.6 | 0.4 | 0.4 | 0.4 |
| | Low | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | Mid | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| World | No | 1.0 | 1.0 | 1.2 | 1.4 | 1.6 |
| | Low | 0.6 | 0.6 | 0.6 | 0.7 | 0.7 |
| | Mid | 0.4 | 0.3 | 0.4 | 0.8 | 1.0 |

^a The division between low- and mid-strength beer in this table is 2.8% ABV.

^b In the 3 years after 2018, the World 'No-' share rose to 1.7%, 1.9% and 2.0%, respectively, while the 'Low-' share stayed at 0.7%

Sources: Compiled from Plato Logic (2022).