

Exporting epidemics? The impact of liberalisation on alcohol trade in the Asia-Pacific region (early draft)

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Abstract (300 words)

Features of trade and investment agreements such as market liberalisation (i.e. the removal of barriers to the import and export of goods, services, and capital) have been hypothesised to facilitate the increased availability, affordability, and desirability of tobacco, alcohol, and ultra-processed food and beverage products. A growing body of increasingly robust studies on these hypothesised relationships has been emerging, particularly in relation to ultra-processed food and beverage products. However, empirical studies of the relationship between market liberalisation provisions and the subsequent production, trade, and consumption of alcohol are lacking. This study employs gravity modelling to explore whether tariff rate reductions in free trade agreements are associated with an increase in alcohol production, trade, and consumption in member countries, specifically looking at agreements between Australia and its 16 free trade partners. It also considers differential impacts on countries at varying levels of economic development with disparities in capacity to address potential negative externalities of increased alcohol consumption. Initial results of this modelling will be presented along with relevant lessons for trade policy and domestic regulatory policy in countries in the Asia-Pacific region.

Introduction

A recent publication in *The Lancet* (Burton & Sheron, 2018) began a shift in the narrative on alcohol – namely that ‘no level of alcohol consumption improves health’. This work drew on analyses from the Global Burden of Disease study which has used increasingly robust methods to challenge previous findings of a protective effect for low or moderate levels of alcohol consumption (GBD, 2016). The study also demonstrated the significant contribution of alcohol to morbidity and mortality, such that alcohol use was the seventh leading risk factor for both deaths and disability-adjusted life-years globally in 2016 (GBD, 2016). The authors concluded that their results warranted the reconsideration of current alcohol control policies worldwide. The aim of this paper is to provide a novel empirical analysis of the contribution of preferential trade and investment agreements (PTAs) to cross-border flows of alcohol in order to identify whether reform efforts are likely to benefit from targeting such policy areas.

Alcohol consumption is detrimental to the health of the drinker in numerous ways, including increased risk of cancers, chronic liver disease, self-harm, and road injuries (GBD, 2016); as well as generating ‘second-hand effects’ for people other than the drinker, including workplace incidents, road injuries, family disruption, and violence (Giesbrecht, 2010). Furthermore, the destructive impacts of alcohol are not borne out equitably among the population. For example, lower socioeconomic status has been demonstrated to increase the risk of alcohol-related mortality by 66% for men and 78% for women (Probst et al., 2014); the burden of disease associated with alcohol use by Indigenous Australians is almost double that of the general Australian population (Wilson, 2010); and alcohol is a significant contributor to events of ‘severely aggressive’ intimate partner violence against women (Thompson and Kingree, 2006).

The pathways through which international trade and investment agreements can promote consumption of health harmful commodities like alcohol, as well as tobacco and ultra-processed food and beverages, have been explicated in the literature (Schram et al., 2017). Briefly, some of the key mechanisms for change include provisions that reduce tariffs (i.e. border taxes) on these products, which in turn promote consumption by reducing cost; the elimination of restrictions on foreign direct investment which can incentivise transnational corporations to invest in emerging markets, subsequently growing both supply and demand through expertise in manufacturing, supply chain management, and marketing and advertising; and finally, through the inclusion of regulatory obligations and investor rights which can

increase impediments to newer, more effective regulatory responses that target harmful commodity industries.

Progress has been made in protecting national tobacco control measures from trade and investment obligations, such as the option for states to refuse private arbitration over tobacco regulatory policy in the Trans-Pacific Partnership agreement. In an effort to support similar policy space for ultra-processed food and beverages, increasingly robust empirical work has been conducted to quantify the impact of trade and investment agreements on these products (Schram et al., 2015; Barlow). Yet despite several contributions examining the threats that these agreements may (or may not) present for alcohol regulation (O'Brien and Mitchell, 2018; Kelsey, 2012; Zeigler, 2008), we are unaware of any corresponding efforts to quantify the impact of trade and investment agreements on alcohol products in order to inform policy reform. This article aims to address this gap by examining the impact of PTAs with Australia on alcohol exports to its partner countries in the Asia-Pacific region.

Methods

Case Selection

This study is part of a National Health and Medical Research Council funded Centre for Research Excellence in the Social Determinants of Health Equity (APP1078046) examining how Australian policy shapes the distribution of power, money, and resources that affect people's daily living conditions and the implications for health equity. The focus on Australian policy in the larger study underpinned the selection of Australia as the exporting country, while the importing countries included in this analysis are representative of the broader Asia-Pacific region. Moreover, Australia is an important origin for alcohol exports in the region given its competitive advantage, namely, its well-established industry players (Pierce and Stafford, 2017) that are able to take advantage of existing knowledge and resources in manufacturing, marketing and exporting alcohol products internationally (Grant, 1991; Srivastava, 2001). Narrowing our country selection also enabled the manual entry of PTA tariff data which corrected for accuracy issues in existing datasets (see *Data* section below).

We included all countries with which Australia has a PTA in force, which resulted in 16 country pairings (see Table 1 for overview). We identified tariff rates and export volumes based on the *Harmonized Commodity Description and Coding System* at the six digit level, which is the most detailed level that is internationally standardised. We captured 15 product codes,

including: 220300 (beer); 220410 (sparkling wine); 220421 (wine, 2 litres or less); 220429 (wine; more than 2 litres); 220430 (grape must); 220510 (vermouth, 2 litres or less); 220590 (vermouth, more than 2 litres); 220600 (fermented beverages); 220820 (spirits from grape wine); 220830 (whiskies); 220840 (rum); 220850 (gin); 220860 (vodka); 220870 (liqueurs and cordials); and 220890 (other spirits). Our dataset was thus structured on 240 unique country and product combinations over the period 1988 to 2016, for a total of 6,960 possible observations.

Abstinence from alcohol varies significantly across countries in the Asia-Pacific region and was considered to be a potentially important moderating factor in this analysis. Based on data from the World Health Organization's *Global Information System on Alcohol and Health (GISAH)* we categorized countries where approximately 50% or more of the population reports lifetime abstinence from alcohol as High Abstinence countries (N=7: Brunei, Cambodia, Indonesia, Malaysia, Myanmar, Thailand, and Vietnam) and those with less than 50% as Low Abstinence countries (N=9: Chile, China, Japan, Korea, Laos, New Zealand, Philippines, Singapore, and the United States). We ran models for High and Low Abstinence countries separately based on the hypothesis that the impact of PTAs on imports would be reduced in High Abstinence countries where the influence of price on demand is attenuated on religious grounds.

[Insert Table 1 about here]

Data

Independent variable. Tariff data was obtained from the World Bank's *World Integrated Trade Solution (WITS)* software. We recorded the maximum bound tariff rate (i.e. the highest percentage of border tax that can be applied to a product) for Australian alcohol products entering the importing country each year. This rate was derived from either the Most Favoured Nation rate bound through the General Agreement on Tariffs and Trade or through a PTA. When a tariff rate is 'unbound' (i.e. no commitment has been made) it requires some form of numerical representation which was set at 1000% in this study. This was based on research elsewhere which has indicated that unbound tariffs, which permit countries to raise the tariff to any value at any time, are a significant disincentive to exporters. Alternatively, if a tariff value was missing, but had been given in a previous year, the most recently available value was imputed, otherwise it was left as missing data.

Dependent variable. Export data was obtained from United Nations Statistical Division Commodity Trade database. We captured the volume of alcohol exports in litres as reported by Australia to each partner country, as well as the volume of alcohol imports in litres from all countries except Australia as reported by the importing country. From this we calculated the proportion of imports coming from Australia relative to all other countries, which enabled us to explore both absolute and relative changes in trade flows from Australia. Missing trade data was set at zero based on the knowledge that countries do not report a value if the volume is too low.

Control variables. We recorded gross domestic product (per capita at purchasing power parity in international dollars) and official exchange rate (local currency unit per USD, period average) for each country using World Bank Open Data to account for economic growth and purchasing power, respectively, in the model.

Supplementary data. Imports represent only one component of the domestic alcohol supply available for consumption. The total domestic supply is the sum of formal and informal production and legal and illegal imports, minus exports. We collected data on formal production, legal imports and exports, and total supply from the Food and Agriculture Organization of the United Nations' statistical database (FAOSTAT). Data was available for all countries with the exception of Singapore over the period 1988 to 2013. We elected to use FAO import to explore trends in the sources of domestic supply rather than COMTRADE data as the two bodies use different units of measurement that cannot be easily harmonised (tonnes versus litres). From the GISAH we collected data for all countries on informal alcohol production and illegal imports (e.g. home produced, smuggled, cross-border shopping) as represented by the level of unrecorded alcohol consumption (per capita, over 15 years old, in litres of pure alcohol). These values are estimated based on judgements from a series of WHO surveys of experts and Member States and the STEPwise approach to surveillance (STEPS) surveys. Finally, from GISAH we collected data on recorded alcohol consumption (per capita, over 15 years old, in litres of pure alcohol) for wine, beer, spirits and total alcohol to get a sense of the trends in consumption over time in these countries.

Analysis

Supplementary graphing analysis to explore time trends was conducted in IBM SPSS Statistics for Windows, Version 25.0 and Microsoft ® Office Excel 2016.

Findings

Trends in consumption and domestic supply

Alcohol consumption in Low Abstinence countries was fairly stable over the period 1988-2015 (see Figure 1a). Spirits and beer demonstrated some fluctuation over time, including growth in the consumption of spirits in the early nineties that was mirrored by declines in beer consumption, followed by a dip in spirits consumption starting in the mid-1990s, trailed by a resurgence in beer consumption later that decade. Alcohol consumption in High Abstinence countries exhibited very different trends (see Figure 1b). Notably, consumption of spirits generally declined throughout the nineties and has experienced slow growth since the turn of the century, however it has yet to reach pre-2000 volumes. Beer consumption declined at the start of the study period but has steadily increased since the early nineties. Wine and other alcohol products have remained negligible in these countries, however a small increase in wine consumption can be seen starting in 2013.

In general, alcohol imports in both sets of countries increased from Australia and the world over the period 1988-2015 (see Figure 2). It was clear from the data that domestic production contributes to the majority of the domestic alcohol supply, however in High Abstinence countries, imports are becoming an increasingly important source – particularly in comparison to Low Abstinence countries where the role of imports has stayed fairly consistent (see Figure 3a and 3b). What was also apparent was that imports were not substituting for other components of the domestic supply. That is, the total formal domestic supply has continued to increase, and thus imports are not substituting for domestic production. Likewise, while in Low Abstinence countries unrecorded consumption has been declining, in High Abstinence countries the volumes have continued to climb on average, meaning imports are also not substituting for unregulated black market or homemade products.

Gravity Model Results

Interpretation

This study has produced two key findings about the effects of introducing a PTA with Australia on alcohol imports: (1) PTAs significantly increase trade in new products, rather than intensifying trade in existing products; and (2) PTAs produce greater impacts on new product imports in High Abstinence countries than in Low Abstinence countries. The first finding

suggests that trade liberalisation of alcohol products may be more apt to shift consumption patterns rather than simply increasing total consumption. The second finding demonstrates that high levels of alcohol abstinence did not act as a protective factor against increased imports as originally hypothesised.

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Table 1 Overview of Trade Agreements in Force

<i>Partner Country</i>	<i>WTO¹ Accession</i>	<i>Bilateral Agreement²</i>	<i>Regional Agreement³</i>
<i>Brunei Darussalam</i>	1995	--	2010
<i>Cambodia</i>	2004	--	2010
<i>Chile</i>	1995	2009	--
<i>China</i>	2001	2015	--
<i>Indonesia</i>	1995	--	2010
<i>Japan</i>	1995	2015	--
<i>Korea</i>	1995	2014	--
<i>Laos</i>	2013	--	2010
<i>Malaysia</i>	1995	2013	2010
<i>Myanmar</i>	1995	--	2010
<i>New Zealand</i>	1995	1983	2010
<i>Philippines</i>	1995	--	2010
<i>Singapore</i>	1995	2003	2010
<i>Thailand</i>	1995	2005	2010
<i>United States</i>	1995	2005	--
<i>Vietnam</i>	2017	--	2010

¹World Trade Organisation; ² with Australia; ³ ASEAN-Australia-New Zealand Free Trade Agreement

Figure 1 Trends in alcohol consumption (1988 – 2015) in countries with low and high levels of alcohol abstinence

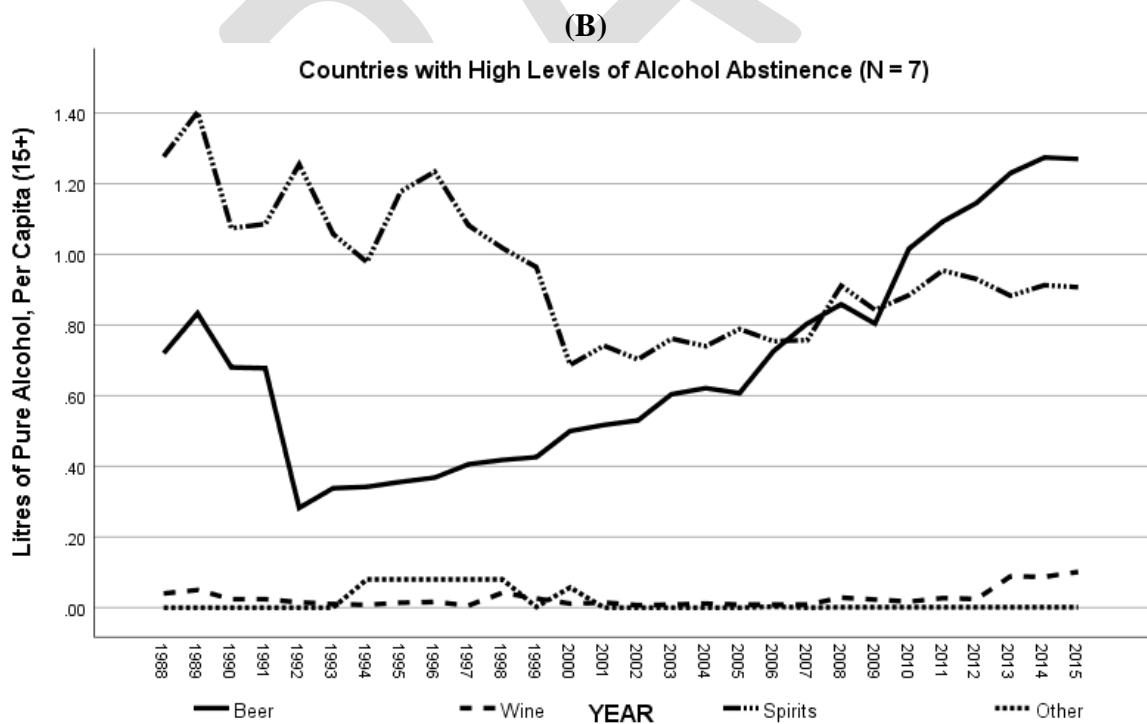
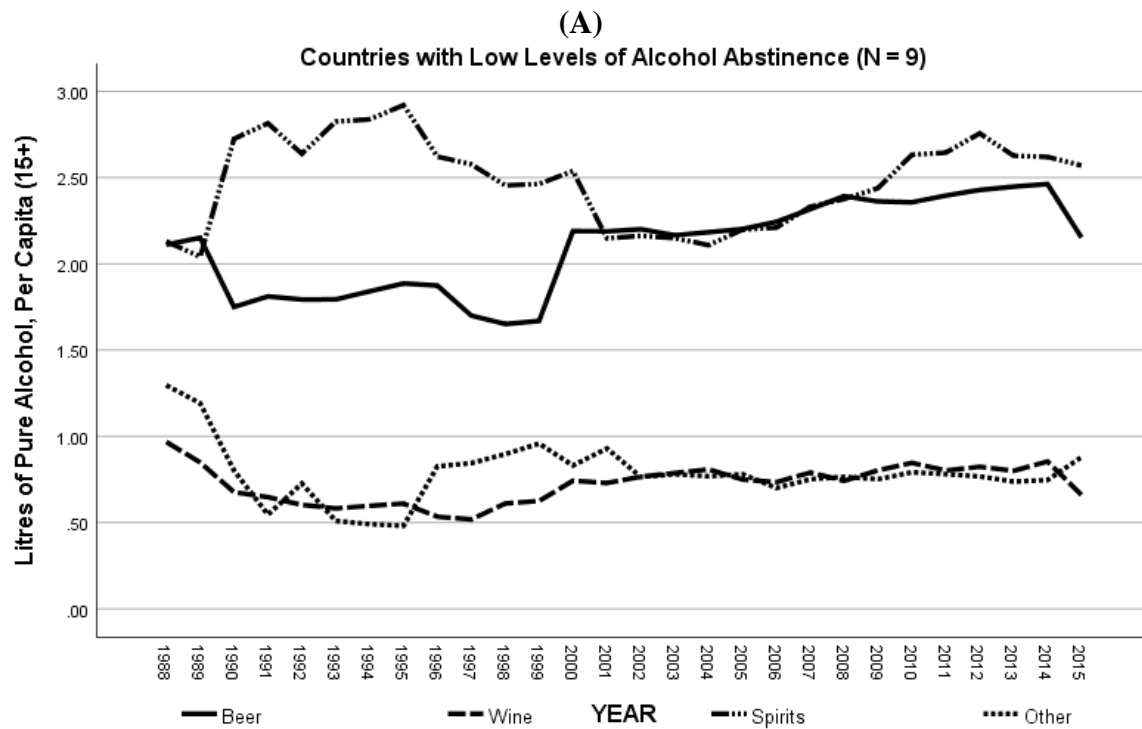
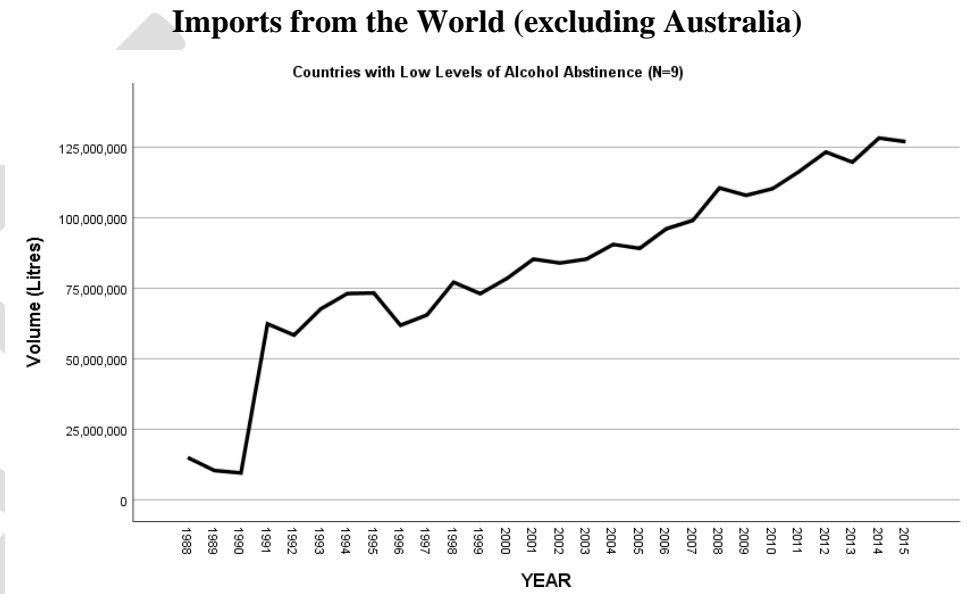


Figure 2 Trends in alcohol imports (1988 – 2015) in countries with low and high levels of alcohol abstinence

Low Levels of Abstinence



High Levels of Abstinence

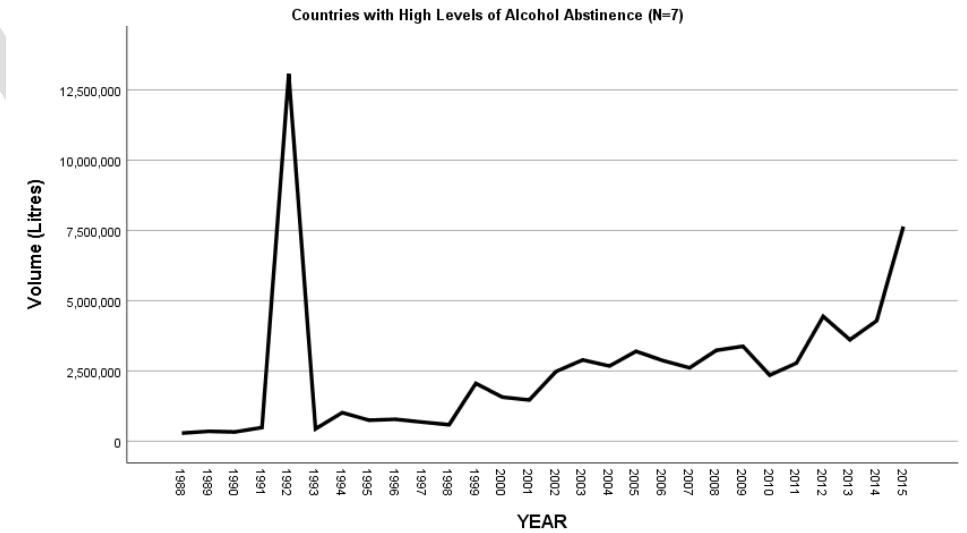
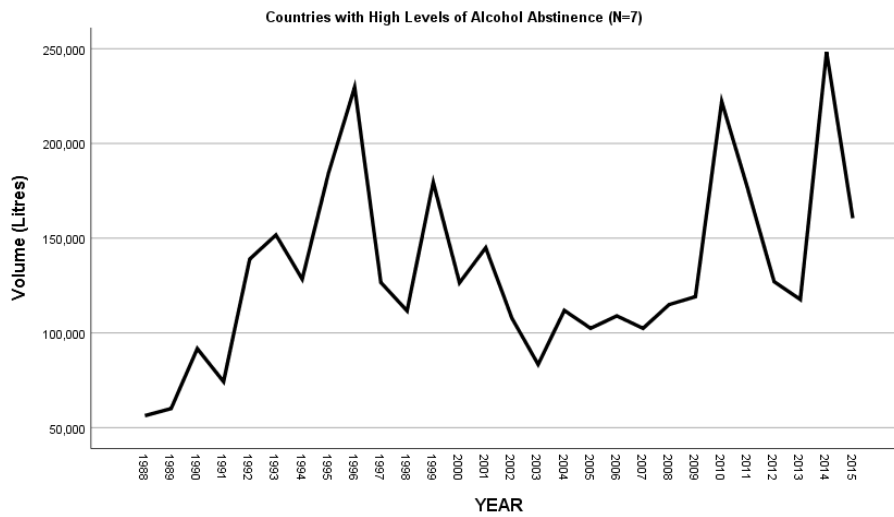


Figure 3 Trends in alcohol production, imports, exports, and total supply (1988 – 2013) in countries with low and high levels of alcohol abstinence

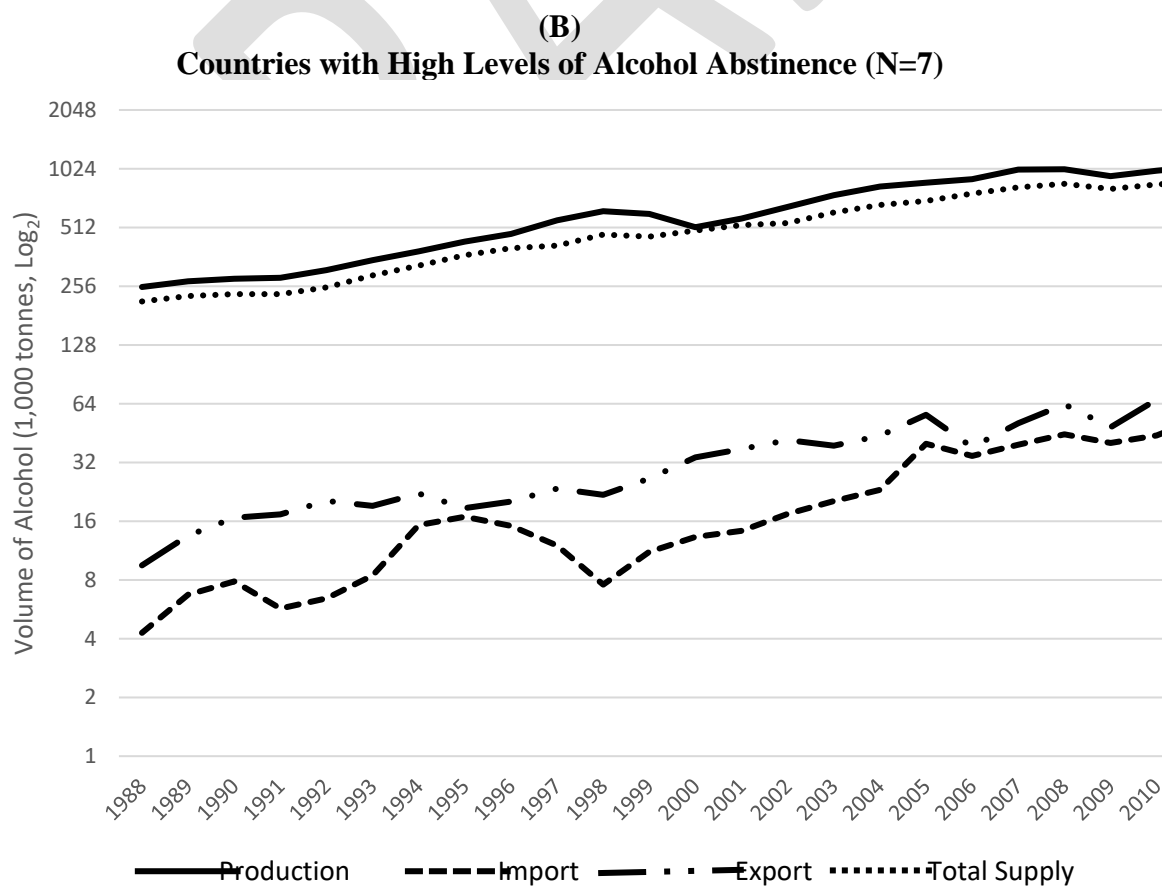
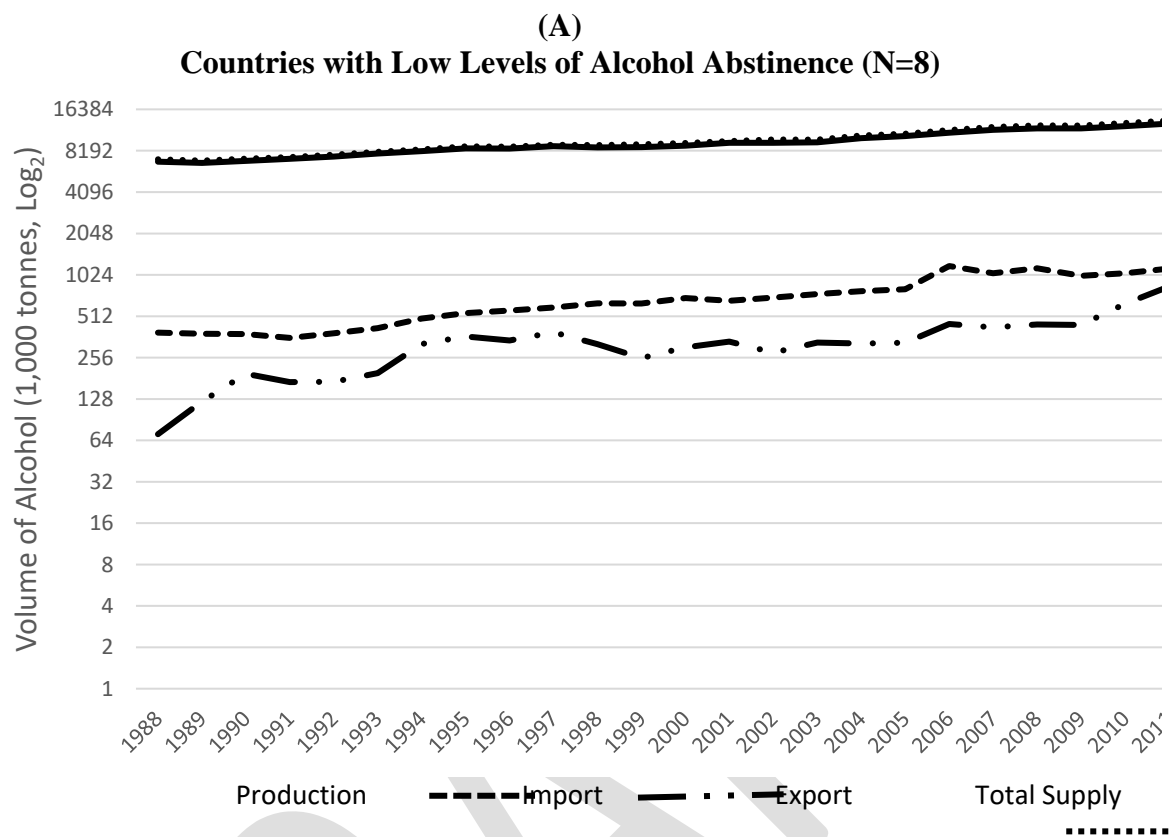
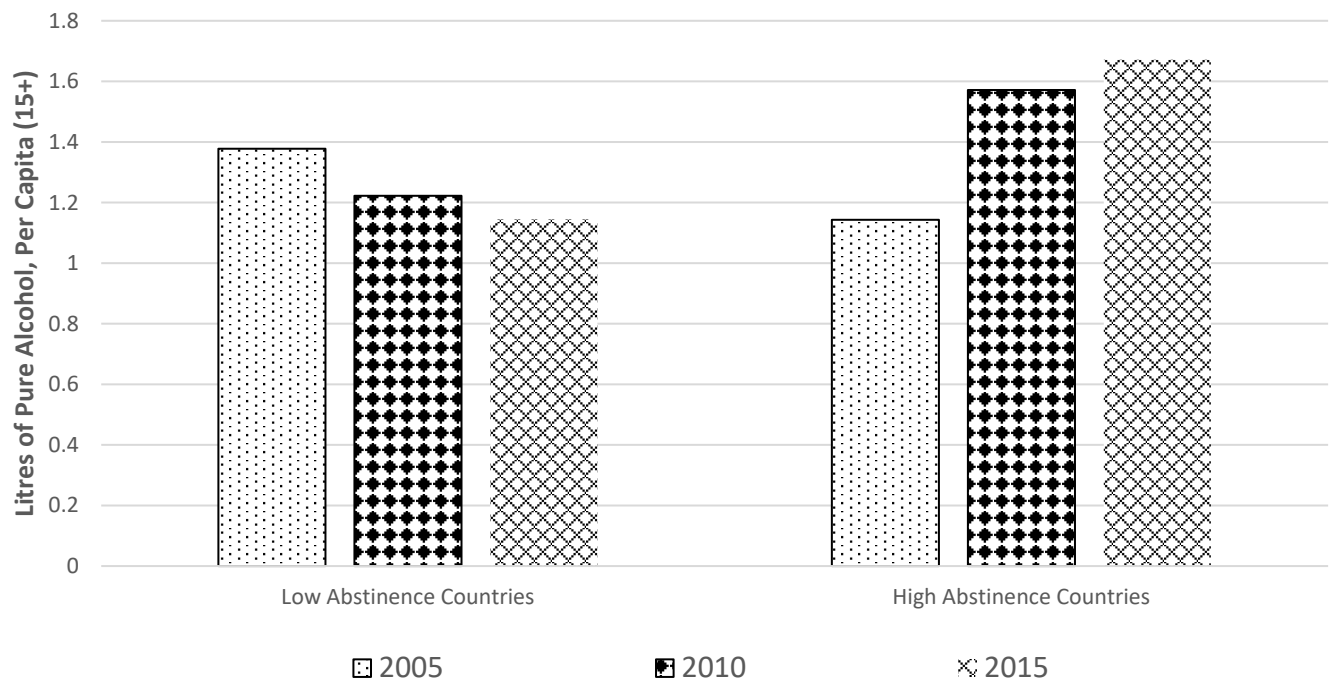


Figure 4 Trends in unrecorded alcohol consumption (2005, 2010, 2015) in countries with low and high levels of alcohol abstinence



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