

Economic Perspectives

Could a reduction in alcohol consumption be good news for the UK economy?

Kevin Connolly, Katerina Lisenkova and Peter G. McGregor, Fraser of Allander Institute.

**The research underlying this article was funded by the Institute of Alcohol Studies. However, the responsibility for the analysis and opinions expressed in this paper are the sole responsibility of the authors. We would like to acknowledge Aveek Bhattacharya's helpful comments in the development of this paper.*

1. Introduction

The UK has one of the highest alcohol consumption rates per capita in the world being ranked 25th according to the latest global World Health Organisation report on alcohol (WHO, 2014). While there are several well documented detrimental effects of alcohol consumption on health, crime and productivity (e.g. Holmes et al, 2016), the sector also contributes positively to the economy through its production and sales activities.

Health concerns have prompted governments' efforts in the UK and elsewhere (including in Scotland) to seek to reduce harmful alcohol consumption, whether through attempts to shift public taste away from such consumption or through the imposition of higher taxes on alcohol. While most would accept that such policies would be likely to have beneficial health effects, there is concern that it would have detrimental effects on the UK economy. For example, previous "impact studies" have produced estimates of the substantial levels of output and employment supported by the UK alcohol industry (Oxford Economics, 2016; Berkhout et al, 2013).

In this study we explore the likely macroeconomic consequences of policy-induced reductions in alcohol consumption using the same basic methodology as impact studies.¹ Conventional industry impact studies are generally not used to address the issue of the economic effects of a shift in tastes away from alcohol or the impact of higher alcohol taxation. In general, in both these cases the reduction in the consumption of alcohol is typically only one aspect of the total impact: this is the "gross" impact of the reduction in expenditure on alcohol and this tends to be the focus of industry impact studies. However, a shift in taste away from alcohol would normally imply a shift in favour of the consumption of other goods and services, and it is the "net" impact of this switch in consumer spending that matters to calculate the overall impact on the economy. Similarly, a rise in alcohol taxation would indeed be expected to reduce consumption on alcohol, but would augment tax revenues and hence increase government current expenditure.² Again, the overall impact on the aggregate economy reflects the "net" effect of the reduction in consumption of alcohol and increase in public spending.

Of course, we know that the "gross" macroeconomic impact of a reduction in consumption of alcohol must be negative: the reduction in demand will reduce economic activity.³ From a policy perspective that focusses only on the gross impacts, the adverse economic consequences of a reduction in consumption would have to be traded off against any beneficial health or wider social effects. However, since the net effect is generally the outcome of conflicting pressures, even the direction of the net macroeconomic

¹ We develop an alcohol-disaggregated input-output table and model of the UK. For a brief account of this see Fraser of Allander (2018).

² In principle, tax revenues could fall in response to a rise in taxes on alcohol, but the evidence suggests the reverse. Of course, if they were to fall, the net effect would in this case would be even more adverse than the gross effect.

³ This certainly has to be true within an input-output context.

outcome is unknown a priori and, in principle at least, a policy aimed at shifting tastes or changing taxes to reduce alcohol consumption could yield a “double dividend” of improved health outcomes and a positive (net) economic impact. This paper explores, quantitatively as well as qualitatively, the issue of whether there appears to be a trade-off between health benefits and economic activity of a reduction in alcohol consumption or whether there is the potential for a “double dividend” in the UK.

The paper is organised as follows. Section 2 provides some background to the study. Section 3 considers the macroeconomic impacts, net as well as gross, of a switch in taste away from alcohol consumption. Section 4 explores the (gross and net) macroeconomic impact of a rise in taxation on alcohol. Section 5 provides a brief conclusion.

2. UK alcohol policy

As in many countries, the legal age for purchases of alcohol in the UK is 18, whereas the legal age for consumption depends on a variety of factors, including location and type of alcohol.⁴ While there are no other legal limits on the purchase or consumption of alcohol, the UK government recommends that both men and woman should not consume more than 14 units per week . (Department of Health, 2016).

In the past, the UK Government has set out policies with the objective of reducing the rate of harmful alcohol consumption. The UK Alcohol Strategy (UK Government, 2012) is the most significant recent UK alcohol policy and its objective is to reduce excessive alcohol consumption through a series of actions.

One problem identified by the UK Government is the availability of cheap alcohol. To combat this the UK Alcohol Strategy outlines actions aimed at reducing consumption including: introduction of a minimum juice content rule in cider, increase of the duty on high strength beer (>7.5%) together with a reduction in duty on lower strength beer (<2.9%). The UK strategy also mentions the possibility of banning multi-buy sales discounts (e.g. ‘buy one get one free’) as well as the introduction of a minimum unit price for alcohol but neither policy has been implemented at the UK level. However, the Scottish Government did act; it implemented a ban on multi buy sales in 2012 and – after a lengthy legal challenge by the whisky industry – it finally introduced a minimum unit price for alcohol (of 50p) in May 2018. These measures (Scottish Government, 2017) were taken to combat the greater health impacts in Scotland, given that its alcohol consumption is c. 18% higher than in England and Wales⁵.

Along with multi-buy deals, the UK Government identified alcohol advertising as a potential factor limiting reduction in consumption, especially among the young (18-24). A ban on advertising was mooted, but not adopted as the government noted that there were already strict adverting controls in place to prevent advertisers from targeting and appealing to young people (UK Government, 2012).

The UK Government has also set out other alcohol-focused policies. Launched in 2011, the Public Responsibility Deal is an agreement between the government, industry, public bodies, NGOs and academics to promote public health goals. It includes 11 pledges related to alcohol ranging from alcohol labelling to support for the Drinkaware charity (IAS, 2015). Given the voluntary nature of the agreement there is, however, the possibility of a conflict of interest for the alcohol industry with regard to the pursuit of public health objectives.

The UK government sets alcohol duty levels which affect the cost of alcohol and hence the level of consumption. To induce a reduction in consumption, between 2008 and 2012, an alcohol duty escalator (ADE) was put in place, which increased alcohol duty 2% above the rate of inflation on an annual basis. However, in 2014 the ADE was scrapped (2013 for beer) and in 2015 and 2016 duty rates were frozen (IAS, 2017a). Duty rates in 2017 rose in line with inflation but were again frozen for 2018. Overall however, there

⁴ A unit of alcohol is defined in the UK as 10ml (or 8g) of pure alcohol (NHS, 2018).

⁵ The key elements of the Scottish Government’s alcohol policy are: no multi-buy promotions (implemented in 2012) and the introduction of a minimum unit price as introduced on 1st May 2018, after a lengthy legal challenge by the Scotch Whisky Association (SWA) on behalf of the whisky industry.

has been a significant drop in the real terms value of alcohol duty since 2012.

3. The macroeconomic impact of a reduction in alcohol consumption

In Section 2 we noted the emphasis on the reduction of harmful alcohol consumption in the UK Government's alcohol strategy. However, while this strategy identified the steps to be undertaken to achieve this objective, it did not specify any clear target for the reduction in alcohol consumption. However, the World Health Organisation (WHO) recommends an overall 10% reduction in alcohol consumption to reduce negative health effects (WHO, 2018). Using this WHO recommendation, in this paper we explore the macroeconomic impact of a 10% reduction in UK alcohol consumption.

To explore these impacts we use an Input-Output (IO) model calibrated using a purpose-built 2010 UK alcohol-disaggregated IO table. Within the alcohol industry we identify two key components, production and consumption. In this paper the focus is on consumption changes and within the alcohol disaggregated IO table there are three consumption sectors: hotels, other on-trade (including pubs/bars/ restaurants/ nightclubs etc.) and retail (off-trade).

3.1 The "gross" impact of a 10% reduction in alcohol consumption

We assume that all three alcohol consumption sectors (hotels, other "on-trade" and retail) experience a 10% reduction in the value of alcohol sales with the price of alcohol fixed. We investigate the economy-wide impacts of such fall in alcohol consumption, which could, for example, reflect the impact of a successful government campaign to shift consumer taste away from alcohol.

In this scenario it is important to note that the income saved as a consequence of the reduction in alcohol spending is not reallocated to other consumption. Scenario 1 isolates the effects of only reducing alcohol consumption. This is broadly the approach used by sectoral "impact studies" that seek to identify the overall impact of a particular sector.

As expected, a 10% reduction in sales by value in all three alcohol sales sectors (hotels, other on-trade and retail) – with no assumed reallocation of spending – has a negative effect on GVA (the value of final goods and services produced in the economy, i.e. accounting for intermediate consumption, taxes etc.)⁶ and employment. Overall there is a reduction in GVA of £2.60 billion. This is broadly consistent with the Oxford Economics' (2009) report, which stated that the alcohol industry in 2008, supported £28.6 billion of UK GDP. For employment, a 10% reduction sees the loss of 63,344 full time equivalent jobs (FTEs) – with nearly 55% of these directly within the alcohol sales sectors (34,779), plus 1,200 in manufacturing of alcohol (5.3% of base year). IAS (2017b) notes that in 2014, the UK alcohol sales industry supported 740,000 UK jobs⁷, with only between 30-56% (depending on the sector) being full-time jobs. Our results look to be of the appropriate order of magnitude given a 10% reduction in alcohol consumption⁸.

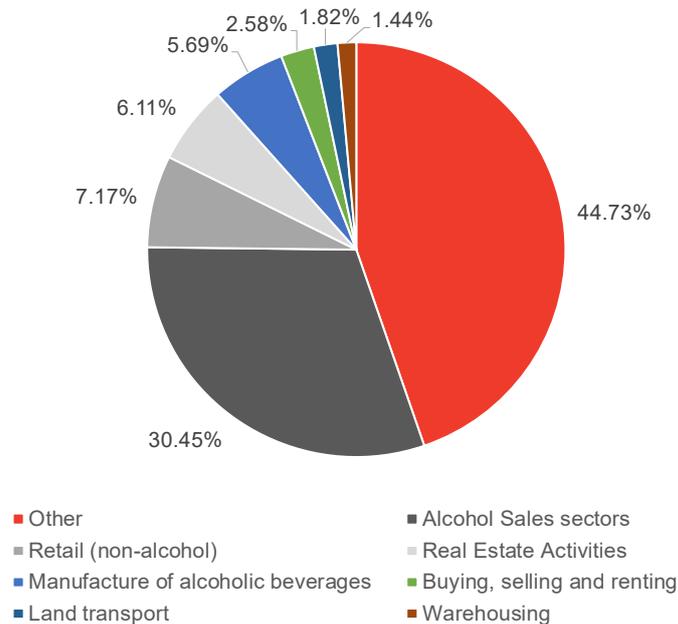
Obviously the reduction in GVA is not evenly distributed across the economy. Its distribution depends on sectors' scale and the inter-sectoral links with alcohol sales sectors. Chart 1 illustrates the sectoral distribution of the overall GVA change. The largest GVA reduction is in the alcohol sales sectors. The other significant GVA changes are the sectors which are inherently linked to the sales of alcohol but are not directly impacted.

⁶ GVA is a more important measure for the economy and is closely related to GDP.

⁷ There were also 30,000 jobs in alcohol production.

⁸ Due to a large percentage of part-time workers in the alcohol sales industry the FTE results would be much lower than the 740,000. Using a scaling factor of 0.5 the FTE becomes 370,000, which with a 10% reduction is in the same magnitude of the model results.

Chart 1: Sectoral composition of GVA decline in alcohol consumption



Source: Fraser of Allander Institute

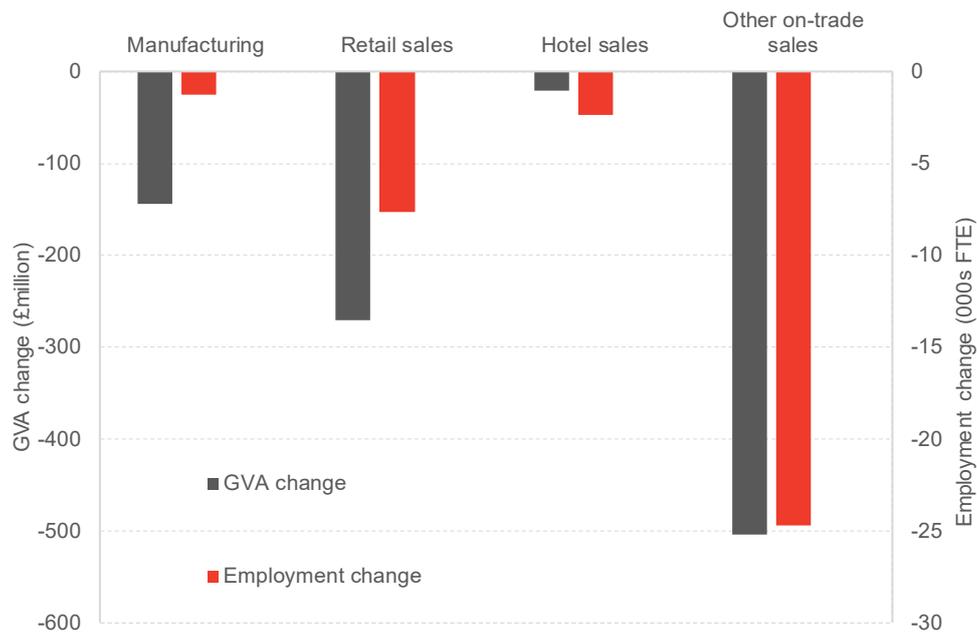
3.2 The “net” impact of a 10% reduction in alcohol consumption in favour of other goods and services

If consumers reduce their spending on alcohol it is likely they would switch their spending to other goods and services, rather than saving it (as assumed in the previous section). Not surprisingly, the net effects depend to a degree on what goods and services are consumed instead of alcohol. We consider a number of possibilities, but begin by assuming that the reallocation simply follows the overall pattern of household expenditure in the IO table.

Using the income saved from reduced consumption expenditure on alcohol to spend on other goods and services clearly reduces the scale of the negative impact on the economy. Indeed, ex ante, even the direction of change in aggregate economic activity is strictly ambiguous: depending on the structure of the alcohol-related industries relative to all other industries, it is perfectly possible that the switch in consumption away from alcohol could actually increase aggregate economic activity.

A 10% reduction and reallocation of spending (in line with the IO table) generates a small positive GVA impact of £23 million. Also, FTE employment falls by 21,680, much less than the 63,344 “gross” impact figure noted above in Section 3.1. These results imply that while there are fewer jobs, they are better paid jobs with higher levels of value-added per employee.

Chart 2: GVA and employment changes for alcohol sectors



Source: Fraser of Allander Institute

Chart 2 summarises the employment and GVA effects in the alcohol sectors (the three sales sectors plus alcohol manufacturing). All four are negatively affected in terms of both employment and GVA due to the reduction of sales. The greatest part of the employment and GVA reduction occurs in the other-on trade sector. That is because this sector has by far the largest sales value and is more labour intensive as compared to the other sales sectors – and many jobs within this sub-sector are low paid.

4. The impact of a 10% increase in alcohol duty with and without recycling of additional government revenues

The UK alcohol strategy (UK Government, 2012) identified the low price of alcohol as problematic, since the lower price drives an increase in consumption (refer Meng et al (2013), which can, as already noted, lead to various adverse health effects. The simplest method to reduce consumption is to increase the price – either through a tax or minimum unit pricing (MUP). While there is evidence that MUP could lead to a reduction in ‘health inequality’ (Holmes et al, 2014), there has been substantial industry objections to MUP policies⁹. In time MUP may become a UK-wide policy, however the most likely option is an increase in alcohol tax duty. That is the focus of this scenario.

There is no ‘one size fits all’ alcohol tax in the UK. Instead the tax levied is dependent on the type of alcohol. In this scenario we assume a broad 10% increase in the tax duty on all types of alcohol across the three consumption sectors. An important point that needs to be accounted for is the consumption response to a change in price for each type of alcohol. For this the own-price elasticities from Meng et al (2013) listed in Table 1 are used. Most elasticities are between 0 and -1, indicating that as the price rises demand falls, but less than in proportion to the fall in price so that the total expenditure on alcohol increases. Accordingly, with most of the elasticities less than unity, demand falls less than in proportion to the rise in price, so that Government revenues actually increase in response to a tax rise.

⁹ One of the key opponents to this minimum unit pricing has been the Scottish whisky industry. <https://www.theguardian.com/society/2017/jul/24/scotch-whisky-industry-attacks-minimum-price-plans-as-blunt-instrument>; <http://www.bbc.co.uk/news/uk-scotland-38390535>

Table 1: Own price elasticities by alcohol type

	On-trade	Off-trade
Beer	-0.79	-0.98
Cider	-0.59	-1.27
Wine	-0.87	-0.38
Spirits	-0.89	-0.08
RTDs ¹⁰	-0.19	-0.59

Source: Meng et al (2013)

An increase in alcohol duty, without the recycling of additional government revenues, generates a reduction in alcohol consumption: the focus is exclusively on this “gross” impact. Since alcohol duty only makes up part of the total price of alcohol, this 10% increase in tax results in a much lower increase in consumer prices. With a 10% increase in duty, the reduction in alcohol sales amounts to 1.1%. With this increase in tax there is an overall negative effect on the economy with a reduction of £294 million GVA and 7,324 FTE jobs.

The increase in tax also impacts government revenues, with an overall net positive impact of £788.7 million. A 10% increase in tax results in an increase in government revenue through increased alcohol duty of £835.4 million. However, the associated reduction in consumption generates a net reduction in VAT revenue of £46.7 million (assuming standard VAT rate and accounting for change in VAT on alcohol duty).

We next explore the impact of recycling the £788.7 million net increase in tax revenues by increasing public spending in line with the pattern of government expenditure within the original UK IO table. In this case there is a positive impact on employment of 17,041 FTE jobs and GVA of £847 million¹¹. A large fraction (77.3%) of the overall employment changes is attributable to just four sectors. Of the overall 17,041 increase in FTEs: 3772 are attributed to public administration and defence; 3128 to education; 4153 to health and 2127 to residential care and social work.

5. Conclusions

While there is little controversy that policies directed towards reducing alcohol consumption – either through changing public taste or higher alcohol duties - would improve health outcomes, there is such less known on the impact of such policies on the economy, with some arguing it might impact negatively on value-add and jobs currently supported by the UK alcohol industry. While any reduction in alcohol consumption would, in itself, have an adverse impact on the economy this is only part of the overall effect of either a shift in tastes or higher alcohol duties. In the former case, a shift in taste away from alcohol will typically operate in favour of the consumption of other goods and services, and the overall impact on the economy depends on the net impact of this switch in spending. Similarly, while a rise in alcohol duties will reduce consumption of alcohol, any rise in tax revenues will allow an increase in public spending and the net impact on the economy depends on the outcome of these countervailing forces.

Not surprisingly, we find that a reduction in consumption of alcohol alone, without considering the likely reallocation of consumption spending in the case of a shift in tastes or the recycling of the increase tax revenues in the case of an increase in duties, has significant negative effects on the UK economy. This broadly captures the approach of conventional alcohol industry “impact studies”. In this “gross impact” view, there would appear to be a trade-off between the health benefits of the policy aimed at reducing alcohol consumption and an adverse impact on the economy. However, if one takes a “net impact”

¹⁰ Ready to Drink packaged drinks (i.e. ‘alcopops’ etc.)

¹¹ We explored the sensitivity of results to alternative assumptions about the use of income freed up by not spending on alcohol: while the quantitative results varied, the qualitative results were unaffected. See FAI (2018).

perspective, where proper account is taken of the reallocation of expenditures and/or the recycling of revenues to increase public spending, outcomes change significantly. For the switch in consumption away from alcohol and towards other goods and services we find that for employment the trade-off is considerably relaxed, and is not present at all for value-added effects (although the quantitative results vary with the assumed use of the income freed up by the reduction in alcohol consumption). For an increase in alcohol duties we find evidence of a net positive effect on both value-added and employment, implying a “double dividend” of a simultaneous improvement in health and a stimulus to the UK economy.

It should be noted that this finding of a “double dividend” for rises in alcohol duties may not apply to other countries / regions or in other time periods. Since the overall impact of a policy-induced reduction in the consumption of alcohol is the net outcome of two countervailing forces: the reduction in consumption itself and either the reallocated consumption or recycled revenues. Even the direction of the net effect cannot be determined a priori: it is an empirical issue that has to be resolved by appeal to evidence drawn from the target country / region.

A number of extensions to this research would yield important additional insights from a policy perspective. First, the analysis could be extended to include explicit modelling of changes in the consumption of alcohol, including responsiveness to relative prices. Second, it would be beneficial to relax the rather restrictive assumption, embedded in the input-output approach, of an entirely passive supply side, to reflect the presence of supply-side constraints on the UK economy. A computable general equilibrium (CGE) framework would accommodate these developments, and allow a more rigorous exploration of the impact of changes in taste and/or taxes. Third, such a framework would also facilitate systematic investigation of the adverse supply-side impacts of alcohol consumption arising from, for example, increased absenteeism, presenteeism and mortality. Fourth, it would be instructive to introduce a regional dimension to the analysis, to identify the regional distribution of impacts, which may prove to be uneven. Finally, disaggregation of households by income level would allow an assessment of distributional impacts.

Author Details

Kevin Connolly
Fraser of Allander Institute
k.connolly@strath.ac.uk

Katerina Lisenkova
Fraser of Allander Institute
k.lisenkova@strath.ac.uk

Peter G. McGregor
Fraser of Allander Institute
p.mcgregor@strath.ac.uk