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► Potential benefits of minimum unit pricing for alcohol versus a ban on below cost selling in England 2014: modelling study.

Brennan A., Meng Y., Holmes J. et al.

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When for England the UK government reverted from a proposed minimum unit price for alcohol to a ban on pricing below duty plus VAT, they abandoned a policy that would probably have had 40–50 times the impact on consumption and reaped correspondingly greater health gains.

SUMMARY In 2010 the UK government proposed a “ban on below cost selling” of alcoholic beverages, which would target drinks sold so cheaply that their price is below the cost of producing and retailing them. In the absence of detailed, commercially sensitive information on these costs, the government instead proposed that the price to consumers could not be lower than the tax payable on the product. In the United Kingdom, tax on alcohol has two components: the alcohol beverage specific duty, for example, £28.22 per litre of pure alcohol for spirits as of March 2014, and a sales value added tax (VAT), currently 20% on top of the price of the product. Under this interpretation of ‘below cost’, alcohol must be sold at least at 120% of the duty payable. Duty rates vary for different drinks; a ban on below-cost selling would maximally affect drinks with higher duty rates such as spirits, and have less effect on drinks with lower duty rates, such as cider.

In 2012 the UK government announced an alternative policy: a minimum unit price for alcohol. Levels discussed ranged between £0.40 and £0.50 per unit. Under this system the minimum selling price increases in proportion to the alcohol content of the drink, so it maximally affects the price of strong drinks sold relatively cheaply – drinks favoured more by those drinking at harmful levels.

In 2013 the government reverted to its previous ban on below-cost selling, which it introduced in May 2014, the impacts of which are very different. For example, a below-cost ban of the kind implemented would force a large bottle of strong cider to be sold for at least the equivalent of £0.06 per unit rather than £0.45 per unit if that were the minimum unit price.

To assess the impacts of these options, for this study a new version of the Sheffield Alcohol Policy Model was developed. On the basis of the available data, this simulates or predicts the impact of policy options including minimum unit and below-cost pricing through analysis of selected costs and benefits. It was used to address these questions: How would the potential impact of a ban on below-cost selling differ from that of a minimum unit price of £0.40, £0.45 or £0.50, if the policies were to be implemented in 2014/15? In particular, what are the estimated potential effects on alcohol consumption, consumer spending, tax and duty revenues, and health harms and associated NHS costs? A minimum of £0.45 is focused on because this was the withdrawn government proposal.

Under these various policies, the model estimates the percentage changes in the average prices paid by subgroups of the population for 10 beverage types, on the assumption that prices which do not need to increase stay the same, and those that do need to (because they fall below the minimum level) increase only as much as is needed to meet the new legal requirement. These estimates in turn are used to estimate effects on consumption, given what is known about how purchasing changes when price changes – not just the purchasing of that beverage type, but the knock-on effect on other types. Finally, likely impacts of consumption changes on health are estimated from what is known about the relation between consumption and various forms of ill-health and fatalities. These were estimated on a per annum basis out to the tenth year after the policy changes, when the effects of the changes should have been fully realised.

Main findings

The proportion of the alcohol market affected is the key driver of the estimated policy impact. Just 0.7% of alcohol units are estimated to be sold at less than duty plus VAT. In contrast, a £0.45 minimum unit price would affect 23% of units. **Harmful drinkers** are a priority group, as they consume substantially (on average 58 units per week for women, 80 units for men) and spend substantially (respectively £1800 and £3400 per annum). Of the population aged 16 or more, 25.5 million (61.5%) are moderate drinkers, 7.2 million (17.3%) hazardous drinkers, and 2.2 million (5.3%) harmful drinkers. A £0.45 minimum unit price would affect about 13%, 20%, and 31% of units sold to these categories of drinkers. In contrast, the impact of a below-cost ban would be minimal; for example, just 1% of units currently consumed by harmful drinkers would be affected.

These figures would feed through to consumption. The below-cost ban would for example reduce each harmful drinkers’ average annual consumption by just three units, compared to 137 units for a £0.45 minimum unit price. Despite this large impact on consumption, for all population subgroups, a £0.45 minimum unit price would result in relatively small changes in spending. This is because in respect of the beverage types particularly affected by this policy, drinkers tend to cut back in the face of increased prices so they spend about the same. For example, although each harmful drinker might drink 137 units less, each unit would cost more, so spending was estimated to fall by just £1.70 per year. Average consumption and spending of moderate drinkers would barely be affected.

Estimates of health harms again show that a below-cost ban would have minimal effect. For example, 10 years after its implementation just 14 fewer deaths per annum and around 500 fewer hospital admissions, compared to 624 deaths and 23,700 admissions prevented by a £0.45 minimum unit price. A similar pattern was found for cumulative measures of harm reduction over 10 years, each almost 50 times greater for a £0.45 minimum unit price – for example, in respect of quality adjusted life year (QALY) gains for England (24,200 v. 500) and healthcare cost savings (£9.5m v. £417.2m). Most of the harm reduction would benefit the 5.3% of the population who are harmful drinkers. As the minimum unit prices increases from £0.40 to £0.45 and £0.50, more alcohol products are affected, and estimated harm reductions are greater.

Given a £0.45 minimum unit price, total retailer revenue in shops and supermarkets (the off-trade) is estimated to increase by 5.6% or £201m, but by just 0.2% for a below-cost ban. Profits can be expected to rise accordingly. In contrast, effects on government tax revenue are small, primarily because two tax effects counteract each other. Alcohol duty revenue will fall slightly because it is related to the volume of alcohol sold, but VAT will rise a little because it is a percentage of product prices and these will increase. The net effect was estimated as reductions in alcohol tax revenues of £48.5m or 0.6% for a £0.45 minimum unit price and £1.5m or 0.02% for a below-cost ban.

The authors’ conclusions



This study quantifies the potential impact of the UK government's policy of a ban on selling alcohol for less than the cost of the payable duty plus VAT. The findings suggest that effects would be small – a 0.04% reduction in consumption and just 14 fewer deaths per year at full effect. The minimum unit price policy originally proposed by the prime minister would have an estimated 40–50-fold greater effect.

Why the model estimates a £0.45 minimum unit price would have such greater impact is clear: a greater proportion of the market is affected and to a greater extent, and this is especially true for harmful drinkers. It is this more specific targeting of harmful drinkers that distinguishes minimum unit pricing from, for example, general price or tax increases.

The greatest effects of a £0.45 minimum unit price would be on the harmful drinkers who buy the greatest share of cheap alcohol and buy in larger volumes than moderate drinkers; for them, greater absolute reductions in consumption lead to greater reductions in harm. In contrast, the 62% of the population who are moderate drinkers are on average affected little.

The UK government has recently implemented the ban on below-cost selling but says it will monitor events in Scotland, where the government passed legislation to introduce a £0.50 minimum unit price (implementation has been stalled by a legal challenge) after reviewing analyses using an earlier version of the simulation model. Ireland has also committed to introducing a similar policy in conjunction with Northern Ireland. Locally in the United Kingdom, several local authorities are considering or have enacted price agreements or voluntary restrictions with local retailers covering the sale of high strength, low-cost alcohol; this study suggests that agreements leading to alcohol being sold at £0.40 to £0.50 per unit could have substantive effects on alcohol-related harms.

Given that the assessed pricing policies have either never been implemented in the United Kingdom or only recently, there is currently a lack of data with which to validate the estimates. However, the model has been applied to two Canadian provinces, and the results can be compared with what actually happened there to prices, health, and hospital admissions when minimum prices changed. The estimates seem to be conservative, typically predicting less than half the actual level of changes and benefits. This is consistent with the analysts' approach of, where necessary, making conservative assumptions so as not to overstate the potential impact of minimum unit pricing.

In addition to the analysis of health harms described in this paper, a wider public health perspective can be used, and estimates are also available on the effects of these policies in terms of reductions in crime and absence from work. One issue missing from the model is harms to others (for example, in families) rather than to drinkers themselves.

FINDINGS COMMENTARY The issues addressed by the featured study were explored by Findings in a [hot topic entry](#) on minimum price drink policies, to which the reader is referred for more information.

As that entry commented, it is important to remember that analyses such as the featured study focus on averted ill health and early deaths. However, health has little to do with why most Britons drink. The 'benefits' drinkers themselves feel they get are rarely valued in cost-benefit calculations. In the recent past, at least one [UK government analysis](#) has argued that drinking produces social and business benefits for society as a whole due to "alcohol's capacity to act as a catalyst in social interactions and leisure experiences ... promoting social cohesion", but then as now there is no study on which estimates of these benefits could be based, so they are omitted from calculations.

In a section which looked at the issue from the point of view of the drinker, when the Home Office itself [valued the costs and benefits](#) of minimum per unit pricing, they [accepted](#) drinkers will experience a diminution in welfare as the gap between what they are willing to pay and what they have to pay narrows. Some will instead choose not to purchase alcohol at the higher prices or not as often as before, and forgo whatever benefits they see themselves as having got from drinking. In so far as they do pay more, there will be countervailing gains for the alcohol industry, but the result would, it was said, be a "decrease in net social welfare". This loss was unquantified and needs to be set alongside the health gains for the same consumers and broader social gains.

There is little doubt that the possible prize in purely public health terms is great – health improvement among the largest achievable by any feasible means and at very little cost to the nation. And while some benefits of drinking are omitted from the calculations, so too are some harms, notably (as the authors comment) to the drinker's family. But non-health reasons for drinking and the opposition these and other considerations (such as the 'nanny state' jibe) could generate have left the minimum price policy floundering in England, while Scotland with greater alcohol-related problems to solve has bitten the bullet, at least in terms of written if not yet implemented law.

Thanks for their comments on this entry in draft to research author Alan Brennan of the University of Sheffield in England. Commentators bear no responsibility for the text including the interpretations and any remaining errors.

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