Written Evidence from the Sheffield Alcohol Research Group on the transcript of the Health Committee and Home Affairs Committee’s sessions on minimum unit pricing.

31st January 2018
Introduction
At the request of the Clerk to the Health Committee, this submission clarifies claims about our research and related work which were made during recent hearings on minimum unit pricing (MUP).

The submission has four sections. First, we provide some general comments on over-arching concerns and, as requested, on timelines for evaluation of MUP in Scotland. We then respond in turn to comments about the Sheffield Alcohol Policy Model, wider comments about MUP and comments about other aspects of the evidence base.

We have generally limited ourselves to addressing matters of fact and evidence rather than challenging points of view expressed by committee members and witnesses. Exceptions to this occur where we felt important perspectives on the evidence were not advanced.

1. General comments

1.1. Unspecified criticisms of work by the University of Sheffield and researchers in Canada

Example comments: Q45, Q51-52, Q231

At several points, witnesses and committee members suggested that our modelling and evaluation research from Canada are contested. However, no specific criticisms were made excepting a small number of inaccurate claims which we discuss below (see Sections 2.1, 2.4, 2.5 and 3.5). We reviewed the written evidence submitted to the committee and found that all criticisms raised therein originate from two sources: the submission from Christopher Snowdon of the Institute of Economic Affairs and an Adam Smith Institute (ASI) report authored by Mr Snowdon with John Duffy. We ask the committees to consider the following points:

- Our estimates of the potential effects of MUP are based on the best available evidence and align with a much larger body of evidence on alcohol pricing policies and the risks of alcohol consumption. Where alternatives to the evidence used in the model exist, we have consistently sought to test how using that evidence affects our conclusions and have published our findings. Where gaps in the evidence remain, we have highlighted these as sources of uncertainty (see Section 2.3 below). Critics of our work have not identified specific evidence, methods or uncertainties which we have failed to consider.

- Dr Duffy was commissioned by the Scotch Whisky Association to critique our research as part of their legal challenge to MUP.¹ This conflict of interest is not acknowledged in either the ASI report or Mr Snowdon’s submissions to the committee. Despite claiming scientific authority, Dr Duffy has also not published his criticisms in any peer-reviewed scientific article. Indeed, we are unaware of any such article which raises significant criticisms of either our work or that of the Canadian researchers.

- The ASI report contains a large number of factual errors which negate its main arguments and suggests that the authors have failed to understand the basic structure of our model. We have highlighted these errors in a detailed rebuttal.² The most problematic error is repeated in the BBPA’s submission to the committee which states incorrectly that “the Sheffield model makes the assumption that there is a causal link between overall per capita consumption and levels of harmful drinking”. We are puzzled by the prominence that the ASI report and BBPA give to this claim as we published a journal article in 2010 explaining in detail why we do not make this assumption.³
The criticisms of the Canadian research are based on misrepresentations of that research by Mr Snowdon among others. We addressed these misrepresentations in our original submission to the committee and reproduce the relevant text (slightly edited) in an Appendix to this submission. The authors of the Canadian research have also responded to similar criticisms in a peer-reviewed article.\textsuperscript{4}

If there are additional specific criticisms of our model or the Canadian research which committee members would like to raise, we would be happy to respond.

1.2. \textit{How long will it take for evidence to emerge from Scotland?}

We anticipate that evidence on the effects of MUP will emerge from Scotland in four broad phases:

- \textbf{0-12 months - Early anecdotal and preliminary data:} Claims may be made in the early months of the policy based on short-term shifts in data and experiences of front-line workers. These should be treated with caution as their robustness will be difficult to assess.

- \textbf{12-36 months – Short-term evaluation research:} Analyses of early high quality data are likely to appear in the first three years after implementation. These may relate to changes in alcohol sales, acute health and social outcomes, and the alcohol market. They are likely to be informative and reasonably robust but potential problems include insufficient post-implementation data to obtain statistically significant results and many of the anticipated longer-term policy effects, especially on health, welfare and persistent changes in youth uptake of drinking, not having had time to emerge and add to conclusions.

- \textbf{36-60 months – Medium-term evaluation research:} Evaluation studies aiming to contribute to the Scottish Parliament’s ‘sunset clause’ decision on MUP will report primarily in this period. Studies will capture all major outcomes of interest and their evidence is likely to be robust and give a clear indication of the policy’s main effects. However, evaluations may still be based on relatively short time periods as some datasets take up to two years to become available. Some longer-term effects may also still be emerging (e.g. health effects relating to chronic diseases such as cancer may take up to 20 years to fully emerge).

- \textbf{60+ months – Long-term evaluation research:} Additional evaluation research may emerge in the longer-term as new datasets or analytical methods become available, researchers not involved in the initial evaluation publish studies, and secondary outcomes of the policy become apparent. There is a low likelihood that conclusions on MUP will change substantially in this period.

1.3. \textit{Conflation of dependent and harmful drinkers}

\textit{Example comments:} Q12, Q123, Q134

At several points witnesses conflate harmful drinkers with those who are dependent on alcohol, often to suggest that the former will not respond to MUP because they are ‘addicted’. This conflation should be avoided.

The population can be divided into abstainers (15.0%), moderate drinkers (63.8%), hazardous drinkers (16.5%) and harmful drinkers (4.7%).\textsuperscript{5} Those dependent on alcohol are primarily found in the harmful group but account for only 1.4% of the total population of England.\textsuperscript{6} Thus, the majority of harmful drinkers are not addicted to alcohol but may benefit from MUP as their level of consumption is still putting their health at risk.
2. Comments relating to the Sheffield Alcohol Policy Model

2.1. *Does the Sheffield model define a moderate drinker as someone consuming 5.5 units a week and does it include abstainers in its definition of moderate drinking?*

*Example comments: Q39-40, Q61-67, Q73-80*

It does not. We were extremely disappointed by the extended discussion of these claims as they appeared to undermine several committee members’ confidence in our research. Until 2017, we defined a moderate drinker as a drinker who consumes no more than 21 units per week if male or 14 units a week if female. This definition was in line with a standard interpretation of the pre-2016 low risk drinking guidelines. Since 2017, our definition of moderate drinking has aligned with the new guidelines. Abstainers have never been included in our definition of moderate drinking.

The figure of 5.5 units a week originates from our 2014 article in the Lancet and is the average weekly consumption reported by moderate drinkers in the General Lifestyle Survey, the best available data on alcohol consumption in England at that time. This average is a summary statistic that is presented for reporting purposes and is not used in the model. Instead, the model estimate policy effects using the full distribution (i.e. each individual’s reported alcohol consumption).

The claim that our model “is based on the assumption that moderate drinkers consume just 5.5 units per week” originates from Christopher Snowdon of the Institute for Economic Affairs and can be found in his submission to the committee, among other places. His inclusion of this claim is disappointing as we have asked him to correct it on several previous occasions. It is unfortunate that his decision not to do so has caused the committee to be misled.

2.2. *Has the Sheffield model been reviewed or replicated and is there other evidence?*

*Example comments: Q48-50, 92, 109, 127*

As Prof Gilmore noted (Q48), both our policy analyses and our methods have been peer-reviewed and published by many scientific journals, including the most respected medical journals, the Lancet and BMJ. Our work has also been subject to the external independent academic peer-review processes of the Department of Health, NICE and Public Health England. As one of the most high profile public health studies of recent years, it has also been subject to extensive additional scrutiny; yet, as noted above, no peer-reviewed scientific article has made significant criticisms of the model.

Contrary to views expressed to the committees, other models have estimated the potential effects of MUP. These have been constructed by researchers in Australia, the New Zealand Ministry of Justice and the Institute for Fiscal Studies (IFS). A number of smaller scale studies, referenced here, also went unmentioned and provide important evidence on MUP. This body of research generally supports our conclusion that MUP is effective and well-targeted, although there is some debate on other matters (e.g. the effect on businesses and public support for the policy).

With regard to replication, it would be difficult to replicate a model of this kind in the sense of other researchers building and testing an identical model. This would be resource-intensive and is unnecessary as our data and methods are fully described and can be checked for their appropriateness. We have also conducted and published extensive sensitivity analyses and adaptations to test the robustness of our conclusions to new datasets, methodologies, assumptions and contexts. For those seeking further information, we have published a full mathematical description of our work and we are aware of other researchers making use of this and our other methodological publications to develop similar models for other purposes.
2.3. What are the limitations of the Sheffield Alcohol Policy Model?
Example comments: Q91

As with all scientific research, the Sheffield Alcohol Policy Model has limitations. We document these and discuss their implications in our reports, journal articles and presentations. The most important limitations are listed below:

- **Impacts on cross-border trading and consumption of illicit alcohol:** The model does not consider these potential responses to MUP as there is insufficient evidence on which analyses could be based. Witnesses to the committee offered appropriate views on their likely impact on the effectiveness of MUP.

- **Impacts on those dependent on alcohol:** The best available population surveys of alcohol purchasing, consumption and health risks under-represent those who are dependent on alcohol. This means our findings can be generalised to most moderate, hazardous and, harmful drinkers but cannot be generalised to the 1.4% of the population who are dependent on alcohol. There are two ways in which MUP may affect this population. First, by preventing cheap alcohol contributing to the development or perpetuation of future cases of alcohol dependence. Second, those dependent on alcohol may adopt both positive and negative strategies in response to MUP (see Section 3.2). It will be important to monitor the impact of MUP on this population. The best approach to helping those currently dependent on alcohol is to improve provision of alcohol treatment services.

- **Market restructuring:** The model makes the simplifying assumption that all products sold for less than the MUP will move up to the MUP and that products sold above the MUP will be unaffected. The true market response is likely to be more complex. Producers and retailers may remove products from the market, reformulate or repackage products to change their alcoholic content or move products to different price points to communicate quality. Therefore, our assumption is probably conservative and may mean we are underestimating the effects of MUP.

- **Underestimation of alcohol consumption:** In common with all alcohol consumption surveys, our underlying data underestimate the levels of alcohol consumption in the population.\(^{22}\) We have previously undertaken a detailed examination of the effect of this on our policy analyses and concluded that we are likely to be underestimating the impact of MUP.\(^{23}\)

2.4. Do the Sheffield model’s estimates change with each model run?
Example comments: Q127, Q124

Mr Beale quoted three different estimates of the reduction in annual alcohol-attributable hospital admissions which arise from a 50p MUP in Scotland. These are 6,500 (from our 2012 report), 2,033 (from our 2016 report) and 2,000 (unclear 2017 source). He also noted that, between 2012 and 2016, the endpoint of our modelling moved from 10 years in the future to 20 years in the future.

We are happy to explain these changes:

- The difference between 2016 and 2017 is because the latter figure has been rounded to the nearest hundred.
- The difference between 2012 and 2016 arises due to us updating the data and evidence within the model. The updates accounted for: (a) substantial changes in alcohol prices, consumption, spending and related harm in the intervening period; (b) newly available evidence on the relationship between alcohol consumption and the risks of alcohol-related harm and (c) improvements to the modelling methodology.
The endpoint of our modelling changed because we made evidence-based revisions to our estimates for the time lag between a change in alcohol consumption and the resultant effects on health outcomes being fully realised. The revision from 10 to 20 years reflects new evidence relating to alcohol-attributable cancers. This does not change the estimated size of the policy effects; it simply affects how they emerge over time.

All key model updates are detailed in the introductory sections to our reports to help readers understand why estimates have changed. Our experience has been that policy makers and other stakeholders value this information and view our use of the most recent data, evidence and methods as a strength of the model. We assume that Mr Beale would agree and would express greater concern if the model were out-of-date.

It is important to recognise that MUP continues to appear effective and well-targeted despite changes to its underlying data, evidence and methodologies. This should provide additional confidence that our conclusions are robust.

2.5. Does the Sheffield model show the main impact of MUP will be on moderate drinkers?

Example comments: Q121-123

We are unsure how this conclusion was reached as no figures were presented to support it and our research and other similar studies show the exact opposite.
3. Other comments on MUP

3.1. How much will a 50p MUP cost moderate drinkers?
Example comments: Q19-21, Q37, Q68-73, Q81

Two different figures were repeatedly offered as the cost of a 50p MUP to moderate drinkers: £1.26 per week and £0.20 per week. This confusion arose because the figure relate to different ‘costs’ of MUP and should not be compared.

The figure of £1.26 is derived from IFS analyses and was used in a highly artificial way. It is the increase in price faced by someone buying 14 units of wine per week (i.e. the guideline threshold) and paying the current average price per unit for wine sold below 50p per unit. It is unclear how many moderate drinkers have this purchasing pattern and we are unconvinced that the figure of £1.26 is a relevant estimate of the cost of the policy to real-world moderate drinkers. It is also the increased cost before drinkers make any consumption changes in response to the policy.

The alternative figure of £0.20 is taken from our research. It is the estimated average increase in alcohol spending for a moderate drinker after they have changed their consumption. It is derived from analyses which separate respondents to the Health Survey for England into 72 different groups based on their sex, age and socioeconomic status, and whether they report moderate, hazardous or harmful drinking. Estimated changes in consumption and spending are then based on real-world data on the types and amounts of alcohol that each group buys, how much they pay for it, the price increases they would face under a 50p MUP and the potential for substitution behaviour (e.g. switching consumption from off-trade beer to on-trade cider). We believe that this data-driven approach provides a better indication of policy effects.

3.2. Will those dependent on alcohol inevitably adopt problematic strategies in response to MUP?
Example comments: Q41, Q134, Q185

This is not our understanding of either the evidence or practitioners’ experiences. Research with those dependent on alcohol and our discussions with treatment service providers in Scotland suggest that there are a range of potentially beneficial or more problematic strategies that dependent drinkers adopt when alcohol becomes unaffordable. Potentially beneficial strategies include reducing alcohol consumption, waiting for money to become available or seeking treatment for their alcohol problems. More problematic strategies include not buying essentials, using illicit drugs and drinking non-beverage alcohol.

Those dependent on alcohol are a diverse population with complex needs. They are unlikely to adopt a single common response to MUP and stakeholders in the policy debate should avoid generalisations. If MUP is implemented, service providers will require resources to manage a range of responses from their clients and our evaluation work in Scotland will provide evidence to inform that support and the protection of vulnerable individuals.

3.3. Can MUP be achieved using taxation and can the additional revenue be obtained by the Government?
Example comments: Q113, Q146, Q168, Q197

An MUP could theoretically be created using the excise duty system; however, tax rises of either 118%-674% or 27%-70% would be required depending on the approach used. These large tax rises are required due to two main barriers which we describe these below. Figure 1 illustrates the current tax system and will help readers to understand these barriers.
First, to achieve a MUP using excise duty requires alcohol to be taxed in proportion to its strength. Beer and spirits are taxed this way but wine and cider are not as the EU requires they be taxed by volume (i.e. by litre of wine rather than by litre of alcohol). This requirement can be partially circumvented by introducing a series of strength-based tax bands so that the tax rate for a litre of 5% cider is higher than for 4% cider and so on. The UK Government does this to a modest extent but Figure 1 shows the current system of duties remains some distance from strength-based taxation. The introduction of additional tax bands is theoretically possible but, to date, the Government has only committed to a minor adjustment for cider and it is unclear whether EU law would permit sufficient bands to achieve an approximation of strength-based taxation.

Second, even after accounting for EU requirements, current alcohol duties are not close to 50p per unit and some beverage types are taxed at very low levels. For example, the duty and associated VAT payable on:

- A 4.0% can of beer is £0.23 per unit
- A 11.0% bottle of wine is £0.31 per unit
- A 37.5% bottle of vodka is £0.34 per unit
- A 7.5% bottle of cider is £0.06 per unit.

Very large increases in duty would be required to approximate a 50p per unit tax. Using the examples above:

- Beer duty would need to increase by 118.4%
- Wine duty would need to increase by 58.8%
- Spirits duty would need to increase by 45.0%
- Cider duty would need to increase by 673.9%

These duty increases would apply to all alcohol irrespective of whether it was previously sold for less than 50p per unit. This may deliver greater improvement to public health than a 50p MUP, but the political and economic consequences are likely to be substantial. An alternative option would be to increase alcohol duties to the level required to achieve effects comparable to a 50p MUP. For
Scotland, we estimated that tax increases of between 27% and 70% would be required to achieve comparable reductions in alcohol consumption and alcohol-attributable among heavier drinkers (note that in Q107 these tax increases were incorrectly described as equating to a 60p MUP in England rather than a 50p MUP in Scotland). We also found that such tax changes would be less targeted on heavier drinkers and would consequently affect moderate and lower income drinkers to a greater extent than a 50p MUP.

Alternative options include a windfall tax or annual levy on large retailers, as has been discussed in Scotland, or Mr Loughton’s suggestion during the committee sessions of a new targeted tax on alcohol proportionate to its cheapness. These approaches merit discussion but we do not have evidence on their potential effectiveness, targeting, legality or practicality.

3.4. Would increased VAT revenue arising from a MUP cancel out lost revenue from excise duty?
Example comments: Q148

We have examined this question in most of our reports. In 2013, we estimated that total government revenue from excise duty and VAT in England would fall by £62m or 0.7% under a 50p MUP. This is because reduced duty revenue from reduced alcohol sales is only partially off-set by increased VAT revenue from the increased value of the remaining sales.

3.5. Did a 10% increase in minimum prices trigger a 32% fall in alcohol-attributable mortality in Canada?
Example comments: Q55

This is an incorrect description of the Canadian evidence (see Appendix).

3.6. Is evidence from Canada transferrable to the UK context?
Example comments: Q45, Q51, Q127

There are important differences between the alcohol retail systems in the UK and Canada which should be borne in mind. However, the economic and epidemiological principles underpinning MUP are similar in both countries, suggesting that Canada can provide a useful test of those principles.

It is also likely that the Canadian approach to minimum pricing is a less effective policy than the UK proposal of MUP as it does not directly link minimum prices to the strength of alcoholic drinks. As such, it is less well-targeted at the cheap strong alcohol preferred by heavier drinkers.

3.7. Are there thousands of studies on the relationship between alcohol price increases and alcohol-related harm and is the effectiveness of MUP proven beyond doubt?
Example comments: Q54

The evidence base is over 1000 estimates from approximately 100-150 studies of the relationship between alcohol price changes and alcohol consumption, plus over 300 estimates from 50-100 studies directly linking price changes to changes in alcohol-related harm rates. The evidence that price increases reduce consumption and alcohol-related harm is strong and compelling. However, MUP, as proposed in the UK, has not been tried elsewhere and this means a degree of uncertainty necessarily remains.
4. Comments on other matters

4.1. Has the real price of alcohol risen since 1980?

Example comments: Q28

The real prices of on-trade and off-trade alcohol have moved in opposite directions. Since 1987 (when data become available), the real price of on-trade alcohol has risen by approximately 30% while the real price of off-trade alcohol has fallen by 27% for wine and spirits and by 40% for beer.

The Office for National Statistics uses the Alcohol Affordability index as the standard measure of alcohol price trends as this additionally accounts for trends in household disposable income. The Alcohol Affordability Index shows that on-trade alcohol was around 30% more affordable in 2016 than in 1987 while off-trade wine and spirits were 131% more affordable and off-trade beer was 188% more affordable (Figure 2).

![Figure 2: Alcohol affordability index by beverage type](image)

4.2. Are duty increases passed through to alcohol prices?

Example comments: Q211-212

We have previously used supermarket price data to analyse how tax changes were passed through to the prices of different beverage types (e.g. beer, wine, spirits) and cheaper or more expensive products. The cheapest products increased in price by up to 15% less than would be expected given the tax changes observed. Mid-priced products increased by between 6% and 11% more than would be expected and the most expensive products increased by up to 19% more than would be expected. Thus, the price of cheaper products appears to be partially protected from tax increases while excess price rises are passed on to more expensive products.
4.3. **Does recent data suggest an upturn in drinking among young people?**
*Example comments: Q27*

The 2016 report of the ‘Smoking, Drink and Drug Use among Young People in England’ survey does show an upturn in some measures of drinking but this should be treated with caution. The report includes the following footnote: ‘Data from 2016 is not comparable with previous years due to a change in the wording of the question pupils were asked’.

4.4. **To what extent are pre-loading or pre-drinks a common feature of nights out?**
*Example comments: Q154-157*

A small body of international evidence consistently finds that pre-loading (i.e. drinking off-trade alcohol before going out to pubs or clubs) is now a commonplace behaviour. Surveys conducted in the night-time economy in Northern England find that approximately 60% of young adults reported drinking before going out.

4.5. **Do risks of drinking start from any level of alcohol consumption and to what extent is moderate drinking beneficial to health?**
*Example comments: Q191, Q194*

We provided the epidemiological modelling on which the new UK low risk drinking guidelines are partly based. We would like to clarify three points.

First, our research and the work of the Guideline Development Group took account of the best available epidemiological evidence on the risks associated with different levels and patterns of alcohol consumption. This includes differences between men and women in the risk experienced for acute and chronic harms.

Second, there is a large and reputable body of scientific evidence indicating that moderate drinking reduces risk for some cardiovascular diseases and Type II diabetes. However, this evidence contains a number of methodological limitations which suggest that the benefits of moderate drinking may be overestimated. The Chief Medical Officers concluded that “the net benefits from small amounts of alcohol are less than previously thought (with substantial uncertainties around the level of protection) and are significant in only a limited part of the population. That is women over the age of 55, for whom the maximum benefit is gained when drinking around 5 units a week, with some beneficial effect up to around 14 units a week”. This does not preclude the existence of cardioprotective effects, but does suggest that the benefit is smaller and associated with lower levels of consumption than previously thought.

Third, although risks for certain health conditions (e.g. alcohol-related cancers) increase with any level of alcohol consumption, after taking account of all other potential risks and benefits, drinking is unlikely to be riskier than not drinking until one consumes approximately eight units a week if male or 13 units a week if female.

4.6. **Will liver disease become the leading cause of death in the UK?**
*Example comments: Q7*

Liver disease is not on course to become the leading cause of death. However, depending on one’s interpretation of future trend data, it may become the leading cause of years of working life lost.
Appendix: Clarification on evidence on the effects of changing minimum prices for alcohol in Canada (reproduced from our written submission to the committee).

It is sometimes claimed that evidence from Canada is misleading and particularly that the number of deaths due to alcohol did not fall by 32% in British Columbia (BC) during the period studied and rose slightly instead.\(^4\) However, this claim represents a misunderstanding of the analyses conducted for three reasons:

- The claim that deaths increased over the study period arises from raw data which have not been adjusted to account for changes over time in the age and sex structure of the BC population. These ‘age and sex standardising’ adjustments are routine practice and, after they are made, the alcohol-related death rate in BC is seen to fall.\(^4\)
- The analysis should not be interpreted as claiming that a 10% increase in minimum prices took place and triggered a 32% fall in alcohol deaths. The correct interpretation is that the relationship observed between many changes in minimum price levels and many subsequent changes in alcohol deaths over the study period implies that a hypothetical 10% increase in minimum prices would be followed by a 32% decrease in alcohol deaths. It is however correct to state that the researchers estimated that a 10% increases in minimum prices would be associated with a 32% fall in deaths wholly attributable to alcohol.
- The analysis takes account of other factors which exerted upward or downward pressures on the number of alcohol deaths during the study period. In particular, there was a large increase in the number of private liquor stores (i.e. off-licenses) in BC during this period which was estimated to increase the number of alcohol deaths.\(^41\) The researchers took account of this when analysing the effect of minimum price increases, whereas those who looked only at the number of deaths over time did not.

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References


