Imperial College Business School: Public Policy Analysis

A Strategic Analysis of Minimum Alcohol Pricing in Scotland

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Imperial College Business School

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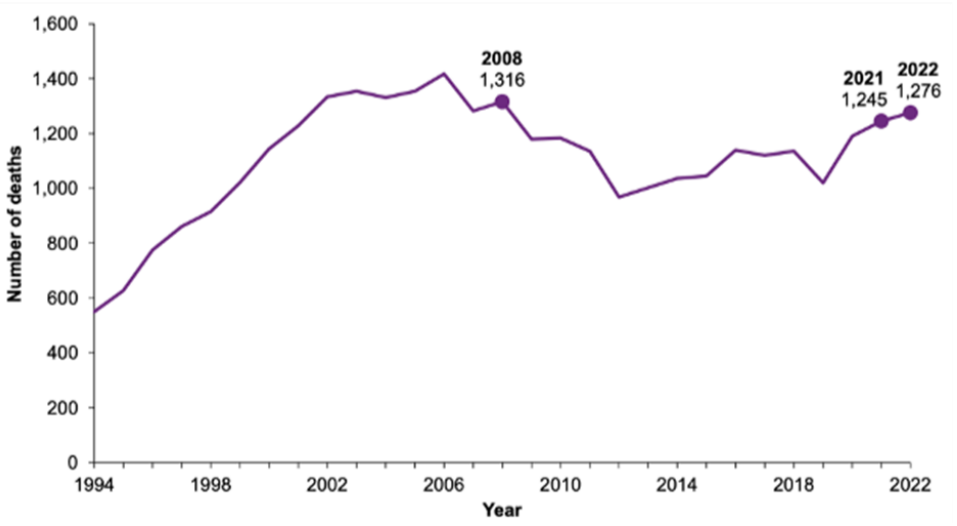
1. The Challenge of Alcohol in Scotland

In 2008, Scotland experienced 1,316 deaths due to causes wholly attributable to alcohol, illustrating the growing impact of excessive alcohol consumption on public health (Scotland. National Records of Scotland, 2023). Since then, alcohol-specific deaths have continued to increase, though data can be somewhat distorted by the recent Covid-19 pandemic, nonetheless emphasising the urgency of addressing this public health crisis (Scotland. Public Health Scotland, 2023). The challenge posed by high levels of alcohol consumption is not only a matter of individual health but extends to broader societal concerns, including significant healthcare costs, reduced productivity and social disruptions (Chaloupka et al., 2002; Wyper et al., 2023). Recognising these issues, Minimum Alcohol Pricing (MAP) policy was implemented in 2018, a targeted intervention designed to mitigate harmful effects of excessive alcohol consumption. By setting a price floor for alcohol at £0.50 per unit, the MAP policy targets the reduction of cheap, high-strength alcohol availability, which is often associated with harmful consumption patterns, thereby promoting alcohol sales at a sensible price reflective of its societal costs (Scotland. Department of Health and Social Care, 2018).

Figure 1: Number of Alcohol-specific Deaths, 1994-2022



(Source: Scotland. National Records of Scotland, 2023)

Recent evaluations of the MAP policy have shown promising outcomes, including a significant reduction of 13.4% in alcohol-attributable deaths and 4.1% in hospital admissions (Wyper et al. 2023), particularly among men and individuals living in the most deprived areas, thus contributing to narrowing health inequalities (Holmes et al., 2014; Scotland. Public Health Scotland, 2023). However, the effectiveness of MAP in reducing consumption among those with alcohol dependence who are financially vulnerable remains slow, highlighting the need for targeted treatment and support services for this subgroup (Scotland. Public Health Scotland, 2023).

This report aims to explore the reasons behind the MAP policy from an economic perspective, focusing on concepts such as negative externalities, market failures, information asymmetry, and the elasticity of demand for alcohol. Additionally, the report examines the MAP's role in enhancing societal welfare by reducing the social harms of alcohol consumption and considers the effect of alcohol consumption on social and private health outcomes as a public good that necessitates regulation. The effectiveness and impact of MAP on overall drinking patterns, health outcomes, and societal well-being in Scotland will be analysed, providing insights into its successes and areas for improvement. We come to find that an MUPstyle framework is effective at achieving the policy aims set out by the Scottish government in combatting problematic drinking behaviours and associated negative externalities.

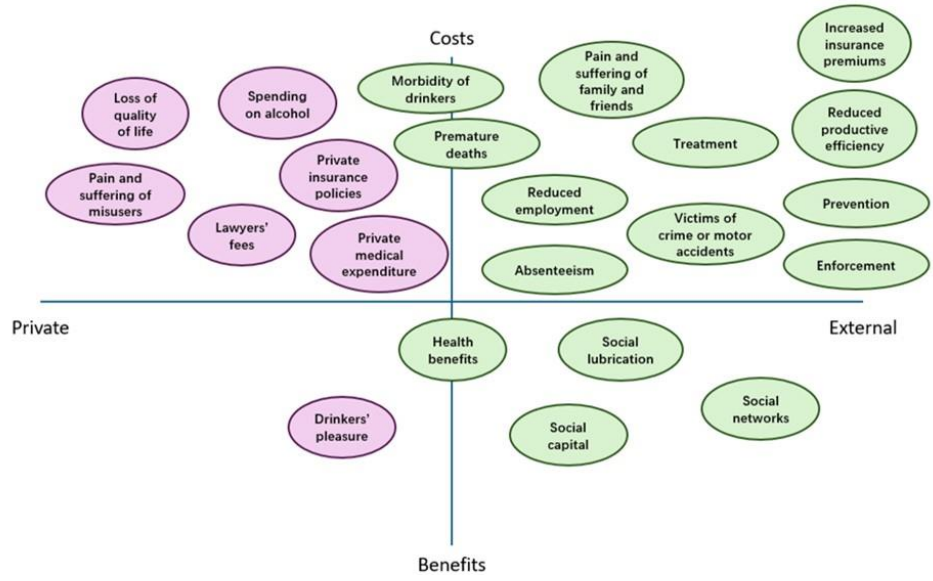
2. Economic and Strategic Analysis of MAP Rationale

The early legislation of planned Minimum Alcohol Pricing (MAP) in Scotland in 2012 represented a pivotal policy initiative to address alcohol-related individual, social, and economic harms within the strategy of the Scottish government (Hilton et al., 2014). The rollout of the MAP policy in May 2018 positioned Scotland as an effective pioneering social planner by implementing a targeted policy setting a minimum price for all alcoholic beverages by unit, accompanied by a Sunset Clause and a Review Clause for parliamentary endorsement and comprehensive reporting (Katikireddi et al.,

2016). The roots of alcohol policies in Scotland trace back to the early 2000s, with the 'Plan for Action on Alcohol Problems' laying the groundwork for subsequent advancements, culminating in Scotland being the first country to pass a national MAP policy with countries such as Wales and Ireland following suit, to similar effect.

The implementation of this policy aims to solve a market failure in the alcohol market. Alcohol is typically categorised as a demerit good with negative externalities, imposing both private costs on consumers and external costs on society. Figure 2 below illustrates the benefit and cost framework of alcohol as concluded by the UK government Cabinet Office (2003).

Figure 2: Private and External Costs and Benefits of Alcohol Use/Misuse



(Source: United Kingdom. HM Government Cabinet Office, 2003)

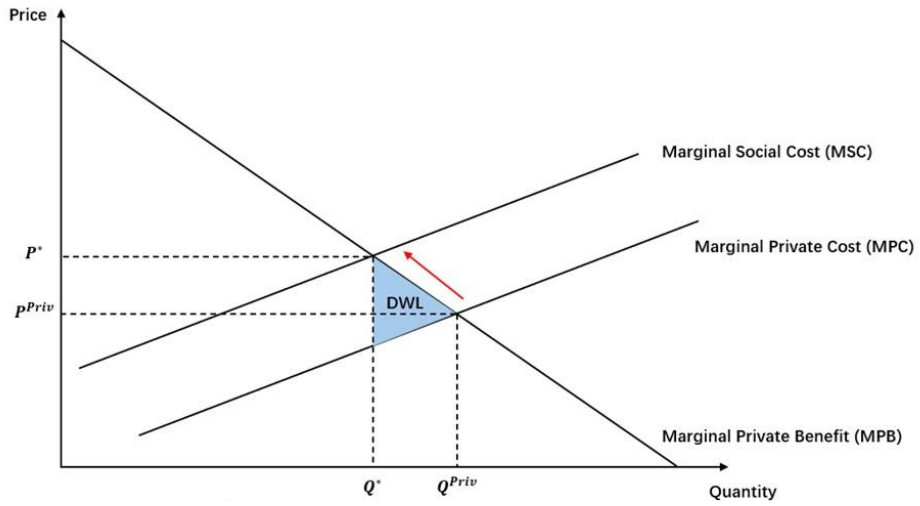
Even from a purely private perspective, alcohol incurs greater costs for individual consumers than the price suggests. Alcohol abuse can lead to increased absenteeism from work and lower labour productivity, and can result in injuries, diseases, or death, impacting individual well-being (Chaloupka et al., 2002). Despite these concerns, there remains a substantial number of people who overconsume alcohol, and alcohol purchasing is globally measured as being inelastic [-0.5] (Sousa, 2014). This is

attributable to market failures, addiction, information asymmetries, or shortsighted decision-making processes likely influenced by the inter-temporal preference biases associated with low income. When making consumption decisions, consumers may not be aware of or may not fully consider the long-term harm caused by alcohol. As this information is not reflected in the price, alcohol is overconsumed.

From a social perspective, alcohol imposes external costs on wider society. Private decision-makers do not consider the impact of their decisions on others. Alcohol's negative impact on individual health places significant pressure on the healthcare system, incurring substantial direct costs to UK taxpayers, opportunity costs to healthcare providers, and increased burdens on insurance markets. Harmful drinkers, those who regularly exceed lower risk drinking guidelines, cause negative social externalities by endangering the well-being of others through crime and violence (Scotland. Department of Health and Social Care, 2018). Antisocial behaviour associated with binge drinking impacts not only those who overconsume but also imposes external costs on the limited resources of the healthcare, police, and criminal justice systems (Chaloupka et al., 2002). These harms tend to be concentrated among those from lower income socioeconomic groups who purchase low-cost, high-strength alcohol (Scotland. Department of Health and Social Care, 2018; WHO, 2023). All these social costs indicate negative externalities stemming from failure in the alcohol market, as depicted in Figure 3.

In a market with negative externalities, the marginal social cost $\boldsymbol{P^*}$ exceeds the marginal private cost $\boldsymbol{P^{Priv}}$; the price does not reflect this external cost. The market is at a private equilibrium where the marginal private benefit $\boldsymbol{P^{Priv}}$ equals the marginal private cost $\boldsymbol{Q^{Priv}}$. Alcohol is overconsumed at $\boldsymbol{Q^{Priv}}$ and does not maximize social welfare, where the marginal benefit should be equal to the marginal social cost at $\boldsymbol{Q^*}$, resulting in a deadweight loss in the market.

Figure 3: Negative Externalities

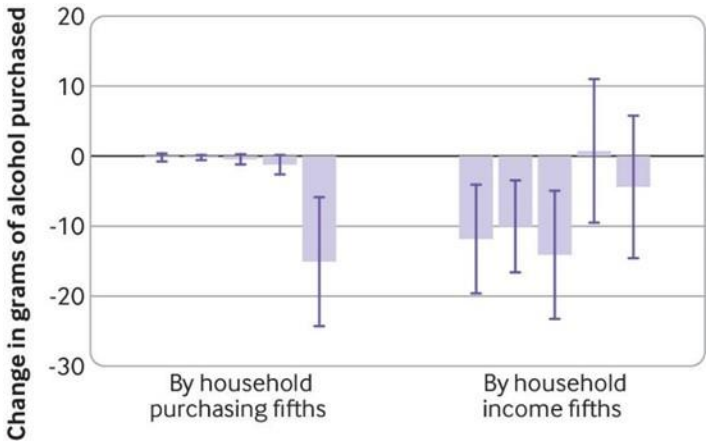


The minimum unit price is designed to adjust alcohol consumption to the socially optimal level, where social costs are minimised, thereby improving allocative efficiency, and maximising social welfare – this can be made difficult by the inelasticity of alcohol purchasing with respect to price (Sousa, 2014). The price of alcohol increases, achieving some demand reductions among harmful drinkers, therefore moving private marginal cost to the social level. Despite general inelasticity, problem consumers of alcohol are often price sensitive and price increases can effectively reduce a large quantity of alcohol consumed (Chaloupka et al., 2002). Additionally, according to Becker and Murphy (1988), addictive products such as alcohol are more price-sensitive in the long term, as a small price increase implies a significant increase in the aggregate cost of the product over time. In the long run, this policy would be more effective in reducing alcohol consumption to the desired socially optimal value.

In the immediate aftermath of the introduction of the MAP policy (32 weeks-post) in Scotland, the objective of decreasing alcohol consumption among the targeted groups is seemingly well-addressed by the implementation of the MAP; the households which were the biggest consumers of alcohol experienced the largest reduction in units

of alcohol purchased, and this reduction in purchases was clearest in lower income households as is shown by O'Donnell et al. (2019):

Figure 4: Alcohol Purchasing by Quintiles (Unit)

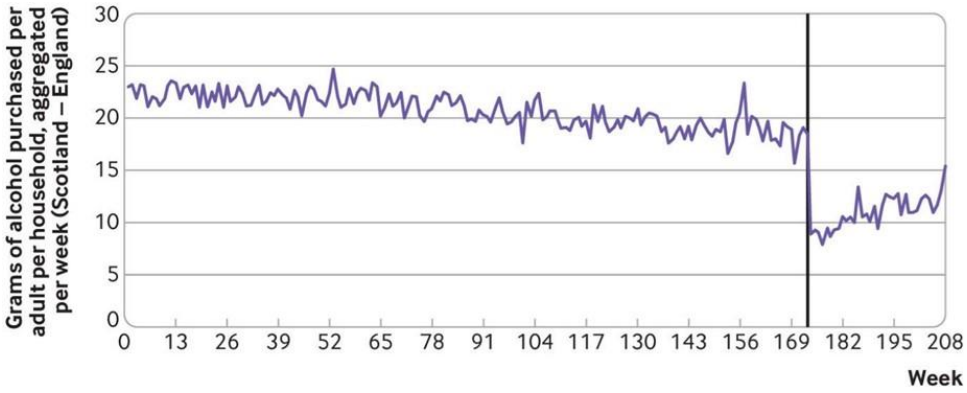


(Source: O'Donnell et al., 2019)

We can further infer that these changes are primarily in male populations from the work of Wyper et al. (2023), and that males likely constitute the large brunt of alcohol-related economic externalities owing to greater participation in manual labour, as well as greater involvement in negative social externalities such as the perpetration of violence and criminality (Chaloupka et al., 2002; Scotland. Department of Health and Social Care, 2018; WHO, 2023). Holmes et al. (2014) noted that the health benefits experienced from the reduction in problematic alcohol consumption are most noticeable for the lowest income manual and routine worker groups indicating that an MUP-style policy substantially addresses health inequality concerns as well as social externalities. This supports the argument that the introduction of an MUP-style policy is an appropriate policy intervention for combatting the negative social and economic externalities of problematic alcohol consumption and that it targets the most negatively affected groups, namely low-income male heavy drinkers, in an effective individual manner likely to also entail positive private health benefits, with Wyper et al. (2023) noting the pronounced impact of the MAP on males and on the bottom 40% of socioeconomic groups.

Examination of the MUP floor-price framework as an appropriate mechanism to target negative externalities leads us to conclude that a unit floor price presents significant advantages over other forms of tax or price intervention. Maharaj et al. (2023) note that an MUP floorprice framework as opposed to a general alcohol levy prevents retailers from selling cheap alcoholic beverages at below-cost prices and transferring the costs of the levy onto premium alcohol products; a situation that might instead exacerbate problematic alcohol consumption and related negative externalities among the lowest income consumers. This strategic decision at imposing a floor price as opposed to a general levy on alcoholic products is likely the most important single factor in directing the aim of the MAP policy at the most problematic drinkers for whom the legislation is most intended.

Figure 5: Aggregate Alcohol Purchasing (Units)



(Source: O'Donnell et al. 2019)

Where drinkers are used to purchasing units of alcohol below the threshold of an MUP framework price is where the largest increase in price is felt by consumers (Maharaj et al., 2023), and corresponding decreases in consumption proxied by aggregate alcohol purchasing seem to confirm this mechanism, with premium alcohol products and consumers who are used to purchasing alcohol above the MUP experiencing less impact from the introduction of a floor price (O'Donnell et al., 2019). Proposed increases to a floor price of £0.65 may be appropriate to continue

disincentivising high-risk consumers in the face of inflation, as well as increases in problematic alcohol consumption behaviour patterns stemming from the Covid-19 pandemic (Barbosa et al. 2023). We note that Barbosa et al. (2023) highlight not only that problematic alcohol consumption behaviours increased during the Covid-19 pandemic, but also that many heavy drinkers with alcohol-related health complications delayed treatment during the Covid 19 pandemic, which will likely cause continued distortions (such as in Figure 1) in alcohol-related death and hospitalization data for the near future (next ~ 5 years), obscuring analyses of MAP policy implementation and necessitating the further use of comparative difference approaches such as those employed by O'Donnell et al. (2019) and Wyper et al. (2023). It is important to note that there is also evidence of externalities arising from the implementation of the MAP policy itself; Kopasker et al. (2022) showed that household food expenditures and total food volume declined in Scotland by 1% and 0.8% respectively, and that the distribution of food expenditure was also affected, with increased spending on junk food categories while expenditure on fresh foods decreased. Such work highlights the delicate nature of implementing regulation, and the wariness to not cause further negative externalities that should be forefront in the development of policy intervention.

3. Conclusion and Future Discussions

To conclude, our discussion underscores the significance of MAP in effectively addressing alcohol-related social and economic issues, while also emphasizing its positive impact on the most high-risk socioeconomic groups by reducing health inequalities. This synergy in objective targeting affirms the critical role of well implemented, evidence-based targeted interventions in tackling negative externalities stemming from market failure while simultaneously advancing individual health outcomes and well-being. Future data on alcohol-related health outcomes may be distorted by Covid-19 related behaviours in the short term, but in the long run it is likely we will continue to see an improvement in the negative social externalities and individual private outcomes of the highest-risk alcohol consumers as a result of the MAP policy. Current proposals to increase the minimum unit price to £0.65 are likely sensible

and will bolster the targeted effect of the MAP policy on the highest-risk consumers, with ongoing review of data across different regions including those without MAP policies being necessary in order to truly determine the ultimate effectiveness of a minimum unit alcohol price. It must be always remembered that as the policy of the MAP evolves, social planners must themselves be wary of not contributing to or creating negative externalities through the implementation of the regulation itself, and to strive to strike a balance that maximizes welfare for all.

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