

Which cost of alcohol? What should we compare it against?

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ABSTRACT

This paper explores and develops issues raised by recent debates about the cost of alcohol to England and Wales. It advances two arguments. First, that the commonly used estimates for alcohol harm in England and Wales are outdated, not fully reliable and in need of revisiting. These estimates rely on data that are between 4 and 12 years out of date and sensitive to questionable assumptions and methodological judgements. Secondly, it argues that policymakers, academics and non-governmental organizations should be more careful in their use of these numbers. In particular, it is imperative that the numbers quoted fit the argument advanced. To help guide such appropriate usage, the different types of cost of alcohol are surveyed, alongside some thoughts on the questions they help us to answer and what they imply for policy. For example, comprehensive estimates of the total social cost of alcohol provide an indication of the scale of the problem, but have limited policy relevance. External cost estimates represent a 'lowest common denominator' approach acceptable to most, but require additional assumptions to guide action. Narrower perspectives, such as fiscal, economic or health costs, may be relevant in specific contexts. However, optimal policy should take a holistic view of all the relevant costs and benefits. Similarly, focusing solely on tangible costs may be less controversial, but will result in an under-estimate of the relevant costs of alcohol.

Keywords Alcohol, alcohol policy, alcohol taxation, cost to society, economic costs.

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INTRODUCTION

The figure of £21 billion is cited regularly by policymakers, academics and non-governmental organizations (NGOs) as the annual cost of alcohol to England and Wales [1–3]. Unfortunately, there is often confusion around what this figure represents: it is sometimes presented as the cost to the taxpayer [4,5] or to the economy [6,7]. In fact, it relates to the external cost to society: costs not directly borne by the drinker.

This confusion provoked a recent discussion paper from the Institute of Economic Affairs (IEA), a libertarian think-tank [8]. The IEA argue that misunderstanding of the £21 billion number has encouraged inappropriate comparisons with the £11 billion of excise duty collected on alcohol.¹ They believe that this has led to the unjustified conclusion that alcohol taxes should be higher. By contrast, the IEA's

report concludes that alcohol costs the government only £4 billion, and so taxes should be lowered.

This paper explores some of the issues raised by the Institute of Alcohol Studies' (IAS) response to the IEA report [11] (which rejected the IEA's framing of the question), and the ongoing debate around cost of alcohol estimates. It advances two arguments: first, that the commonly used estimates for alcohol harm in England and Wales are outdated, not fully reliable and in need of revisiting; and secondly, perhaps more importantly, policymakers, academics and NGOs should be more careful in their use of these numbers. In particular, it is imperative that the numbers quoted fit the argument advanced.

Accordingly, the paper is divided into two parts. The first discusses the limitations and failings of the existing numbers. The second outlines some thoughts about which costs of alcohol we ought to care about, in order to help guide the appropriate use of alcohol cost data in the future.

¹Author's calculation. Total UK excise duty on alcohol in 2014–15 was £10.5 bn [9]. This also generates 20% value-added tax which, once included, brings the total to £12.6 bn. However, as the cost estimates apply only to England and Wales, for comparability we need to multiply this number by 88%, which is England and Wales' share of alcohol excise duty [10].

Getting better numbers

The IEA's study rightly remarks upon 'how slender some of the evidence is behind the assumptions in cost-of-alcohol studies', and expresses the hope that 'this paper will make journalists and politicians more circumspect when citing cost-of-alcohol estimates in the future' ([8], p. 37). This is one point on which we are in total agreement. The canonical survey of alcohol costs is the 2003 UK Government Cabinet Office report *Alcohol Misuse: How Much Does It Cost?* [12]. This is a thorough and admirable piece of work, but it is more than 12 years old. In the intervening period, relevant government departments have done little but periodically refresh the numbers with the latest available data, without reconsidering the underlying methodology [13–16].

Even the most recent of these updates is at least 4 years out of date, comprising crime costs from 2010–11 and health-care and productivity costs from 2009–10 [16]. Just to revise these numbers would therefore be valuable and useful, while even better would be to institute procedures for regular updates, for example by developing a model. However, such projects clearly carry a cost, and so any review should address a number of further methodological issues to neutralize scepticism of the data and make a consequential contribution to the debate.

For example, the way in which the cost of alcohol-related accident and emergency attendances is calculated is open to challenge. The Cabinet Office methodology, replicated in subsequent estimates, assumes that 35% of attendances are attributable to alcohol, and multiplies the estimated total number of alcohol-related attendances by the average cost per attendance [12]. As the IEA point out, the 35% assumption is based on a single survey of the perceptions of accident and emergency (A&E) staff [8]. Unfortunately, more recent research is far from clear: different studies of different points of the week and locations have produced a wide range of results, from 2 to 40% [17]. More definitive research in this area would clarify the situation. However, even if we had confidence in the proportion of admissions attributable to alcohol, the Cabinet Office approach may still not be appropriate. Qualitative IAS research suggests that dealing with intoxicated patients is more complicated and costly than other patients, so it may not be valid to apply the average cost to them [18].

Moreover, certain types of cost are omitted from the Cabinet Office study which, by its own admission, accepts that 'The estimates given in this study are far from comprehensive' ([12], p. 2). The government's numbers do not attribute any social care costs to alcohol, despite the evidence that drinking is associated with child neglect and mistreatment [19,20]. The report also judges it too difficult

to estimate the impact of alcohol on work-place productivity and is reluctant to place financial values on some intangible costs, such as the emotional impact on families of drinkers.

Taken together, this should serve to demonstrate that the numbers available on the cost of alcohol to English and Welsh society have major limitations. The fact that it is imperfect does not undermine the data entirely, and it certainly does not warrant ignoring this evidence. What it does suggest is that, at a minimum, there is a need to revisit the numbers. Further, it shows there is a need for more research, and ideally a full, holistic review of the costs of alcohol. In this context, it is disappointing to see that the UK Government appears satisfied with the £21 billion figure [1], and has stated that it has 'no plans to commission a further review of costs' [21].

Using numbers better

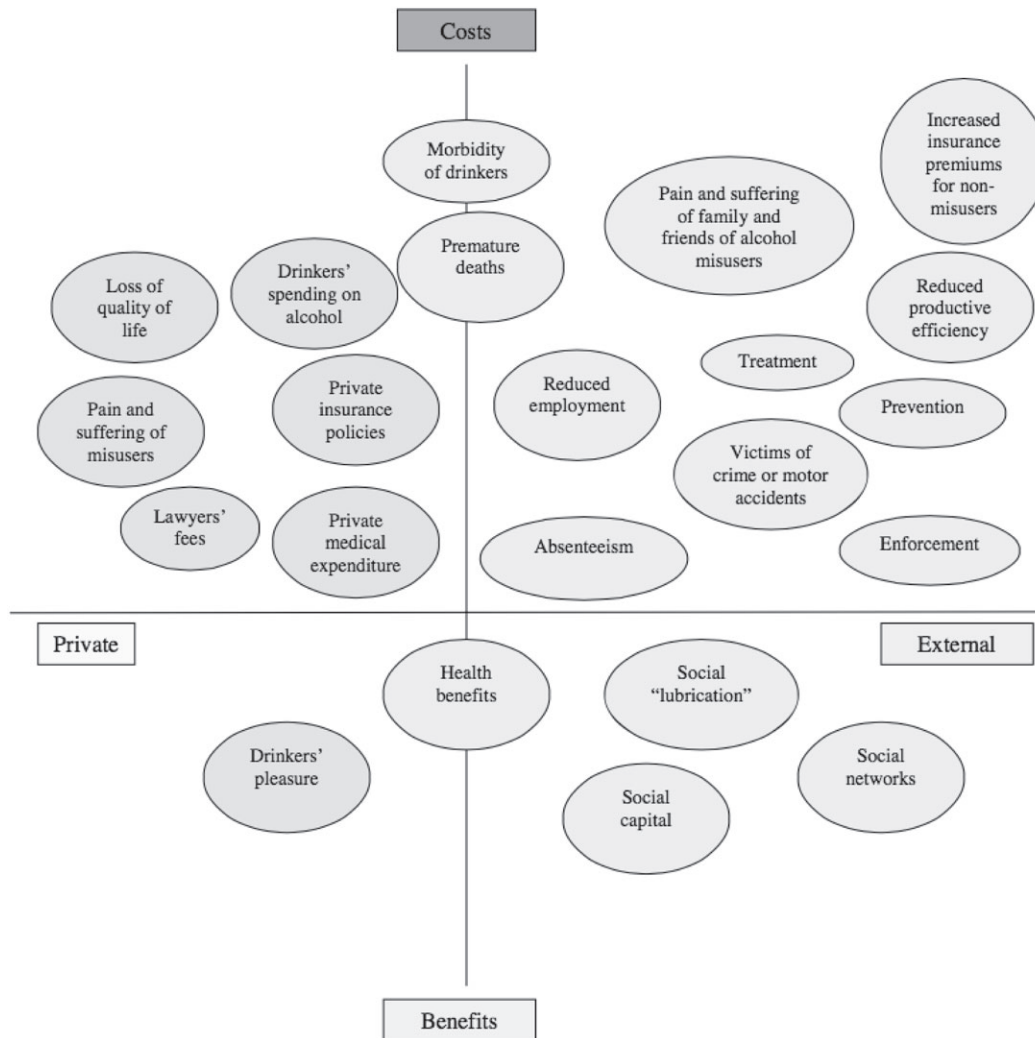
However, more robust data alone are not enough, especially if they are misinterpreted or misused. Interestingly, the IEA debate was less about specific numbers and methodology than the theoretical question of which costs of alcohol we ought to care about, and under which circumstances. This section lays out some of the different types of cost of alcohol, and matches them to the different questions and arguments they inform to shed light on these theoretical issues.

Figure 1 offers a useful (although non-exhaustive) framework for considering the costs and benefits associated with alcohol consumption (Fig. 1). These can be categorized as 'private' or 'external'. Private costs and benefits are those that accrue to the drinker themselves. The most obvious private benefit is the pleasure they gain from drinking. Private costs include the suffering associated with ill health (as opposed to costs of treating these ailments in taxpayer-funded health-care systems), or negative effects on their earnings. External costs and benefits represent the 'spillover' effects of a person's drinking on others. If a person is more enjoyable to be around when drinking, this could represent an external benefit. External costs include concerns such as violence and crime suffered as a result of drinking, or the cost of treating health problems that others incur as a result of drinking.

Total social costs

The most straightforward and thorough approach to estimating the cost of alcohol is to determine the total social cost to the country—taking in both private and external costs to cover all the negative consequences from drinking. This is not a common approach, but one estimate suggests that it amounts to £49 billion in England, accounting for costs such as the direct impact on the drinker's health [22].²

²Technically, the costs of production, distribution and sale and the cost to the consumer of buying alcohol would be covered by a comprehensive accounting of the full costs of alcohol, but these are likely to confuse the issue as they are balanced by exactly corresponding benefits in terms of wages to workers and revenue to industry. Clearly, defining such 'transfer payments' is tricky in practice, although discussion of this point is excluded for reasons of space



Source: Cabinet Office (2003), *Alcohol Misuse: How much does it cost?*, p.11

Figure 1 Overview of costs and benefits, categorized into private and external

The main utility of this number is that it helps us to understand the scale of the problems issuing from alcohol consumption, and to put them into perspective relative to other health and social issues. It gives us an indication of how 'material' alcohol is—whether it deserves the focus of policymakers, government officials and health-care systems, or if there are more pressing priorities.

If we can estimate the corresponding total social benefits, we can carry out a full cost–benefit analysis and determine whether alcohol is, on balance, good or bad for society. This is an interesting question, but is unlikely to directly dictate policy unless we are considering a total ban [23]. If we accept that alcohol is not going to be eradicated, the absolute level of costs and benefits is less important than how these change in response to different policies: in economist's language, the focus should be on marginal, rather than total, costs. Moreover, without an understanding of the distribution of alcohol harms—for

example, whether the costs are accepted freely by the drinker or imposed upon bystanders—it is difficult to make clear policy recommendations.

External costs

A more common approach, exemplified by the Cabinet Office report, is to focus exclusively upon external costs imposed by the drinker on others. A common assumption is that private costs and benefits can be ignored because they are already implicit within market outcomes: in the absence of government intervention, 'individuals are assumed to take into account both the private benefits and costs of an activity' ([12], p. 10).

This has both a practical and a philosophical justification. The practical justification is that it avoids tricky psychological judgements about how much satisfaction or suffering individuals face as a result of consuming

alcohol (although measuring external costs carries methodological difficulties of its own—see below). The philosophical justification is the principle that restriction of an individual's action is justified only if the action harms others [24]. This principle is inconsistent with paternalistic measures to reduce people's drinking for their own good. It implies that the only harm the state ought to care about is harm to others. Estimates of external costs assess only these types of harm.

Focusing on external costs also fits naturally with the standard economic approach to alcohol policy [23,25]. This requires that government action be predicated on the existence of a 'market failure'. In the case of external costs, the market fails because drinking imposes costs on others—for example, those at risk of drunken assault—but these costs are not considered by the drinker, and so are not reflected in the market outcome.

That external costs can justify government intervention is relatively uncontroversial, accepted even by those on the right who are sceptical of intervention [26,27], so it is perhaps best to think of them as a minimum baseline set of costs that almost everybody agrees (in principle) are relevant to public policy: a 'lowest common denominator'. Unfortunately, quantifying external costs and determining precisely what action they imply is much harder to agree upon.

Measuring external costs is problematic because the distinction between private and external costs is blurred [28]. For example, reduced productivity at work impacts upon the drinker, but also their colleagues, employer and the wider economy. Premature deaths resulting from alcohol also rob the economy of labour. There is a further difficulty in dealing with costs to people within the drinker's household [23,28]. It seems outrageous not to consider alcohol-induced domestic violence as a harm to others, but we risk going too far in counting the cost of a person's drinking to the household budget as an external cost.

Even if we agree upon the magnitude of the external costs from alcohol within a society, the implications for policy are not clear. How do we determine whether the level of external costs is acceptable? The standard economic view is that we ought to seek the level of consumption that individuals would choose if they had to bear the external cost themselves: we ought to 'internalize the externality'. So, for example, if the market price of a unit of alcohol is £1, and the external cost associated with the consumption of a unit of alcohol is £0.50, then the optimal level of consumption is the volume of alcohol people would buy at a price of £1.50.³ A natural way to achieve this is to add a tax of £0.50 per unit of alcohol.⁴

³For the purposes of illustration, this is a simplified picture that ignores the differences between different types of alcohol and ignores any taxes levied to raise revenue.

⁴For simplicity, this section refers to taxes as the only way of internalizing the external costs of alcohol. In practice, however, there are other instruments contributing to the same end, including criminal sanctions, such as fines and the threat of prison.

What this implies is that taxes on alcohol ought to be set so that they generate revenue (i.e. impose costs on the drinker) fully equal to the external costs.

Unfortunately, the optimal tax level is not as clear-cut as that. For technical reasons, if (as is likely) higher levels of population alcohol consumption are associated with higher marginal costs per unit—if moving from 7 to 8 litres per capita alcohol consumption does more incremental harm than moving from 2 to 3 litres per capita—then at the optimal rate, tax revenue will exceed external costs [28–30]. Moreover, if taxes can be tailored to specific drinks, occasions or types of consumer, optimal taxes may be different across these.

However, external costs represent only one form of market failure. Alcohol consumers regularly appear to depart from the rational, fully informed model of economic theory; consuming alcohol because they misunderstand the risks, their judgement is impaired under the influence of drink or because they are addicted [31]. Some economists have also argued that fully rational economic agents can be better off under higher alcohol taxes because they lack the self-control to follow through on their plans to reduce their drinking [32]. These claims are more controversial, but if accepted, they imply that optimal policy would consider certain private costs as well as external ones. Markandya & Pearce argue that these apparently 'private' costs should be classified as 'social' [33], but this is slightly confusing terminology, as the costs are still borne by the drinker. The term 'market failure costs' to describe these costs may be more clear.

A common feature of the approaches discussed so far is that they assume a utilitarian approach whereby social costs and private benefits are weighted equally. This is controversial, because it implies that the drinker's pleasure from consuming alcohol can be traded off against the suffering of the people they assault [34,35]. An extreme alternative would be to say that this trade-off is never appropriate and so no external costs of alcohol are ever tolerable. This would almost certainly imply that alcohol should be banned. A more plausible view is that external costs ought to be weighted more heavily than private costs and benefits—another argument for optimal tax revenue being greater than external costs.

Specific costs

So far, the discussion relates to society as a whole. However, it is sometimes appropriate to look at costs and benefits from a specific perspective. For example, the approach pursued in the IEA report looks at the impact of alcohol

Table 1 Summary of cost types.

<i>Cost</i>	<i>What it includes</i>	<i>What questions it answers</i>	<i>What to compare it against</i>
Total social costs	All costs, private and external, attributable to alcohol	What is the scale of the problem? Should we prioritize it?	Total social benefits
External costs	Costs borne by anybody other than the drinker themselves	What are the externalities associated with alcohol? What is the optimal tax level on alcohol?	Total tax revenue (although this may just be an input, depending on assumptions)
Market failure costs	Costs associated with any market failure (not just externalities)—including addicted/uninformed consumption	What are the costs associated with failures of the alcohol market? What is the optimal tax level on alcohol?	Total tax revenue (although this may just be an input, depending on assumptions)
Specific costs	Social costs within a specific domain, e.g. government budget, economy, health	How does alcohol affect specific domains, e.g. how does alcohol affect the public purse?	Specific benefits within each domain, e.g. alcohol tax revenue
Tangible costs	Costs that involve a loss of resources	What are the costs of alcohol that can be estimated without controversial judgements of value? What costs are actually paid out, rather than remaining notional?	Tangible benefits

on government finances, comparing costs such as health-care and criminal justice to revenue generated from tax. If the costs exceed the revenue, then alcohol is a net burden on the state.

Nevertheless, this number represents a narrow view. The fiscal impact of alcohol is, of course, important to the government, particularly one that prioritizes the state of its own finances; but while it is rhetorically useful to talk about the impact upon 'taxpayers', people are never *just* taxpayers: they are private citizens, too. They bear costs from alcohol besides those they face by virtue of paying tax. There is no obvious reason for taxpayers, and therefore policymakers, to care more about higher taxes than the insurance costs or lost earnings as a result of assault.

If alcohol takes more from the public purse than it contributes, then this is of course a clear argument for raising taxes on it, but this argument is subsumed within the externality argument above. Public health-care and criminal justice costs are just one sort of externality; it is not clear why we should care only about these and not the others.

Just as fiscal costs become more salient if the government is seeking to rein in public spending, so other perspectives can be relevant in other contexts. If economic growth is the priority, then positive or negative effects on economic output will be key. If law and order is the main issue, then the focus will be upon how alcohol impacts crime. A government focused on health will naturally care about health-care costs. These all contribute to the total societal costs, but different elements may draw more attention at different points.

Tangible and intangible costs

A further distinction, cutting across the types of costs discussed above, is the difference between tangible and intangible costs. Tangible costs are those that involve the loss of resources that could otherwise be used for consumption or investment. These are commonly assigned financial value, and so are relatively easier to estimate. For example, health-care and criminal justice costs represent sums of money that would not otherwise have to be paid by the government. Intangible costs, such as the fear of crime or the badness of premature death, by contrast, would not yield resources if eliminated, and are inherently more difficult to value.

One motivation for focusing upon the cost of alcohol to the government is that this is limited exclusively to tangible costs. However, if this is the motivation, then it is unclear why private tangible costs, such as the financial costs imposed by crime, should be neglected. Moreover, even if there is a practical reason for focusing upon tangible costs (they are easier to agree on a value for), almost everyone accepts that intangible costs matter in principle, so it should never be forgotten that tangible costs underestimate the full cost of alcohol [36].

CONCLUSION

This paper has sought to show that existing estimates of the cost of alcohol to England and Wales are inadequate. They rely upon data that are between 4 and 12 years out of date, and are sensitive to questionable assumptions and

methodological judgements. However, it has suggested that reflecting upon what these estimates represent and how we should use them is as important as improving these data. It has laid out different types of alcohol costs and their implications (summarized in Table 1). Comprehensive estimates of the total social cost of alcohol provide an indication of the scale of the problem, but are unlikely to have clear policy implications, particularly given the difficulties of calculating the corresponding benefits to weigh them against. Assessing the external cost of alcohol is useful because it fits into the standard economic framework, and provides a 'lowest common denominator' of costs that are agreed to be policy-relevant. A more expansive account of market failure or an alternative moral framework requires us to move beyond this consensus. In specific contexts, narrower perspectives, such as alcohol's impact upon the government's finances, economy or crime, may be of interest. However, optimal policy should take a holistic view of all the relevant costs and benefits. Similarly, focusing solely upon tangible costs may be less controversial, but will result in an underestimate of the relevant costs of alcohol.

Declaration of interests

A.B. has worked previously for a strategy consultancy firm that served alcohol industry clients, although he did not personally undertake any work in the alcohol sector.

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