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► [Cost-of-alcohol studies as a research programme.](#)

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Nordic Studies on Alcohol and Drugs: 2012, 29, p. 321–343.

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Prominent alcohol expert argues that estimates that drinking imposes billions of pounds of costs on society are so value-laden and imprecise that their main value is as propaganda. Policies like increasing the price of drink may be justified on other grounds, but not by a misleadingly appealing total cost or cost reduction figure.

Summary This analysis argues that estimates of the cost imposed on society by drinking are often grossly inflated because (among other things) they assume that hazardous drinking must be irrational consumption, that crime benefits no one, that drinking has no social, psychological or indirect business benefits, and that productivity losses are not counter-balanced by benefits elsewhere and by non-alcohol impaired workers taking over the jobs of the impaired. These assumptions are, it is contended, based on value judgements sometimes not made explicit, and lend the results of calculations based on those values a spurious appearance of objectivity and precision.

What should (not) be included in the grand total of alcohol-imposed costs?

In **bold** in the following account are some cost headings which arguably should not (or not fully) be included in the grand total for society as a whole but which have been in various reports. Cumulatively they make a substantial difference to cost estimates.

Reports on [Australia](#) and [New Zealand](#) effectively assumed that if someone has spent money in order to drink at levels which risk harm, they must have done so through ignorance or irrationality, rather than this representing an informed purchase which from the drinker's point of view gains benefits at least worth their expenditure. With no countervailing benefits, **expenditure on 'excessive' drinking** is treated merely as waste and a loss to society. This decision has a considerable impact on the grand total of

tangible social costs due to alcohol, in the Australian report accounting for over 15% and 10% in the New Zealand report.

Heavy drinking may be hazardous, irresponsible or even morally wrong, but not necessarily irrational. The contention that heavier consumers are ill-informed requires evidence; it cannot simply be assumed. Nor can we assume that the only pros and cons a drinker can take in to account and remain rational are related to health, not social networking, relaxation, making business contacts, enjoyment of intoxication, etc. A rational and fully informed consumer may judge these worth increased health risks. If all behaviours which increase health risk are irrational and/or ill-informed, we would have to include playing ice hockey or travelling by car instead of train, not normally considered inherently irrational or lacking benefits.

A related but different issue concerns addicted drinkers. Even if their behaviour may in some sense be less than fully rational, their spending on drink is best classified as a private cost borne by them. The argument that it is a social cost rests on the assumption that the adverse consequences actually experienced are greater than those anticipated at the time of purchase. The difference is categorised as a social cost because the drinker did not account for these unintended consequences when they decided it was worth buying the drink. But there is a risk element in most everyday decisions, yet not all unanticipated and unintended costs are treated as social costs.

Calculations also sometimes treat the **value of stolen property** as a loss to society. From the perspective of the whole society (one advocated by the cost-of-alcohol literature) this overlooks the revenue of the thief and others who benefit from the theft. An alternative assumption, made for example in an estimate for [Sweden](#), is to count as social costs the difference between what the thief gets for the goods and their market price. This still ignores the profits of the 'fence' and particularly the value gained by the end purchaser who enjoys the object's use without having to pay the full price. Instead of taking a whole society approach, we could estimate the losses caused to 'decent' or 'ordinary' people, but this should not then be added to the total for society as a whole. The value of stolen property is *transferred* within society, not lost altogether.

Production lost due to premature mortality is the largest item in most cost calculations, but World Health Organization [guidelines](#) published in 2010 say this "should not be included" [Editor's note: largely because it is assumed that the loss amounts to lost work over what would have been the entire productive life of the deceased, yet in the absence of full employment, their place will usually be taken (if via a chain of job moves) by someone who would otherwise have been unemployed].

The Sheffield Alcohol Policy Model [Editor's note: on which British alcohol pricing policy proposals have been largely based; see for example this [Findings analysis](#)] may be equally controversial. "Workplace harms" included in [the model](#) consist of alcohol-related unemployment and absence from work. First the analysts calculate the increased risk that someone will be unemployed the more they drink above harmful levels. They then take *a step too far* when they use this to predict that (for example) a minimum unit price for alcohol of £0.50 would lead to 25,900 fewer people unemployed in the first year. Drinking may affect who gets hired and fired first, but a minimum unit price would hardly create 25,900 new jobs. This assumption has a substantial impact, accounting for three quarters of the estimated social value gained by a £0.40 minimum price in year one.

Calculations of losses due to **absenteeism** take no account the benefits the drinker and perhaps others gain from staying away from work. Arguably the value lost to the company and the economy is transferred in a different form to the worker and others who are able to enjoy a day off work or enjoy a night's drinking knowing they can sleep it off the next morning.

Estimates have recently been made of the **diminished quality of life caused by drinking to people other than the drinker**. Important as this is, it is also important to keep in mind that attitudes affect responses. It is for example **possible** that as toleration of heavy drinking declines so too does heavy drinking, yet the distress felt by others witnessing heavy drinking might increase. In this scenario, distress caused to others rises as heavy drinking falls. It is a matter of judgement whether it makes sense to include this in social cost calculations. Again, monetarisation tends to hide the impact of this kind of value judgement. Values and moral judgements influence what it seems legitimate or 'natural' to include in estimates of intangible costs. For example, it may seem natural to include being kept awake or harassed by a drunk, yet not the shame felt by the caregivers of schizophrenia patients due to the mental illness of their child or relative.

Monetary values have also been attached to the degree to which the public would **prefer not to experience drinking conditions** ranging from being a non-drinker through to an at-risk drinker and being alcohol dependent, bringing in to play the **imaginings of the unafflicted** of what these conditions would feel like, creating a mechanism for stigma, unwarranted negative perceptions, and religious beliefs, to feed in to the cost calculations. In a **Swedish study** these ratings were derived from a **US report** based on judgements made two samples of 100 respondents not necessarily representative of the broader population. The authors were surprised by the low health ratings given to at-risk drinking, defined as entailing no significant adverse consequences. Alcohol abuse was rated as low as being blind, dependence lower still. The implication is that alcohol abusers would be willing to trade becoming blind in order to cease being abusers and dependent drinkers would be eager to do so.

The Swedish study applied the US ratings for alcohol dependence to harmful consumption, despite the fact that many such drinkers would not see themselves as suffering the symptoms by which dependence **was defined**. Additionally, there is disagreement about the monetary value to attach to these states of health. With so many layers of uncertainty and value judgements involved, we cannot have any faith in the resultant estimate of the monetary value of the diminished health-related quality of life associated with heavy drinking. As long as the calculations remain within the confines of public health this does not cause serious problems. But a further and complicating step is taken when (as in **UK calculations**) these estimates are then added to those related not to health, but, for example, to productivity.

An example of how cost-of-alcohol studies gain their results through limiting their vision comes from a **California** study which included an estimate for **unwanted pregnancies** due to unprotected sex under the influence of drink. Its source documents account for medical costs and the mother's lost productivity, but fail to account for the counterbalancing productive potential of the child.

What about the *benefits* of drinking?

Cost studies usually limit themselves to the adverse consequences of drinking, and include benefits (if at all) only in terms of health. This is fine if health is the limit of the study, but as the World Health Organization [explains](#), if the study purports to assess total costs across a society, then there is no rationale for excluding benefits. Some benefits may be intangible, but so too are some of the adverse consequences costed in to the studies. Among the pleasures/value of drinking for drinkers are taste, food value, enjoyment of an altered state of consciousness, and greater expressiveness. Then there are social rewards linked to drinking such as the pleasure given to dinner guests, the solidarity of round-buying and drinking 'buddies', drink as a way of forging sexual and other relationships, and beyond these the business benefits of wining and dining clients and broader social cohesion. Some town centres owe their lively character to drinking venues.

One way to assess these is by calculating how much more consumers would be prepared to pay for drink. This figure is for them the net benefit after taking in to account how much they actually do spend. The figures can be derived from studies of how much consumption rises/falls in response to price changes. [One such exercise](#) arrived at an [estimate](#) that drinking's pleasures and other benefits are worth £2309 million to London's drinkers – greater than the report's estimate of the cost of alcohol-related crimes.

Heavier drinkers are usually less responsive to price increases than less heavy drinkers. According to the methodology just described, this translates in to their gaining greater benefits per unit they drink. Sometimes an attempt is made to discount these benefits by arguing excessive drinkers must be irrational or ill-informed, and that their pleasures are therefore illusory or counter-balanced by adverse consequences they have failed to appreciate – an unwarranted assumption dealt with [above](#).

Another in practice unaccountable factor is what consumers who stop drinking due to price increases do with the money they save. They may lose the benefits as they see them of drink, but gain others. What these might be and how they should be valued would require an extensive research programme of dubious value because it would feed in to a set of calculations which for other reasons (as argued in this analysis) cannot be relied on.

The practical impossibility of monetarising such benefits does not mean they can be ignored. It simply highlights the futility of attempting to assess the total social costs of alcohol in a meaningfully comprehensive manner.

Why try to estimate total cost to society?

If questionable assumptions and imprecision render cost-of-alcohol estimates of little scientific worth, the question arises why such studies are funded and undertaken. The most important reason is their political value, [because](#) "the allocation of public funds between competing programs is substantially influenced by public servants trained in economics or finance". Present cost estimates are so crude that from a policy perspective their worth is mainly limited to this propaganda value. How crude they are can be appreciated from [estimates](#) that alcohol costs as a proportion of the gross domestic product differ nearly fourfold between Spain and New Zealand, with the latter being the highest despite lower consumption.

Cost-of-illness studies [can be seen](#) as weapons in an armaments race as each health sector strives to show that the problem it is charged with ameliorating matters more than alternative spending priorities. Because the comparability issues are at their least, this comes closest to being justified in the attempt to show that alcohol is a bigger problem than illicit drugs. However, the same point could be made with more accurate and more easily available figures on morbidity and mortality or on public expenses related to alcohol and drugs.

Another commonly cited purpose of cost-of-alcohol studies is to provide a way to assess the effectiveness of intervention policies, either in terms of their cost-effectiveness in producing desired outcomes per extra £ spent on the interventions or their cost-benefit credentials in reducing the total cost imposed by drinking. Here too, there seems no reason why more direct data such as such as government expenditure, mortality figures, crime statistics and drinking surveys could meet the same need more reliably.

Two such analyses (an [original study](#) and [an update](#)) conducted for the World Health Organization assessed effectiveness in terms of gains in years of life adjusted for the degree of disability experienced during those years. Their calculations are based on so many arbitrary and unrealistic assumptions that their policymaking value is highly doubtful. For example, the earlier analysis assumed that price increases reduce consumption most for the type of drink least often consumed in a country, while the most popular type of drink is much less affected. The result was that in parts of Europe wine drinking was assumed to react little to price while in others the reaction was five times as strong, despite the fact that in both regions wine accounted for a substantial minority of the alcohol consumed. This assumption also meant that price increases were assumed to be relatively ineffective when the alcohol market was dominated by one type of drink, as in the South East Asian region where distilled spirits accounted for over 85% of all consumption.

The update analysis inherited many of the uncertainties of its predecessor and added some surprising cost comparisons, such as that school-based education is for some reason 83% more expensive in Vietnam than in Brazil, while mass media campaigns are 63% more expensive in Brazil. It also assumed that research findings on the impact of an intervention in one cultural and national context can be extrapolated to others. It is bold indeed to assume that an increase in the age at which alcohol can legally be bought would have the same impact in say Italy as in the United States, or that price increases would have the same impact in, say, Vietnam and Scandinavia. Intervention costs too are (unrealistically) assumed to be the same in all countries in a region, despite the fact that regions are formed of countries with similar mortality levels, not similar costs.

A different example of the limits of economic modelling comes from the [mathematical model](#) which has influenced policy in Britain. It calculates that screening primary care patients for hazardous drinking and briefly counselling those at risk is a cost-effective way to reduce mortality and morbidity, with associated impacts on healthcare costs and health-related quality of life. However, no account is taken of the uses which the time spent in these activities could have been put to. As the medical journal the Lancet [critically observed](#), "lecturing" patients about lifestyle takes up time in the average 12-minute GP consultation which could have been used to address the reason why the patient attended in the first place, or some other medical condition. These uses might have more cost-effectively reduced ill-health than a diversion to drinking. Such

considerations do not invalidate the findings of the modelling exercise, but do show that it is inherently limited because it cannot account for all the alternative uses of a GP's and a patient's time, the best use of which perhaps the participants are best placed to judge.

The [background notes](#) detail further (it is contended) invalid or unnecessary uses of total cost studies including: comparing alcohol-related costs to those related to other illnesses such as mental illness; comparisons between the costs associated with drinking in different countries; and targeting policy at the most costly forms of drinking.

The authors' conclusions

Even the most sophisticated cost-of-alcohol calculations include entries based on misleading assumptions or logical mistakes. Monetary calculations do not add precision to the comparison of the magnitude of health problems. Cost calculations cannot be used to compare the extent or nature of alcohol problems in different countries. Cost calculations should focus on money spent from clearly defined budgets. It is good to measure the joys and sorrows of heavy drinkers and their nearest, but little is gained from expressing them in euros and dollars. The use of a monetary metric conceals important issues and value judgements. Traditional measures of alcohol problems offer a better picture of the effects of policy measures than cost-of-alcohol estimates.

There is no meaningful way to compare the sufferings of a child with born damaged due to their mother's drinking to the sufferings of youngster put in a wheelchair because of a drunken driver. The allocation of resources to alleviate these different forms of sufferings is, and has to be, based on value judgements in addition to any cost calculations. Value judgements should not be hidden behind a curtain of opaque calculations. Many of the variables needed for cost-of-illness estimates, such as hospital days, arrests for drunkenness, number of deaths and QALYs lost, are useful measures of the tangible effects of alternative interventions. Only exceptionally is there reason to translate them into a grand total in money terms. Usually, a more rational way of choosing between alternatives is to compare effect profiles as such. Intangible costs may be measurable in principle, but in practice the measures available are not accurate enough to be used in policy evaluations.

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Among other roles, the author was Research Director of the Finnish Foundation for Alcohol Studies and Professor of Sociology at Helsinki University. In the middle of the firing line of his iconoclastic critique are attempts to calculate a single monetary value for the costs imposed on society by drinking. These headline-grabbing figures are major weapons in policy setting debates, promising at times vast returns to society for relatively little expenditure in curbing drinking. If they are indeed invalid and/or hugely imprecise, to that degree policy based on them will also risk being significantly misguided. Though some shots stray towards these, the featured analyst finds much greater validity in attempts to cost interventions and set these against 'natural units' of losses and benefits such as life-years saved or injuries or crimes averted.

The implication of the featured analysis is that while component policies like health service priorities may be susceptible to cost-effectiveness analysis, whole-society policy like minimum per-unit pricing or restricting licensing cannot (at least given the current state of the science) reliably be decided by analyses which purport to show that the returns from these policies are greater than the costs. The alternative is to weigh in the

balance several consequences of implementing such policies. This means that, as the featured analysis points out, data about which interventions affect which outcomes must be refracted through the prism of which outcomes we value most, and whose values have the greatest leverage in determining policy. Its principle objection to cost estimates is that these typically are not explicit about the values behind them, and that the false precision of a numerical estimate gives an appearance of a value-free calculation.

Possibly in view of the significance and contentious nature of this critique, alongside it were published six responses, including the views of the some of the world's leading alcohol researchers, and some responsible for cost estimates the featured analysis criticised. Broadly they supported the thrust of the critique, though argued that despite its scientific imprecision or conceptual invalidity, calculating a total cost figure does aid policymaking because it gives an indication of the overall size of a problem relative to others. Without some such common metric, comparisons are much more complicated and less convincing to public and policymakers – the reason why such studies are commissioned.

Similar critique of same studies

A [critique similar](#) to the featured study was published the same year (2012) in New Zealand, focusing on two of the same cost-of-alcohol reports – the ones for [Australia](#) and [New Zealand](#). The authors accepted that attaching a figure to the costs drinking imposes on others is a valid way to determine how much people should have to pay in alcohol taxes for imposing those costs. But they calculate that such costs are in fact just a fifth of the totals estimated by the two reports.

The core of the critique is that the adverse consequences experienced by drinkers themselves should normally be considered offset by the benefits they gain; consequences are among the 'costs' they are prepared to 'pay' for the benefits. To do otherwise is the same, they suggest, as treating skiing as utterly socially wasteful because only the accident costs suffered by skiers are considered while taking no account of the fact that that skiers generally derive at least some enjoyment from their risky activity. This blanking out of benefits is, as the [featured analysis says](#), sometimes justified on the basis that risky drinkers must be ill-informed or irrational consumers. For the New Zealand critique this is like assuming that "imperfect information in the used car market means nobody derives any benefit from buying a vehicle". The critique also agrees with the featured study that lost productivity estimates fail to account for the replacement of the alcohol-impaired or prematurely dead worker by another.

The [study](#) underlying the article was commissioned and funded by an alcohol industry body. Earlier the same authors had published an [extended critique](#) of the New Zealand study. The lead author has also released [a more trenchant and informal critique](#).

Implications for British policymaking

For British readers, criticisms levelled at the Sheffield University modelling exercise are most pertinent. Applied to [England](#) and [Scotland](#), this fed in to decisions to set a minimum unit price for alcohol, among the most significant policy decisions in living memory.

The headline figures summing up the exercise were expressed in total cost terms. For

example, for England, over ten years the cumulative value of the net harm reductions caused by a £0.40 minimum price were estimated at £540 million, more than doubling to £1.3 billion at a £0.50 threshold. For the featured analysis, these figures are virtually worthless, in particular because they are dominated by cost savings due to reduced unemployment, calculations which effectively assume that no one currently unemployed benefits from the vacancies left by drinkers.

By design too, the estimates exclude what the researchers [described](#) as drinking's "beneficial effects in terms of individual 'feel good' factors or general quality of life". Subjective 'feel bad' consequences were included, for example in the form of distress caused to the victims of crime and diminished quality of life due to alcohol-related illness. [According to](#) the World Health Organization, if one is included, so should the other be if the aim is to assess the total net harm imposed on society by drinking. This omission of what for probably most of the population are the main reasons for drinking [has been highlighted](#) by Findings as a flaw not in the study itself, but in the use of these results in isolation to determine social and economic policy.

An alternative position taken by a [UK government analysis](#) published in 2003 is that diminished quality of life due to alcohol-related illness is part of the cost drinkers are prepared to pay, so from a whole society perspective, is cancelled out by the benefits they experience. As for the [other critics](#), the argument is that only the consequences and benefits arising for other people are relevant to determining public policy.

Findings [has also highlighted](#) the implicit assumption that crime benefits no one and in particular that stolen property effectively vaporises rather than being transferred within society. Though a factor (as the featured analysis says) in alcohol cost estimates, this assumption is particularly significant in estimates of the cost imposed by addiction (and saved by its treatment) to illegal drugs, whose purchase is often funded by prodigious levels of property crime.

The point made in the featured analysis that time spent in primary care screening and brief intervention targeted on drinking might have more profitably been used in other ways is applicable to most brief intervention studies, which limit themselves to their specific topic without looking at the totality of the primary care encounter. Again this not a criticism of the studies themselves, but of their use in isolation to determine (in this case) health policy.

Such considerations do not invalidate the more concrete constituents which fed in to Sheffield model's total cost estimates, such as lives saved, crimes not committed, and illnesses avoided. These in themselves may be considered a good enough reason to curtail the availability of alcohol, even if some drinkers are thereby deprived of the benefits they feel they get from drinking, or pay more to sustain these and lose out in the form of less money for other purposes.

Thanks for their comments on this entry in draft to Klaus Mäkelä of Helsinki in Finland. Commentators bear no responsibility for the text including the interpretations and any remaining errors.

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