

The economic impacts of alcohol



The different types of cost of alcohol • Estimates of the cost of alcohol



A number of studies have attempted to calculate the cost of alcohol to society. This is tricky for two reasons. First, because many of the costs are difficult to estimate accurately. Second, because there is significant debate around which types of cost to include. The lack of a definitive set of criteria means that there is no single figure representing the cost of alcohol consumption to the UK.

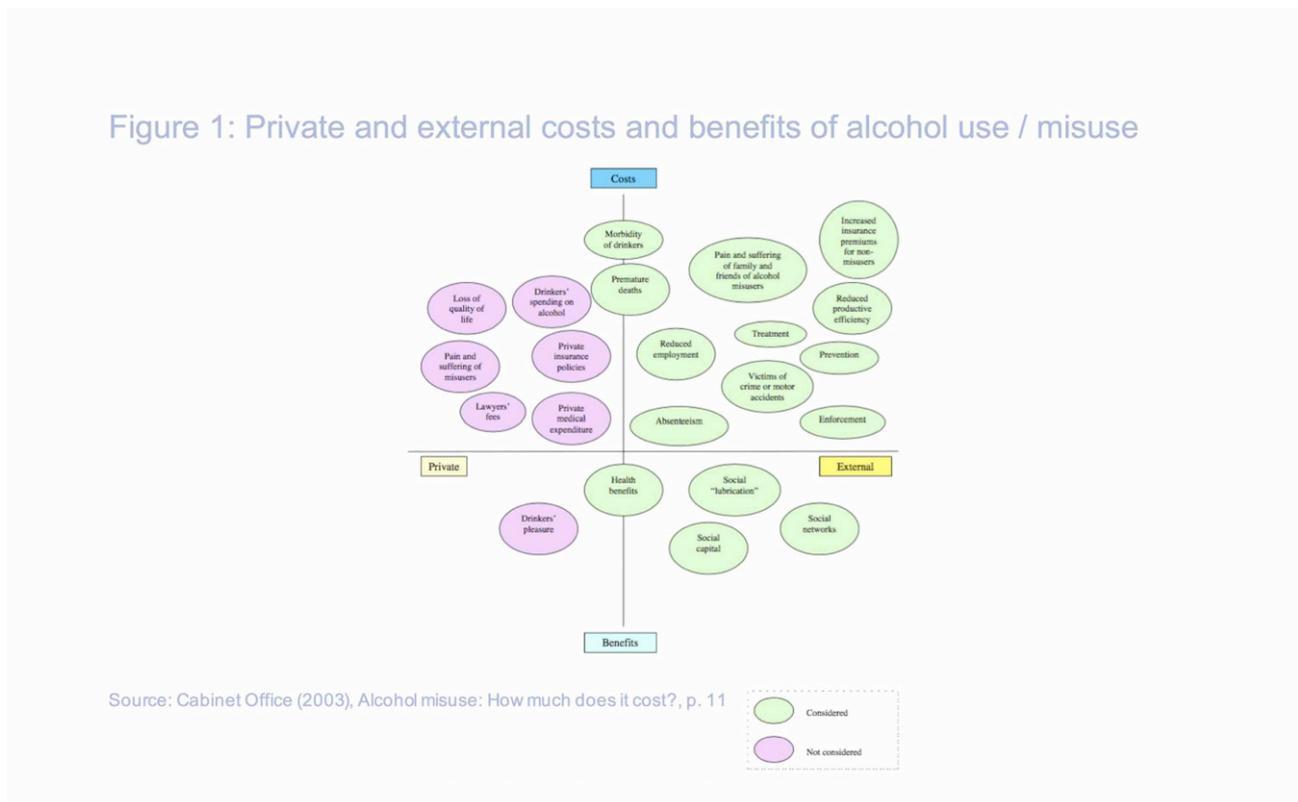
The Government regularly cites the number £21 billion in relation to alcohol costs – this represents the ‘external’ cost of alcohol to society in England and Wales: the costs imposed by drinkers upon others, excluding any personal impact. Standard economic theory suggests that this should be the basis for setting alcohol taxes. However, this number remains controversial, and many groups, including IAS, have called for it to be updated or revised.



The different types of cost of alcohol

There are a wide array of costs and benefits associated with the consumption of alcohol. These are typically classified as either 'private' or 'external'. Private costs and benefits are those that accrue to the drinker themselves. The most obvious private benefit is the pleasure the drinker gains 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.

Figure 1, taken from the UK Government Cabinet Office's report into the costs of alcohol offers an overview of this framework. The purple bubbles represent private costs, while the green ones represent external costs.



External costs are significant because they are not willingly chosen, but are imposed upon third parties without their consent. Consequently, there is general agreement that they offer a justification for government intervention. Standard economic theory posits that external costs should be reflected in alcohol taxes, so that consumers bear the full price of the social cost of their drinking, and not just the private cost.¹

However, some economists argue that policymakers should look not only at external costs, but also costs resulting from irrational consumption (e.g. due to addiction or misinformation).² These might be collectively termed 'market failure' costs, as they represent costs generated as a result of deviations from the 'perfect market' model. In

practice, identifying such irrational consumption is too difficult and open to debate to quantify market failure costs.

In certain contexts, it may be appropriate to focus on alcohol costs from a specific perspective, rather than looking at society as a whole. For example, it may be of interest to take the government’s perspective, and look at how alcohol tax revenue compares to public spending on alcohol-related problems. Similarly, the specific impact of alcohol on the health service, the criminal justice system or the economy may be of interest.

A further important distinction is 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 therefore inherently more difficult to value.

Each of these different types of costs have different uses in different contexts, as figure 2 summarises:

Figure 2: Summary of cost types

Cost	What it includes	What questions it answers	What to compare it against
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

Source: Bhattacharya, A. (2016), Which cost of alcohol? What should we compare it against?, *Addiction* doi:10.1111/add.13335

¹ Bhattacharya, A. (2016), Dereliction of duty: Are UK alcohol taxes too low? London: Institute of Alcohol Studies, p. 10. Available from: <<http://bit.ly/dutyyp032016>>

² Markandya, A. & Pearce, D.W. (1989), The social costs of tobacco smoking, *British Journal of Addiction* 84, pp. 1,139–50.



Estimates of the cost of alcohol

Total social costs

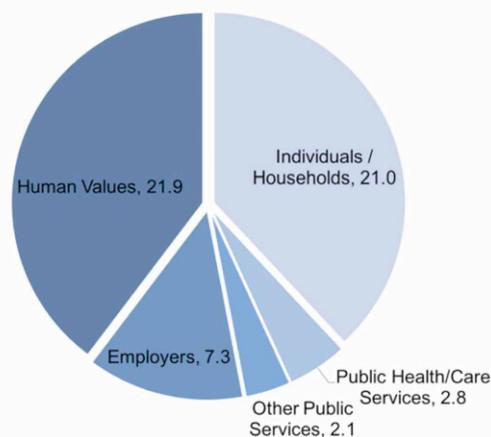
It is relatively unusual to look at total social costs of alcohol. A study by the National Social Marketing Centre comes closest to such an analysis, with a broad scope covering both private and external costs. It estimates that the total social cost of alcohol to England in 2006-07 was £55.1 billion.¹ This comprises:

- £22.6 billion costs to individuals and households, including
 - Crime and violence
 - Private health and care costs
 - Informal care costs for families
 - Lost income due to unemployment
 - Unusually, spending on alcohol consumption above guideline levels (on the basis that “From a family perspective the economic impact of such purchasing can be devastating”)
- £21.9 billion ‘human values’ costs: the pain and grief associated with illness disability and death
- £3.2 billion costs to public health and care services
- £5.0 billion costs to other public services, such as social care, criminal justice and fire services
- £7.3 billion of costs to employers due to lost productivity, absenteeism and accidents

‘Transfer payments’ which do not represent an overall cost to society, but simply move resources from one group to another – for example, tax income and benefits – are subtracted from this total to produce the overall estimate, as shown in figure 3.

Figure 3: National Social Marketing Centre estimate of social costs of alcohol

Social Costs of Alcohol in England, 2006-07 (£bn)



External costs – England and Wales

A more common approach to valuing the costs of alcohol is to focus on external costs – that is, setting aside private costs to the drinkers themselves, and estimating only the costs drinkers impose on others in society.

In the UK, the most widely cited such estimate is the Government's claim that alcohol generates external costs of £21 billion a year in England and Wales. This number has its roots in a 2003 Cabinet Office Strategy Unit report which surveyed the evidence on the cost of alcohol to society.² While the methodology and assumptions underpinning the Cabinet Office analysis have not been revisited, their estimate has been periodically updated for new data and inflation.³ According to the most recent revisions from the Department of Health and the Home Office, these costs comprise:⁴

- NHS costs, at £3.5 billion per year (at 2009–10 costs)
- Alcohol-related crime, at £11 billion per year (at 2010–11 costs)
- Costs to the economy, at about £7.3 billion per year (at 2009–10 costs, UK estimate)

Figure 4: The annual cost of alcohol-related harm (Government estimate)



Source: Public Health England (October 2014), *Why invest in alcohol and drugs prevention, treatment and recovery*
<http://www.nta.nhs.uk/uploads/why-invest-2014-alcohol-and-drugs.pdf>

While detailed breakdowns of these estimates are unavailable, the original Cabinet Office report provides an indication of the relative size of the specific items that make up the £21 billion number (though these have been updated subsequently):

Figure 5: Cabinet Office breakdown of alcohol costs (2003 estimate)

Table 40 Overall Costs of Alcohol Misuse (£ millions)		
	First Estimate	Second Estimate
Health Care Costs		
Hospital inpatient (&day) visits		
Directly attributable to alcohol misuse	126.2	126.2
Partly attributable to alcohol misuse	344.2	399.8
Hospital outpatient visits	222.8	445.6
Accident and emergency visits	305.2	305.2
Ambulance services	205.0	205.0
Practice nurse consultations	19.1	19.3
NHS GP consultations	27.8	48.7
Laboratory tests	N/A	N/A
Dependency prescribed drugs	1.6	1.6
Other health care costs	35.3	35.3
Specialist treatment services	96.2	96.2
Workplace and Wider Economy Costs		
Lost output due to absenteeism	1,213.6	1,785.9
Lost output due to reduced employment	1,726.1	2,153.7
Lost output due to reduced employment efficiency	N/A	N/A
Lost output due to premature death	2,254.3	2,481.8
Costs of alcohol-related and alcohol specific crime		
Criminal Justice System costs		
Alcohol specific offences	29.9	29.9
Alcohol-related offences	1,720.4	1,720.4
Property/health and victim services	2,521.2	2,521.2
Costs in anticipation of crime (alarms etc)	1,494.6	1,494.6
Lost productive output of victims	999.8	999.8
Emotional impact costs for victims of crime	4,678.6	4,678.6
Drink driving		
Criminal Justice System costs	77.3	77.3
Cost of drink-driving casualties		
Lost output		
Serious casualties	33.8	33.8
Slight casualties	25.9	25.9
Medical and ambulance		
Serious casualties	20.5	20.5
Slight casualties	11.0	11.0
Human costs		
Serious casualties	232.8	232.8
Slight casualties	123.8	123.8
TOTAL COSTS	18,517.1	20,044.0

Source: Cabinet Office (2003), Alcohol misuse: How much does it cost?, p. 59

In recent years, the Government's reliance on its £21 billion estimate has received growing criticism from those who believe that its assumptions and methodology ought to be revisited.⁵ For example, its assumptions over the proportion of accident & emergency attendances attributable to alcohol are based on a single survey, which has been augmented by further research since. Moreover, certain costs are omitted from the tally – most prominently social care costs and reduced workplace productivity.⁶

The Cabinet Office report recognises its own limitations, acknowledging that “The estimates given in this study are far from comprehensive – rather, due to the lack of data in certain areas, they are probably underestimates of the true costs associated with alcohol misuse”. Similarly, the Home Office points out that the valuation “does not include any estimate for the economic costs of alcohol misuse to families and social networks”.⁷

Nevertheless, the Government has continued to make use of the £21 billion number, most recently in response to questions in parliament.⁸ Moreover, in October 2015, responding to criticisms of the estimate, Home Office Minister Lord Bates insisted “The Government has no plans to commission a further review of costs”.⁹

Cost of alcohol to Scotland

The Scottish Government has produced its own estimate of the costs of alcohol in Scotland. Research it commissioned from the University of York found that alcohol consumption was associated with a total cost of £3.6 billion in 2007, which consists of roughly £2.1 billion of external costs and £1.1 billion private costs (though they do not make exactly this distinction).¹⁰ Figure 6 below breaks this number down in detail. Notably, it includes social care costs (unlike the Cabinet Office study for England and Wales), and finds these to be almost as high as health service costs.

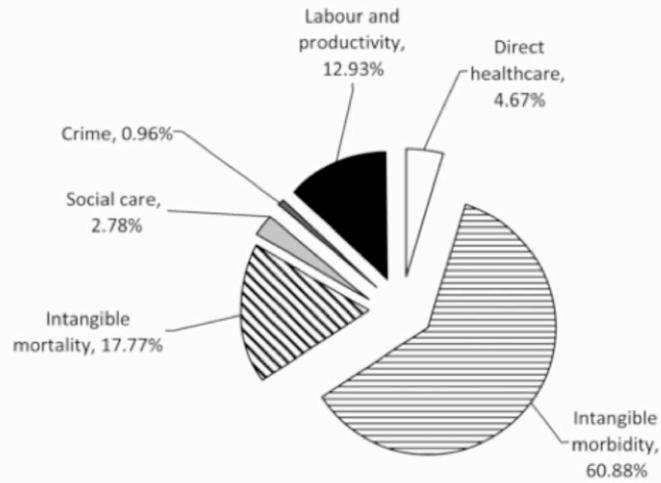
Figure 6: Cost of alcohol to Scotland, 2007

Resource	Annual Cost (£ million)	
	Range	Mid-point
HEALTH SERVICE		
GP and practice nurse consultations	15.1	15.1
Community Psychiatric Team visits	3.4 – 3.9	3.6
Community prescribed drugs	0.9	0.9
Laboratory tests	0.2	0.2
Non-psychiatric inpatient days	34.3 – 132.8	83.5
Psychiatric inpatient days	32.8 – 39.7	36.2
Maternity inpatient days	0.02 – 0.03	0.02
A&E attendances	2.8 – 55.9	29.0
Outpatient attendances	11.4 – 30.4	20.9
Hospital day cases	0.9 – 2.5	1.7
Ambulance journeys	1.4 – 47.5	24.4
Alcohol services	40.6 – 64.0	52.3
SUB-TOTAL	143.6 – 392.8	267.8
SOCIAL CARE		
Social care in relation to children and families	104.0 – 312.0	208.1
Criminal justice social work	7.0 – 27.4	17.2
Care homes	1.7 – 3.4	2.5
Children's Hearing System	1.6 – 3.9	2.7
SUB-TOTAL	114.2 – 346.8	230.5
CRIME		
Alcohol-specific offences	8.2	8.2
Alcohol-related offences - costs in anticipation of crime	14.1 – 28.5	21.3
Alcohol-related offences - costs as a consequence of crime	354.0 – 757.7	555.8
Alcohol-related offences - costs in response to crime	86.2 – 197.3	141.8
SUB-TOTAL	462.5 – 991.7	727.1
PRODUCTIVE CAPACITY OF THE SCOTTISH ECONOMY		
Foregone productive capacity by workforce participants due to presenteeism, absenteeism, unemployment and premature alcohol-related mortality	725.2 – 1,006.1	865.7
SUB-TOTAL	725.2 – 1,006.1	865.7
WIDER SOCIAL COSTS		
Cost of premature mortality: value of lost activity prior to retirement by non-participants in the workforce	52.0 – 63.8	57.9
Cost of premature mortality: value of lost activity post-retirement and prior to life expectancy	96.6 – 110.5	103.6
Cost of premature mortality: intangible social costs associated with life years lost	882.5 – 1,723.7	1,303.1
SUB-TOTAL	1,031.1 – 1,898.0	1,464.6
OVERALL TOTAL	2,476.6 – 4,635.4	3,555.7

Source: York Health Economics Consortium, University of York (2010), The societal cost of alcohol misuse in Scotland for 2007. Edinburgh: Scottish Government Social Research, p. 3

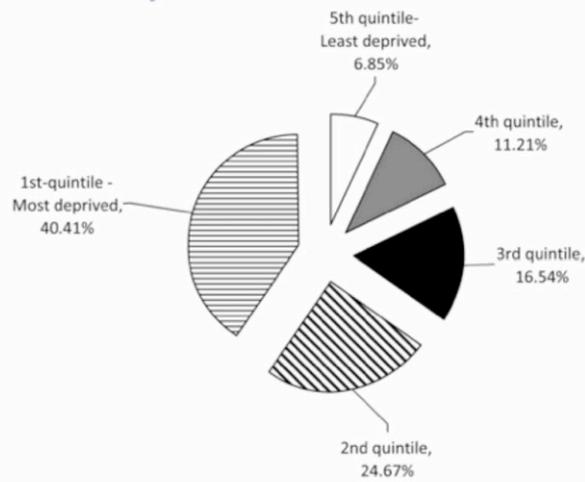
A more recent academic analysis from University of Aberdeen researchers makes a significantly higher estimate of £7.2 billion for the total costs of alcohol to Scotland.¹¹ This difference is largely due to the inclusion of morbidity costs (costs to sufferers of alcohol-related illness that does not result in death), which the researchers claim account for 61% of total alcohol costs. Of this £7.2 billion, around £5.9 billion comes from private costs and £1.4 billion external costs (which is likely to be an underestimate due to a lack of data on alcohol-specific criminal offences). The researchers also found that alcohol costs are disproportionately borne by the poorest: the 20% most deprived suffer 40% of the harms.

Figure 7: Cost of alcohol to Scotland by category, 2010 – University of Aberdeen study



Source: Johnston, M. et al (2012), Inequalities in the distribution of the costs of alcohol misuse in Scotland: A cost of illness study, *Alcohol and Alcoholism* 47:6

Figure 8: Distribution of alcohol costs in Scotland by category, 2010 – University of Aberdeen study



Cost of alcohol to Northern Ireland

Another cost of alcohol study from the Northern Irish Government calculated the external costs of alcohol misuse to Northern Ireland in 2008/09 to be an annual £679.8 million¹²:

- £122m is spent on healthcare
- £48.5m on social work
- £223.6m on the fire and police services
- £83.8m on courts and prison services
- £201.7m on the wider economy.

These numbers represent a 'base case', with the total annual cost estimated in the range of £501-£881 million. This upper limit is frequently rounded up to £900 million by the Government and charities in Northern Ireland.¹³ For example, in launching a new alcohol and drug strategy in 2012, Northern Ireland Health Minister Edwin Poots claimed "There is no doubt that alcohol misuse is one of the main threats to public health in Northern Ireland. Research has shown that it costs Northern Ireland up to £900 million every year, and almost £250 million of these costs are borne by the Health and Social Care sector".¹⁴

International context

It is typically inadvisable to make international comparisons of estimates of the social cost of alcohol because differences in data quality, definitions and methodology may account for many of the differences. However, such comparisons can help to calibrate the estimates mentioned above to see whether they are conservative or likely to overstate the costs of alcohol to society. One review of such estimates found that the weighted average total cost of alcohol to society in high-income countries is 2.5% of GDP (see figure 9).¹⁵

Figure 9: Comparison of selected comparable cost of alcohol studies

	High-income countries					Middle-income countries		
	France ¹²	USA ¹³	Scotland ¹⁴	Canada ¹⁵	Weighted average	South Korea ¹⁶	Thailand ¹⁷	Weighted average
Study year	1997	1998	2001-02	2002	NA	2000	2006	NA
Population in study year (million)	58.6	280.6	5.1	31.9	NA	47.5	64.6	NA
GDP (PPP) in study year*	1301087	8587884	133179	929912	6689552	760549	604575	670666
Direct health-care cost	3592	29855	162	3045	23090	1516	344	841
Direct laws	72	8049	454	2830	6262	-	15	9
Other direct cost	7619	26244	145	966	20848	5459	49	2341
Indirect cost	11223	170707	1052	6564	129659	17938	7496	11921
Total economic costs of alcohol	22506	234854	1813	13406	179859	24914	7903	15111
Cost per head (2007 US\$ PPP)	384	837	358	420	725	524	122	293
Health-care costs (% of total cost)	16.0%	12.7%	8.9%	22.7%	12.8%	6.1%	4.3%	5.6%
Law enforcement (% total cost)	0.3%	3.4%	25.0%	21.1%	3.5%	-	0.2%	0.1%
Other direct cost (% total cost)	33.9%	11.2%	8.0%	7.2%	11.6%	21.9%	0.6%	15.5%
Indirect cost (% total cost)	49.9%	72.7%	58.0%	49.0%	72.1%	72.0%	94.8%	78.9%
Total cost (% GDP [PPP])	1.7%	2.7%	1.4%	1.4%	2.5%	3.3%	1.3%	2.1%
Health-care costs (% GDP [PPP])	0.3%	0.4%	0.1%	0.3%	0.3%	0.2%	0.1%	0.1%
Law enforcement (% GDP [PPP])	0.0%	0.1%	0.3%	0.3%	0.1%	0.0%	0.0%	0.0%
Other direct cost (% GDP [PPP])	0.6%	0.3%	0.1%	0.1%	0.3%	0.7%	0.0%	0.3%
Indirect cost (% GDP [PPP])	0.9%	2.0%	0.8%	0.7%	1.7%	2.4%	1.2%	1.7%

GDP=gross domestic product. NA=not applicable because data unavailable. PPP=purchasing power parity. *Adjusted to 2007 US\$ million.

Table 4: Overview of economic costs attributable to alcohol in selected high-income and middle-income countries (in 2007 million international \$)

Source: Rehm, J. et al (2009), Global burden of disease and injury and economic cost attributable to alcohol use and alcohol-use disorders, Lancet 373, p. 2,230

Comparing the official Government estimates to GDP in the year of estimate suggests that Scotland's figure is relatively high, whereas England, Wales and Northern Ireland's estimates are below average:¹⁶

- Scotland: 3.4% of GDP
- Northern Ireland: 2.2% of GDP
- England and Wales: 1.7% of GDP

Healthcare costs

As mentioned above, it is common to look specifically at the cost of alcohol from specific perspectives. The most common of these perspectives is costs to health service. The Department for Health has estimated that the NHS spends £3.5 billion a year on alcohol-related problems.¹⁷ The Welsh Government has carried out a similar exercise – finding in 2008/09 alcohol cost NHS Wales between £69.9 million and £73.3 million.¹⁸ However, more recently, Deputy Health Minister Vaughan Gething has claimed this has risen to £109 million a year.¹⁹

Estimates of healthcare costs are available at a sub-national level as well. Alcohol Concern has created an alcohol harm map for England, which provides information on the costs of alcohol misuse by local authority. By exposing the costs of dealing with alcohol to each and every specific region of the country, the charity aims to “reveal the real harm and cost of alcohol at a local level”.²⁰

¹ Lister, G. et al (2008), Measuring the Societal Impact of Behavior Choices, *Social Marketing Quarterly* 14:1, pp. 51–62;

Lister, G. et al (2006), Comparing the Societal Impacts of Common Health Risks. National Social Marketing Centre.

² Cabinet Office (2003), Alcohol misuse: How much does it cost?

³ Findings (2015), Measuring and reducing alcohol-related harm.

<http://findings.org.uk/PHP/dl.php?file=hot_alc_pop_hot>

⁴ Home Office (2012) A Minimum Unit Price for Alcohol Impact Assessment. London: Home Office, p. 5.

⁵ Bhattacharya, A. (2016), Which cost of alcohol? What should we compare it against?, *Addiction* doi:10.1111/add.13335; Full Fact (2012), Does Britain lose £21 billion to alcohol abuse each year?

<<https://fullfact.org/news/does-britain-lose-21-billion-alcohol-abuse-each-year/>>; Findings, op. cit.

⁶ Bhattacharya, A. (2016), Which cost of alcohol?, op. cit.

⁷ Home Office (2012) A Minimum Unit Price for Alcohol Impact Assessment. London: Home Office, p. 5.

⁸ HL 27 October 2015, vol 766 WA2472

⁹ www.parliament.uk (May 2013), 'HL2474', Alcoholic Drinks: Written question <<http://bit.ly/1ZQd0pG>>

¹⁰ York Health Economics Consortium, University of York (2010), The Societal Cost of Alcohol Misuse in Scotland for 2007. Edinburgh: Scottish Government Social Research.

¹¹ Johnston, M. et al (2012), Inequalities in the Distribution of the Costs of Alcohol Misuse in Scotland: A Cost of Illness Study, *Alcohol and Alcoholism* 47:6, pp. 725–31.

¹² Public Health Information and Research Branch (June 2010), 'Social Costs of Alcohol Misuse in Northern Ireland for 2008/09', Department of Health, Social Services and Public Safety Northern Ireland, pp. 6–8

¹³ Department of Health, Social Services and Public Safety (2011), New Strategic Direction for Alcohol and Drugs Phase 2 2011–2016: A Framework for Reducing Alcohol and Drug Related Harm in Northern Ireland; BBC News (2014), Alcohol abuse in Northern Ireland 'costs £900m a year', *BBC News* [online].

<<http://www.bbc.co.uk/news/uk-northern-ireland-29232595>>

¹⁴ Northern Ireland Executive (2012), Health Minister launches new strategy to address alcohol and drug misuse [online]. <<http://bit.ly/22UJYu6>>

¹⁵ Rehm, J. et al (2009), Global burden of disease and economic cost attributable to alcohol use and alcohol-use disorders, *Lancet* 373, p. 2,230.

¹⁶ IAS calculations, based on ONS (2015), Regional Gross Value Added (Income Approach).

<<http://www.ons.gov.uk/economy/grossvalueaddedgva/datasets/regionalgrossvalueaddedincomeapproach>>

¹⁷ Home Office (2012) A Minimum Unit Price for Alcohol Impact Assessment. London: Home Office, p. 5.

¹⁸ Phillips, C. et al (2011), Assessing the costs to the NHS associated with alcohol and obesity in Wales, Cardiff: Welsh Assembly Government Social Research.

¹⁹ BBC News (2015), Alcohol misuse 'costs Wales NHS £109m a year', *BBC News* [online].

<<http://www.bbc.co.uk/news/uk-wales-politics-31711313>>

²⁰ Alcohol Concern, 'Alcohol Harm Map'



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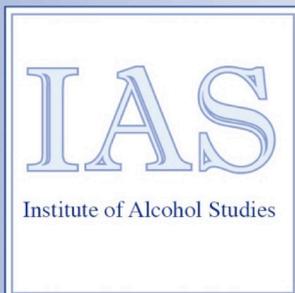


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Alliance House
12 Caxton Street
London SW1H 0QS

Telephone | 0207 222 4001
Email | info@ias.org.uk
Twitter | [@InstAlcStud](https://twitter.com/InstAlcStud)
Web | www.ias.org.uk

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