Title: **BANNING THE BELOW COST SELLING OF ALCOHOL (BBCS)** **IA No:** HO **Lead department or agency:** HOME OFFICE **Other departments or agencies:** DEPARTMENT OF HEALTH, HM TREASURY, HM REVENUE AND CUSTOMS	Impact Assessment (IA)
	Date: 30 January 2014
	Stage: FINAL
	Source of intervention: Domestic
	Type of measure: Secondary legislation
	Contact for enquiries: Stephen Cummins, HOME OFFICE 0207 035 1836

Summary: Intervention and Options

RPC Opinion: GREEN

Cost of Preferred (or more likely) Option				
Total Net Present Value	**Business Net Present Value**	**Net cost to business per year** (EANCB on 2009 prices)	**In scope of One-In, Two-Out?**	**Measure qualifies as**
£34.0m	-£4.1m	£0.4m	Yes	IN

What is the problem under consideration? Why is government intervention necessary?
Alcohol misuse costs around **£21 billion per year** and is associated with a range of related harms. There is currently no requirement for retailers to sell their alcohol above a defined threshold. There is growing concern about the availability of low cost alcohol and the impact that excessive alcohol consumption has on health and crime harms. Government intervention would enable the definition and implementation of 'cost' as a floor price below which alcohol could not be sold, putting an end to heavily discounted alcohol sales.

What are the policy objectives and the intended effects?
The Coalition Programme for Government committed to ban the sale of alcohol below cost price. The objective of the policy is to define a threshold below which alcohol cannot be sold. The intended effect is drive forward action to reduce the harms associated with excessive consumption such as the number and associated costs of alcohol related crimes; alcohol related health problems, and deaths due to alcohol. .

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Option 1: Do nothing.

Option 2: Banning the below cost selling of alcohol (BBCS), defined here as below the level of duty plus VAT.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** Routine					
Does implementation go beyond minimum EU requirements?			Yes		
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	**Micro** Yes	**< 20** Yes	**Small** Yes	**Medium** Yes	**Large** Yes
What is the CO$_2$ equivalent change in greenhouse gas emissions? (Million tonnes CO$_2$ equivalent)			**Traded:** N/A	**Non-traded:** N/A	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister: Norman Baker   Date: 1st February 2014

Summary: Analysis & Evidence   Policy Option 2

Description: Banning the below cost selling of alcohol (BBCS)

ECONOMIC ASSESSMENT

Price Base Year: 2014/15	PV Base Year: 2014/15	Time Period Years: 10	Net Benefit (Present Value (PV)) (£m)		
			Low: 27.6	**High: 35.1**	**Best Estimate: 34.0**

COSTS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	4.3		5.1	48.5
High	8.4	1	5.5	56.0
Best Estimate	4.3		5.3	**49.6**

Description and scale of key monetised costs by 'main affected groups'

- There will be transition costs as retailers familiarise themselves with the policy and change prices to comply with the below cost ban. This is estimated to be a one-off total cost of **£4.1m**.
- There will be transition costs to the licensing authorities to familiarise themselves with the policy and inform alcohol retailers, estimated at **£0.2m.**
- There will be cost to the public sector for monitoring compliance of **£0.3m** per annum.
- Reduced revenue for the Exchequer from alcohol duty receipts will amount to **£5m** per annum.

Other key non-monetised costs by 'main affected groups'

- There will be a cost to consumers from higher prices, which is a transfer to business.
- There could be material and stationery costs to business for re-pricing products on shelves and displays.
- There could also be a cost to business as a result of lost alcohol sales as well as potential losses from restrictions placed on loss-leading pricing strategies.

BENEFITS (£m)	Total Transition (Constant Price) Years		Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low				
High				
Best Estimate			9.5	**83.6**

Description and scale of key monetised benefits by 'main affected groups'

- The benefits in terms of NHS cost savings and quality adjusted life years gained are estimated at **£5.3m** on average annually over 10 years.
- The benefit to society, for example to victims, the police and the criminal justice system (through a reduction in alcohol related crime) is estimated as **£3.6m** per annum. Note: These benefits are not fully 'cashable' and so the actual financial savings could be lower.
- The benefit to society from reduced absenteeism, estimated at **£0.5m** per annum.

Other key non-monetised benefits by 'main affected groups'

There may be a benefit to business if consumers substitute currently cheaper alcohol for more expensive alcohol. There may be a benefit to business if consumers switch their expenditure from alcohol to other goods. The business profit cannot be quantified, though there is expected to be further benefits to business and society as a whole from a reduction in absenteeism and an increase in productivity.

Key assumptions/sensitivities/risks	**Discount rate (%)**	3.5

Per person consumption is expected to fall by **0.04 per cent**. There is a risk that consumers could maintain or reduce their current consumption levels to a greater degree than the evidence suggests.

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			In scope of OIOO?	Measure qualifies as
Costs: 0.4	**Benefits:**	**Net: -0.4**	Yes	IN

Evidence Base (for summary sheets)

A.   Strategic Overview

A.1   Background

The United Kingdom faces a particular challenge, as levels of harmful drinking, deaths and crime due to alcohol are high and have risen over the last 50 years.

Coalition commitment
The Coalition Programme for Government committed to tackle the harmful use of alcohol.

The commitments were:
• Banning the sale of alcohol below cost price.
• Reviewing alcohol taxation and pricing to ensure it tackles binge drinking without unfairly penalising responsible consumers, pubs and important local industries.
• Overhauling the Licensing Act to give local authorities and the police much stronger powers to remove licences from, or refuse to grant licences to, any premises that are causing problems.
• Allowing councils and the police to shut down permanently any shop or bar found to be persistently selling alcohol to children.
• Doubling the maximum fine for under-age alcohol sales to £20,000.
• Permitting local councils to charge more for late-night licences to pay for additional policing.

The Government's Alcohol Strategy
On 23 March 2012 the Government launched its Alcohol Strategy, which aims to radically reshape the approach to alcohol and reduce the number of people drinking to excess. The Alcohol Strategy is targeted at harmful and hazardous consumers and aims to limit the impact on responsible consumers. The Government has previously introduced a range of measures with the aim of tackling the related harms caused by excessive alcohol consumption. These include significant reforms to the Licensing Act 2003 and work with industry through the Responsibility Deal. However, excessive alcohol consumption and unacceptable levels of crime and health harms remain an issue. Other measures contained within the Alcohol Strategy aimed at targeting harmful and hazardous drinking include, addressing alcohol advertising, piloting sobriety schemes, and continuing work with the industry through the Responsibility Deal to implement pledges to market, advertise and sell their products in a responsible way.

Other approaches considered
The Government proposed a number of pricing policies throughout the development of the Alcohol Strategy. The Government has decided that the introduction of minimum unit pricing (MUP) will remain a policy under consideration but will not be taken forward at the present time. The Government also consulted on the possible introduction of a ban on multi-buy promotions of alcohol in the off-trade. The Government believes that the evidence for the effectiveness of a ban on multi-buy promotions in the off-trade in reducing hazardous and harmful consumption remains inconclusive, and will not therefore be taking this forward.

We are proceeding with the commitment in the Coalition Agreement to ban below cost selling as this is a proportionate, pragmatic and sensible starting approach for tackling the availability of below cost alcohol, as we committed to in the Coalition Agreement.

Mandatory Licensing Code
The ban on below cost selling will be implemented through secondary legislation by making it a mandatory licensing condition that would apply to all alcohol retailers in England and Wales.

Definition of Below Cost Selling

For the purposes of this policy, the Government has established 'cost' as the value of 'duty plus VAT', defined as the level of alcohol duty ('duty') for a product plus value added tax ('VAT').

Calculating the level of duty plus VAT for a product
The level of duty plus VAT is calculated by establishing the duty paid on a product and then applying the rate of VAT to this amount. On 4 January 2011 the standard rate of VAT was set at 20%. Duty rates for alcohol are set by the Chancellor at the Budget. The latest duty rates can be accessed at http://www.hmrc.gov.uk/rates/alcohol-duty.htm. Duty rates differ by type of alcohol and often the strength of the product. There are three main categories for calculating the floor price of duty plus VAT: Beer, Spirits and Wine. We can calculate the floor price of duty plus VAT using the following three formulas:

Formula 1: Calculating the duty plus VAT floor price for beer
Based on 2013 duty rates, £19.12 of duty is paid per hectolitre per cent of alcohol in beer. The floor price of duty plus VAT for beer is calculated using the following formula:

Duty rate of beer x litres of beer x alcohol by volume (ABV) + VAT = floor price

For example: A 440ml can of 5% alcohol by volume beer = Duty rate of beer = £19.12 x 0.440ml x 5% ABV + 20% VAT = 50 pence.

Formula 2: Calculating the duty plus VAT floor price for spirits, spirit-based ready-to-drinks and wine and made-wine (exceeding 22% ABV)
Based on 2013 duty rates, £28.22 duty is paid per litre of pure alcohol in spirits, spirit-based ready-to-drinks and wine exceeding 22% ABV. The floor price of duty plus VAT for spirits and wine exceeding 22% ABV is calculated using the following formula:

Alcohol by volume (ABV) x litres of product x duty rate of spirit/wine + VAT = floor price

For example – A 750ml bottle of 40% vodka = 40% ABV x 0.750l x £28.22 duty rate + 20% VAT = £10.16.

Formula 3: Calculating the duty plus VAT floor price for wine and cider
Duty rates for wines and cider vary based upon the alcohol by volume (ABV). Please see table 1 for the 2013 duty rates that apply to wine and cider (per hectolitre of product). The floor price of duty plus VAT for wine and cider is calculated using the following formula:

Litres of product / 100 x duty rate of product + VAT = floor price

For example – A 700ml bottle of 13.5% wine = 0.7l / 1000 / 100 x 266.72 duty rate + 20% VAT = £2.24.

Table 1: Variable duty rates for wine and cider (as of 2013)

(1) Product	(2) ABV%	(3) £ per 100 litres
Still cider and perry	1.2 > ABV ≥ 7.5	39.66
	7.5 > ABV > 8.5	59.52
Sparkling cider and perry	1.2 > ABV ≥ 5.5	39.66
	5.5 > ABV > 8.5	258.23
Wine and made-wine	1.2 > ABV ≥ 4	82.18
	4 > ABV ≥ 5.5	113.01
	5.5 > ABV ≥ 15	266.72
	15 > ABV ≥ 22	355.59
Sparkling wine and made-wine	5.5 > ABV ≥ 8.5	258.23
	8.5 > ABV ≥ 15	341.63

Exemptions to a duty plus VAT policy
Duty-free alcohol
The sale of alcohol on ships (on international journeys), aircraft, trains, airside at international airports and seaside at ferry terminals are not licensable activities under Section 173 of the

Licensing Act 2003. Therefore, a ban on below cost selling would not apply to any alcoholic products sold at these locations.

Low strength beer
No duty is charged on beer which has a strength of 1.2% or less. Therefore, these products will not be subject to this policy.

A.2 Groups Affected

Consumers
The aim of a below cost policy is to reduce alcohol consumption. However, the policy is designed to target hazardous and harmful drinkers who tend to purchase cheaper alcohol. Evidence in this assessment suggests that an increase in the price of alcohol is likely to reduce the consumption of alcohol by harmful drinkers. There is expected to be a limited impact on responsible consumers who drink moderate amounts of alcohol.

Off-trade alcohol retailers
The off-trade refers to premises that are licensed to sell or supply alcohol for consumption off the premises only. This would typically include large chain supermarkets, independent shops and off-licences. The off-trade is expected to be most affected by a requirement to sell all alcohol above cost price as off-trade alcohol products typically retail more cheaply than alcohol sold in the on-trade.

On-trade alcohol retailers
The on-trade refers to premises licensed to sell or supply alcohol for consumption on the premises. This would include pubs, bars, nightclubs, hotels and restaurants. Alcoholic drinks sold in the on-trade are not typically expected to be affected by a ban on below cost selling as advice from HM Treasury suggests that the on-trade generally sells alcohol significantly above the floor price of duty plus VAT. However, on-trade retailers that sell alcohol at very low or heavily discounted prices could be affected, for example, through promotions that result in heavily discounted alcohol.

Production supply chain: producers, manufacturers and wholesalers
Retailers may decide not to purchase those affected products from producers if they do not sell in the stores. As a result, producers might see a decrease in the volume of certain products purchased from retailers.

Criminal Justice System and the NHS
The expected reduction in alcohol-related harms, which includes health harms and crime harms, will benefit the NHS and Criminal Justice System.

Local Government
As is currently the case for alcohol licensing issues, licensing authorities will ensure legal compliance with the ban on below cost selling and take action against alcohol retailers that are found to be in breach of the condition.

UK Exchequer
A higher price for some alcoholic drinks is expected to lead to a fall in alcohol consumption. This will directly translate into falling alcohol duty receipts. This equates to a decrease of £5m per annum.

A.3 Consultation

Within government
The Coalition Programme for Government committed to ban the sale of alcohol below cost price.

Public Consultation
Two separate public consultations have featured discussions on alcohol pricing policy.

From July to September 2010, the Government conducted a public consultation exercise on 'Rebalancing the Licensing Act'[1].

This consultation included a request for responses on the following areas:
• Simple and effective ways to define the 'cost' of alcohol.
• Effective ways to enforce a ban on below cost selling and their costs.
• The feasibility of using the Mandatory Licensing code to set a licence condition that no sale can be below cost, without defining cost.

The Home Office received a total of 1,089 responses to the consultation. This included 370 from members of the public; 164 from those involved in the retail or manufacture of alcohol or their trade associations; 387 from those involved in enforcement, licensing and health; and 117 responses from others including legal specialists, those involved in the entertainment industry, village halls, charities and a range of other organisations.

A series of seven regional events were held across England and Wales, which gave interested parties the opportunity to hear more about the proposals and to discuss their responses in workshops.

The most recent public consultation on the Alcohol Strategy ran from 28 November 2012 to 6 February 2013 and around 1,450 responses were received. This consultation included questions on minimum unit pricing. Strong arguments were presented both in opposition to and in support of a minimum unit price for alcohol.

Government officials have also held discussions with a range of representatives such as local authorities and the alcohol industry to discuss various pricing options, including MUP, a ban on the sale of alcohol below cost and taxation.

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[1] The Governments formal response to the consultation on Rebalancing the Licensing Act was published on 30 November 2010 and can be accessed via https://www.gov.uk/government/publications/responses-to-consultation-rebalancing-the-licensing-act and the full analysis can be accessed via https://www.gov.uk/government/publications/alcohol-response-analysis-part-2

B. Rationale

B.1 Background

Alcohol related harm

The cost of alcohol misuse in England is estimated to be around **£21bn** per year made up of the following:[2]

- NHS costs, at about **£3.5bn** per year at 2009-10 costs.[3]
- Alcohol-related crime, at **£11bn** per year at 2010-11 costs.[4]
- Lost productivity due to alcohol, at about **£7.3bn** per year at 2009-10 costs (UK estimate).[5]

The impact of alcohol on health is a significant issue. Over the last 10 years health harms have continued to grow. Alcohol is now one of the biggest behavioural risk factors for disease and death in the United Kingdom, along with smoking, obesity, and lack of physical activity.[6]

Alcohol-related deaths in England rose by 7 per cent, from 14,406 in 2001 to 15,479 in 2010[7]. In contrast, deaths from all causes in England have fallen by 7 per cent over this period.

The rate of liver deaths in the UK has nearly quadrupled over 40 years, a very different trend from most other European countries, where rates are falling.[8] Approximately 60 per cent of people with liver disease in England have alcoholic liver disease, which accounts for 84 per cent of liver deaths.[9] In addition, alcohol-related hospital admissions[10] have risen by an average of more than 10 per cent each year over the nine years 2002-03 to 2011-12. There were over 1.2 million alcohol-related hospital admissions in 2011/12 (in England).[11]

There is also a strong link between alcohol and crime, particularly violent crime. Crime Survey data from 2011/12 shows that in around half (47%) of all violent incidents in England and Wales the victim believed the perpetrator to be under the influence of alcohol. This was highest in incidents of stranger violence (65%), followed by acquaintance violence (41%) and then domestic violence (39%).[12] We also know that alcohol can be a contributory factor in incidents of minor crime and anti-social behaviour which blight our communities.

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[2] This does not include any estimate for the economic costs of alcohol misuse to families and social networks.

[3] The Department of Health has updated the previous estimate of around £2.7bn at 2006-07 prices.

[4] The Home Office has recently updated the estimate of the cost of alcohol-related crime: £11 billion in 2010/11 prices. This figure includes the cost of general offences (like violent crime) that are alcohol-related, the cost to the Criminal Justice System of alcohol specific offences (like drink driving) and the cost of issuing Penalty Notices for Disorder. This estimate was arrived at using the same methodology as that which lay behind the widely quoted figure of £8-13 billion in 2006/07 prices. The previous estimate was presented as a range due to a methodological uncertainty, which has now been resolved. Further information is available on request from the Home Office.

[5] The Department of Health has updated the previous estimate of around £6.4bn at 2006-07 prices.

[6] Government Response to the House of Commons Science and Technology Committee Report of Session 2010–12: Alcohol Guidelines http://www.official-documents.gov.uk/document/cm83/8329/8329.pdf

[7] Alcohol related deaths are those from conditions wholly caused by alcohol.

[8] CMO annual report: Volume One, 2011 'On the state of the public's health'.

[9] Government's written evidence on the Health Select Committee's Enquiry into the Alcohol Strategy 2012.

[10] Alcohol-related admissions are defined in the Public Health Outcomes Framework by reference to admissions where the primary diagnostic code is for an alcohol-related condition.

[11] NHS Information Centre Statistics on Alcohol: England, 2013

[12] Crime Survey for England and Wales 2011/12, Nature of violent crime tables. Office for National Statistics

Link between alcohol price and harm

There is a range of evidence[13] that supports increasing the price of alcohol in order to reduce alcohol consumption and alcohol harms, particularly health harms.[14] For example, a review of the evidence found that doubling the level of alcohol excise duty would reduce alcohol-related mortality by an average of 35 per cent, traffic crash deaths by 11 per cent, sexually transmitted disease by six per cent, violence by two per cent and crime by 1.4 per cent.[15]

The impact of a change in alcohol price specifically on alcohol-related crime and disorder has been less researched than the impact on health. However, a rapid evidence assessment by Sheffield University found that increases in alcohol price were associated with reductions in overall crime, violent crime, sexual assault and criminal damage/property offences.[16]

Affordability of alcohol in the UK

Alcohol has become increasingly affordable despite prices increasing faster than the retail prices index (RPI). While the price of alcohol increased by 24 per cent more than retail prices between 1980 and 2012, real households' disposable income per adult increased by 99 per cent over the same period.

Using the most recently available data, alcohol in 2012 was 61% more affordable than it was in 1980, highlighting the overall trend of increasing affordability over the period. (See Graph 1 in Annex 2).[17] It is important to note that this does not take into account the change in affordability of other products.

Market practices

A study by the Competition Commission in 2008 found that 6 out of 7 major supermarkets sold alcohol 'below cost'.[18] The study found that 'below cost' selling took place at an average 11.9 per cent below cost price for all goods, which resulted in retailers selling 220.2m litres of below cost alcohol during that same year.[19]

The study found that increases in below cost selling took place during events of significance, such as the final tournament for the FIFA World Cup. An article of 1 December 2012 in the *Economist* magazine cites the view of David Ware of Symphony IRI, a grocery intelligence firm, that 70% of all alcohol sold by UK supermarket chains in the last year was sold on promotion.[20]

There has also been a 45 per cent increase in purchasing alcoholic drinks for consumption in the home, from 527ml per person per week in 1992 to 762ml in 2010. In contrast, the overall volume of alcoholic drinks purchased for consumption <u>outside</u> the home decreased by 44 per cent from 733ml per person per week in 2001/02 to 413ml in 2010.[21]

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[13] The range of available evidence that demonstrates a link between price and a reduction in consumption consists of the following studies and reports: Anderson, P., Moller, L. and Galea, G. (2012). Alcohol in the European Union: Consumption harms and policy approaches. World Health Organisation. *and* Booth, A., Meier, P., Shapland, J., Wong, R. and Paisley, S. (2010). Alcohol pricing and criminal harm: a rapid evidence assessment of the published research literature. Home Office. The assessment included a study of alcohol pricing and criminal harm from 20 papers reporting 17 studies conducted in the US, Sweden, Denmark, Finland, Australia and the UK.

[15] Wagenaar, A.C., Salois, M.J. and Komro, K.A. (2009). Effects of beverage alcohol price and tax levels on drinking: a meta-analysis of 1003 estimates from 112 studies. *Addiction* **104**: 179 –90.

[16] Booth, A., Meier, P., Shapland, J., Wong, R. and Paisley, S. (2010). Alcohol pricing and criminal harm: a rapid evidence assessment of the published research literature. Home Office. The assessment included a study of alcohol pricing and criminal harm from 20 papers reporting 17 studies conducted in the US, Sweden, Denmark, Finland, Australia and the UK.

[17] Ibid.

[18] Data obtained from the 2008 Competition Commission report. http://www.competition-commission.org.uk/assets/competitioncommission/docs/pdf/non-inquiry/rep_pub/reports/2008/fulltext/538_5_6.pdf: "Below-cost selling is where a retailer sells an item to consumers for less than the input cost. For the purposes of our analysis, we have defined a product as being sold below cost if it has a negative gross margin. We calculated gross margin as cash at the till less cost of goods and any adjustment for VAT (where required), and adding back any markdowns (e.g. goods close to sell-by date) and some types of promotional funding (e.g. multi-buys)."

[19] Figures are taken from the Nielsen sales price data for 2008.

[20] http://www.economist.com/news/21567398-how-new-minimum-price-might change-drinks-industry-time-please

[21] Family Food Module of Living Costs and Food Survey (LCFS) 2010. Defra/ONS

Off-trade sales have become dominant in the UK as off-trade prices have fallen in real terms since the year 2000.[22] There is a growing body of evidence linking 'pre-loading' to alcohol-related harm, particularly alcohol-related crime and disorder. Two recent small scale studies provide some indication of the scale and impact of pre-loading. Two thirds (66 per cent) of 17-30 year olds arrested in a city in England claimed to have pre-loaded before a night out, with the majority (83 per cent) buying alcohol from a supermarket, in advance, in preparation for pre-loading.[23] A further study found that pre-loaders were two and half times more likely to be involved in violence than other consumers.[24]

By raising the price of the cheapest products, a ban on below cost selling is intended to curb practices such as 'pre-loading' and help to reduce crime and disorder in or around the on-trade without unfairly penalising responsible on-trade businesses where there is a controlled and heavily regulated licensing environment.

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[22] Office for National Statistics, Consumer Price Indices

[23] Barton, A. and Husk, K. (forthcoming) Controlling pre-loaders: alcohol related violence in an English night time economy. Drugs and Alcohol Today.

[24] Hughes, K., Anderson, Z., Morleo, M. and Bellis, M.A. (2008) 'Alcohol, nightlife and violence: the relative contribution of drinking before and during nights out to negative health and criminal justice outcomes', Addiction, 103 (1), pp 60-5.

C. Objectives

Banning the sale of alcohol below its cost price is aimed at tackling the availability of the cheap alcohol that we know is linked to crime and health problems. This will put and end to the sale of the very cheapest alcohol and the contribution it makes to the harms associated with the excessive consumption of alcohol.

D. Options

The Government considered a range of options such as taxation, minimum unit pricing and a ban on multi-buy promotions in the off-trade. However, for the purposes of this assessment, consideration will only be had to a ban on below cost selling and the counterfactual.

Option 1 is to make no changes (do nothing). This is the no change option. Doing nothing will enable alcohol retailers to continue selling alcohol sold at very low or heavily discounted prices and will not bring about the expected crime and health benefits to society through a reduction in alcohol consumption.

Option 2 – Banning the below cost selling of alcohol (BBCS), with cost defined as equivalent to the value of duty plus VAT
The Government will implement this option. We estimate that a ban based on duty plus VAT will affect **1.3%** of the total alcohol market. The on-trade is not likely to be affected as they tend to sell their alcohol significantly above the rate of duty plus VAT.

E. Appraisal (Costs and Benefits)

E.1 General Assumptions and Data

Health, Crime and Employment Impacts
In 2008 the University of Sheffield's School of Health and Related Research (ScHARR) developed a model (hereafter referred to as "the ScHARR model") for assessing the impact of alcohol pricing policies on alcohol consumption and health, crime and employment outcomes. The model is used by the Department of Health and is regarded as the best model currently available for assessing the impact of pricing policies.

This impact assessment is based on version 2.5 of the ScHARR model the results of which have been made available to government ahead of its forthcoming publication.[25] More detail on the ScHARR model is provided at Annex 3.

Exchequer Impacts
HM Revenue & Customs have provided the estimate of the Exchequer impact using their existing alcohol model (hereafter "the HMRC model"). This model is designed for assessing the impact of a range of alcohol policies on the demand for duty-paid alcohol and the resulting excise duty receipts[26]. The HMRC model has been used to assess the Exchequer effect because this will ensure that the cost is comparable to the other alcohol duty rate changes. This modelling uses the same underlying data but employs a different modelling structure to estimate the impact on consumption.[27] This is a result of the need to use the best and most appropriate model for estimating the Exchequer costs. A more detailed explanation of the differences in the models can be found in Annex 2.

Inflationary Impacts
HM Treasury have confirmed that the introduction of a ban on alcohol sales below duty plus VAT will have no significant impact on inflation despite the increase in the average price of some products.

Geographic Coverage
Please note that because the ScHARR model applies to England only, all health and crime impacts in this Assessment are based on policy implementation in England. However, as legislation will apply to both England and Wales we expect the true benefits may be greater than those set out in this Impact Assessment.

Implementation
All impacts in this Assessment are based on implementation of the ban on below cost selling policy in **2014/15.**

OPTION 1 – Do nothing

The 'do nothing' option is provided as a baseline for comparison with the potential impacts of a ban on below cost selling. There would be no impact on current alcohol consumption or alcohol-related harms which have been estimated to cost **£21bn** per year to society.[28] Doing nothing would still permit retailers to sell heavily discounted alcohol with no benefits to crime and health harms.

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[25] The ScHARR v.2.5 report will be published on their website: http://www.sheffield.ac.uk/scharr/sections/ph/research/alpol/publications

[26] The HMRC model is a UK wide model and so to assess the consumption effect of MUP in England and Wales they assumed that Scottish consumption represents 10% of the total consumption, which is inline with census statistics on population density.

[27] Elasticities measure the responsiveness of demand to a change in price.

[28] As per Government Alcohol Strategy 2012, in current prices.

OPTION 2 – Introduce a ban on below cost selling

E.2 Costs

Costs (1): Costs to Individuals

Consumption effect

The ScHARR model predicts that overall alcohol consumption will fall by 0.04% as a result of a ban on alcohol sold below duty plus VAT. The drink types most affected are estimated to be off-trade beer and spirits. Consumption of off-trade wine is expected to increase slightly as a result of switching to products that become relatively cheaper, whilst consumption of on-trade beer is also expected to decrease slightly as the ScHARR elasticities reveal it to be a 'complement' to off-trade beer and wine. Table 10 (see Annex 2) shows the percentage of each product estimated to be affected by the policy.

Note that changes in producer strategy, such as the replacement of affected products with premium alcohol products, are considered second order effects and are therefore not assessed in full in this appraisal.

Cost to consumers

The initial change in the market is likely to be in the quantities sold of a specific alcoholic product if the original price lies below cost price. The change in revenue to business will be determined by consumers' responsiveness to price changes (also known as price elasticity of demand) for that product. If consumers are highly unresponsive to price changes, there will be an increase in revenue. This leads to a transfer of money from consumers to retailers. In effect, retailers can charge higher prices for the same goods than they otherwise would.

Different consumer groups are likely to respond to higher prices in different ways. For instance, some may reduce their consumption, others may pay more to maintain their consumption, and others still may switch their consumption to different alcohol products. See Table 2 for the breakdown between consumer types.

The ban on below cost sales is expected to affect consumers across a range of ages and income groups, particularly harmful consumers[29], though the total effect is comparatively small.

Table 2: % change in consumption from the ScHARR model

	Population	Moderate	Hazardous	Harmful
% population	*100%*	*77.2%*	*17.5%*	*5.3%*
% change per person	-0.04%	-0.03%	-0.01%	-0.08%
Total change per year (millions of units)	-10.5*	-3.2	-0.7	-6.6

Population total is equal to the sum of the individual components and therefore subject to rounding error.

Harmful and hazardous consumers

A systematic review by *Booth et al* (2008) reported that there is some evidence that harmful consumers tend to show a preference for cheaper alcoholic drinks.[30] This is also partially validated by ScHARR who suggest that harmful consumers have a higher response to price changes with larger absolute consumption changes in comparison to responsible consumers.[31] This finding is based on EFS[32] data which, according to ScHARR, shows that harmful consumers are most likely to purchase the types of alcoholic products that are expected to be affected by pricing policies[33]

Moderate consumers

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[29] Harmful drinking is defined, by Government, as regularly drinking >50 units per week for men or >35 units for women.

[30] Booth, Meier, Stockwell, Sutton, Wilkinson, Wong, Brennan, O'Reilly, Purshouse & Taylor (2008)

[31] See ScHARR NICE Report.

[32] EFS = Expenditure and Food Survey

[33] See ScHARR NICE Report.

The impact on responsible consumers is expected to be less than the impact on harmful consumers. As detailed above, evidence suggests that harmful consumers are more likely to show a preference for cheaper drinks than moderate consumers.

Table 3 below shows the expected impact on consumer expenditure. Spending increases are larger for hazardous drinkers (£0.33) than moderate drinkers (£0.01). Harmful drinkers are estimated to increase their expenditure by £0.27. These estimates combine the opposing effects of consumers buying less alcohol, but paying more for some of the products that they continue to buy. However, it does not take into account the lost pleasure resulting from consuming less (see discussion below on consumer welfare).

Table 3: Overall increase in consumer expenditure per drinker per annum (£)[34]

Population	Moderate drinkers	Hazardous drinkers	Harmful drinkers
0.09	0.01	0.33	0.27

Low income consumers
27.1% of the adult population (16+) in England are classified as low-income (below the poverty line defined as 60% of the median of equivalised household income).[35] However, 26.8% of those with low incomes are non-drinkers, compared to 11.6% of those with higher incomes. Therefore, the low income population contains disproportionate numbers of people who will be wholly or largely unaffected by the direct impacts of a ban on below cost selling due to their abstinence or relatively low consumption.

Table 4 shows that the impact of a ban on below cost selling on low-income moderate drinkers is higher in percentage terms than on hazardous and harmful drinkers. But this masks the fact that hazardous and harmful drinkers consume more alcohol to start with, so the total change in units consumed for those groups is higher, relative to their share of the population. Low-income hazardous drinkers are estimated to be more strongly affected than high-income hazardous drinkers. However the opposite is true for harmful drinkers; high-income harmful drinkers are estimated to be affected the most of any consumer group by a ban on below cost sales.

Table 4: % change in consumption for low and higher income drinkers

	Low income				Higher income			
	All	Moderate	Hazardous	Harmful	All	Moderate	Hazardous	Harmful
% population	*27.1%*	*23%*	*3.1%*	*1.3%*	*72.9%*	*54.5%*	*14.4%*	*4.0%*
%change per person	-0.04	-0.06%	-0.04%	-0.02%	-0.04%	-0.02%	-0.00%	-0.10%
Total change per year (millions of units)	-1.9*	-0.9	-0.6	-0.4	-7.6*	-1.9	-0.5	-5.2

Income group totals are equal to the sum of their individual components and therefore subject to rounding error.

The picture is different when we look at the impact on expenditure rather than consumption (see Table 5 below). Low-income and higher-income moderate and hazardous drinkers are affected to a similar extent (no change in expenditure for moderate drinkers and an increase of £0.30 per year in expenditure for hazardous drinkers). However, whereas low-income harmful drinkers are expected to increase their expenditure by £1.40 per year, higher-income harmful drinkers are expected to *decrease* their expenditure by £0.10 per year This is due to the different drink types preferred by the different consumer groups and the different elasticities associated with those. Some drink types

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34 Figures rounded to nearest pound. The ScHARR model, as it is based on survey data, underestimates baseline consumption. To address this, expenditure figures were adjusted using Nielsen and CGA 2011 sales data which contains estimates of the number of units purchased per person and the average price per unit. This is the upper end of the range.
35 General Lifestyle Survey 2009

are relatively 'inelastic' meaning that responsiveness to price changes is comparatively less. And some consumer groups may 'switch' from one drink type to another. For instance, the ScHARR modelling reveals that harmful drinkers are likely to *increase* their consumption of off-trade wine in response to a ban on below cost sales. This is why for some groups reductions in overall consumption may be associated with smaller reductions, or even increases, in expenditure.

As moderate consumers make up 83.9% of the low income population, of which 26.8% are abstainers and thus not directly affected by the policy, the ScHARR model suggests that a small minority of those with low incomes will be substantially affected by a ban on below cost selling.[36]

Table 5: Overall increase in consumer expenditure per drinker per annum for low and higher income drinkers (in £s)[37]

Low income				Higher income			
All	Moderate drinkers	Hazardous drinkers	Harmful drinkers	All	Moderate drinkers	Hazardous drinkers	Harmful drinkers
0.1	0.0	0.3	1.4	0.1	0.0	0.3	-0.1

Consumer welfare and deadweight loss

By raising the price of alcohol there will be a loss in aggregate consumer surplus[38]. Much of this loss will take the form of a 'transfer' to producers. However, economic theory holds that the imposition of a price *above* that set naturally by the market leads to the loss of some transactions that would have taken place before. This is known as deadweight loss. It implies that the imposition of a ban on below cost sales will lead to some loss of welfare for consumers and/or producers.

In order to estimate this deadweight loss, information is required on the slope of both the demand curve and the supply curve for alcohol. While it is possible to estimate a demand curve – based on price elasticities of demand, average price and consumption data from the ScHARR model – there is no information on which to base an estimate of the slope of the supply curve. Therefore it is only possible to calculate the part of deadweight loss which derives to consumers from lost transactions and not the welfare which is lost to producers. Initial analysis suggests that the consumer part of the deadweight loss would be in the order of thousands of pounds only, a level that would be lost in the rounding of this cost benefit analysis.

Furthermore, while it is possible to give a numerical estimate of the lost consumer surplus that would result from this policy, we do not think it is an appropriate means for appraising the welfare impacts in the context of alcohol consumption. This is for a number of reasons. Firstly, the standard economic framework typically used to calculate consumer surplus relies on the assumption that individuals are *fully rational* in their consumption behaviour – that is, consumers act in their own best interests in order to maximise personal welfare. However, there is strong evidence to suggest that not all alcohol consumption is entirely rational. Baumberg and Drummond[39] list three issues around the assumption of rationality:

1. Firstly, the issue of alcohol addiction needs to be considered – 5.9% of the adult (16+) population are dependent on alcohol and it is unreasonable to assume that they are behaving wholly rationally.[40]
2. Secondly, alcohol consumption is a socially-embedded activity, being influenced to some extent by peer pressure.
3. Thirdly, evidence on the relationship between alcohol consumption and well-being suggests increasing well-being at low levels of consumption but decreasing well-being at high levels of consumption.

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[36] General Lifestyle Survey 2009

[37] Figures rounded to nearest pound. The ScHARR model, as it is based on survey data, underestimates baseline consumption. To address this, expenditure figures were adjusted using Nielsen and CGA 2011 sales data which contains estimates of the number of units purchased per person and the average price per unit. This is the upper end of the range.

[38] Consumer surplus is the welfare gain obtained by consumers due to their ability to purchase a product for a price lower than the highest price they would be willing to pay.

[39] Ben Baumberg and Colin Drummond provided a paper to government on valuing wellbeing in relation to alcohol consumption.

[40] This is a measure of alcohol dependence in the past six months from the Adult Psychiatric Morbidity Survey 2007; see https://catalogue.ic.nhs.uk/publications/mental-health/surveys/adul-psyc-morb-res-hou-sur-eng-2007/adul-psyc-morb-res-hou-sur-eng-2007-rep.pdf p164

In addition, within a drinking occasion it is difficult to separate out any wellbeing gains from alcohol itself versus the wider environment in which the drinking takes place (including everything from the impacts of post-experience marketing to cementing social relations). There is therefore a possibility for alcohol consumption itself to be reduced (especially where heavier drinking is in question) without reducing these wellbeing gains that are not intrinsically about alcohol consumption (e.g. by people consuming lower-alcohol drinks in the same number of drinking occasions).

Given all these reasons, any estimate of lost consumer welfare is highly uncertain and of limited value to the overall assessment of the impact of this policy.

Impact on loss-leading activity
As discussed on page 16, a ban on alcohol sales below the level of duty plus VAT may have a wider impact on the 'loss-leading' activity carried out by large retailers. Depending on the response to this, consumers may face reduced prices on other products which become candidates for loss-leading or from alternative promotional measures. Any such impact is unlikely to be large because of the relatively small number of alcohol products on which prices are expected to increase under this policy. Furthermore, there is associated work being progressed as part of the alcohol strategy to take action to limit the ability of retailers to undertake irresponsible promotional activity. A further point that should be considered is that, because some alcohol consumption may not be 'rational' (see above section), a switch to loss-leading in non-alcohol products could lead to welfare improvements for consumers.

Costs (2): Business Costs

Transition costs to off-trade and on-trade retailers

Familiarisation of below cost selling policy: off-trade and on-trade retailers
Alcohol retailers will need to ensure that all products on the premises are sold above the price of duty plus VAT. However, due to typically higher prices in the on-trade, it is expected that only off-trade retailers will need to re-price products, amend bar codes, and change prices on shelves, shop displays and websites.   Based on discussions with a small number of retailers, it has been assumed that it could take **one hour** for each retailer to familiarise themselves with the policy.[41]
Total estimated familiarisation costs: £2.7m

Off-trade implementation costs
Implementation costs are not expected to be as significant for stores with Head Office support as such stores have the ability to cross-check prices right across their regional stores and update via centralised pricing systems. A study on how often prices change for products in supermarkets, using weekly scanning data collected by Nielsen (including alcohol), shows that around 40% of prices in supermarkets change frequently.[42] Around 25% of changes are adjusting for temporary reductions and, in any one week, 29% of alcohol prices rose and 29% fell.

As of 2012, there are 125,900 off-trade alcohol retailers in England and Wales (this includes on-trade retailers that are also licensed to sell alcohol for consumption off the premises)[43]. In 2010, there were 27,341 micro-businesses, 28,808 small businesses and 29,289 medium businesses[44]. We therefore assume that the remaining 39,762 are large businesses.

There is no available data that details what proportion of retailers use central pricing systems. However, we assume that large retailers and medium retailers are most likely to use central pricing systems and that micro and small businesses are least likely. We therefore expect that the largest implementation burden will fall on the 56,149 micro and small off-trade retailers (although there will be a proportion of these businesses that use centralised pricing systems). It is also important to note that the scale of impact will depend on the size of actual premises and the number of affected

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[41] See Table 19 for full average hourly salary breakdown. All figures have been up-rated by 16.4% for non-labour costs

[42] Ellis, C (2009). *Do supermarket prices change from week to week?*, Bank of England Working Paper No. 378

[43] Alcohol and Late Night Refreshment Licensing England and Wales, 2011/12 tables" https://www.gov.uk/government/publications/alcohol-and-late-night-refreshment-licensing-england-and-wales-2011-12-tables

[44] Data is obtained from UK Business: Activity, Size and Location – 2010 which contains data from a snapshot of the Inter Departmental Business Register (IDBR) taken on 22 March 2010

alcohol products in stock. This data is not currently available, though we know that only a small *percentage* of products will be affected. (Table 10).

Based on consultation with a small number of retailers who do not use centralised pricing systems, it was previously estimated that *minimum unit pricing* could take up to a one-off period of <u>8 hours</u> per independent retailer to comply. For the purposes of this assessment we have not made separate assumptions based on the size of the business due to the degree of uncertainty around the number of retailers that have a central pricing system and the frequency of regular pricing changes. Whilst this may be an overestimate for some larger businesses that have centralised pricing systems, this will be offset to some extent by the fact that larger businesses are likely to have more stock to update. Therefore we consider it reasonable to assume that it takes the same amount of time to implement the policy for all businesses.

A *ban on below cost sales* is likely to impose a smaller burden on retailers for two reasons. Firstly, retailers are more likely to have existing means of calculating duty plus VAT on their products for tax purposes; unit pricing may require longer to calculate. Secondly, a ban on below cost sales affects far fewer products and far fewer retailers. In the absence of direct evidence on the likely transitional cost of a ban on below cost sales[45], we used data from the ScHARR model, based on Nielsen price data, which suggested that the percentage of products affected by a 45p MUP is greater by a factor of around 18 than the percentage affected by a ban on below cost sales. Applying this factor to the 8 hour estimate results in an estimated period of half an hour for retailers to comply (rounded to the nearest half hour). We realise that the relationship between the percentage of products affected and implementation costs is not necessarily linear. But considering that some retailers will be <u>entirely unaffected</u> and will therefore be burdened with <u>no</u> extra time, we consider half an hour to be a reasonable estimate of the <u>average</u> time required to comply. Because there is considerable uncertainty involved in arriving at this estimate, we have modelled an upper bound estimate of 2 hours (a quarter of the 8 hour estimate). Therefore our **best estimate of time required to comply with a ban on below cost sales is £1.4m**, while our upper bound estimate is £5.5m.

There will also be material and stationery costs to alcohol retailers when amending the prices on shop shelves, menus and promotional displays. Stationery costs are expected to be insignificant as most stores frequently update their prices and already have the necessary resources.

The total one-off cost to business is therefore estimated at £4.1m (best estimate).

<u>**Annual costs to business**</u>

Annual impact on profits
Business' profits are made up of total revenue minus total costs. Revenue estimates are described below. We have not estimated the impact on business profit as this is also dependent on the unit costs of the alcohol products sold. Whilst total costs will fall for the alcohol products for which volumes have fallen, total costs will increase with production of the substitute goods for which demand has increased. If the cost of these products is larger than the cost of the products they have substituted (because they are typically sold at a higher price), then the net change in cost is likely to be greater than zero. In the absence of information to allow us to say whether this increase in cost is likely to outweigh, offset or fall short of the increase in revenue, the impact of a ban on below cost sales on business profits remains uncertain.

The ScHARR model predicts that a ban on below cost selling would lead to an increase in revenue for off-trade retailers but a decline in revenue to on-trade retailers. The overall effect is a gain in revenue of around £3.5m.

The changes in revenue may have an impact on retailers, wholesalers or producers. The alcohol market is highly segmented and this makes it particularly difficult to identify how different businesses will be affected. For different products, where the additional revenue accrues will depend, to some extent, on the relative market power of different parts of the supply chain.

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[45] The Government has announced in its response to the Alcohol Strategy consultation (17 July 2013) that it is committed to implementing the ban of below cost sales of alcohol as quickly as possible. Given the legislative timescales involved, this impact assessment has been prepared based on the available evidence and without further be-spoke research

Impact on loss-leading activity

One reason that alcohol is sold cheaply by large retailers, particularly supermarkets, is the practice of 'loss-leading' whereby customers are enticed in to a particular shop by the low prices on certain 'high visibility' items like alcohol and end up buying other goods at the same time on which retailers make their profit. Since businesses must logically undertake loss-leading activity in order to make higher overall profits, it stands to reason that a policy which undermines the ability to loss-lead may have a negative impact on overall profits. Therefore the increased revenue reported above and resulting from higher alcohol prices may be offset by reduced profits on other products.

There are various possible second order effects resulting from this impact. Large retailers may switch their loss-leading activity to other products, thereby maintaining the overall benefits resulting from loss-leading, but losing revenue on the products on which prices would be lowered. Alternatively if loss-leading activity is permanently reduced, custom may transfer to some extent to those smaller retailers which would now be relatively competitively priced. Therefore there may be some redistribution of profits from larger to smaller retailers. The impact on on-trade retailers such as community pubs has not been quantified; however it would remove the possibility of supermarkets using loss-leading as a tool to attract business that might otherwise go to other off- or on-trade premises, such as community pubs.

There is no available data with which a quantified estimate of these effects could be made. Since this policy is estimated to affect the prices of relatively few alcohol products, the effects discussed in this sub-section are unlikely to be substantial. Therefore we did not consider it proportionate to commission any new research into this issue.

Alcohol producers

According to HMRC data, there are approximately 900 brewers, 110 distillers and 250 wine and cider producers in the UK. This is a total of approximately 1,260 alcohol producers in the UK that could be affected by a ban on below cost alcohol selling.[46]

Government modelling suggests a decrease in demand due to the introduction of a ban on below cost selling. This would therefore lead to a decrease in sale volumes and therefore a drop in the demand faced by producers of alcohol.

Impact on wholesalers

Wholesalers may be affected indirectly by the decrease in the volume the modelling estimates although there will be an increase in the value of sales. The reduction in sales will vary across alcohol types. For example, a reduction in sales of certain products could result in retailers removing that product from shelves or increasing the price of that product. Removal of affected products from shelves will impact on wholesalers as a 'second round' effect.

As for producers, the 'first round' impact for wholesales is implicitly counted elsewhere. If retailers choose to reduce any lost revenue by lowering their costs through making smaller stock orders to wholesalers, they are effectively 'passing on' the loss to wholesalers. The overall loss would remain unchanged.

Costs (3): Public Sector

Transition costs to the public sector

The Government will produce supporting guidance for both alcohol retailers and local authorities prior to the introduction of a ban on below cost selling.

Licensing authorities would be likely to inform local alcohol retailers of the new legislation, although they would not be legally required to do so. They would have a number of options of how to do this and so direct costs are difficult to estimate. The cost of communicating previous changes has been estimated at £500 per authority. We assume this cost to be the same for communicating the ban on

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[46] Data provided by HMRC

below cost selling as the method of communication is likely to be the same for communicating new policies. An estimated £500 per authority, of which there are 350, gives a total cost of **£0.2m**.

Enforcement authorities (licensing authorities, the police and Trading Standards) would also need to familiarise themselves with the ban on below cost selling. Based on discussions with a small number of enforcement authorities we estimate that it will take 1 hour for enforcement authorities to familiarise themselves with the policy, at an estimated cost of **£0.03m** (see Table 15 in Annex 2).

Based on both sets of transition costs (familiarisation and informing retailers), the best estimate of the total transition cost to the public sector is **£0.2m.**

Ongoing costs to the public sector

Monitoring of compliance
The requirement not to sell alcohol below cost would become a standard condition on alcohol licences. We would expect the great majority of retailers to comply with this condition from the outset (the transition section above details the support that will be given to business and public protection bodies to prepare for the introduction of pricing below cost ban). However, if a retailer is found to be non-compliant, action may be taken. This may result in the review of a licence – potentially resulting in revocation or suspension of the licence. In rare cases of criminal prosecution, it could result in a fine and/or imprisonment. However, in common with the current mandatory conditions, we expect reviews and prosecutions relating solely to breaches of this provision to be extremely rare.

It is estimated that the time taken to ensure compliance with the ban would be 1 hour per week for one member of staff in each licensing authority (LA). There is a lack of firm evidence on which to base this estimate so we have modelled a lower bound estimate based on 0.5 hours per week and an upper bound estimate based on 2 hours per week for one employee of each LA, to account for uncertainty. The on-going cost of monitoring compliance and enforcement is therefore estimated at between **£0.1m and £0.5m** per year (best estimate of £0.3m).[47]

However, there are some important caveats that have been recognised when arriving at this position. These are that:

• The cost of monitoring compliance will vary depending on the size of the premises, the number of alcohol products in stock and, in rare cases, whether steps such as licence reviews (held by the licensing authority) are required.
• Most compliance monitoring activity will be focused on the off-trade. We have assumed that local licensing officers will be responsible for monitoring compliance, though in more complex cases the police or trading standards may also have a role.
• These costs are likely to be "opportunity" in nature as extra time needed to ensure compliance will displace other work rather than require additional resources to be hired

Impact on the Exchequer
HM Revenue & Customs have provided the estimate of the Exchequer impact using their existing alcohol model. This model is designed for assessing the impact of a range of alcohol policies on the demand for duty-paid alcohol and the resulting excise duty receipts[48]. The HMRC model has been used to assess the Exchequer effect because this will ensure that the cost is comparable to the other alcohol duty rate changes, which has been certified by the Office for Budget Responsibility (OBR).

The impact on the Exchequer concentrates on the reduced revenue from alcohol duty receipts resulting from a fall in alcohol consumption. HMRC model the impacts of increased prices in the off-trade using a set of price elasticities of demand covering five different drink categories (spirits, cider, beer, wine and RTDs) sold in the off-trade as well as in the on-trade. This allows HMRC to cover a wide range of consumer 'switching' effects. It is important to note that the impact of a BBCS modelled by HMRC is not comparable to the impact modelled by ScHARR. This is due to

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[47] See Table 13 for full average hourly salary breakdown. All figures have been up-rated by 16.4% for non-labour costs

[48] The HMRC model is a UK wide model and so to assess the consumption effect of a ban on below cost selling in England and Wales an adjustment is made to exclude Scottish consumption, this is informed by population statistics and reduces the impact by around 10%.

the use of a different modelling structure. (See General Assumptions section and Annex 3 for detailed explanation). **The introduction of a ban on below cost selling is expected to decrease duty receipts by approximately £5 million in year one**.

The loss of duty is assumed to be the same each year for the whole 10 year NPV period. In addition, these duty estimates may not accurately reflect underlying alcohol consumption changes in the future.

The Exchequer impact does not include the impact on Corporation Tax or any other tax receipts. Typically, lost tax revenue is not counted for the purpose of impact assessment because it is simply transferred to consumers or producers and there is no net change in social welfare. But in this case the loss in revenue from alcohol duty receipts reflects a net decrease in economic activity[49] as lost duty is not recouped elsewhere in the economy.

E.3   Benefits

The following benefits are expected to accrue to local Government, central Government and society through a reduction in the numbers and costs associated with alcohol related crime and health problems. It is important to note that these benefits are not entirely cashable savings but also reflect where resources can be reallocated and put to alternative use. There are a number of uncertainties surrounding the modelling and a more detailed explanation of these can be found in Annex 3.

Crime benefits
The ScHARR model estimates the potential reduction in alcohol related crimes.[50] Alcohol-related crimes include sexual offences, assault and criminal damage, amongst others. The crime benefits happen immediately from year one with no time-lag. The costs of crime are calculated by using the Home Office cost of crime estimates and measure the cost to society of crime.[51]

Table 6 shows that for a ban on below cost selling, modelling estimates that approximately 900 crimes could be prevented per year at a benefit of **£3.6m per year** (in 2014/15 prices).

The extent to which reductions in such costs are "cashable" is constrained by the indivisibility of some elements. As such the actual financial savings could be significantly lower.

Table 6: Reduction in alcohol related crimes per annum (from years 1 to 10) for England only

	Total	Moderate	Hazardous	Harmful
Crimes ('000s)(p.a.)	**-0.9**	-0.2	-0.1	-0.7
Cost of crime (£m) (p.a.)	**-3.6**			

Note: Cost of crime split by drinker type are not currently available

Health benefits
As shown in Table 7, the modelling predicts that a ban on below cost selling will lead to 100 fewer alcohol related hospital admissions in the first year. 10 years after the policy has been implemented, it is estimated that 500 admissions will be prevented annually. The full effects of the model take ten years to work through as there is a time lag between changes in alcohol consumption and chronic health harms. A reduction in alcohol related hospital admissions covers a wide range of alcohol related conditions including alcoholic liver disease, heart disease, cancers, poisoning, falls and injuries, assault and road traffic accidents.[52]

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[49] This may alternatively be described as an increase in the 'deadweight loss' associated with reduced alcohol consumption.

[50] This analysis is based on calculated 'Alcohol Attributable Fractions' (AAF) using the Offending Crime and Justice Survey (OCJS) which asks offenders whether they committed an offence due to alcohol.

[51] Based on Brand and Price (2000) and Dubourg et al (2005) unit costs of crime. The ScHARR model uses unit costs in 2010/11 prices therefore are underestimates of the potential savings from any reductions in crime. These have been updated using the GDP deflator from 2010/11- 2014/15 http://www.hm-treasury.gov.uk/data_gdp_index.htm

[52] Health harm reductions are mostly likely to relate to chronic diseases rather than acute conditions such as injuries. This is because much of the alcohol-attributable health harm occurs in middle or older age groups who are at greater risk of developing these conditions.

The direct health cost component comprises the health care costs of treating alcohol-related conditions.[53] Gains in health-related quality adjusted life years (QALYs) show the increase in the number of life years in good health as a result of reductions in mortality and morbidity from alcohol-related conditions. A health related QALY is valued at £60,000 in accordance with Department of Health methods.[54] The extent to which reductions in such costs are "cashable" is constrained by the indivisibility of some elements.

Table 7: Reduction in alcohol related health harms per annum (year 1 and year 10) for England only[55]

Health impacts (p.a.)	Deaths	Hospital admissions	Health care costs (£m)	QALYS	QALYs (£60k per QALY) (£m)
Year 1	3	100	0.6	30	1.8
Year 10	14	500	1.7	118	7.1

Employment benefits
The costs of lost productivity due to alcohol misuse are substantial – the Government estimates that these costs total £7.3bn per year in 2009-10[56] and that alcohol-related sickness absence accounts for 7-11% of all sickness absence. Reductions in alcohol-related harm may therefore benefit businesses if levels of sickness absence decrease. For alcohol-related unemployment, a range of estimates of impact exists, as the team that developed the ScHARR model noted[57]. It is technically difficult to investigate this area, as allowance has to be made for three possible effects which make it difficult to determine causality:

- Unemployment causes some heavy drinking.
- Heavy drinking may cause unemployment.
- Some other unobservable factor, such as low education, may cause people both to be unemployed and to drink heavily.

Reduced alcohol consumption is expected to lead to employment benefits in the form of increased productivity and reduced absenteeism.

ScHARR v2.5 estimates the impact on absenteeism but not unemployment. For a ban on below cost selling of alcohol, workplace absence is estimated to be reduced by 5,700 days per year, saving £4.7m per year. Unemployment was not modelled because of a lack of robust evidence on which to base the necessary assumptions.

Benefit to business
See *Annual Impact on Profits* section above.

Benefit to alcohol industry as a whole
Any increased revenue to the alcohol industry will return to the wider economy in a variety of ways. For example, wages and salaries to industry employees, profits to individual and institutional shareholders, including pension funds, and potential price reductions on other goods where retailers have been using alcohol as a loss-leader. The ScHARR modelling does not include this dynamic analysis of the full effects of re-distribution through the economic system.[58]

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[53] These have been updated to 2014/15 prices using the GDP deflator from 2011/12- 2014/15 http://www.hm-treasury.gov.uk/data_gdp_index.htm

[54] The Home Office calculation of total benefits from reductions in alcohol-related health harms differs from the standard methodology the Department of Health (DH) uses. Whilst this analysis only monetises the QALYs directly attributable to the policy, DH typically assume that any savings in direct health costs will be reinvested and produce one additional QALY for every £25,000 saved, at a benefit of £60,000 per QALY.

[55] See Table 20 in Annex for full breakdown of annual savings from reduced alcohol related health harms. Whilst the NPV for direct health cost savings has a 3.5% discount rate applied, QALYs are discounted by 1.5% as per standard Dept. of Health practice.

[56] The Prime Minister's Strategy Unit, Alcohol Harm Reduction Project, Interim Analytical Report, 2004; updated by internal Department of Health analysis, 2012.'

[57] Purshouse R et al. (2009). Modelling to assess the effectiveness and cost–effectiveness of public health related strategies and interventions to reduce alcohol attributable harm in England using the Sheffield Alcohol Policy Model version 2.0. Report to the NICE Public Health Programme Development Group. Sheffield, University of Sheffield, School of Health and Related Research (ScHARR).

[58] See page 64 of the ScHARR NICE Report.

As explained earlier, due to the uncertainty surrounding business costs and profit margins, we cannot estimate what the effect on business profit will be as a result of the policy. Therefore we have not included the potential costs or benefits to business profit in the overall cost-benefit analysis.

E.4 Net Effect

The monetised costs are:
• £4.3-8.4m from transition costs to licensing authorities and business for familiarisation with the policy and to business for amending prices (best estimate of £4.3m).
• £5.1-5.5m annual costs, which includes the cost to the Exchequer and the cost of enforcement (best estimate of £5.3m).

Totalling **£5.3m** on average per year (excluding transition costs) and **£49.6m** over ten years, discounted (best estimate).

The monetised benefits are:
• £3.6m per year from crime savings to society.
• £5.3m per year on average from health savings to society.
• £0.5m per year from reduced absenteeism to society.

Totalling **£9.5m** per year and **£83.6m** over ten years, discounted.

The net effect is a benefit of £34.0m. It is important to note that this figure is subject to considerable uncertainty given the inclusion of Exchequer costs modelled on a very different basis to health, crime and business impacts, and the uncertainties inherent in the ScHARR model.

Costs (OITO)
The primary, and direct, effect of the policy is that all businesses would have to change the prices of alcohol sold to ensure they comply with the ban on below cost selling, estimated at £4.1m in the first year[59].

Benefits (OITO)
The impact on business profits from increased prices (but reduced consumption) is considered to be in the scope of OITO. Increased *revenue* to businesses is estimated to total £3.5m per year but the impact on *profits* could not be determined because of the absence of information on costs of production. Furthermore, the reduced ability for retailers to carry out 'loss-leading' activity may offset any profits that are realised. Therefore we have not modelled any net benefit to businesses from the policy.

OITO Net Effect
The cost to business from familiarisation with the policy and implementation of a ban on below cost sales is in scope under One in Two Out (OITO). **This policy will be an IN of £0.4m.**

Sensitivity Analysis
Sheffield University undertook sensitivity analyses to reflect the uncertainty in the modelling, specifically around the set of elasticities used. Full details of these can be found in their forthcoming report.[60] Using a range of different elasticities, including HMRC elasticities, it was found that harmful drinkers are estimated with a high degree of confidence to be more affected by a below cost ban than moderate drinkers.

The base case model, used to estimate the outputs in this Impact Assessment, were found to be the most conservative in terms of estimated scale of impact for the overall population. However the differences are small (-0.04% total consumption effect in the base case compared to -0.04% to -0.06% for other models tested).

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[59] Note: this is not directly comparable to the EANCB figure, which is discounted over ten years, annualised and in 2009 prices

[60] The ScHARR v.2.5 report will be published on their website: http://www.sheffield.ac.uk/scharr/sections/ph/research/alpol/publications

Sheffield state that caution is required when interpreting findings substantially influenced by these cross-price elasticities, as although the econometric model as a whole is statistically significant, few of the cross-price elasticities are individually significant. Therefore, greater confidence can be placed on our estimates of aggregated effects on total alcohol consumption, but there is considerable uncertainty regarding shifts in consumption between individual beverages and between the on-trade and off-trade.

F. Risks

OPTION 2 – Introduce a ban on below cost selling (defined as duty plus VAT)

Modelling of a ban on below cost selling
The modelling used to estimate the impacts of a ban on below cost selling is the best available, but nevertheless estimating the effect of this policy is very difficult and subject to considerable uncertainty. However, the ScHARR model has been updated to improve the accuracy of the estimated impacts. The figures in this Impact Assessment reflect this. Sensitivity analyses are presented in the ScHARR report.[61]

A lower than expected impact on alcohol consumption, crime and health
Consumers may respond by continuing to purchase alcohol at higher prices, thereby having a more limited impact on consumption levels than is intended. The legislation will be subject to review and the Government will consider the impact on consumption, crime and health. However previous models and studies have shown a clear link between price and reduced alcohol consumption. The link between the price of alcohol and alcohol consumption in relation to crime is less well researched then for health. In particular the link between reduced consumption of some types of alcoholic drinks (especially cider) bought from the off-trade, and reduced alcohol-related crime is not well-evidenced.

Impact on retailers
If consumers continue to purchase alcohol at a higher retail price then this would lead to an increase in revenue to the alcohol industry as a whole. There is a risk that any revenue could be re-invested in strategies to promote alcohol consumption, for example advertising. The Government's intention is to work with the alcohol industry so that any additional revenue provides better value to customers in other areas.

Removal of affected products from the market
It is possible that retailers will remove some of the most affected products from the market rather than increase the retail price. This would result in less alcohol being produced on the market with subsequent effects on producers, manufacturers, wholesalers and consumers. It is also possible that producers will produce lower strength alcohol products as these would retail more cheaply.

UK wide pricing regimes
Other parts of the UK are currently taking forward, or considering, alcohol pricing policies. For example, the Scottish Government has passed primary legislation to introduce a minimum unit price (at 50 pence per unit) but, at the time of producing this Impact Assessment, has not yet implemented the legislation. The Northern Ireland Executive is also considering MUP. MUP remains a policy under consideration in England and Wales

Cross-border alcohol
If the ban on below cost selling in England and Wales results in alcohol sold at a lower price than in Scotland then there could be a risk of consumers purchasing alcohol from across the border in order to pay a cheaper price for the same product. We do not expect this to be a significant issue as the costs associated with travelling across borders from the main centres of population in Scotland could outweigh the benefits of purchasing the cheaper product (unless a consumer resides exceptionally close to the England/Scotland border). Potential increases in price differentials with retailers across the English Channel might also reinforce existing motivations for legitimate cross-border shopping. This would impact the duty collected by HMRC, but not the overall level of consumption.

Internet sales
Like the potential for cross border shopping, the incentive to buy from outside England and Wales via the internet will be greater the bigger the price differential between the price of alcohol in

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[61] The ScHARR v.2.5 report will be published on their website: http://www.sheffield.ac.uk/scharr/sections/ph/research/alpol/publications

England and Wales and elsewhere. The Government does not expect this to be a significant issue but will keep this under review.

Increase in the production of illegally produced alcohol
We have considered whether the introduction of a ban on below cost selling could lead to increased levels of smuggling, illicit production and 'bootlegging' of alcohol. Any increase could have an impact on the criminal justice system and undermine legitimate producers and retailers. However, there is no evidence to suggest that this would be the case and the Government does not consider this to be a significant risk with this policy option. Illicit production would also involve duty fraud and this issue will be discussed with HMRC and local authorities to assess the potential levels of increased risk and consider actions to mitigate as part of HMRC's strategy to counter duty fraud.

G. Enforcement

The monitoring of compliance and enforcement will be the responsibility of licensing authorities, the police and Trading Standards (see page 17 for more information). These enforcement authorities are existing bodies that are already responsible for enforcing the licensing conditions of the Licensing Act 2003.

The Government will provide guidance to licensing authorities on the implementation of a ban on below cost selling.[62] This will cover the monitoring of compliance.

H. Summary and Recommendations

The table below outlines the costs and benefits of the proposed changes.

Table 8: Costs and Benefits		
Option	**Costs**	**Benefits**
2	Costs to alcohol retailers for familiarisation of the policy and re-pricing where required. Cost to enforcing authorities for familiarisation of policy and enforcing when required. Cost to the Exchequer from lost duty revenue. £49.6m (PV over 10 years)	Benefits to society from a reduction in alcohol-related crime, absenteeism, health problems and deaths. £83.6m (PV over 10 years)
Not quantified	Reduction in alcohol consumption resulting in decreased revenue for some businesses. Cost to some consumers who may choose to purchase alcohol at higher retail prices. Loss of consumer surplus. Potential losses or redistribution of business profits through reduced ability to 'loss lead'.	There may be a benefit to on-trade retailers if consumers switch their consumption from off-trade to on-trade. There could be a benefit to the alcohol industry as a whole if consumers switch to more expensive products. Employment benefits due to reduced absenteeism and increased productivity.

The Government is proceeding with Option 2. The analysis in this Impact Assessment suggests that a ban on below cost selling would be effective in reducing alcohol consumption, alcohol related harms (including alcohol-attributable deaths, hospital admissions, crimes and workplace absences) and the costs associated with those harms.

It is important to note that the estimated costs and benefits of a ban on below cost selling cannot be directly compared due to the use of a different model to estimate the impact on the Exchequer.

It is also important to note that the modelled benefits are based on a model which, although the best available for the purpose, is inherently subject to various uncertainties.

On balance, and despite the aforementioned limitations, the evidence suggests that the benefits of a ban on below cost selling are likely to outweigh its costs if the changes in consumption and social outcomes that are expected materialise.

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[62] Statutory guidance issued under section 182 of the Licensing Act 2003.

I.   Implementation

The Government intends to introduce a ban on below cost selling via secondary legislation as a new licensing condition of the Licensing Act 2003. Secondary legislation will ensure that the policy receives Parliamentary scrutiny. The implementation date is therefore subject to the necessary Parliamentary procedures.

Delivery will be led by the Home Office with support from other Government departments including the Department of Health, Treasury, BIS and HMRC.

J.   Monitoring and Evaluation

There is a Government duty to review all new policies. This duty is applicable after a minimum of five years and the ban on below cost selling will be subject to this review. The exact scope and scale of the review will be developed further, but will include the consideration of alcohol-related crimes (such as violent crime) and health problems. It will also try to measure any burdens on all groups that have been affected by the policy. The Government will conduct a review by analysing the latest available statistics and reports relating to the impact of the ban. This information could be obtained from the latest set of Nielsen sales data which provides information on the sale of alcohol in England and Wales. Evidence will also be analysed from the Crime Survey for England and Wales, licensing statistics, hospital admissions data, and ongoing liaison with the police and the alcohol industry.

K.   Feedback

In order to accurately assess the impact of the ban on below cost selling the Government will seek views from those who will be most affected by the policy. The Home Office will therefore seek feedback from the alcohol industry and its representatives, the police, licensing authorities, Trading Standards, alcohol consumers, health bodies, responsible authorities and other Government departments when considering the effectiveness of the legislation. This will be achieved by regular meetings between those organisations affected and Government officials.

L.   Specific Impact Tests

See Annex 1.

Annex 1: Specific Impact Tests

Small Firms Impact Test

A ban on below cost selling is expected to apply to all alcohol retailers, including small businesses and micro-businesses and is therefore in the scope of One In Two Out. Small businesses are often defined in terms of employee numbers. If we use this definition, then the vast majority of licensed trade businesses are classified as 'small or micro businesses'. These businesses often rely on a pool of shift workers and only have a small base of full time management staff. The industry snapshot below attempts to estimate the proportion of small businesses selling alcohol in England and Wales.

Table 9: Number of affected small businesses in England and Wales[63]

Standard Industry Classification 2007	Description	Number with <10 employees in England and Wales (Micro)	Number with <20 employees in England and Wales (Small)	Number with <50 employees in England and Wales (Medium)
4711	Retail sale in non-specialised stores with food, beverages or tobacco predominating	23,056	24,354	24,803
4725	Retail sale of alcoholic and other beverages	4,285	4,454	4,486
5510	Hotels	4,284	5,616	6,814
5610	Restaurants	46,259	51,483	53,593
5630	Public Houses and bars	32,905	38,751	40,664
Total		**110,789**	**124,658**	**130,360**
Percentage of total		**84%**	**94%**	**98%**

The impact on small businesses will be driven by consumers' behavioural response. There is no available data which can tell us whether small businesses tend to sell cheaper alcohol products on average compared with larger retailers. It is therefore difficult to estimate whether small businesses will be disproportionately affected by a ban on below cost selling.

All alcohol retailers will still need to ensure legal compliance by checking the price of all their alcohol products and re-pricing where necessary. The time spent calculating floor prices will vary between each premises depending on the size of the premises and the number of products in stock.

Generally, franchise businesses and multi-stores are able to alter the price of products by updating their 'central point of sale' computers (centralised bar-coding systems). This updates the barcode prices on all products in the local stores. This means that these retailers do not necessarily have to change the price of products locally (although some store managers will have responsibility for changing prices in local stores during promotions and to clear end of line stock). Therefore, the burden on smaller businesses that have centralised bar-code pricing systems will be less than those businesses that do not operate using a central point of sale computer or barcode system.

Alternative approaches

An alternative approach would be to exempt smaller business from the legislation. However, this approach is not recommended. In order for the policy to be effective, the ban will need to apply to all retailers, regardless of size. Exempting small businesses will undermine the policy because

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[63] This table is based on data from UK Business: Activity, Size and Location – 2010 which contains data from a snapshot of the Inter Departmental Business Register (IDBR) taken on 22 March 2010. Table B3.1 provides a breakdown of the number of enterprises in the UK by Standard Industry Classification 2007 and number of employees. These numbers are scaled down to England and Wales using table B3.4 (regional distribution). These data also include those restaurants, hotels and shops which do not sell alcohol. This is likely to skew the results. In March 2010 there were 182,800 premises licences and club premises certificates with an authorisation to sell alcohol.

consumers could switch their custom to businesses that are permitted to sell alcohol below cost price.
Although this would be a benefit to small businesses, it would undermine the Government's aim to reduce alcohol consumption by creating a loophole. Moreover, it would constrain competition and impact on businesses that are not considered to be a small or micro business.

Consultation with small firms on reducing the burden of the ban on below cost selling
As an alternative to exemptions, we will consult with small firms on ways in which to reduce the potential burden of the ban on below cost selling.

Following initial discussions with a small number of retailers on alcohol pricing policies, it has been suggested that a lead in time of a few months prior to commencement of a ban on below cost selling would be beneficial to businesses. This would provide businesses with an adequate amount of time to check the prices of products, re-price if necessary, and revise promotional strategies. The Government intends to announce a commencement date as much in advance as possible, subject to the necessary Parliamentary procedures.

Businesses suggested that the Government could produce comprehensive guidance. The Government is committed to reducing the burden on business and intends to provide comprehensive guidance in advance of the legislation commencing.

Competition Impact

The Government has considered the impact of a ban on below cost selling on competition as part of the consultation process. We have considered to what extent the ban will:

Directly limit the number or range of suppliers?
This policy is expected to affect the prices of only those products that are sold below the specified cost price. All products sold above the specified cost price will not be directly affected (unless retailers decide to increase the price of premium products to ensure product differentiation). There could be a benefit to the alcohol industry as a whole if consumers continue to purchase affected products at the higher price.

Indirectly limit the number or range of suppliers?
It is possible that wholesalers and producers will see a reduction in the volume of alcohol products being sold as a result of higher prices. This might result in wholesalers and producers removing those affected products from the market. This could impact on the range of wholesalers and producers. We do not expect retailers to be indirectly affected.

Limit the ability of suppliers to compete?
A ban on below cost selling will create a price control that will influence the price of products that suppliers may charge. This will prevent retailers from competing below the defined cost. This will be universal and is expected to affect all retailers. Therefore, retailers can continue to compete as long as the price does not fall below the cost price. Suppliers will be unable to use loss-leading price strategies to encourage customers to purchase other goods but could apply loss-leading promotions to other grocery items.

Reduce suppliers' incentives to compete vigorously?
The ban on below cost selling will apply to all product types but should affect only those products that are sold below the specified cost price. Currently, alcohol is an important product for competition between retailers, especially during periods of celebration such as Christmas, significant football events and national events such as the Olympics. At this stage, it is not clear what the overall effect on competition will be because price increases could create an incentive for retailers to promote alcohol as a result of a potential increase in revenue.

Social Impact

Health and Well-being
This Impact Assessment suggests that a ban on below cost selling will have an impact on the health of alcohol consumers. Increasing the price of alcohol is expected particularly to reduce the consumption of harmful and hazardous consumers and lead to a reduction in alcohol related deaths, health harms such as liver disease, hospital admissions and its associated costs. This could particularly be the case for younger harmful consumers as a reduction in their consumption could prevent chronic alcohol related health conditions later in life.

Impact on low income households
IFS analysis suggests that cheap alcohol is not only bought by those who are poorest but by those across the income distribution.[64] However, as detailed in the appraisal section of this Impact Assessment, evidence suggests that low income consumers tend not to purchase off-trade alcohol (which is expected to be mostly affected by a ban on below cost selling). We would therefore not expect low income households to be significantly affected by the ban. However, further work will be undertaken to consider the impact on low income consumers. Please see 'consumer' section for further details.

Impact on different age groups/consumers
Those consumers that do not consume alcohol are not expected to be directly affected by a ban on below cost selling and this Impact Assessment suggests that those who consume harmful levels of alcohol are more likely to be affected by a the ban.

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[64] There is a lack of survey data containing both information on households' alcohol expenditure as well as the prices they pay per product. IFS analysis is based on market research, when modelling 45 pence MUP in 2007.

Annex 2: Tables and Data

Graph 1: Alcohol affordability index 1980 - 2011
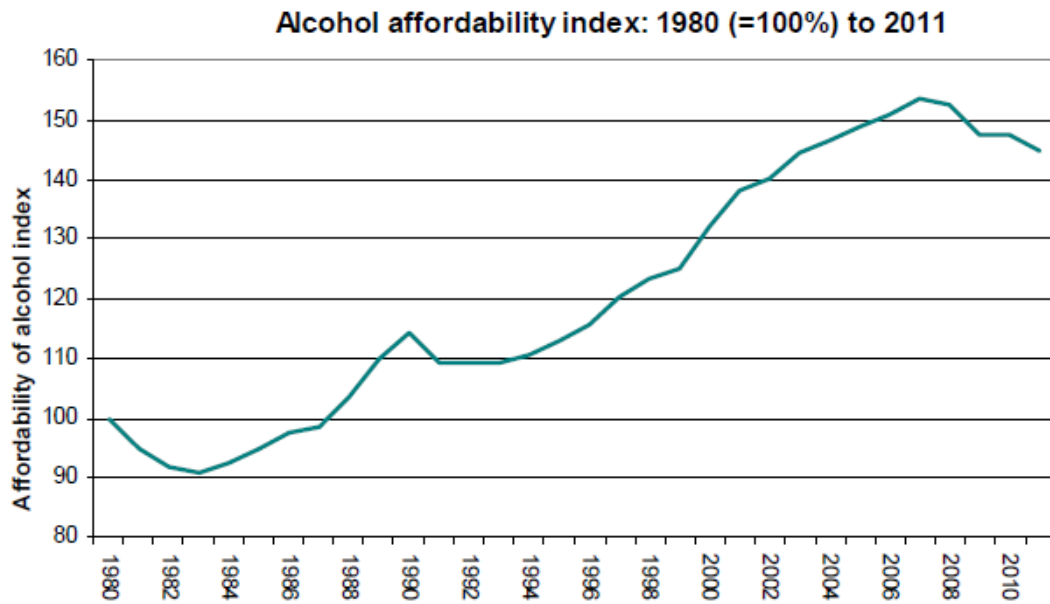
Alcohol affordability index: 1980 (=100%) to 2011

Sources:

Alcohol Price and Retail Prices (all items) Indices: derived from Focus on Consumer Price Indices:
(Codes CBAA, CBAB, CHBD, CHAW). The Office for National

Real Households Disposable Income: Economic Trends: (Code NRJR)

Table 10: Proportion of alcohol sold below duty plus VAT[65]

Proportions sold below duty plus VAT (2014/15 prices)	
Off-trade beer	2.4%
Off-trade cider	0.1%
Off-trade wine	0.4%
Off-trade spirits	1.2%
Off-trade RTDs	0.1%
On-trade beer	0.0%
On-trade cider	0.0%
On-trade wine	0.0%
On-trade spirits	0.0%
On-trade RTDs	0.0%
Total	**1.3%**

Table 11: Enforcement costs to the Public Sector

Enforcement Sector	Hours of Enforcement per week per LA	High	Best	Low
Enforcement authority	0.5 (low) - 2 (high)	£0.5m	£0.3m	£0.1m

Table 12: Cost of familiarisation for the Public Sector[66]

Enforcement Sector	Number of authorities	Average number of staff per authority	Policy familiarisation (in hours per officer)	Best cost
Police	43	3	1	£0.004m
Trading standards	204	3	1	£0.01m
Licensing Authorities	350	3	1	£0.02m
TOTAL				**£0.03m**

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[65] Data obtained from 2008 Nielsen sales Data

[66] These estimations have been calculated on the basis of an average number of 3 staff per authority and a range of 0.5 to 1 hours per officer for policy familiarisation. It uses the average hourly wage for a licensing authority officer (£13.60), a police officer (£22.01) and a trading standards officer (£18.19), multiplied by the estimated time to enforce the policy. The 'best cost' has been estimated by taking a mid point between the low cost and high cost. See Table 19 for full average hourly salary breakdown. All figures have been up-rated by 16.4% for non-labour costs.

Table 13: Average Hourly Wage of local authorities and alcohol retailers

Job role	Average hourly wage[67]
Police officer (Sgt and below)[68]	£36.24
Licensing officers[69]	£14.33
Trading Standards officers	£21.63
Bar manager (on-trade)[70]	£14.36
Retail manager (off-trade)	£21.77

Table 14: Health savings (£m) (incl. QALYs)[71]

Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9	Y10
2.4	2.9	3.5	4.0	4.7	5.4	6.2	7.0	7.9	8.8

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[67] Figures have been up-rated by 16.4% to include non-labour costs. BIS guidance based on http://epp.eurostat.ec.europa.eu/portal/page/portal/labour_market/labour_costs/main_tables

[68] This is calculated using Home Office estimates of police time. These were calculated using CIPFA (Chartered Institute of Public Finance and Accounts) and ASHE (Annual Survey of Hours and Earnings) data for 2011/12, figures were then updated to 2014/15 prices using GDP deflators.

[69] Median hourly wage for local government administrative occupations (licensing officers) and business and public service associate professionals (Trading Standards Officers). Data was obtained from the 2012 Annual Survey of Hours and Earnings. http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-280149. All figures have been up-rated by 16.4% for non-labour costs as well as updated to 2014/15 prices using GDP deflators.

[70] Median hourly wage for publicans and managers of licensed premises (on-trade) and shopkeepers and proprietors – wholesale and retail (off-trade). Data was obtained from the 2012 Annual Survey of Hours and Earnings. http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-280149. All figures have been up-rated by 16.4% for non-labour costs as well as updated to 2014/15 prices using GDP deflators.

[71] When calculating the NPV we apply a 3.5% discount rate to direct health cost savings and a 1.5% discount rate to QALYs as per standard Dept. of Health methodology.

Annex 3: Government Modelling

Government analysis

Sheffield Alcohol Policy Model and HMRC model

The Sheffield University School of Health and Related Research (ScHARR) model estimated the impact of a ban on below cost selling on alcohol consumption and alcohol harms (such as deaths and hospital admissions) in England. The **ScHARR modelling** calculates an aggregated average relative price change for 10 different price distributions (split by 5 beverage types[72], on- and off-trade) for each of the 108 modelled subgroups (by gender, low/higher income, 9 age groups and 3 drinker groups defined by the baseline consumption status[73]) using transaction-level purchasing data from the Expenditure & Food Survey (EFS) adjusted by Nielsen and CGA sales data in 2011 prices.

For each price distribution (on- and off- trade and beverage type) the proportion sold below cost and the price increase required for the unit price to rise to the level of duty + VAT can be calculated.

ScHARR elasticities are then applied to these average price changes to calculate the consumption effects of the 10 beverage types for each subgroup. Subgroup-specific preferences for the 10 beverages are then used as weighting factors to calculate the overall alcohol consumption effect for each subgroup.

The baseline and after-intervention consumption levels for these subgroups are then used to estimate the impact of BBCS on crime and health as different subgroups have different levels of baseline risk. [74]

The **HMRC modelling** calculates an aggregated average price change (for 5 beverage types) using the same 2011 Nielsen off-trade price data which has been updated by RPI to 2014 prices. For each beverage type, the Nielsen distributional data, which shows the volume of products sold at each price level, is used to calculate the proportion sold below cost and the price required for the unit price to rise to the level of duty+ VAT. These elements are then combined to calculate an average price increase across the whole of each beverage type. HMRC elasticities are then applied to these average price changes to calculate the consumption effects.

Given that the estimations of all different BBCS effects under consideration (i.e. health, crime and Exchequer revenue) are based on the underlying change in consumption, the outputs from the ScHARR and HMRC modelling are not directly comparable. The benefit of using two separate models is that they are designed to specifically estimate certain impacts of a BBCS. The ScHARR model is the best available model to estimate the impact on crime and health harms as a result of the introduction of a BBCS. The HMRC model is frequently used to estimate the impact of government alcohol policies in terms of the impact on duty revenue for the Exchequer.

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[72] Wines, spirits, beer, cider and RTDs

[73] The 3 drinker groups are: moderate, harmful and hazardous drinkers. NHS harmful drinking is defined as when a person regularly drinks over more than double the NHS guidelines, i.e. more than 50 units weekly for men or more than 35 units weekly for women. NHS hazardous drinking is defined as when a person regularly drinks over the alcohol (NHS daily guidelines (equivalent to 21 units weekly for men and 14 units weekly for women).), but less than double the guidelines.

[74] ScHARR report 2009 http://www.gserve.nice.org.uk/nicemedia/live/11828/46443/46443.pdf

Further information on ScHARR modelling

To quantify the relationship between levels of consumption and alcohol attributable harms the ScHARR model uses a methodology built around two concepts:

1) Alcohol Attributable Fractions (AAF): the proportion of the harm attributable to alcohol.

2) Relative Risk (RR): the risk that a person exposed to a certain degree of alcohol will experience/cause a particular harm relative to a person not exposed to alcohol.

The two can be used to produce an equation for each crime and harm type showing how risk of causing that harm increases as alcohol consumption increases.

To calculate the crime harms the ScHARR model uses the Offending Crime and Justice Survey (OCJS) which asks whether, in the offender's view, they undertook the offence because they were drunk.[75] This is more conservative than the alternative OCJS question which asks whether the offender was drunk at the time of the incident, which is used by the Home Office to calculate the cost of alcohol-related crime.

The ScHARR model uses this as an alcohol attributable fraction (AAF), for males and females aged under 16 and 16-25 yr olds separately. Risk functions were estimated from the AAFs, based on a mapping of crime categories from OCJS to the modelled crime types. The study selected a threshold of risk, i.e. a level of consumption where risk starts. Risk for crime is assumed to start at 4 units a day for men and 3 units for women. The risk functions for 16-25 year olds was re-used for over 25s due to the lack of data for the latter. This approach is not ideal since it is likely that AAFs for older individuals are different to those for younger individuals. Whilst this is a limitation, the authors of the model argue that it is not likely to impact greatly on the modelling results since individuals over 25 years old contribute to less than 30% of all crimes.[76]

The potential impact fraction (PIF) is calculated based on the consumption distribution at time 0 and time t and the estimated risk function (derived from the above AAF).[77] The PIF is then applied directly to the baseline number of offences to give a new volume of crime for time t. The model uses the consumption distribution for the intake in the heaviest drinking day in the past week (peak consumption) since crime was assumed to be a consequence of acute drinking rather than average drinking (and so there is no time delay between change in exposure to alcohol and subsequent change in risk of committing a crime).

The crime harms outcomes are presented in terms of number of offences prevented and associated cost of crime and QALY impact to the victim.

For the health harms, the ScHARR model considers 47 separate acute and chronic conditions related wholly or partially to alcohol.[78] The health harms include those wholly attributable (AAF=100%, acute and chronic) such as alcohol liver disease and accidental poisoning and partially attributable (acute and chronic) such as throat cancer. A mean lag of 10 years was assumed for all chronic conditions. While such a lag may under/over-estimate the true mean time lag for some conditions, given the lack of consensus it is considered to be a plausible estimate. The time lag for acute conditions was assumed to be zero since benefits associated with a reduction of acute harms occur instantaneously.

The direct health cost component comprises of NHS cost reductions, measured by number of reduced illnesses, deaths and hospitalisations. This cost is broken down by hospital inpatient and day visits, hospital outpatient visits, accident and emergency visits, ambulance services, NHS GP consultations, practice nurse consultations, dependency prescribed drugs, specialist treatment services and other health care costs.

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[75] The OCJS is a well used and large scale self-reporting survey. As with all surveys of its kind, it has a number of limitations.

[76] ScHARR Nice Report

[77] Analysis of consumption is split by age, gender, and drinker type (e.g. hazardous, harmful, responsible drinker)

[78] The 47 conditions included can be found on p.40 of the ScHARR Nice Report http://www.nice.org.uk/nicemedia/live/11828/45668/45668.pdf

Health related QALYs are calculated by using the difference in health-related quality of life (utility) in individuals with alcohol health harms and the quality of life measured in the general population (or 'normal health').

For the impact on absenteeism, potential impact fractions (PIF) were estimated based on relative risk functions from Roche et al (2008).[79] Absenteeism due to alcohol was assumed to be a consequence of the acute consumption (supported by Roche et al.'s (2008) findings). Excess risk was assumed to start after a threshold of 4 units for men and 3 units for women, as for other acute harms. Baseline workplace data on average earnings, participation rates and absenteeism rates was taken from the Labour Force Survey (Office for National Statistics Social and Vital Statistics Division and Northern Ireland Statistics and Research Agency Central Survey Unit, 2008). The number of days absent from work is then calculated based on the absence rate, the mean number of days worked and the number of working individuals in each age-group/gender subgroup. Days absent from work are then valued using daily gross income. The cost of absence was quantified based on average salaries.

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[79] Roche, A. M., Pidd, K., Berry, J. G., & Harrison, J. E. 2008. Workers' drinking patterns: the impact on absenteeism in the Australian work-place. *Addiction*, vol. 103, no. 5, pp. 738-748.