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Model-based appraisal of the comparative impact of Minimum Unit Pricing and taxation policies in Wales: Interim report

An update to the 50p MUP example

Mae'r ddogfen yma hefyd ar gael yn Gymraeg.

This document is also available in Welsh.

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Authors: Colin Angus, John Holmes, Alan Brennan & Petra Meier
Sheffield Alcohol Research Group
School of Health & Related Research
University of Sheffield

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Views expressed in this report are those of the researcher and not necessarily those of the Welsh Government

For further information please contact:

Janine Hale

Social Research and Information Division

Welsh Government

Cathays Park

Cardiff

CF10 3NQ

Tel: 0300 025 6539

Email: janine.hale@gov.wales

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Glossary

Acronym/Key word	Definition
Moderate drinkers	People drinking within the current UK drinking guidelines of 14 units per week
Hazardous drinkers	People exceeding the UK guidelines, but drinking less than 50 units per week for men, or 35 for women
Harmful drinkers	People drinking over 50 units a week for men or 35 for women
Welsh Index of Multiple Deprivation (WIMD)	A small area-level composite measure of socioeconomic deprivation accounting for local levels of income, employment, health, education, access to services, community safety, physical environment and housing.
On-trade	Locations where alcohol is sold for consumption on the premises, e.g. pubs and restaurants
Off-trade	Locations where alcohol is sold for consumption off the premises, e.g. shops and supermarkets
Alcohol-related health conditions	Health conditions from which alcohol consumption increases (or decreases) the risk of death and/or hospital admission ¹

¹ Note that this definition is not the same as the Office for National Statistics definition of 'Alcohol-Related deaths' which has recently been revised ⁹

Introduction

In June 2017, the Sheffield Alcohol Research Group (SARG) at University of Sheffield were commissioned by the Welsh Government to model the potential impact of a Minimum Unit Pricing (MUP) policy for alcohol and how this might compare to rises in alcohol duty. This work builds on previous modelling work undertaken by SARG in 2014¹ and involves the adaptation of the Sheffield Alcohol Policy Model v3.5 (SAPM) to Wales.

The specific research questions to be addressed are:

1. To use new data and new modelling approaches to provide new estimates of the impact of a MUP (at levels in 5p increments from 35-70p) on alcohol consumption, spending, health, crime and workplace outcomes, and how these impacts will vary across different levels of drinking and deprivation.
2. To establish the proportional increase in alcohol duty which would be required to achieve the same reduction in the alcohol consumption of hazardous and harmful drinkers (those drinking over 14 units/week for men and women) as a 50p MUP and to illustrate how the impact of these two policies (MUP and duty rises) are distributed differently across the population.
3. To establish the proportional increase in alcohol duty which would be required to achieve the same reduction in alcohol-attributable deaths among hazardous and harmful drinkers as a 50p MUP and illustrate the differences in distribution of impact across the population.

This short report provides preliminary results from the modelling work in relation to question 1, focussing on a 50p MUP as an illustrative example, for ease of comparison with that used in the 2014 report, and on health outcomes only.

Data

The Sheffield Alcohol Policy Model synthesises data from a wide range of sources. These are outlined briefly below:

Population data

Data on the number of adults (aged 18+) living in Wales in 2016 by age (in single years), sex and deprivation (measured in quintiles of the Welsh Index of Deprivation (WIMD)) was obtained from the Office for National Statistics.

Alcohol consumption data

Individual-level self-reported alcohol consumption data for Wales was obtained from the 2016/17 National Survey for Wales (NSW).

Alcohol pricing data

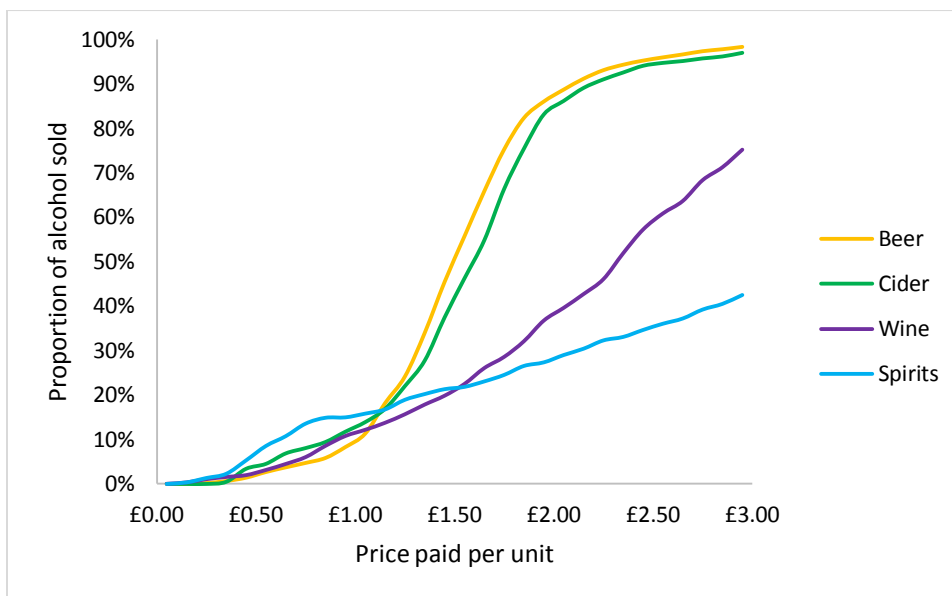
Individual transaction-level self-reported alcohol purchasing data for Wales and England (as the Welsh sample alone was insufficiently large) was obtained from the 2010-14 (pooled) Living Costs and Food Survey, inflated to 2016 prices using alcohol-specific inflation indices published by the Office for National Statistics. The Welsh Government also provided off-trade pricing data for 2016 from The Nielsen Company. This data, for the Wales and West region, gives the total volume of alcohol sold at each price point for each beverage type. This data was used to calibrate the Living Cost and Food Survey Data to ensure that the resulting price distributions match the prices of observed sales.

Figure 1: Cumulative distributions of prices paid for alcohol by channel and beverage type (LCFS 2010-14 and Nielsen 2016)

Off-trade



On-trade



Price elasticities

Price elasticities, which estimate the proportional change in alcohol consumption following a proportional change in alcohol prices were taken from published estimates derived using data from England and Wales ².

Mortality data

Mortality records for 43 alcohol-related health conditions, and for all other causes combined, for Wales for the years 2014-16 were obtained from the Office for National Statistics. These figures were stratified by age group (18-24, 25-34, 35-54, 55+), sex and WIMD quintiles.

Morbidity data

Hospital admission records, corrected for repeat admissions by the same individuals in the same year, for 43 alcohol-related health conditions for Wales for the years 2014-16 were obtained from NHS Wales Informatics Services (NWIS). The same data was also analysed to produce estimates of the average number of hospital admissions in a year for an individual with each of the 43 health conditions included in the model

Healthcare costs data

Estimates of the average annual NHS costs associated with each of the 43 modelled health conditions were taken from published figures ³, inflated to 2016 prices using the Personal Social Services Research Unit's (PSSRU) Hospital and Community Health Services (HCHS) index ⁴.

Results

Baseline alcohol consumption and purchasing

Table 1 illustrates that there are just under 2m adults in Wales who drink alcohol, each consuming an average of 610 units and spending £607 per year. Almost three quarters of these drinkers drink within the UK Chief Medical Officer's guidelines of 14 units/week, however 24% of drinkers are drinking at potentially hazardous levels (14-50 units/week for men and 14-35 for women), and over 4% are harmful drinkers (over 50 units/week for men and 35 for women). The average harmful drinker consumes 3,924 units a year, equivalent to around 30 pints of beer, or 8 bottles of wine a week, and spends almost £2,900 per year on alcohol.

Table 1: Baseline drinker characteristics by drinker type

	All drinkers	Moderate	Hazardous	Harmful
Drinker population	1,910,072	1,379,341	449,339	81,392
% of all drinkers	100.00%	72.21%	23.52%	4.26%
Baseline consumption per drinker per year (units)	610	211	1,236	3,924
Baseline spending per drinker per year	£607	£276	£1,209	£2,882

Equivalent figures showing variation in drinking across quintiles of deprivation are presented in Table 2. These show that people in more deprived areas are more likely to abstain from drinking entirely, with almost 27% of those in the most deprived quintile, compared to 14% in the least deprived, being non-drinkers. Among those who do drink, those in more deprived areas drink less on average (546 units per year compared to 648 in the least deprived quintile) and spend considerably less (£441 per year vs. £780 per year).

Table 2: Baseline drinker characteristics by WIMD quintile

	WIMD Q1 (least deprived)	WIMD Q2	WIMD Q3	WIMD Q4	WIMD Q5 (most deprived)
Drinker population	428,613	406,718	406,692	361,987	306,062
Abstention rate	13.9%	18.9%	19.4%	20.7%	26.7%
Baseline consumption per drinker per year (units)	648	649	598	589	546
Baseline spending per drinker per year	£780	£676	£563	£515	£441

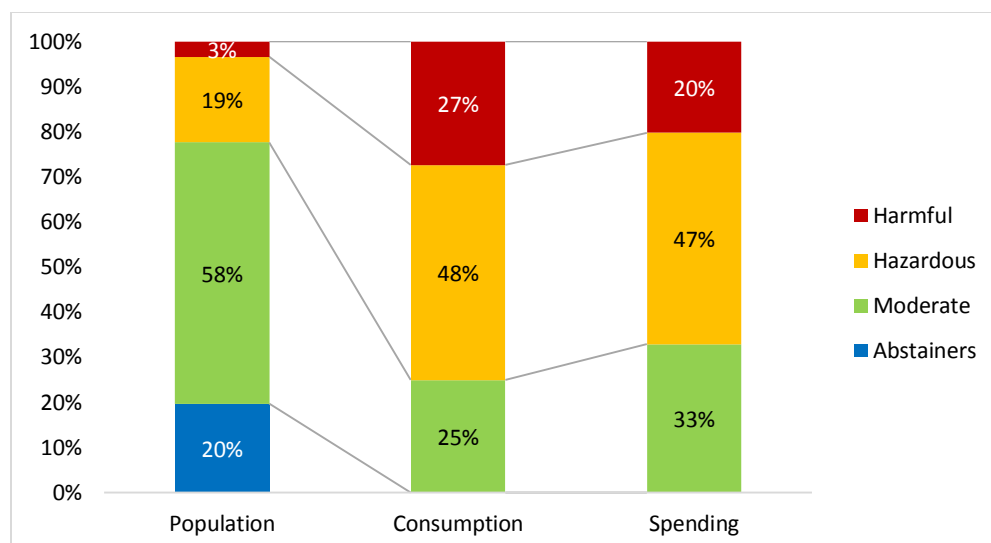
Finally, Table 3 shows how the effects of drinking level and deprivation highlighted in Table 1 and Table 2 interact with each other. This shows that among moderate drinkers, those in the most deprived groups make up a smaller proportion of all drinkers, due to higher rates of non-drinking, drink less on average (194 units per year compared to 231 in the least deprived quintile) and spend less (£198 per year vs. £375). Among harmful drinkers, we again see the most deprived groups making up a smaller proportion of the total, but this 0.6% of the population drink markedly more on average than those in less deprived groups (4,367 units per year compared to 3,892 in the least deprived group) but spend less (£2,715 per year vs. £3,060).

Table 3: Baseline drinker characteristics by drinker type and WIMD quintile

	WIMD Q1 (least deprived)	WIMD Q2	WIMD Q3	WIMD Q4	WIMD Q5 (most deprived)
Moderate					
Drinker population	297,937	286,322	290,248	266,503	238,332
% of all drinkers	15.6%	15.0%	15.2%	14.0%	12.5%
Baseline consumption per drinker per year (units)	231	211	213	200	194
Baseline spending per drinker per year	£375	£296	£265	£228	£198
Hazardous					
Drinker population	112,441	102,031	99,177	80,181	55,509
% of all drinkers	5.9%	5.3%	5.2%	4.2%	2.9%
Baseline consumption per drinker per year (units)	1,228	1,245	1,262	1,219	1,216
Baseline spending per drinker per year	£1,483	£1,209	£1,117	£1,099	£981
Harmful					
Drinker population	18,234	18,365	17,267	15,304	12,221
% of all drinkers	1.0%	1.0%	0.9%	0.8%	0.6%
Baseline consumption per drinker per year (units)	3,892	4,168	3,244	4,081	4,367
Baseline spending per drinker per year	£3,060	£3,646	£2,380	£2,455	£2,715

A summary of population patterns in drinking, consumption and spending on alcohol is shown in Figure 2. This highlights that even though hazardous and harmful drinkers combined account for 22% of the whole population (approximately 28% of the drinker population), they drink 75% of, and are responsible for 67% of all spending on all alcohol consumed in Wales.

Figure 2: Distribution of the population, alcohol consumption and spending by drinker type



As well as differing in the amount that they drink, those in different drinker groups drink different products. Moderate drinkers consume a greater proportion of their alcohol as spirits and wine, while heavier drinkers drink more cider, as illustrated in Figure 3. Heavier drinkers also drink a greater proportion of their alcohol in the off-trade rather than the on-trade (i.e. alcohol purchased from shops and supermarkets, rather than in pubs and restaurants), as illustrated in Figure 4, although all drinkers consume the majority of their alcohol in the off-trade, on average.

Figure 3: Beverage preferences by drinker type

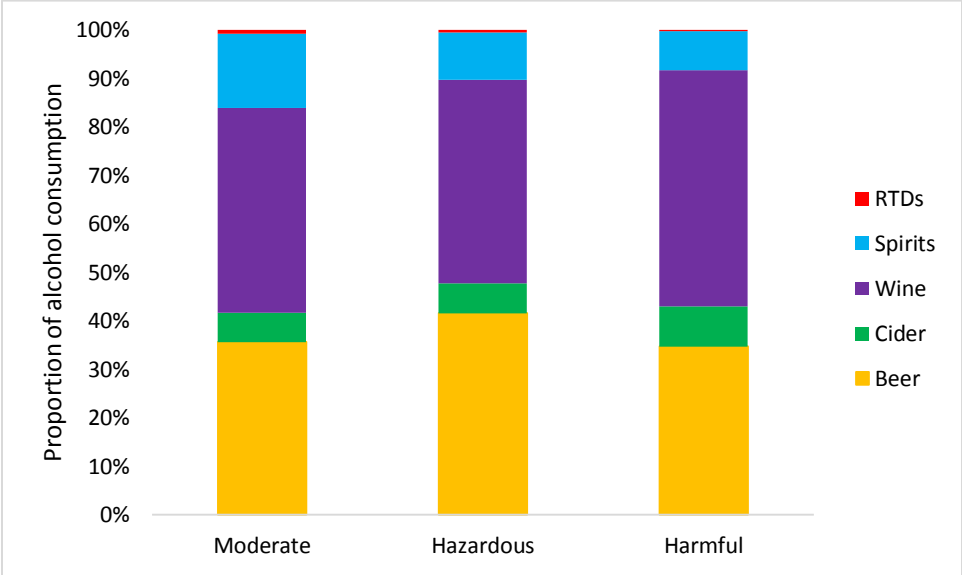
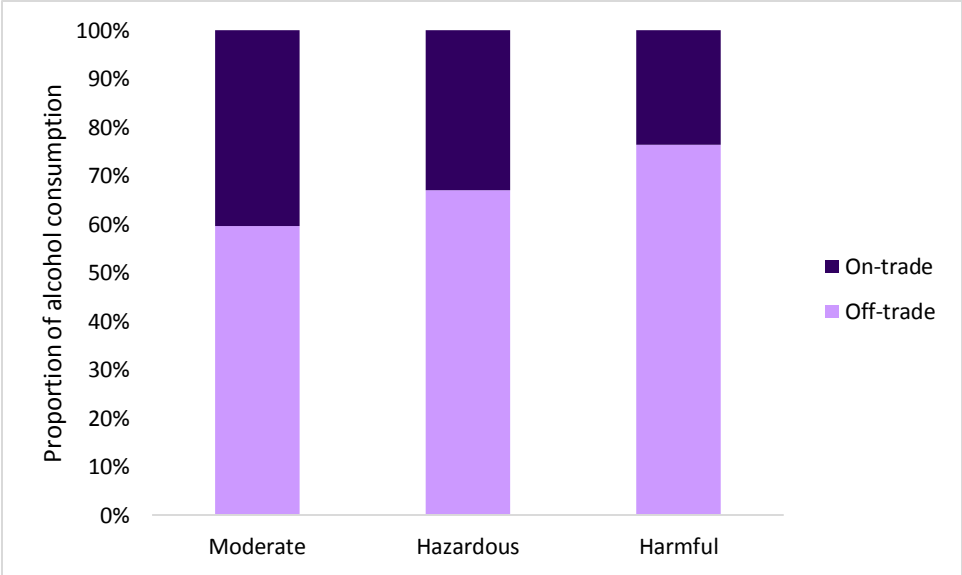


Figure 4: Channel preferences by drinker type



There are also substantial differences in the prices that those in different groups pay for their alcohol, with heavier drinkers, and those living in more deprived areas, typically paying less for each unit they drink. These patterns, shown in Figure 5 and Figure 6 are partly due to drinkers in these groups consuming more of their alcohol in the off-trade, where prices are typically lower, and partly due to these drinkers purchasing cheaper products.

Figure 5: Average prices paid by beverage and drinker type

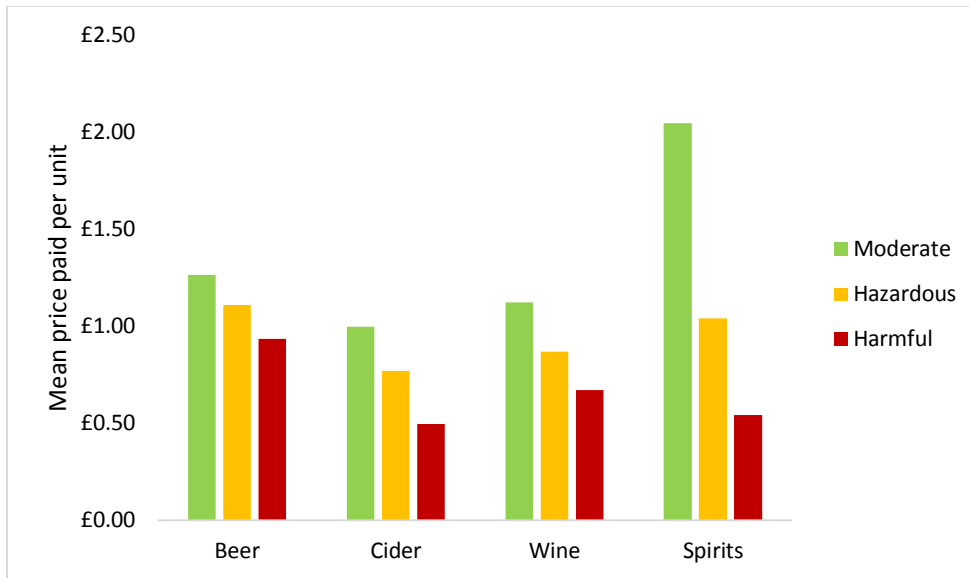
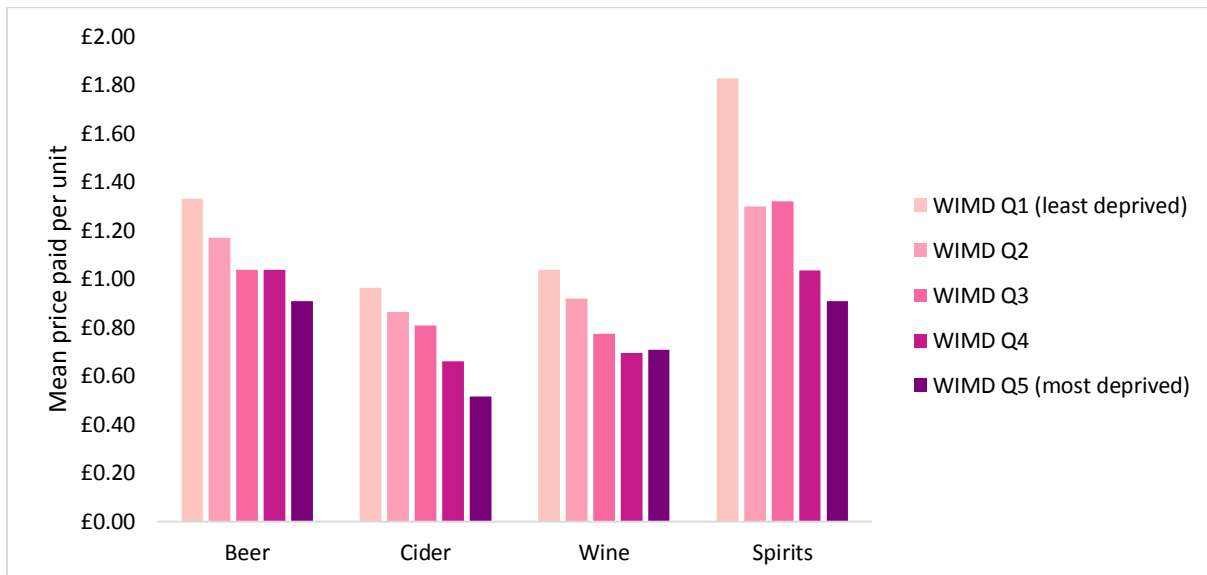


Figure 6: Average prices paid by beverage type and WIMD quintile



In addition to highlighting differences between population groups in prices paid for alcohol, Figure 5 and Figure 6 also highlight variation in prices between products. These differences are shown further in Table 4, which presents the estimated proportion of alcohol units which are sold at below 50p/unit. This illustrates that very little alcohol is sold in the on-trade at below this threshold (less than 1% of all sales), but a significant proportion of off-trade alcohol is (46%), and overall 37% of all units drunk are bought for less than 50p. Off-trade cider (73%), beer (62%) and spirits (60%) are the products most commonly sold below 50p/unit, but when considered alongside overall sales volumes, as illustrated in Figure 7, we see that overall more units of off-trade wine are sold below this level than any other beverage.

Table 4: Proportion of alcohol purchased for below 50p/unit by beverage type, channel and drinker type

		All drinkers	Moderate	Hazardous	Harmful
Off-trade	Beer	61.7%	46.9%	62.6%	69.9%
	Cider	73.1%	53.4%	72.7%	85.3%
	Wine	31.9%	25.0%	30.7%	36.0%
	Spirits	60.4%	48.9%	59.8%	63.5%
	RTDs	0.6%	0.6%	0.7%	0.6%
On-trade	Beer	1.4%	0.6%	1.9%	1.4%
	Cider	3.4%	1.1%	5.1%	3.7%
	Wine	2.0%	0.4%	2.6%	4.1%
	Spirits	5.3%	4.8%	5.8%	5.6%
	RTDs	0.2%	0.3%	0.0%	0.0%
All alcohol		36.7%	22.3%	36.0%	46.3%

Figure 7: Proportion of units purchased at below 50p/unit by beverage type and channel

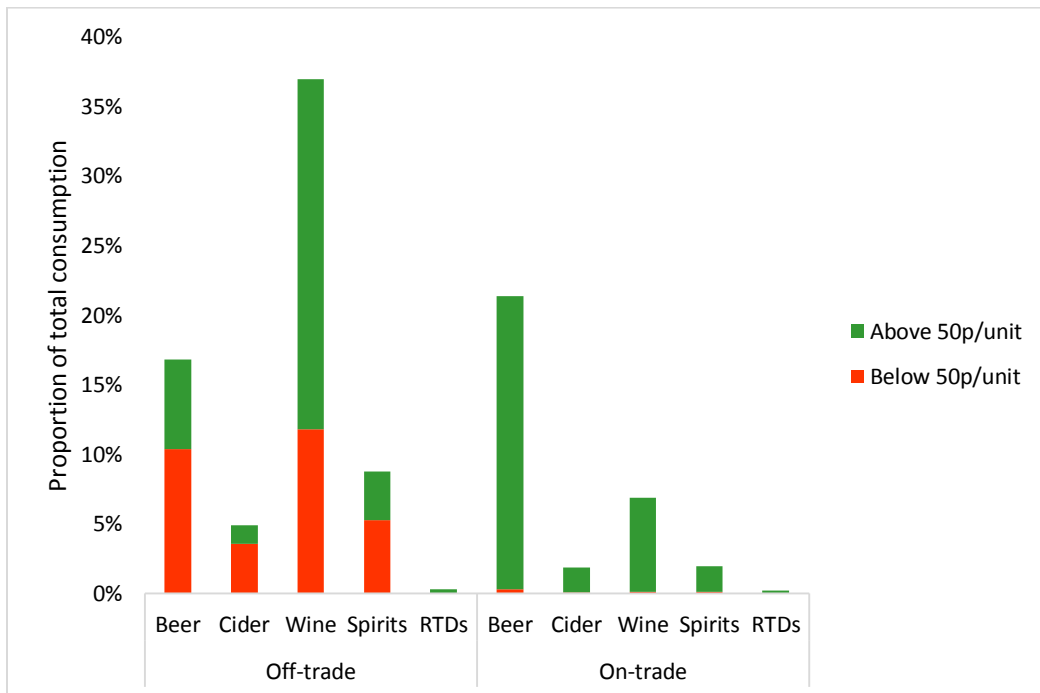
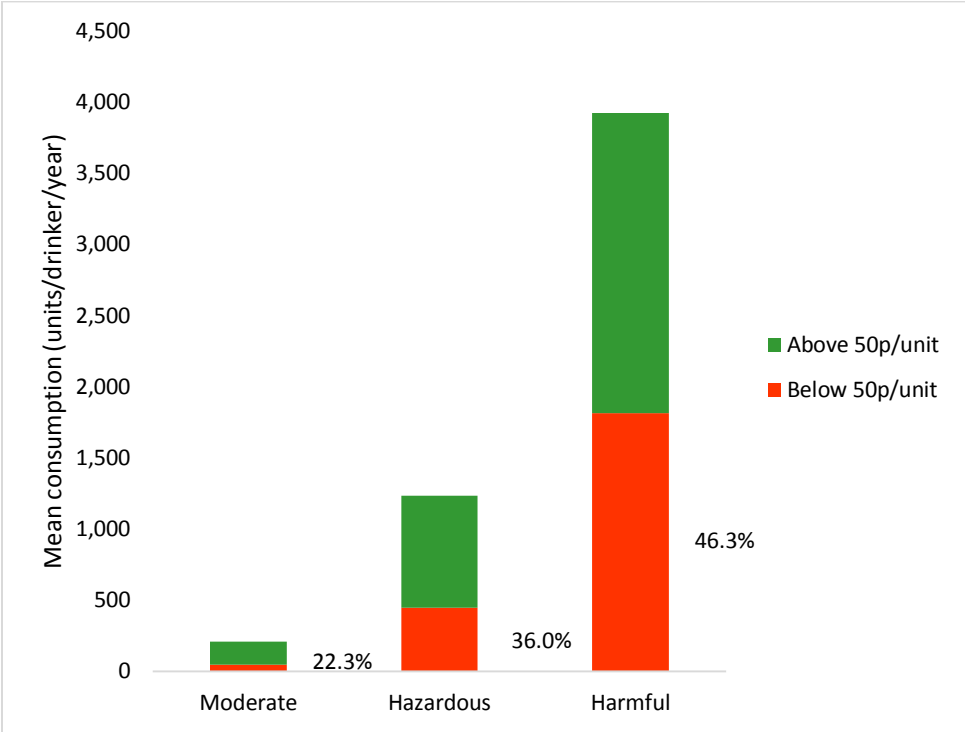


Figure 8 presents the total number of units sold either side of a 50p/unit threshold for each drinker category. Overall moderate drinkers purchase less than a quarter (22%) of their alcohol for less than 50p/unit, while for harmful drinkers this figure is almost a half (46%).

Figure 8: Proportion and total units purchased below 50p/unit by drinker type



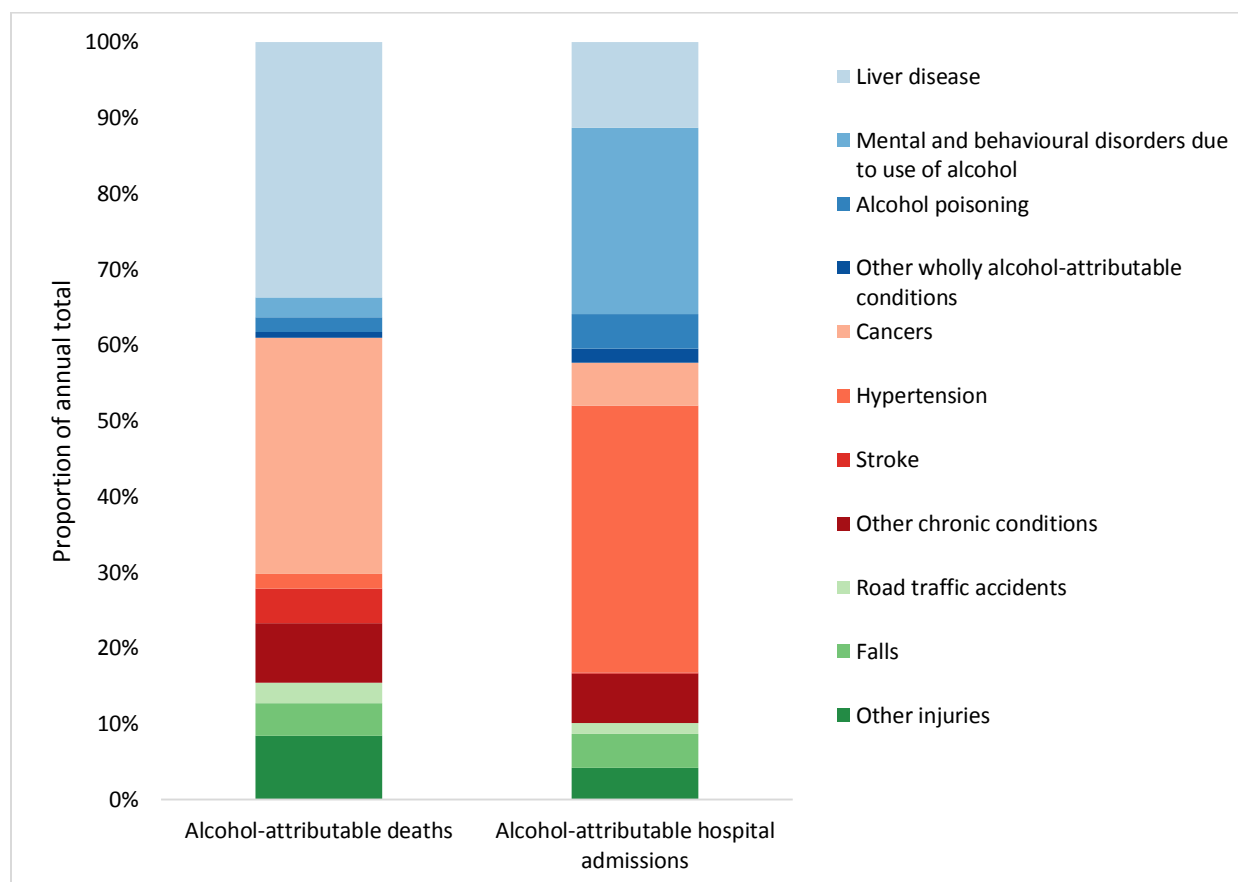
Baseline alcohol-attributable mortality and hospital admissions

Overall, SAPM estimates that 777 deaths and 35,637 hospital admissions every year are directly caused by alcohol. Table 5 breaks these down by condition, showing that more people die from cancer as a result of their drinking than die from liver disease, or any other single cause. For hospital admissions the pattern is somewhat different, with the largest contributors to the overall burden of alcohol of hospital admissions being hypertension and conditions related to alcohol dependence. These figures also illustrate that alcohol is estimated to have a protective effect for diabetes, stroke and other cardiovascular conditions. These effects are widely disputed in the academic literature⁵⁻⁸, which may make estimates of both the burden of harm from alcohol and the effectiveness of alcohol policies as modelled by SAPM, which includes these effects, conservative. Figure 9 shows these patterns visually, excluding protective conditions for ease of interpretation.

Table 5: Estimated annual deaths and hospital admissions caused by alcohol by condition

	Annual alcohol-attributable deaths	Annual alcohol-attributable hospital admissions
Liver disease	369	4,288
Mental and behavioural disorders due to use of alcohol	29	9,307
Alcohol poisoning	22	1,736
Other wholly alcohol-attributable conditions	8	701
Cancers	342	2,169
Hypertension	22	13,345
Stroke	-27	-227
Other cardiovascular conditions	-215	595
Diabetes (type II)	-26	-2,575
Other chronic conditions	86	2,484
Road traffic accidents	29	533
Falls	47	1,689
Other injuries	92	1,593
Total	777	35,637

Figure 9: Proportional causes of alcohol-attributable death and hospital admission (excluding protective conditions)



Estimates of the variation in the burden of alcohol on health by drinker group are presented in Table 6. These show a very substantial gradient in harm, with hazardous and harmful drinkers suffering a substantial burden of harm as a result of their drinking – an estimated 685 deaths and 15,421 hospital admissions each year for every 100,000 harmful drinkers.

Table 6: Estimated annual deaths and hospital admissions caused by alcohol by drinker type

	All drinkers	Moderate	Hazardous	Harmful
Baseline deaths per 100,000 drinkers per year	41	-6	66	685
Baseline hospital admissions per 100,000 drinkers per year	1,866	416	3,861	15,421

Table 7 shows that there is also a significant deprivation gradient in harm. In spite of the fact that drinkers in most deprived groups drink less on average, this group experiences almost 3 times as many deaths and twice as many hospital admissions per 100,000 drinkers than those in the least deprived group. This phenomenon is widely referred to as the 'Alcohol Harm Paradox'. This inequality in harm is illustrated visually in Figure 10.

Table 7: Estimated annual deaths and hospital admissions caused by alcohol by WIMD quintile

	WIMD Q1 (least deprived)	WIMD Q2	WIMD Q3	WIMD Q4	WIMD Q5 (most deprived)
Baseline deaths per 100,000 drinkers per year	28	30	35	45	75
Baseline hospital admissions per 100,000 drinkers per year	1,390	1,542	1,741	2,124	2,823

Figure 10: Socioeconomic distribution of alcohol-attributable harm

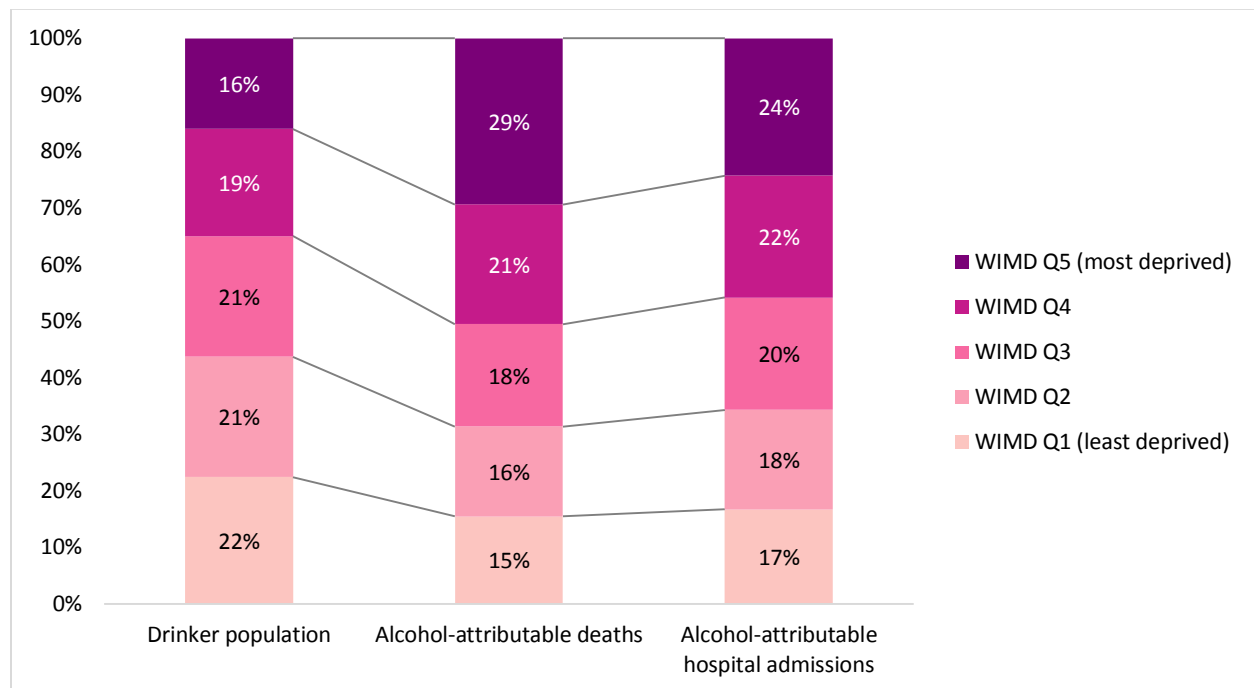


Figure 11 and Table 8 show the combined gradients in alcohol-attributable deaths across both deprivation and drinker groups. This highlights that the negative impacts of alcohol on health are disproportionately concentrated in heavier drinkers in the lowest socioeconomic groups.

Figure 11: Estimated annual deaths caused by alcohol by drinker group and WIMD quintile

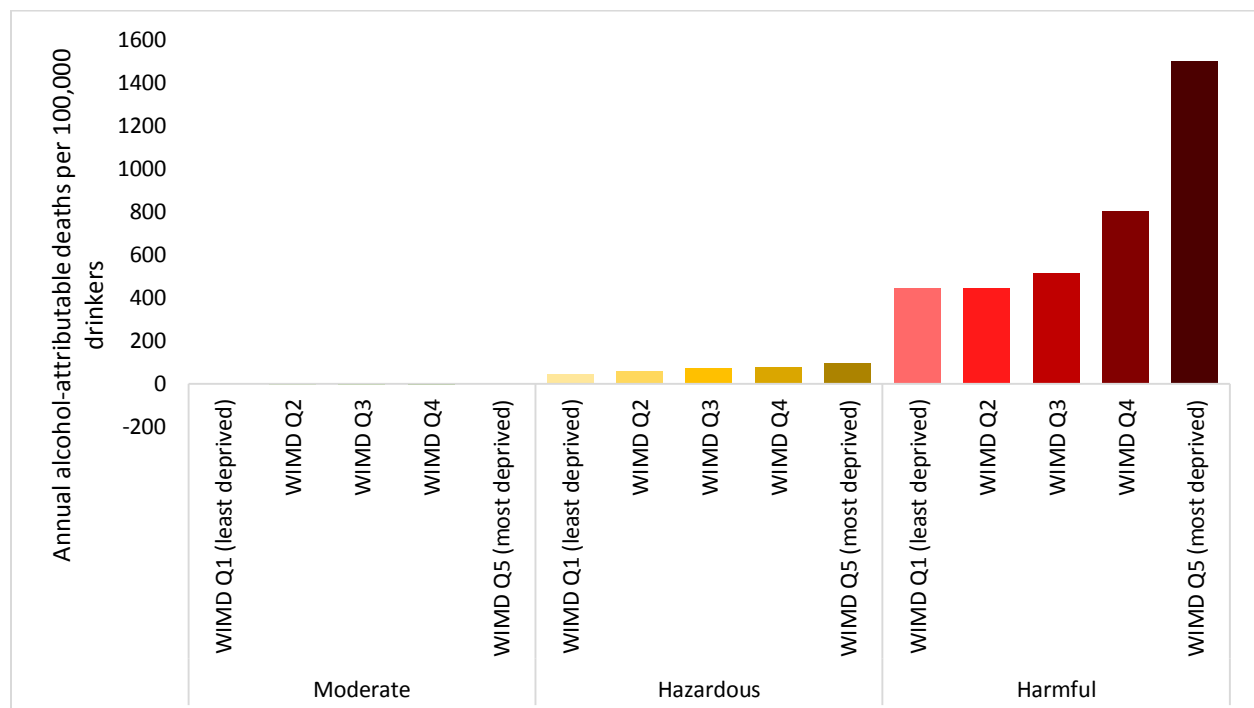


Table 8: Estimated annual deaths and hospital admissions caused by alcohol by drinker group and deprivation

	WIMD Q1 (least deprived)	WIMD Q2	WIMD Q3	WIMD Q4	WIMD Q5 (most deprived)
Moderate					
Baseline deaths per 100,000 drinkers per year	-4	-6	-7	-7	-4
Baseline hospital admissions per 100,000 drinkers per year	272	329	381	489	661
Hazardous					
Baseline deaths per 100,000 drinkers per year	46	57	72	77	97
Baseline hospital admissions per 100,000 drinkers per year	2,787	3,255	3,879	4,505	6,192
Harmful					
Baseline deaths per 100,000 drinkers per year	444	444	512	804	1,502
Baseline hospital admissions per 100,000 drinkers per year	11,042	10,932	12,330	18,127	29,683

Finally, Table 9 illustrates that 2.9% of all deaths among adults in Wales in 2016 are estimated to be caused directly by alcohol. This proportion is higher in men than in women (3.8% vs. 1.9%) and substantially higher in the most deprived compared to the least deprived areas (5.0% vs. 2.2%). Alcohol is also a major cause of deaths in younger age groups, with around 1 in 8 (12.4%) of deaths in adults under 55 being directly caused by alcohol².

² It should be noted that the absolute number of alcohol-attributable deaths is highest in those aged 55 and over, but the rate of other cause mortality is substantially higher in this group and thus alcohol accounts for a smaller proportion of the total.

Table 9: Contribution of alcohol to overall mortality by gender and deprivation

	Proportion of all deaths which are attributable to alcohol
Population	2.9%
Men	3.8%
Women	1.9%
WIMD Q1 (least deprived)	2.2%
WIMD Q2	2.1%
WIMD Q3	2.5%
WIMD Q4	3.2%
WIMD Q5 (most deprived)	5.0%
Age 18-24	12.7%
Age 25-34	9.9%
Age 35-54	12.8%
Age 55+	2.0%

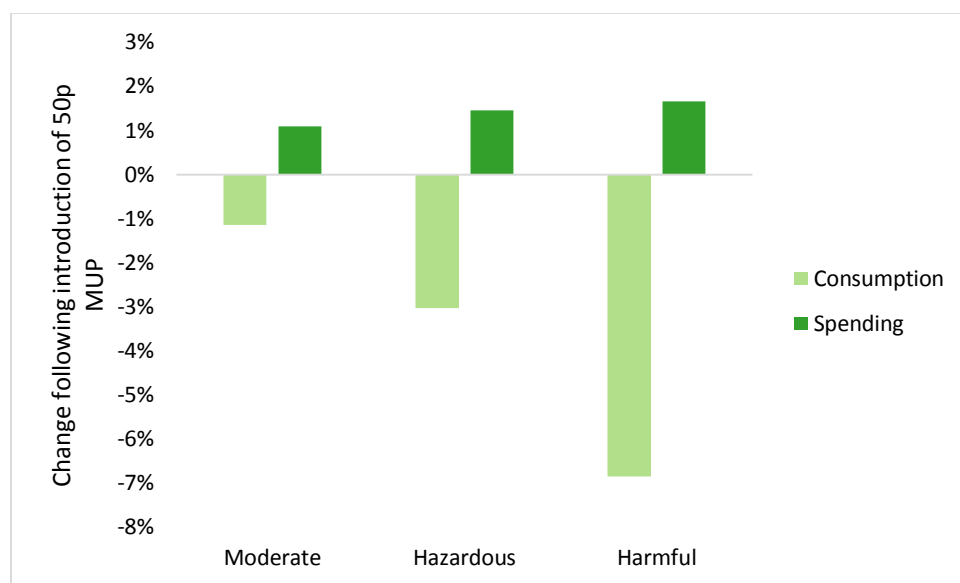
Modelled impacts of a 50p MUP on consumption and spending

The estimated impact of a 50p MUP policy on alcohol consumption and spending on alcohol are shown in Table 10 and Table 11. Overall the policy would reduce alcohol consumption by 3.6% per drinker per year, equivalent to a reduction of 22 units per year. On average, drinkers would spend £8.30 per year extra under a 50p MUP. These effects are not, however, distributed equally across the population. The impact on moderate drinkers is minimal, with an estimated reduction in annual consumption of 2.4 units, equivalent to around one pint of beer or one large glass of wine and an increase in spending of £3 per drinker. In contrast, harmful drinkers experience the greatest change in their drinking behaviour, with an estimated annual reduction of 269 units, equivalent to 110 pints or 30 bottles of wine, and an increase in spending of £48 per drinker. These patterns are illustrated in Figure 12.

Table 10: Estimated impact of a 50p MUP on consumption and spending by drinker type

	All drinkers	Moderate	Hazardous	Harmful
Baseline consumption (units/year)	610	211	1,236	3,924
Post-intervention consumption (units/year)	588	208	1,199	3,655
Absolute change	-22.0	-2.4	-37.4	-268.7
Relative change	-3.6%	-1.1%	-3.0%	-6.8%
Baseline spend on alcohol (per year)	£607	£276	£1,209	£2,882
Post-intervention spend per year	£615	£279	£1,227	£2,930
Absolute change	£8.3	£3.0	£17.6	£47.7
Relative change	1.4%	1.1%	1.5%	1.7%

Figure 12: Estimated impact of a 50p MUP on consumption and spending by drinker type

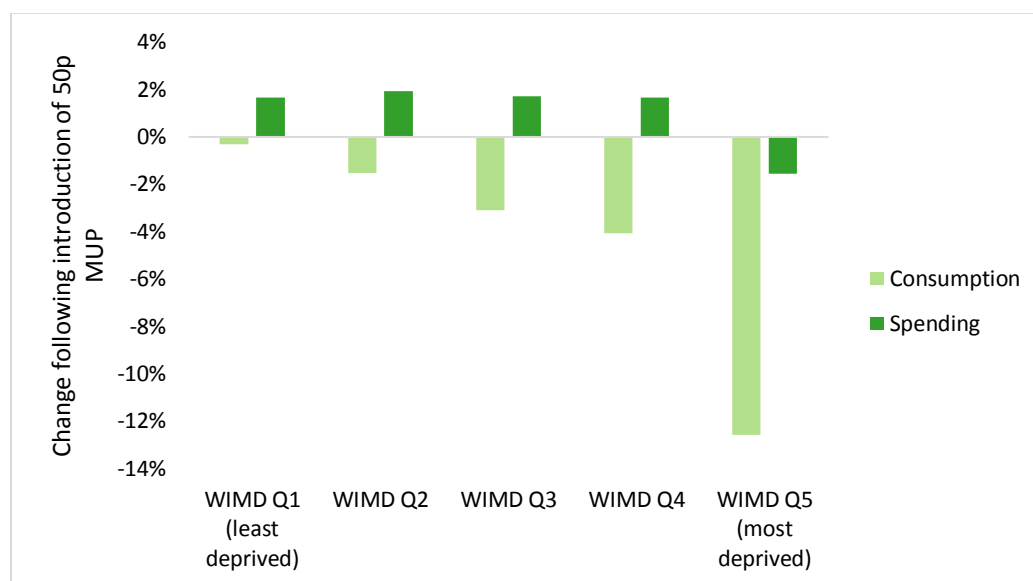


Looking across the deprivation spectrum we see a clear gradient in effect, with a 50p MUP leading to substantially greater reductions in consumption in more deprived groups. In particular, those in the most deprived quintile are estimated to reduce their consumption by 69 units a year, leading to a £7 fall in total spending on alcohol on average.

Table 11: Estimated impact of a 50p MUP on consumption and spending by deprivation

	WIMD Q1 (least deprived)	WIMD Q2	WIMD Q3	WIMD Q4	WIMD Q5 (most deprived)
Baseline consumption (units/year)	648	649	598	589	546
Post-intervention consumption (units/year)	647	639	579	566	477
Absolute change	-1.9	-9.9	-18.4	-23.9	-68.7
Relative change	-0.3%	-1.5%	-3.1%	-4.1%	-12.6%
Baseline spend on alcohol (per year)	£780	£676	£563	£515	£441
Post-intervention spend (per year)	£793	£689	£573	£523	£434
Absolute change	£13.0	£13.2	£9.7	£8.6	£-6.8
Relative change	1.7%	1.9%	1.7%	1.7%	-1.5%

Figure 13: Estimated impact of a 50p MUP on consumption and spending by deprivation



Finally, Table 12 and Table 13 show the impacts on consumption and spending across both drinker groups and quintiles of deprivation, highlighting the steepness of the deprivation gradient in consumption effects. These figures also illustrate that the reductions in spending among more deprived groups are concentrated in hazardous and, particularly, harmful drinkers, with harmful drinkers in the most deprived areas spending over £200 less on alcohol each year.

Table 12: Estimated impact of a 50p MUP on consumption by drinker group and deprivation

	WIMD Q1 (least deprived)	WIMD Q2	WIMD Q3	WIMD Q4	WIMD Q5 (most deprived)
Moderate					
Baseline consumption (units/year)	231	211	213	200	194
Post-intervention consumption (units/year)	232	210	212	195	187
Absolute change	0.3	-0.5	-1.5	-4.3	-6.9
Relative change	0.1%	-0.2%	-0.7%	-2.2%	-3.6%
Hazardous					
Baseline consumption (units/year)	1,228	1,245	1,262	1,219	1,216
Post-intervention consumption (units/year)	1,224	1,221	1,225	1,162	1,114
Absolute change	-3.6	-24.0	-37.2	-56.9	-102.7
Relative change	-0.3%	-1.9%	-2.9%	-4.7%	-8.4%
Harmful					
Baseline consumption (units/year)	3,892	4,168	3,244	4,081	4,367
Post-intervention consumption (units/year)	3,866	4,090	3,050	3,890	3,248
Absolute change	-26.4	-78.0	-193.7	-191.8	-1,118.9
Relative change	-0.7%	-1.9%	-6.0%	-4.7%	-25.6%

Table 13: Estimated impact of a 50p MUP on spending by drinker group and deprivation

	WIMD Q1 (least deprived)	WIMD Q2	WIMD Q3	WIMD Q4	WIMD Q5 (most deprived)
Moderate					
Baseline spend on alcohol (per year)	£375	£296	£265	£228	£198
Post-intervention spend per year	£378	£299	£269	£230	£200
Absolute change	£3.8	£3.6	£3.4	£1.9	£2.1
Relative change	1.0%	1.2%	1.3%	0.8%	1.1%
Hazardous					
Baseline spend on alcohol (per year)	£1,483	£1,209	£1,117	£1,099	£981
Post-intervention spend per year	£1,508	£1,230	£1,137	£1,111	£980
Absolute change	£25.4	£21.0	£20.1	£12.0	-£1.1
Relative change	1.7%	1.7%	1.8%	1.1%	-0.1%
Harmful					
Baseline spend on alcohol (per year)	£3,060	£3,646	£2,380	£2,455	£2,715
Post-intervention spend per year	£3,148	£3,766	£2,436	£2,562	£2,508
Absolute change	£87.6	£119.9	£56.0	£106.8	-£206.2
Relative change	2.9%	3.3%	2.4%	4.4%	-7.6%

Modelled impacts of a 50p MUP on health

The estimated impact of a 50p MUP on alcohol-attributable deaths and hospital admissions, overall and by drinker type, is presented in Table 14. This shows that the estimated reduction in alcohol-attributable deaths is greater than the reduction in consumption (8.5% compared to 3.6%) due to the fact that the policy effectively targets those groups at the greatest risk of harm. This can be seen from the fact that over two-thirds (69%) of the reduction in annual deaths due to alcohol is experienced by harmful drinkers, who comprise just 3% of the population. Owing to the substantial differences in the proportion of the population in each of the drinker groups, it is informative to compare rates of harm, rather than overall volumes. These are shown in Table 15 and Table 16 and presented visually in Figure 14 and Figure 15.

After accounting for different population sizes, the extent to which the effects of MUP on health are concentrated in the heaviest drinkers becomes even more apparent. For every 100,000 harmful drinkers, a 50p MUP is estimated to avoid 56 deaths and 688 hospital admissions each year.

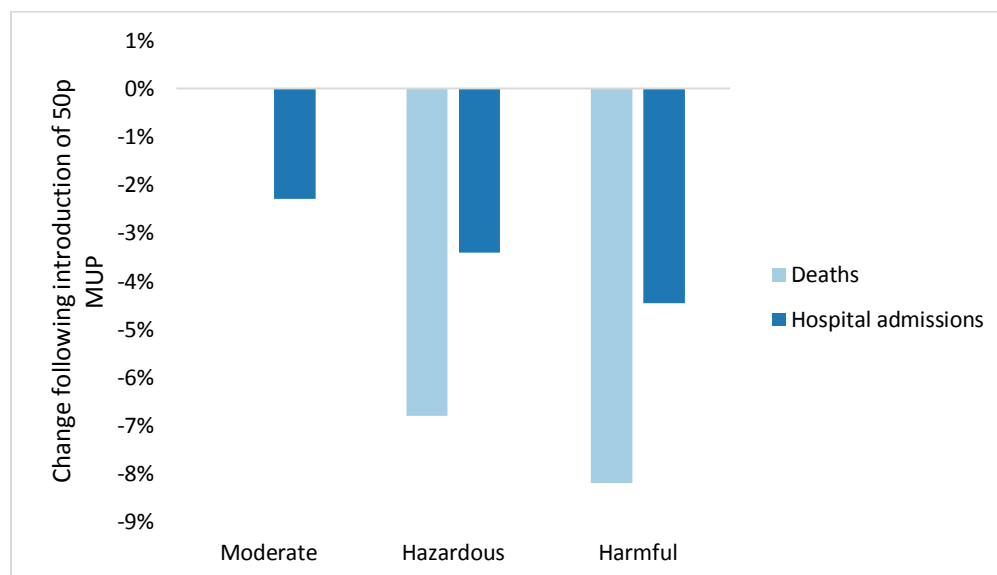
Table 14: Estimated impacts of a 50p MUP on health by drinker type

	All drinkers	Moderate	Hazardous	Harmful
Baseline annual alcohol-attributable deaths	777	-77	297	557
Post-intervention alcohol-attributable deaths	711	-77	277	512
Absolute change	-65.9	0.0	-20.2	-45.7
Relative change	-8.5%	0.0%	-6.8%	-8.2%
Baseline annual alcohol-attributable hospital admissions	35,637	5,735	17,350	12,552
Post-intervention alcohol-attributable hospital admissions	34,356	5,604	16,760	11,992
Absolute change	-1,281	-131	-590	-560
Relative change	-3.6%	-2.3%	-3.4%	-4.5%

Table 15: Estimated impact of a 50p MUP on mortality and hospitalisation rates by drinker type

	All drinkers	Moderate	Hazardous	Harmful
Baseline annual alcohol-attributable deaths per 100,000 drinkers	41	-6	66	685
Post-intervention alcohol-attributable deaths per 100,000 drinkers	37	-6	62	629
Absolute change	-3.5	0.0	-4.5	-56.2
Relative change	-8.5%	0.0%	-6.8%	-8.2%
Baseline annual alcohol-attributable hospital admissions per 100,000 drinkers	1,866	416	3,861	15,421
Post-intervention alcohol-attributable hospital admissions per 100,000 drinkers	1,799	406	3,730	14,734
Absolute change	-67	-10	-131	-688
Relative change	-3.6%	-2.3%	-3.4%	-4.5%

Figure 14: Relative impacts of a 50p MUP on deaths and hospital admissions by drinker type



As for the effects of MUP on consumption, we see a clear socioeconomic gradient in the harm effects, with 12.3 fewer deaths each year per 100,000 drinkers in the most deprived group, compared to 0.1 in the least deprived.

Table 16: Estimated impact of a 50p MUP on mortality and hospitalisation rates by deprivation

	WIMD Q1 (least deprived)	WIMD Q2	WIMD Q3	WIMD Q4	WIMD Q5 (most deprived)
Baseline annual alcohol-attributable deaths per 100,000 drinkers	28	30	35	45	75
Post-intervention alcohol-attributable deaths per 100,000 drinkers	28	29	32	42	62
Absolute change	-0.1	-0.9	-2.7	-3.6	-12.3
Relative change	-0.3%	-3.1%	-7.7%	-8.0%	-16.5%
Baseline annual alcohol-attributable hospital admissions per 100,000 drinkers	1,390	1,542	1,741	2,124	2,823
Post-intervention alcohol-attributable hospital admissions per 100,000 drinkers	1,388	1,522	1,684	2,031	2,619
Absolute change	-1.8	-19.7	-57.4	-93.4	-203.3
Relative change	-0.1%	-1.3%	-3.3%	-4.4%	-7.2%

Figure 15: Relative effects of a 50p MUP on health outcomes by deprivation

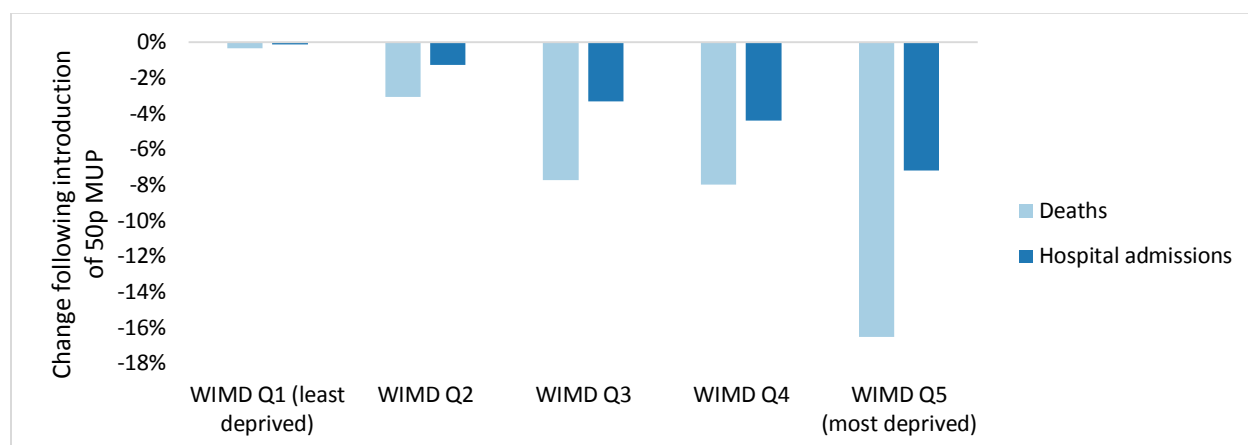


Table 17 and Table 18 break the estimated impacts of a 50p MUP policy on health down by both drinker group and deprivation quintile.

Table 17: Estimated impact of a 50p MUP on mortality rates by drinker group and deprivation

	WIMD Q1 (least deprived)	WIMD Q2	WIMD Q3	WIMD Q4	WIMD Q5 (most deprived)
Moderate					
Baseline annual alcohol-attributable deaths per 100,000 drinkers	-4	-6	-7	-7	-4
Post-intervention alcohol-attributable deaths per 100,000 drinkers	-4	-6	-7	-7	-4
Absolute change	0.0	0.0	0.0	-0.1	0.1
Relative change	-0.4%	0.0%	0.4%	1.4%	-3.4%
Hazardous					
Baseline annual alcohol-attributable deaths per 100,000 drinkers	46	57	72	77	97
Post-intervention alcohol-attributable deaths per 100,000 drinkers	46	56	68	69	82
Absolute change	0.2	-1.6	-4.5	-7.5	-15.1
Relative change	0.5%	-2.8%	-6.2%	-9.8%	-15.6%
Harmful					
Baseline annual alcohol-attributable deaths per 100,000 drinkers	444	444	512	804	1,502
Post-intervention alcohol-attributable deaths per 100,000 drinkers	440	432	475	759	1,259
Absolute change	-3.9	-11.7	-37.0	-44.6	-242.8
Relative change	-0.9%	-2.6%	-7.2%	-5.6%	-16.2%

Table 18: Estimated impact of a 50p MUP on hospitalisation rates by drinker group and deprivation

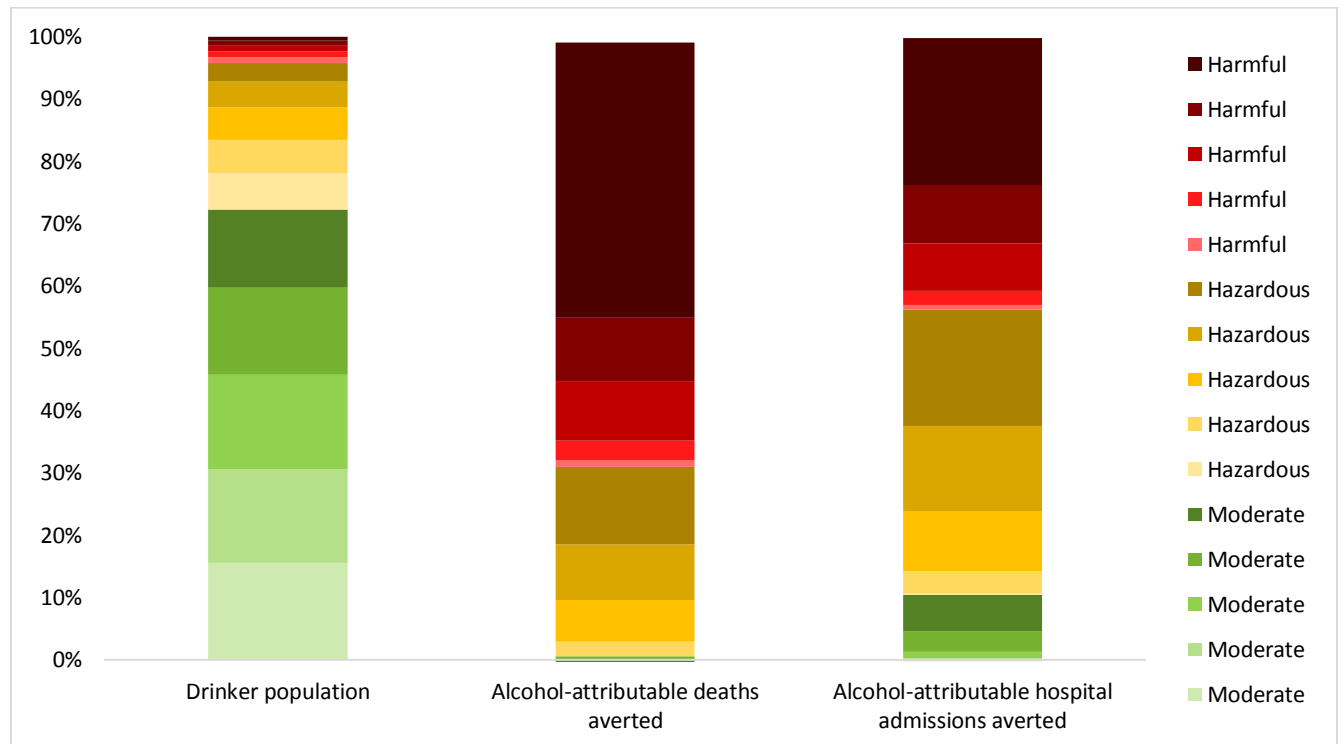
	WIMD Q1 (least deprived)	WIMD Q2	WIMD Q3	WIMD Q4	WIMD Q5 (most deprived)
Moderate					
Baseline annual alcohol-attributable hospital admissions per 100,000 drinkers	272	329	381	489	661
Post-intervention alcohol-attributable hospital admissions per 100,000 drinkers	273	328	376	473	629
Absolute change	1.1	-1.3	-4.4	-15.9	-31.7
Relative change	0.4%	-0.4%	-1.2%	-3.2%	-4.8%
Hazardous					
Baseline annual alcohol-attributable hospital admissions per 100,000 drinkers	2,787	3,255	3,879	4,505	6,192
Post-intervention alcohol-attributable hospital admissions per 100,000 drinkers	2,785	3,208	3,755	4,285	5,756
Absolute change	-1.5	-46.3	-124.7	-219.5	-435.1
Relative change	-0.1%	-1.4%	-3.2%	-4.9%	-7.0%
Harmful					
Baseline annual alcohol-attributable hospital admissions per 100,000 drinkers	11,042	10,932	12,330	18,127	29,683
Post-intervention alcohol-attributable hospital admissions per 100,000 drinkers	10,991	10,774	11,769	17,345	27,186
Absolute change	-50.6	-158.0	-560.4	-782.1	-2496.9
Relative change	-0.5%	-1.4%	-4.5%	-4.3%	-8.4%

Finally, Table 19 and Figure 16 present the health impacts of a 50p MUP in a different way, showing the proportion of alcohol attributable deaths and hospital admissions averted by the policy in each subgroup of the drinker population. This reiterates the highly targeted nature of the policy, with 69% of the reduction in deaths being experienced by harmful drinkers, who account for just 4 in every 100 drinkers.

Table 19: Distribution of estimated health impacts of a 50p MUP

		Drinker population	Impacts of a 50p MUP	
			Alcohol-attributable deaths averted	Alcohol-attributable hospital admissions averted
Moderate		72%	0%	10%
Hazardous		24%	31%	46%
Harmful		4%	69%	44%
WIMD Q1 (least deprived)		22%	1%	1%
WIMD Q2		21%	6%	6%
WIMD Q3		21%	17%	18%
WIMD Q4		19%	20%	26%
WIMD Q5 (most deprived)		16%	57%	49%
Moderate	WIMD Q1 (least deprived)	15.6%	-0.1%	-0.3%
	WIMD Q2	15.0%	0.0%	0.3%
	WIMD Q3	15.2%	0.1%	1.0%
	WIMD Q4	14.0%	0.4%	3.3%
	WIMD Q5 (most deprived)	12.5%	-0.5%	5.9%
Hazardous	WIMD Q1 (least deprived)	5.9%	-0.4%	0.1%
	WIMD Q2	5.3%	2.5%	3.7%
	WIMD Q3	5.2%	6.7%	9.7%
	WIMD Q4	4.2%	9.1%	13.7%
	WIMD Q5 (most deprived)	2.9%	12.7%	18.8%
Harmful	WIMD Q1 (least deprived)	1.0%	1.1%	0.7%
	WIMD Q2	1.0%	3.3%	2.3%
	WIMD Q3	0.9%	9.7%	7.6%
	WIMD Q4	0.8%	10.4%	9.3%
	WIMD Q5 (most deprived)	0.6%	45.0%	23.8%

Figure 16: Distribution of estimated health impacts of a 50p MUP by drinker group and deprivation



Next Steps:

This short report has provided an update on the health outcomes of a MUP set at an example of 50p only. This level has been used here, as it was the example level used in the 2014 report.

The next stage of the analysis is to provide a full report presenting the full range of MUP policies and including crime and workplace outcomes. We will also model the impacts of increases in taxation in order to assess the answers to the 3 research questions set out in the Introduction. This report will follow early in 2018.

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