

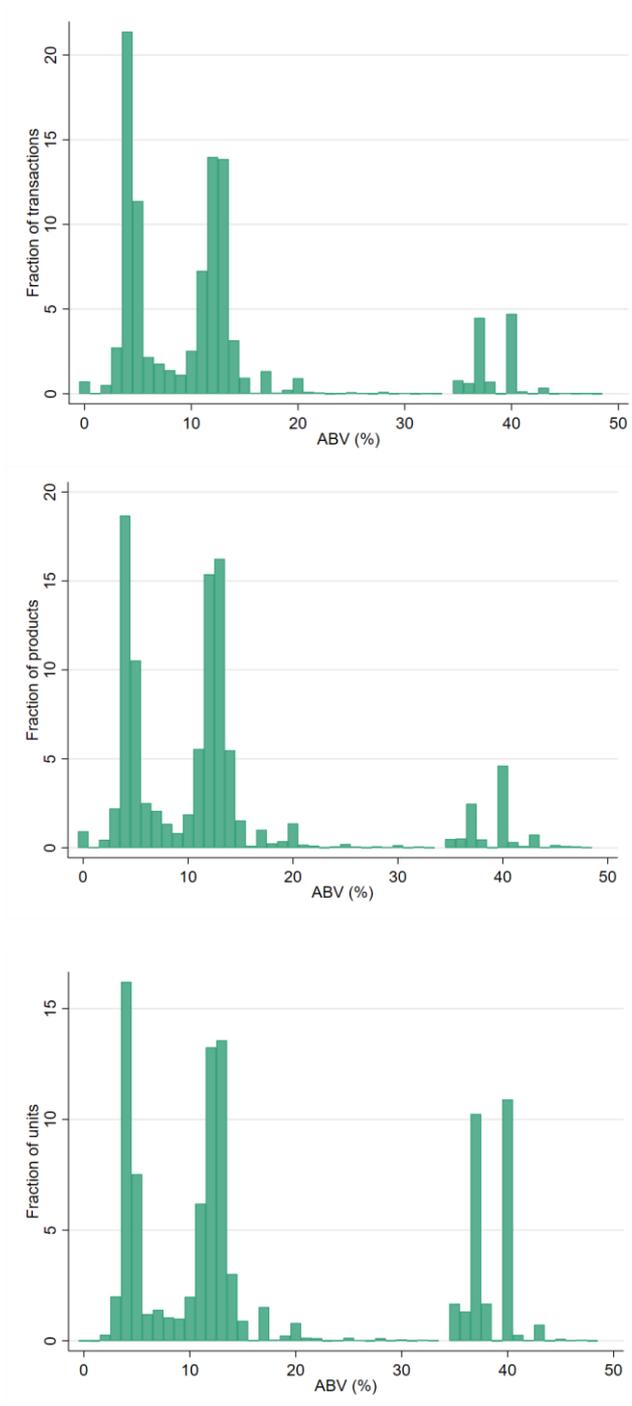
# Supplemental Appendix

## 1. Distribution of ABV

Figure A.1 shows the distribution of alcoholic strength, measured as alcohol-by-volume (ABV), across transactions, products and units purchased in 2019. Figure A.2. shows the distribution of alcoholic strength across transactions by alcohol type.

There are essentially very few products purchased that have an ABV content between 20% and 35%, which makes this a natural position to increase the rate on high strength drinks if treating similar products similarly is an issue of concern.

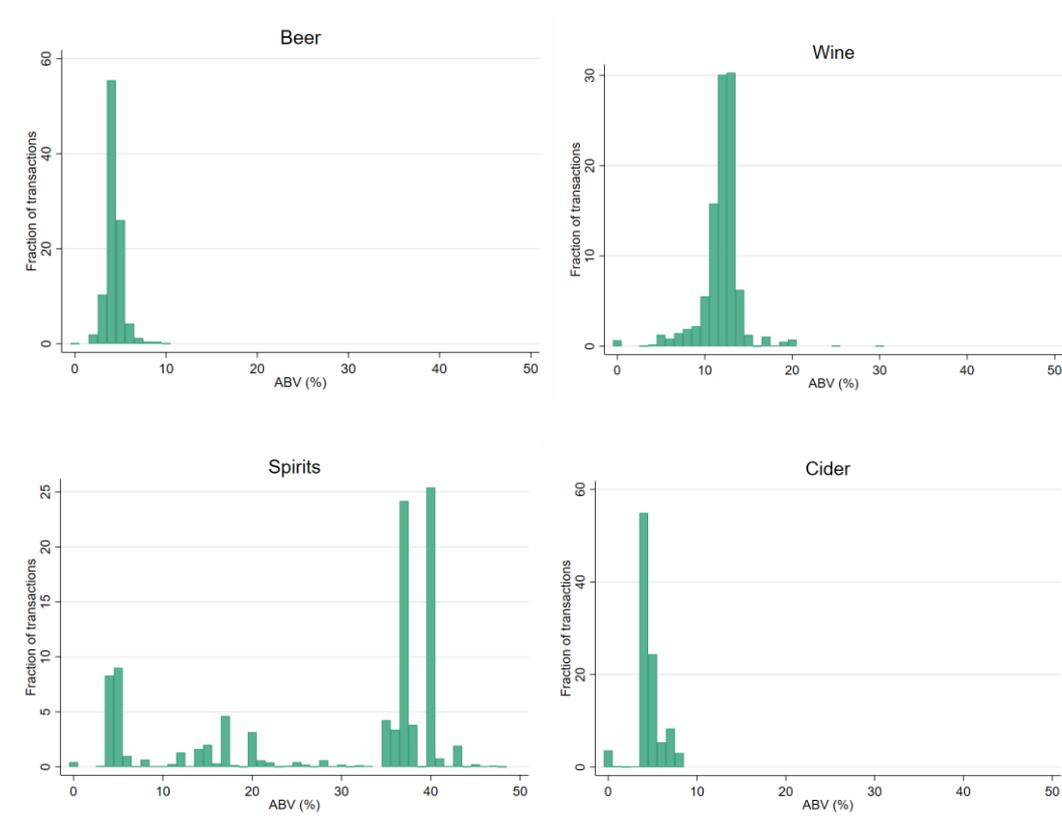
**Figure A.1. Distributions of ABV**



Note: The top panel shows the distribution of ABV content across transactions, the middle panel shows the distribution across products (barcodes) and the bottom panel shows the distribution of transactions weighted by number of units bought in 2019.

Source: Authors' calculations using Kantar FMCG Purchase Panel data described in Griffith, O'Connell and Smith (2020).

**Figure A.2. Distributions of ABV across alcohol type**



Note: Each panel shows the distribution of ABV content across transactions in 2019, by alcohol type.

Source: Authors' calculations using Kantar FMCG Purchase Panel data described in Griffith, O'Connell and Smith (2020).

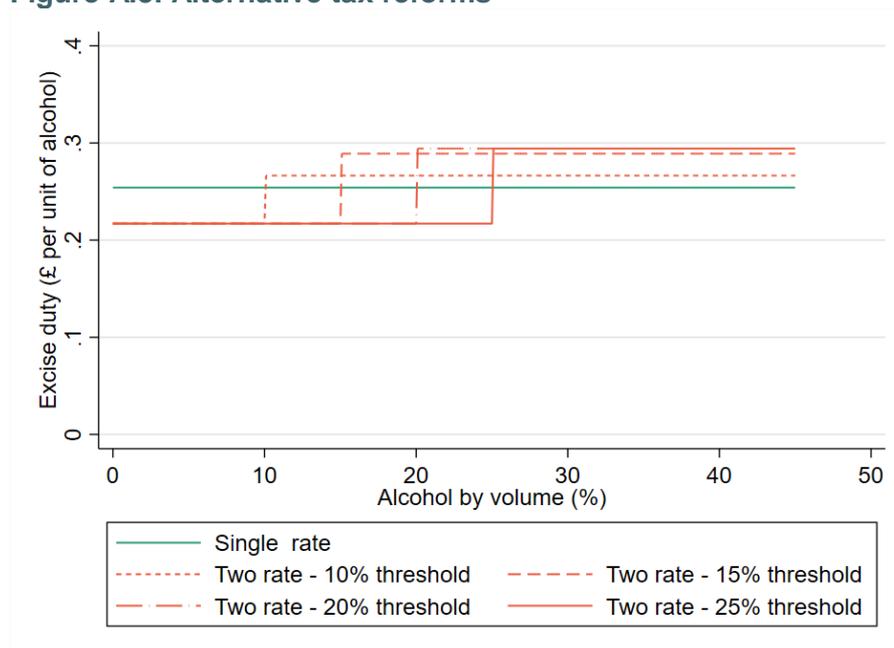
## 2. Varying the threshold in the two-rate system

In the briefing note we consider a two-rate reform that taxes drinks with an ABV above 20% at a higher tax rate. Here we show how our results change if we instead set the threshold at 10%, 15%, or 25%. In each case, we fix the lower rate at 21.7p as in the 20% reform, and vary the higher rate so that the average reduction in units purchased per adult per week is the same as in the 20% threshold case. We also compare the two-rate systems to a single rate levied per unit of alcohol (again, set to lead to the same average reduction in units purchased). Each of these reforms is shown graphically in Figure A.3.

Figure A.4 shows the change in units purchased by light, moderate and heavy drinkers under the alternative policy reforms, and Figure A.5 shows the change in tax revenue. There is little difference between setting the threshold at 20% or 25%, but reducing the threshold to 10% or 15% leads to a system slightly less well targeted at heavy drinkers. A single rate of tax proportional to ethanol content raises the most revenue, but is the least well targeted at heavy drinkers.

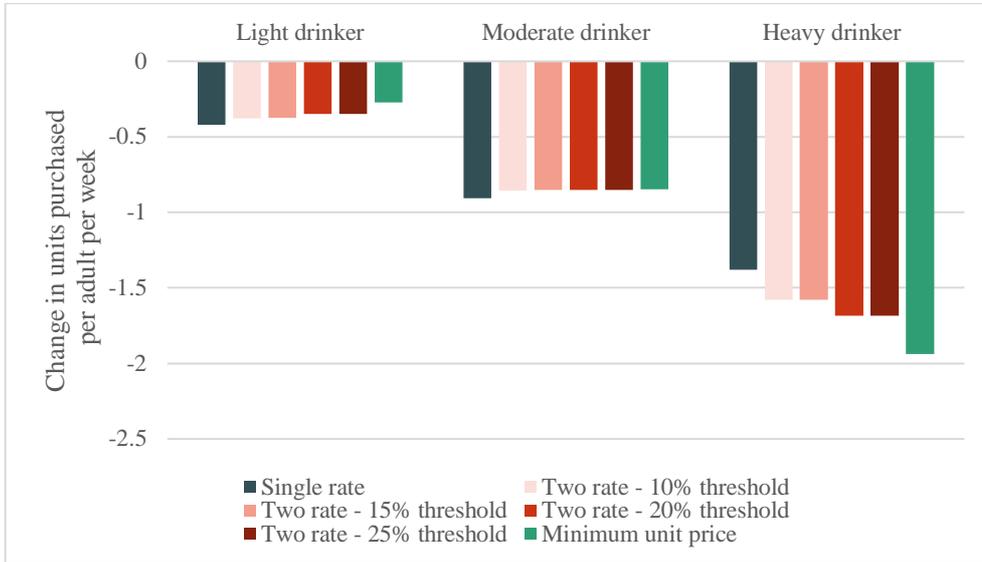
Importantly, these estimates assume that there is no reformulation of drinks to reduce their ABV content. For the 20 and 25% reform, this is likely to be reasonable, as there are very few products with an ABV just above this threshold (see Figure A.1). However, if the threshold were set at 10 or 15%, this could encourage manufacturers with drinks just above these thresholds to reduce their products' content to exactly these levels.

**Figure A.3. Alternative tax reforms**



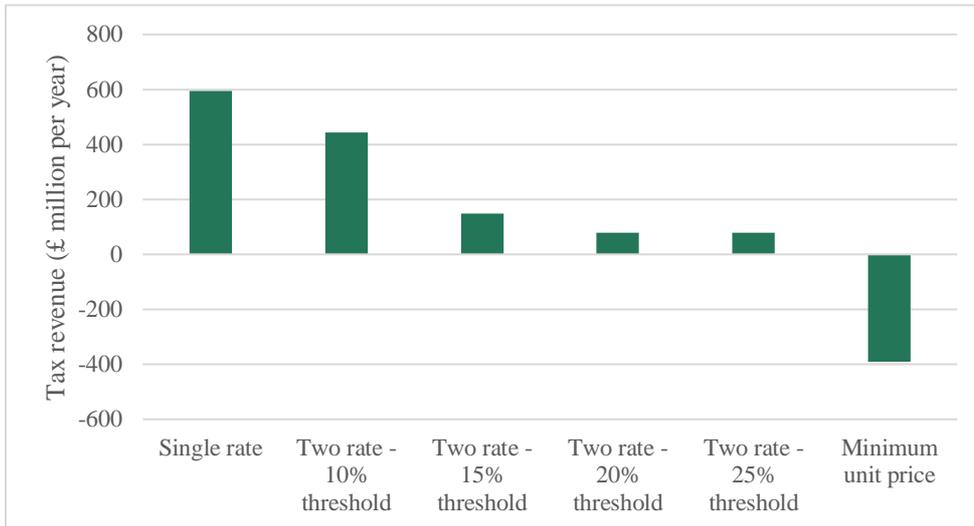
Note: Each line shows a different alternative tax reform. The line for the two-rate reform with a 20% threshold is the reform analysed more fully in the main text of the briefing note. Rates have been updated to 2019 prices in line with inflation.

**Figure A.4. Change in units purchased under different policy reforms**



Note: The bars show the change in units purchased per adult per week under the various alternative reforms relative to the current system of UK alcohol taxation. Light drinkers are those who buy less than 7 units per adult per week in a pre-sample period, moderate drinkers are those who buy 7–14 units, and heavy drinkers are those who buy more than 14 units.

**Figure A.5. Tax revenue under alternative policy reforms**



Note: Each bar shows the change in tax revenue relative to the existing system of alcohol duties under the reform specified on the horizontal axis. Revenue estimates have been updated to 2019 prices in line with inflation.