



Evaluating the impact of Minimum Unit Pricing (MUP) on the price distribution of off-trade alcohol in Scotland

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June 2021

Acknowledgements

The authors would like to thank the members of the Economic Impact and Price Evaluation Advisory Group for their valued input throughout this study.

Citation:

This report should be cited as: Ferguson K, Giles L and Beeston C. Evaluating the impact of Minimum Unit Pricing (MUP) on the price distribution of off-trade alcohol in Scotland. Edinburgh: Public Health Scotland; 2021.

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Key messages

The distribution of prices of off-trade alcohol products in Scotland in the first 12 months after MUP was implemented reflected the 50-pence-per-unit (ppu) price floor and was markedly different to the pre-MUP price distribution and to that in England & Wales.

After MUP was implemented, almost two-thirds of off-trade alcohol was categorised in the 50 to 64.9ppu price range (65.3%), approximately double that in England & Wales (33.6%) and in the previous year in Scotland (31.9%).

The largest change was in the 50 to 54.9ppu price band (immediately above the price floor), which almost tripled from 13.9% in the 12 months prior to MUP being implemented, to 39.0% in the year after.

Increases in the proportion of alcohol sold in the price bands above 65ppu were in line with those seen prior to MUP being implemented and with those in England & Wales.

The changes in price distribution observed for total alcohol were most strongly reflected in the drink categories that were more likely to be sold at the lower end of the distribution prior to MUP being implemented, namely beer, spirits, cider and perry. Drink categories which tended to sell above the price floor prior to MUP being implemented did not see much change after implementation.

Due to the limitations of the methodology used to derive the price distribution (described in full in the report), the data presented here cannot be used to assess compliance with the MUP legislation. However, the data are the best available to describe and understand the impact of MUP on the overall price distribution of off-trade alcohol in Scotland.

Introduction

This report provides a descriptive analysis of changes in the price distribution of pure alcohol sold per adult in the off-trade before and after minimum unit pricing (MUP) was implemented in Scotland. The study addressed the following research question:

- What is the effect of MUP on the volume and proportion of off-trade alcohol sold at different prices in Scotland, overall and by drink type?

The data used to answer this research question rely on categorising off-trade alcohol sales into pre-specified price bands, based on the price per unit of alcohol. The analysis focuses on changes in the proportions of litres of pure alcohol per adult sold within each price band, by drink category and in total.

The volume of pure alcohol recorded in any given price band is an estimate, and a degree of misallocation between price bands will occur due to limitations described in this report. As a result of these limitations, the data presented here cannot be used to assess compliance with the MUP legislation. However, the data are the best available to describe and understand the impact of MUP on the overall price distribution of off-trade alcohol in Scotland.

Minimum unit pricing for alcohol in Scotland

The Scottish Government has had an overarching strategy to reduce alcohol harm since 2009¹, updated in 2018 as the Alcohol Framework². The strategy was developed in response to the well-documented high level of alcohol harm in Scotland, including harm to individuals, families, and communities³. Its suite of policy and legislative actions are designed to operate in a complementary fashion to reduce alcohol consumption, and thus alcohol-related health and social harms. The strength-based floor price of MUP is an important component of this strategy. The 'Alcohol (Minimum Pricing) (Scotland) Act 2012' was passed by the Scottish Parliament in June 2012⁴. A subsequent legal challenge ended when the UK Supreme Court ruled in November 2017 that MUP in Scotland was legal⁵.

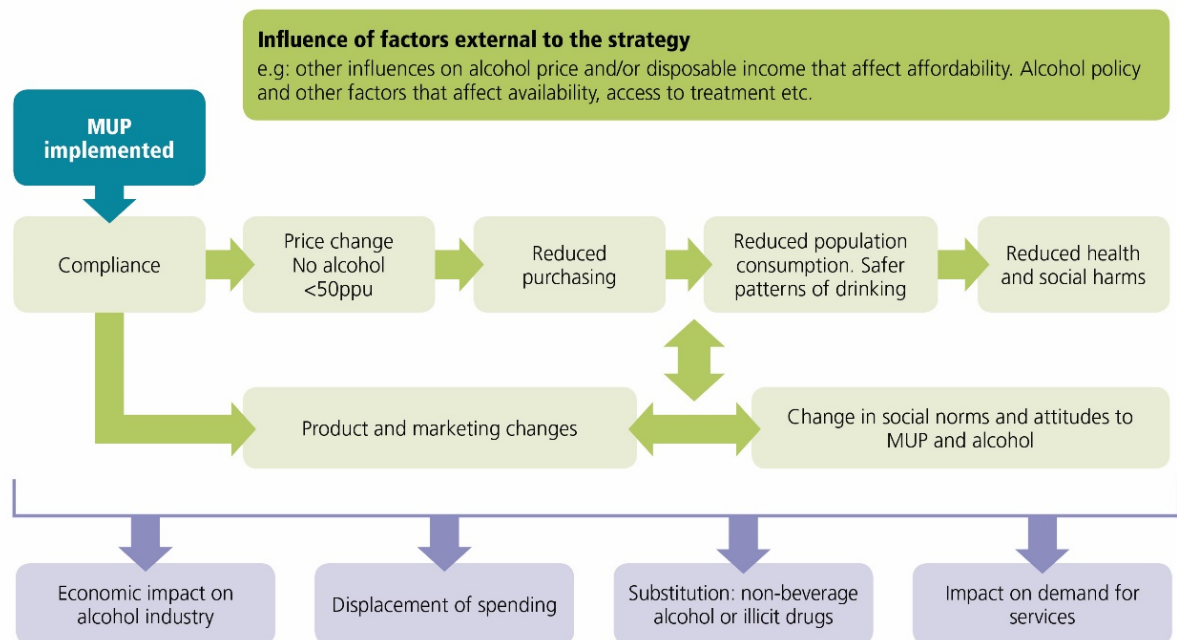
Secondary legislation setting the level of MUP at 50ppu of alcohol was passed in April 2018 and MUP was implemented in Scotland on 1 May 2018⁶.

Minimum unit pricing for alcohol evaluation

The MUP legislation contains a sunset clause whereby its continuation beyond April 2024 requires an affirmative vote by the Scottish Parliament before this time. The legislation also requires that Ministers review the effect of the legislation five years after implementation and report this to the Scottish Parliament³. In order to inform this review, the Scottish Government commissioned Public Health Scotland (formerly NHS Health Scotland) to evaluate the impacts of MUP on a range of outcomes. Public Health Scotland subsequently devised a broad portfolio of studies to evaluate the effect of MUP on these outcomes⁷, underpinned by a theory of change (Figure 1). The theory of change depicts a hypothesised chain of outcomes where MUP increases the price of cheap, high-strength alcohol, which reduces alcohol-related health and social harms via reduced consumption. The theory of change shows other potential outcomes such as changes in the alcohol market or in other substance use. The MUP evaluation systematically investigates these possible outcomes, including studies to assess compliance and implementation, changes in the alcohol market, alcohol consumption, and alcohol-related harm. Complementary studies are also being conducted under research grant funding or other sources.

Our '[Protocol for the evaluation of Minimum Unit Pricing for alcohol](#)'⁷ provides a comprehensive overview of the studies used to evaluate MUP and a summary of the legislation and supporting research.

Figure 1: Evidence-based theory of change for minimum unit pricing in Scotland



Methods

This report compares the price distribution of off-trade retail alcohol sales for the 12 months after MUP was implemented to the prior 24 months, and to England & Wales over the same time period. The analysis is descriptive and looks at off-trade alcohol overall as well as at a category level. It focuses on changes in the proportion of alcohol sold in different price bands, with less than 10ppu as the lowest band and greater than 85ppu as the highest.

Price distribution data

We used commercial alcohol retail sales data to assess the price distribution of alcohol sold in Scotland before and after MUP was introduced, and with England & Wales as a comparator. Data were obtained from market research company Nielsen. Nielsen derived price distribution data from weekly off-trade alcohol sales records for Scotland and England & Wales for the period May 2016 to April 2019. Nielsen collects electronic sales records from most large retailers (retailers with 10 or more retail shops operating under common ownership). It also uses stratified random sampling to collect electronic sales records from 'impulse' retailers (retailers which consumers mainly use for impulse or top-up purchases, i.e. not the main grocery shop). Nielsen is not able to collect data from discount retailers, Aldi and Lidl.

To produce the price distribution, Nielsen categorised the volume of alcohol into 5-pence-per-unit price bands, with the price bands ranging from <10 pence to ≥85 pence. In order to aid more detailed understanding of the distribution around the current minimum unit price of 50ppu, Nielsen provided further 1ppu price bands from 45 to 49.9ppu. Products are allocated to a price band based on the price per unit at which the product is sold in a given store in a given week. Price per unit is calculated based on the volume of pure alcohol and the price the product is sold at. Typically, due to the large number of products available, category level alcohol by volume (ABV) is used to assign products to a price band. However, in order to achieve as accurate a representation of the price distribution as possible, Nielsen was able to assign actual product ABV to approximately 80% of alcohol sales, by natural volume,

in each category. Note that this did not apply to own brand products in any category, and that only 30% of wines were assigned their actual ABV due to the comparatively high number of unique products and diverse ABV levels of the wine market.

Product-level ABV is based on the ABV stated on the pack as of September 2020.

The remaining products derive an ABV from the category average which is based on the sales weighted average of actual ABVs in that category.

It is important to note that a degree of price band misallocation will occur.

Uncertainty such as this exists with any data source and these data provide the best estimates to describe and understand the impact of MUP on the overall price distribution of off-trade alcohol in Scotland. However, due to methodological issues, these data cannot differentiate between actual sales below 50ppu and misallocation of products to incorrect price bands, and thus cannot be used to assess compliance with the MUP legislation. The findings of this research should thus be interpreted in light of these important limitations, and also with respect to our August 2019 study on compliance to MUP⁸, which found that the few identified instances of sales below 50ppu were minor and swiftly resolved.

Population data

Mid-year population estimates for Scotland were obtained from National Records of Scotland and from the Office for National Statistics for England & Wales. Weekly population estimates were interpolated from the mid-year estimates to allow the volume (litres) of pure alcohol sold per adult to be calculated in each sub-category for each week from May 2016 to April 2019.

Outcome measures

The outcome measure used in this study was litres of pure alcohol per adult, as this allows for the most direct comparison between Scotland and England & Wales.

Public Health Scotland obtained these data for seven drink categories: beers; wines; spirits; ciders; fortified wine; ready to drink beverages (RTDs) and perry.

Analysis

Analysis was descriptive and focused on change in the proportion of litres of pure alcohol per adult sold in different price bands in Scotland from May 2016 to April 2019, compared to England & Wales.

Findings

Changes in off-trade price distribution for total alcohol

The distribution of off-trade alcohol in Scotland in the first 12 months after MUP was implemented was different to the previous two years (Table 1). There was a sharp increase in the 50 to 59.9ppu price range and a smaller increase in the 60 to 64.9ppu band, while increases in the higher price bands of 65ppu and above were in line with previous years. In the two years prior to MUP, 30.5% and 31.9% of all off-trade alcohol was categorised in the 50 to 64.9ppu price bands and 20.7% and 24.0% were in the 65ppu or greater range. However, in the first 12 months after MUP was implemented, the proportion in the 50 to 64.9ppu price range was approximately double that in previous years at 65.3%, while the proportion in the 65ppu or greater price range was only slightly larger at 27.3% (Figure 2). Notably, the 50 to 54.9ppu price band, immediately above the price floor, accounted for 39.0% of the total post-implementation, almost triple that compared to the two prior years (15.1% and 13.9% respectively). The proportion above 65ppu increased in line with the previous years (20.7%, 24.0%, and 27.3% of total alcohol respectively). An estimated 7.5% of pure alcohol per adult was recorded in price bands below the minimum unit price, compared to 48.7% and 44.1% in the previous two years. Of the 7.5% categorised below the price floor after MUP was implemented, nearly half (3.5%) was in the 49 to 49.9ppu price band. As described in the methods and the discussion, the methodological limitations of the data mean that this does not definitively represent alcohol sales below the minimum unit price but may represent a degree of misallocation to individual price bands.

For England & Wales across the whole time series, most alcohol was categorised between 35 and 64.9ppu (Figure 3). For each year in England & Wales the 50 to 64.9ppu price range accounted for 30.4%, 32.0%, and 33.6% of total alcohol per adult, respectively. This was comparable to 30.5% and 31.9% for the two pre-implementation years in Scotland but this was not the case after implementation when 65.3% of pure alcohol was sold in the 50 to 64.9ppu price band in Scotland. (Table 1, Figure 4, Figure 5). However, across all three years the proportion sold

above 65ppu was similar to Scotland (e.g. from May 2018 to April 2019, 26.8% was above 65ppu in England & Wales and 27.3% in Scotland).

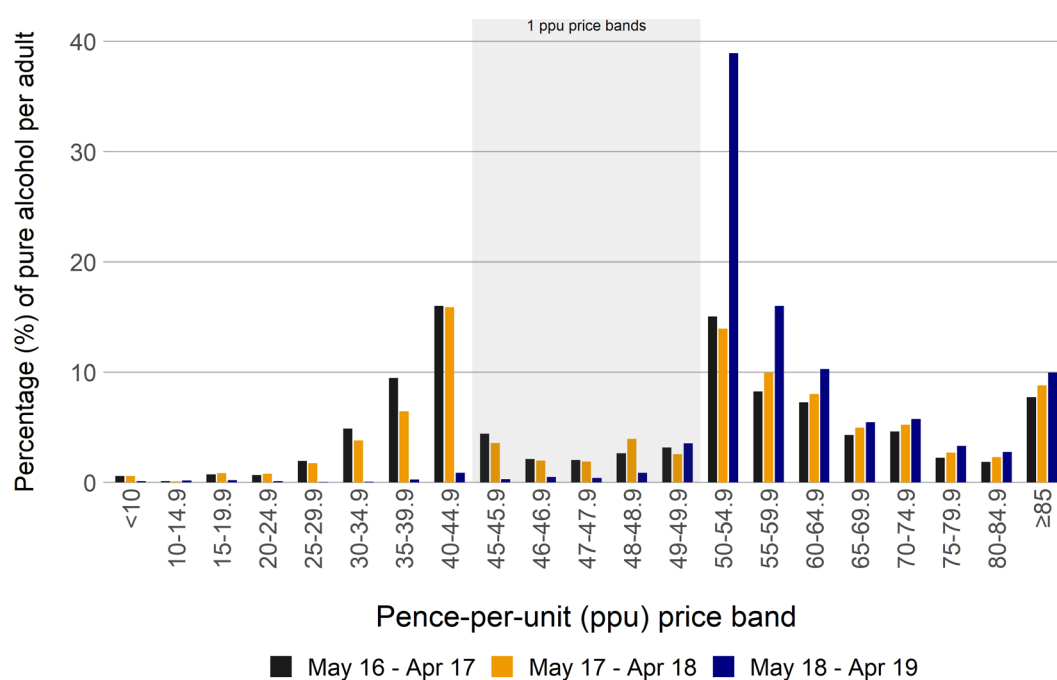
For absolute figures in litres of pure alcohol per adult, see Appendix A.

Table 1: Percentage (%) of pure alcohol (litres per adult) by price band, total alcohol, Scotland, England & Wales (E & W), May 2016 to April 2019

| Price Band | Scotland May 16 – Apr 17 | Scotland May 17 – Apr 18 | Scotland May 18 – Apr 19 (MUP) | E & W May 16 – Apr 17 | E & W May 17 – Apr 18 | E & W May 18 – Apr 19 |
|------------|--------------------------|--------------------------|--------------------------------|-----------------------|-----------------------|-----------------------|
| <10 | 0.6 | 0.6 | 0.1 | 0.4 | 0.4 | 0.1 |
| 10-14.9 | 0.1 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 |
| 15-19.9 | 0.7 | 0.8 | 0.2 | 0.7 | 0.6 | 0.6 |
| 20-24.9 | 0.7 | 0.8 | 0.1 | 0.9 | 0.8 | 0.8 |
| 25-29.9 | 1.9 | 1.7 | 0.0 | 2.5 | 1.8 | 1.7 |
| 30-34.9 | 4.9 | 3.8 | 0.1 | 5.0 | 4.0 | 3.7 |
| 35-39.9 | 9.5 | 6.4 | 0.3 | 9.3 | 7.1 | 7.3 |
| 40-44.9 | 16.0 | 15.9 | 0.9 | 14.2 | 13.9 | 12.5 |
| 45-45.9 | 4.4 | 3.6 | 0.3 | 4.2 | 3.4 | 2.9 |
| 46-46.9 | 2.1 | 2.0 | 0.5 | 2.0 | 2.0 | 2.1 |
| 47-47.9 | 2.0 | 1.9 | 0.4 | 2.3 | 2.2 | 1.9 |
| 48-48.9 | 2.6 | 3.9 | 0.9 | 2.6 | 3.1 | 2.9 |
| 49-49.9 | 3.2 | 2.6 | 3.5 | 2.8 | 2.8 | 2.6 |
| 50-54.9 | 15.1 | 13.9 | 39.0 | 14.4 | 13.9 | 13.6 |
| 55-59.9 | 8.2 | 10.0 | 16.0 | 8.2 | 9.6 | 10.9 |
| 60-64.9 | 7.2 | 8.0 | 10.3 | 7.8 | 8.5 | 9.1 |
| 65-69.9 | 4.3 | 5.0 | 5.5 | 4.7 | 5.3 | 5.3 |
| 70-74.9 | 4.6 | 5.2 | 5.8 | 4.8 | 5.5 | 5.5 |
| 75-79.9 | 2.2 | 2.7 | 3.3 | 2.5 | 2.9 | 3.2 |
| 80-84.9 | 1.9 | 2.3 | 2.7 | 2.3 | 2.6 | 2.7 |
| ≥85 | 7.7 | 8.8 | 10.0 | 8.3 | 9.4 | 10.1 |

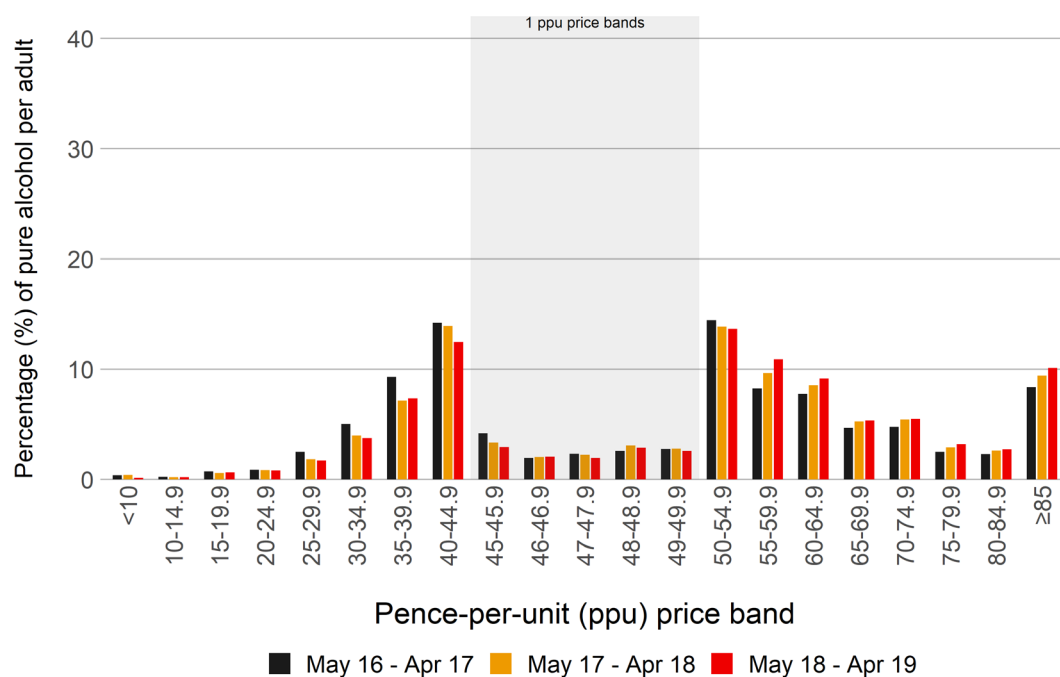
Note: 1-pence-per-unit price bands are used between 45 and 49.9ppu.

Figure 2: Estimated price distribution (%) of pure alcohol (litres per adult) sold in the off-trade in Scotland, May 2016 to April 2019



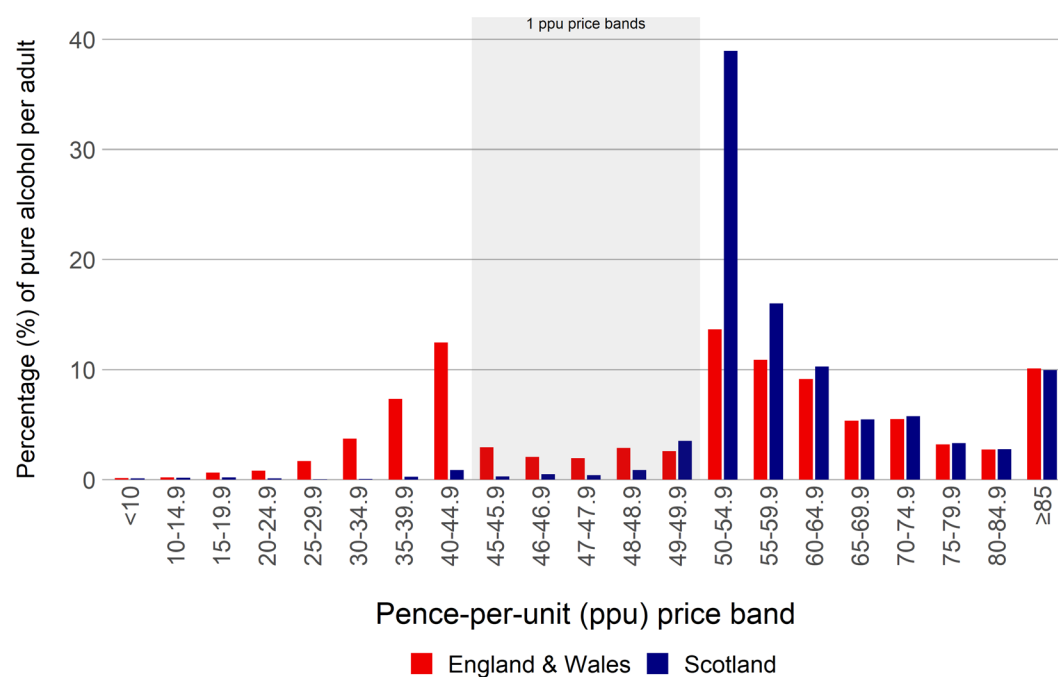
Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Figure 3: Estimated price distribution (%) of pure alcohol (litres per adult) sold in the off-trade in England & Wales, May 2016 to April 2019



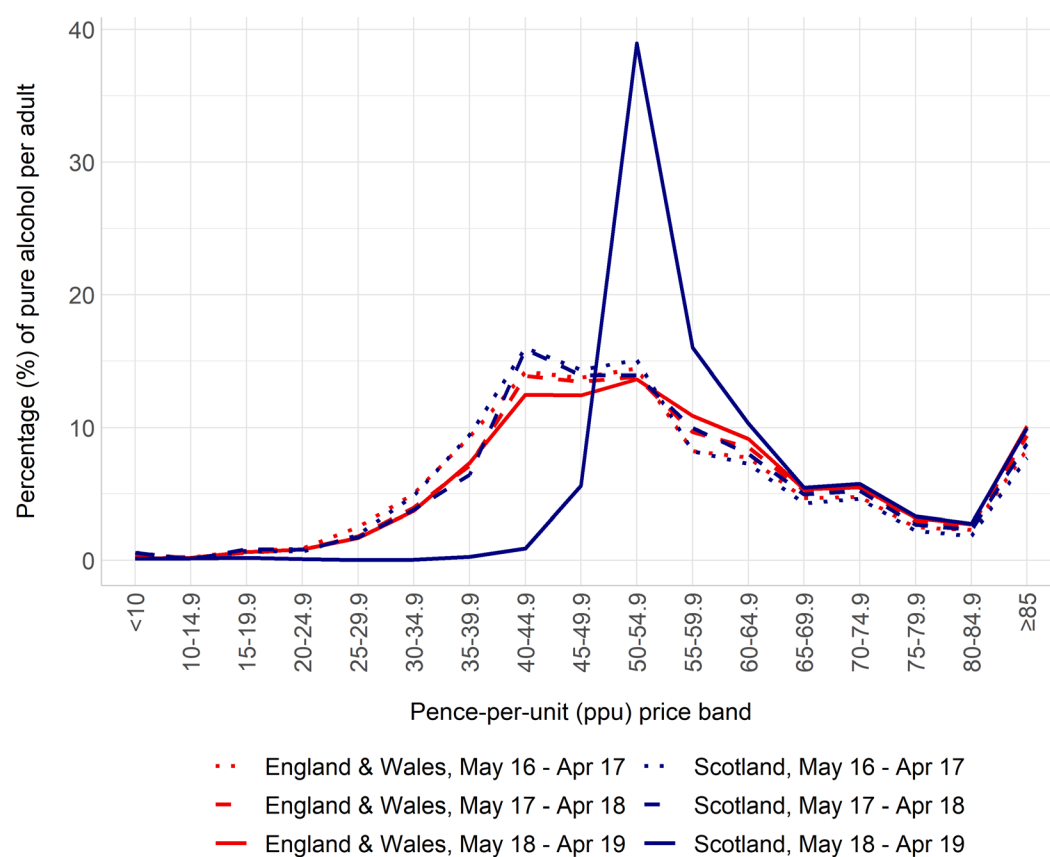
Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments.

Figure 4: Estimated price distribution (%) of pure alcohol (litres per adult) sold in the off-trade, Scotland and England & Wales, May 2018 to April 2019



Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Figure 5: Estimated price distribution (%) of pure alcohol (litres per adult) sold in the off-trade, Scotland and England & Wales, May 2016 – April 2019



Note: Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Changes in off-trade price distribution by drink category

This section describes the findings for the seven available drink categories: beer; spirits; wine; cider; fortified wine; RTDs; and perry. Please see Appendix A for absolute figures in litres of pure alcohol per adult and Appendices B to E for selected sub-category results.

Beer

The price distribution for the volume of pure alcohol per adult sold as beer through the off-trade changed in line with alcohol overall following the implementation of MUP (Table 2). The proportion of beer sold below 50ppu in the two years prior to implementation declined substantially, while the proportion in higher price bands, especially the 50 to 59.9ppu price range, increased after implementation (Figure 6). Prior to MUP being implemented, the volume of pure alcohol sold as beer in the 50 to 59.9ppu price range accounted for 21.4% and 25.1% in the two pre-MUP years, respectively. Following the implementation of MUP this price range accounted for around two-thirds (65.3%) of pure alcohol sold as beer. The 50 to 54.9ppu price band was most impacted; the estimated volume of pure alcohol sold as beer in this price band accounted for 48.3% of the total after MUP was implemented, more than triple that for the prior two years (10.9% and 14.3% respectively). Similar to Scotland overall, off-trade beer saw post-implementation price increases for price bands above 60ppu that were in line with the pre-implementation trends.

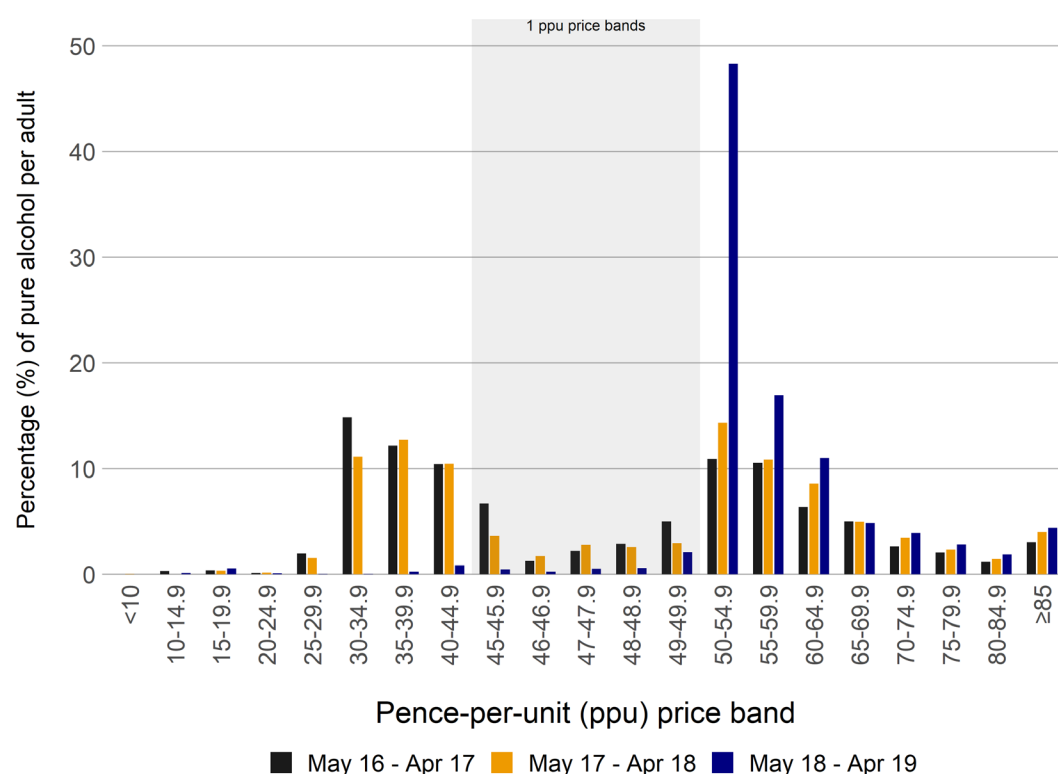
The price distribution of off-trade beer for England & Wales (Figure 7) was largely similar to Scotland prior to MUP, with most sales being categorised between 30 and 59.9ppu. However, as the price distribution in England & Wales was mostly unchanged between May 2017 to April 2018 and May 2018 to April 2019, it was notably different from post-implementation Scotland (Figure 8).

Table 2: Percentage (%) of beer (litres of pure alcohol per adult) by price band, Scotland and England & Wales (E & W), May 2016 to April 2019

| Price Band | Scotland May 16 – Apr 17 | Scotland May 17 – Apr 18 | Scotland May 18 – Apr 19 (MUP) | E & W May 16 – Apr 17 | E & W May 17 – Apr 18 | E & W May 18 – Apr 19 |
|-------------------|---------------------------------|---------------------------------|---------------------------------------|----------------------------------|----------------------------------|----------------------------------|
| <10 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| 10-14.9 | 0.3 | 0.0 | 0.1 | 0.3 | 0.2 | 0.4 |
| 15-19.9 | 0.4 | 0.3 | 0.6 | 0.4 | 0.3 | 0.6 |
| 20-24.9 | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 |
| 25-29.9 | 2.0 | 1.5 | 0.0 | 3.2 | 1.6 | 0.8 |
| 30-34.9 | 14.9 | 11.1 | 0.1 | 12.4 | 8.7 | 7.9 |
| 35-39.9 | 12.2 | 12.7 | 0.3 | 12.9 | 13.7 | 13.7 |
| 40-44.9 | 10.4 | 10.4 | 0.8 | 11.0 | 10.3 | 10.2 |
| 45-45.9 | 6.7 | 3.6 | 0.5 | 6.6 | 3.1 | 2.7 |
| 46-46.9 | 1.2 | 1.7 | 0.3 | 1.5 | 2.0 | 2.1 |
| 47-47.9 | 2.2 | 2.8 | 0.5 | 2.5 | 3.3 | 2.6 |
| 48-48.9 | 2.9 | 2.6 | 0.6 | 2.4 | 3.2 | 2.1 |
| 49-49.9 | 5.0 | 2.9 | 2.1 | 3.9 | 3.7 | 3.2 |
| 50-54.9 | 10.9 | 14.3 | 48.3 | 13.1 | 15.7 | 16.1 |
| 55-59.9 | 10.5 | 10.8 | 17.0 | 9.5 | 10.5 | 11.9 |
| 60-64.9 | 6.4 | 8.6 | 11.0 | 6.6 | 8.4 | 9.9 |
| 65-69.9 | 5.0 | 5.0 | 4.8 | 4.7 | 4.5 | 4.4 |
| 70-74.9 | 2.7 | 3.5 | 3.9 | 2.6 | 3.2 | 3.2 |
| 75-79.9 | 2.1 | 2.3 | 2.8 | 2.0 | 2.1 | 2.4 |
| 80-84.9 | 1.2 | 1.5 | 1.9 | 1.1 | 1.5 | 1.7 |
| ≥85 | 3.0 | 4.0 | 4.4 | 2.9 | 3.7 | 4.1 |

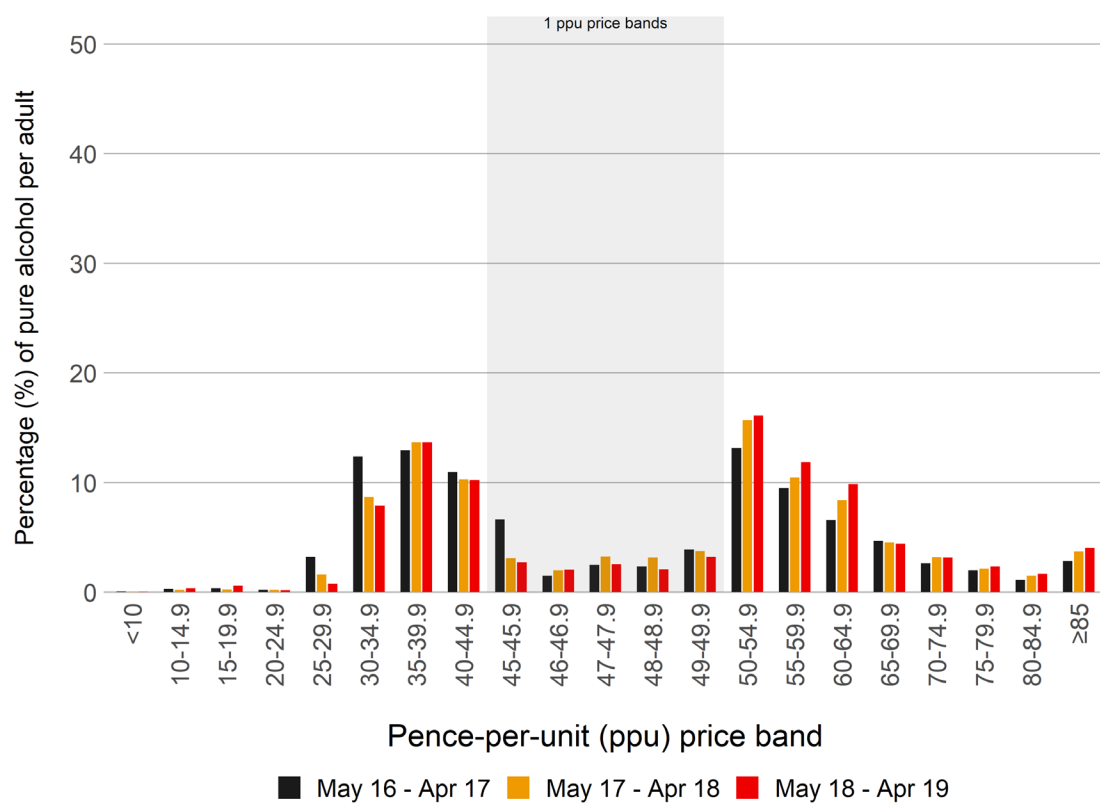
Note: 1 pence-per-unit price bands are used between 45 and 50ppu.

Figure 6: Estimated price distribution (%) of beer (litres of pure alcohol per adult) sold in the off-trade in Scotland, May 2016 to April 2019



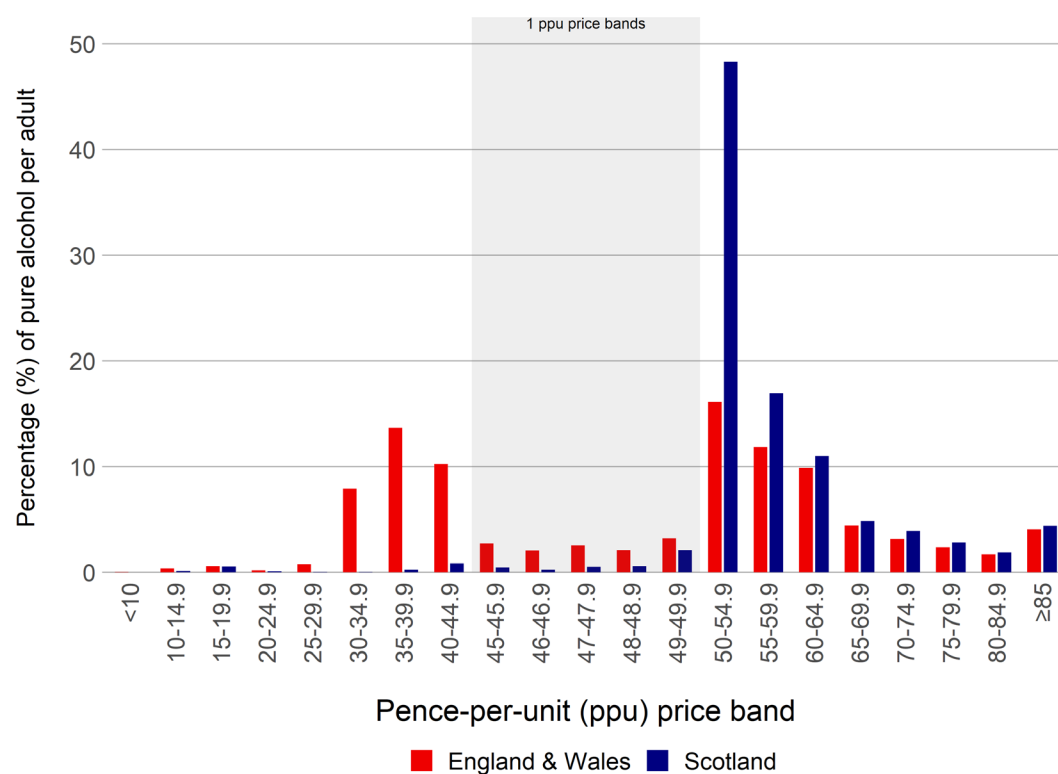
Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Figure 7: Estimated price distribution (%) of beer (litres of pure alcohol per adult) sold in the off-trade in England & Wales, May 2016 to April 2019



Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments.

Figure 8: Estimated price distribution (%) of beer (litres of pure alcohol per adult) sold in the off-trade, Scotland compared to England & Wales, May 2018 to April 2019



Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Spirits

Following the implementation of MUP, the price distribution for the volume of pure alcohol per adult sold as spirits through the off-trade in Scotland changed largely in line with the pattern for alcohol overall (Table 3, Figure 9). In the first 12 months after MUP was implemented, the proportion of off-trade spirits categorised above 50ppu increased notably. The 50 to 54.9ppu price band increased from 14.0% and 11.8% in the two years prior to account for 52.9% of the total post-implementation. There were also year-on-year increases in price bands of 55ppu and above, although post-implementation increases were in line with prior years.

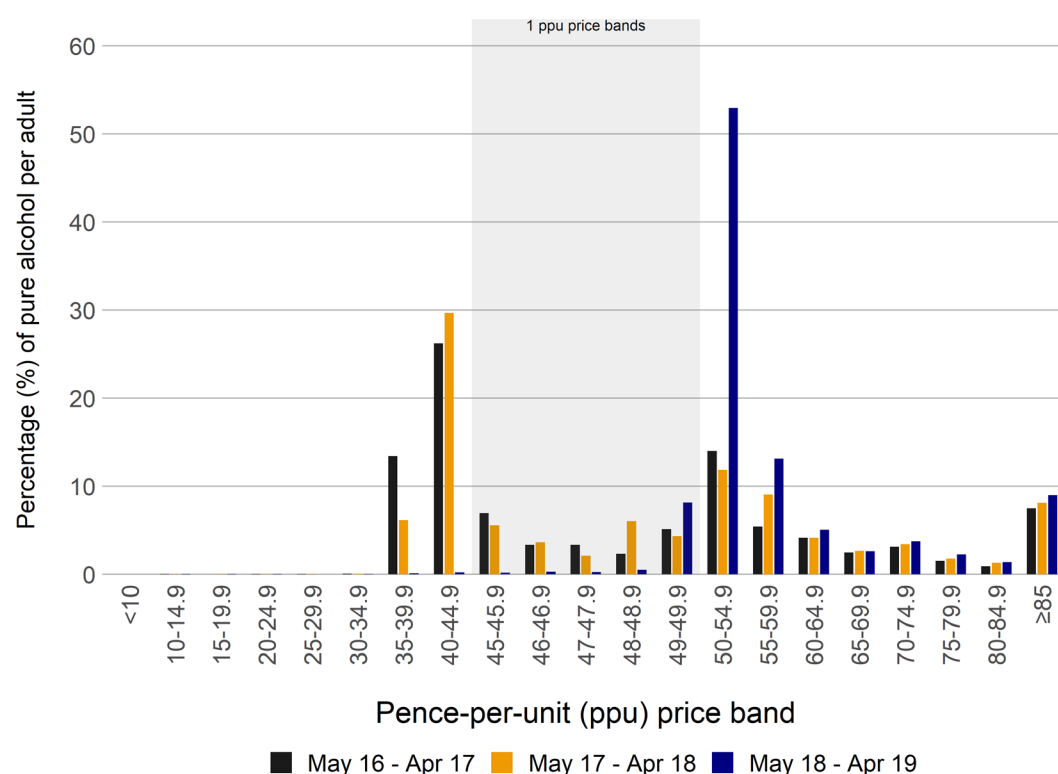
Table 3: Percentage (%) of spirits (litres of pure alcohol per adult) by price band, Scotland and England & Wales (E & W), May 2016 to April 2019

| Price Band | Scotland May 16 – Apr 17 | Scotland May 17 – Apr 18 | Scotland May 18 – Apr 19 (MUP) | E & W May 16 – Apr 17 | E & W May 17 – Apr 18 | E & W May 18 – Apr 19 |
|------------|--------------------------|--------------------------|--------------------------------|-----------------------|-----------------------|-----------------------|
| <10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-14.9 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| 15-19.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |
| 20-24.9 | 0.1 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| 25-29.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30-34.9 | 0.1 | 0.1 | 0.1 | 0.2 | 0.1 | 0.1 |
| 35-39.9 | 13.4 | 6.2 | 0.1 | 14.6 | 7.3 | 7.9 |
| 40-44.9 | 26.2 | 29.7 | 0.2 | 22.4 | 26.7 | 24.9 |
| 45-45.9 | 6.9 | 5.6 | 0.2 | 6.1 | 5.2 | 4.6 |
| 46-46.9 | 3.4 | 3.6 | 0.3 | 3.0 | 2.9 | 2.8 |
| 47-47.9 | 3.3 | 2.1 | 0.3 | 3.4 | 2.3 | 2.3 |
| 48-48.9 | 2.3 | 6.0 | 0.5 | 2.5 | 4.7 | 5.3 |
| 49-49.9 | 5.1 | 4.3 | 8.1 | 4.3 | 3.9 | 4.0 |
| 50-54.9 | 14.0 | 11.8 | 52.9 | 13.7 | 12.3 | 11.1 |
| 55-59.9 | 5.4 | 9.1 | 13.1 | 5.9 | 8.8 | 10.5 |
| 60-64.9 | 4.2 | 4.2 | 5.1 | 5.5 | 5.7 | 5.6 |
| 65-69.9 | 2.5 | 2.6 | 2.6 | 3.0 | 3.2 | 3.2 |
| 70-74.9 | 3.1 | 3.4 | 3.8 | 3.8 | 4.3 | 4.3 |
| 75-79.9 | 1.5 | 1.8 | 2.3 | 1.9 | 2.1 | 2.3 |
| 80-84.9 | 0.9 | 1.3 | 1.4 | 1.3 | 1.5 | 1.6 |
| ≥85 | 7.5 | 8.1 | 9.0 | 8.2 | 8.7 | 9.3 |

Note: 1 pence-per-unit price bands are used between 45 and 50ppu.

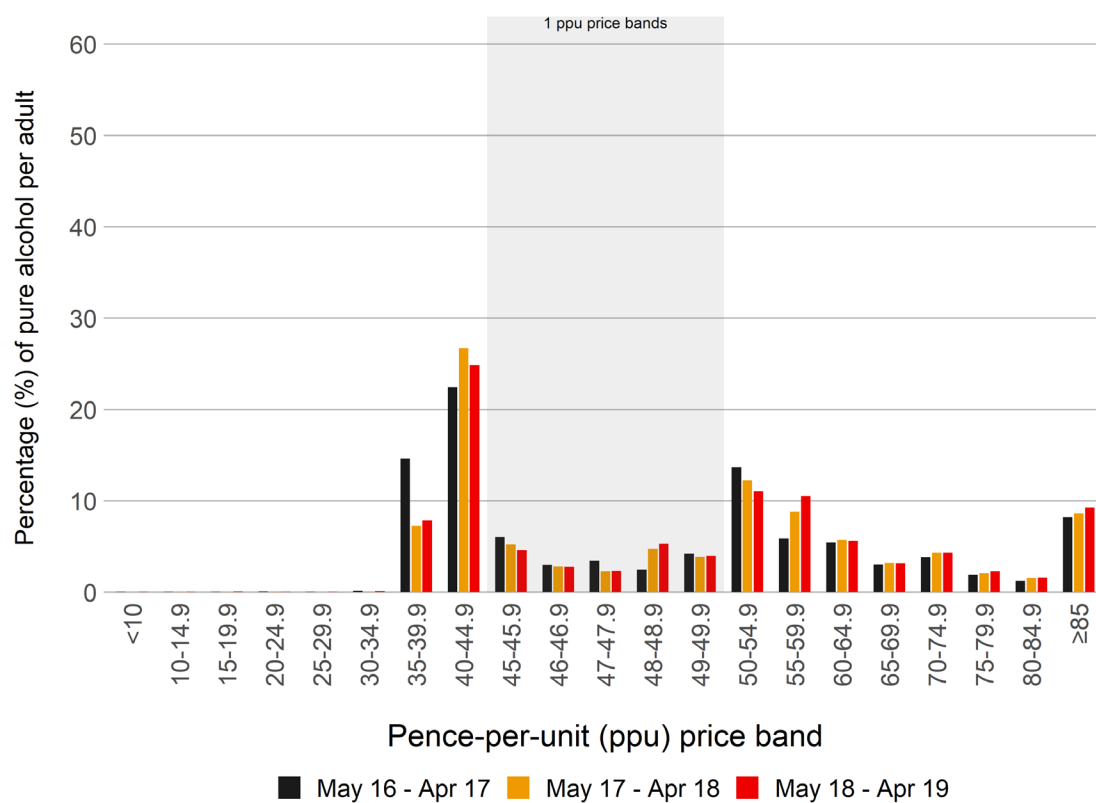
The price distribution of litres of pure alcohol per adult in off-trade spirits in England & Wales (Figure 10) was largely similar to pre-implementation Scotland. However, the price distributions were dissimilar for May 2018 to April 2019. For example, the highest proportion in England & Wales was in the 40 to 44.9ppu price band compared to the 50 to 54.9ppu price band in Scotland (Figure 11).

Figure 9: Estimated price distribution (%) of spirits (litres of pure alcohol per adult) sold in the off-trade in Scotland, May 2016 to April 2019



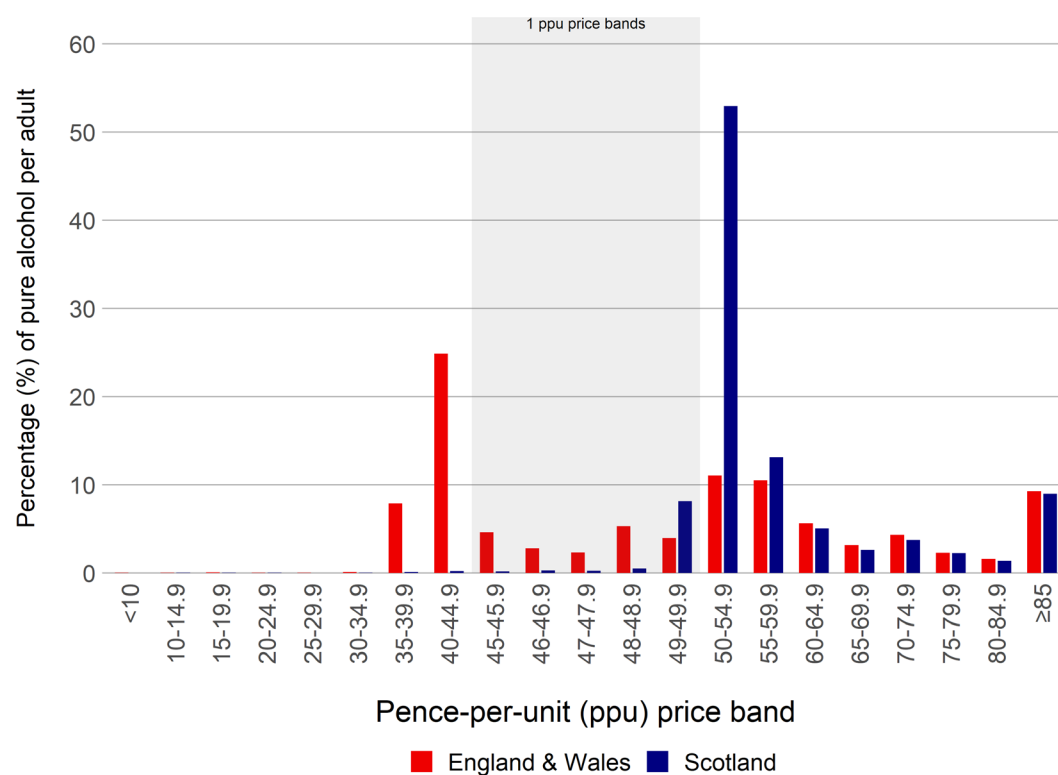
Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Figure 10: Estimated price distribution (%) of spirits (litres of pure alcohol per adult) sold in the off-trade in England & Wales, May 2016 to April 2019



Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments.

Figure 11: Estimated price distribution (%) of spirits (litres of pure alcohol per adult) sold in the off-trade, Scotland compared to England & Wales, May 2018 to April 2019



Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Wine

The change for the price distribution for the volume of pure alcohol per adult sold as wine through the off-trade in Scotland was less clear compared to total alcohol (Table 4). This was due to lower price bands accounting for smaller proportions prior to MUP implementation than other categories. However, the large proportions in the 40 to 49.9ppu price bands declined while the 50 to 64.9ppu price range in particular increased – from 42.6% and 40.9% in the two years prior to 54.8% post-implementation (Figure 12). Still wine constituted the majority of the wine category (86.0%).

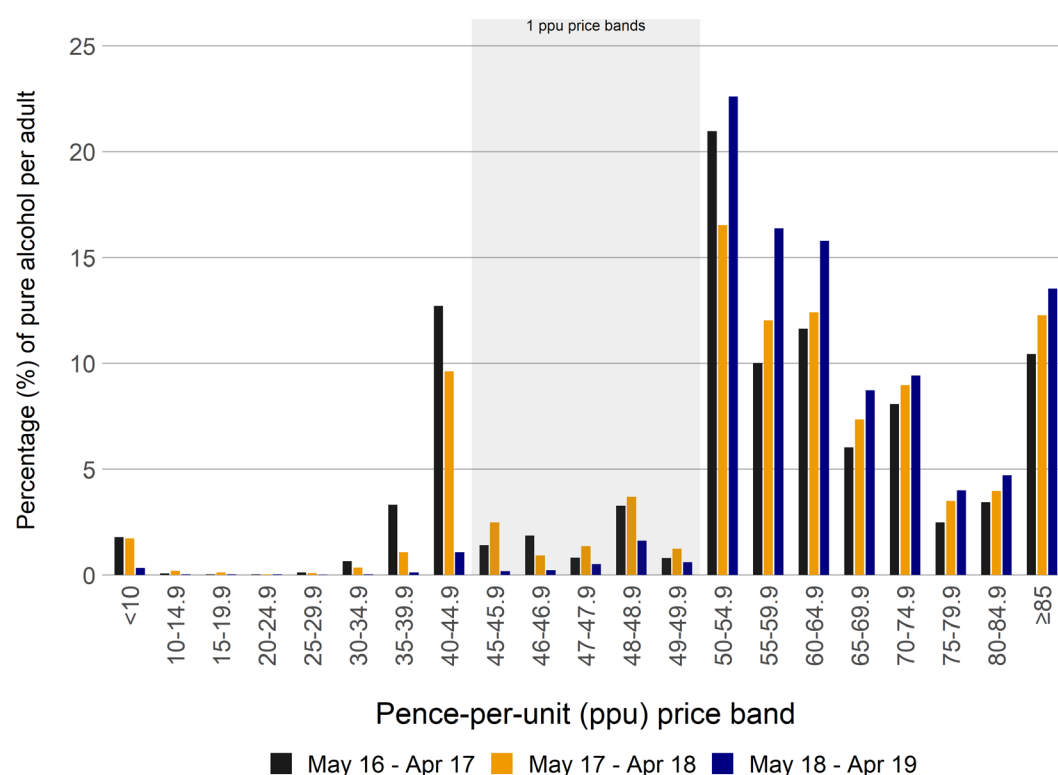
Table 4: Percentage (%) of wine (litres of pure alcohol per adult) by price band, Scotland and England & Wales (E & W), May 2016 to April 2019

| Price Band | Scotland May 16 – Apr 17 | Scotland May 17 – Apr 18 | Scotland May 18 – Apr 19 (MUP) | E & W May 16 – Apr 17 | E & W May 17 – Apr 18 | E & W May 18 – Apr 19 |
|------------|--------------------------|--------------------------|--------------------------------|-----------------------|-----------------------|-----------------------|
| <10 | 1.8 | 1.7 | 0.3 | 0.8 | 0.9 | 0.2 |
| 10-14.9 | 0.1 | 0.2 | 0.0 | 0.3 | 0.3 | 0.1 |
| 15-19.9 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.0 |
| 20-24.9 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| 25-29.9 | 0.1 | 0.1 | 0.0 | 0.1 | 0.0 | 0.0 |
| 30-34.9 | 0.7 | 0.3 | 0.0 | 0.8 | 0.4 | 0.3 |
| 35-39.9 | 3.3 | 1.1 | 0.1 | 2.8 | 1.4 | 1.2 |
| 40-44.9 | 12.7 | 9.6 | 1.1 | 12.1 | 8.6 | 6.1 |
| 45-45.9 | 1.4 | 2.5 | 0.2 | 1.8 | 2.8 | 2.3 |
| 46-46.9 | 1.9 | 0.9 | 0.2 | 1.9 | 1.9 | 1.9 |
| 47-47.9 | 0.8 | 1.4 | 0.5 | 1.5 | 1.7 | 1.4 |
| 48-48.9 | 3.3 | 3.7 | 1.6 | 3.3 | 2.5 | 2.3 |
| 49-49.9 | 0.8 | 1.2 | 0.6 | 1.5 | 2.0 | 1.6 |
| 50-54.9 | 21.0 | 16.5 | 22.6 | 18.6 | 15.6 | 15.4 |
| 55-59.9 | 10.0 | 12.0 | 16.4 | 10.1 | 11.3 | 12.4 |
| 60-64.9 | 11.6 | 12.4 | 15.8 | 11.3 | 12.5 | 13.3 |
| 65-69.9 | 6.0 | 7.4 | 8.7 | 6.5 | 7.7 | 8.5 |
| 70-74.9 | 8.1 | 9.0 | 9.4 | 7.5 | 8.5 | 9.0 |
| 75-79.9 | 2.5 | 3.5 | 4.0 | 2.9 | 3.8 | 4.2 |
| 80-84.9 | 3.4 | 4.0 | 4.7 | 3.9 | 4.2 | 4.5 |
| ≥85 | 10.4 | 12.3 | 13.5 | 12.0 | 13.7 | 15.1 |

Note: 1 pence-per-unit price bands are used between 45 and 50ppu.

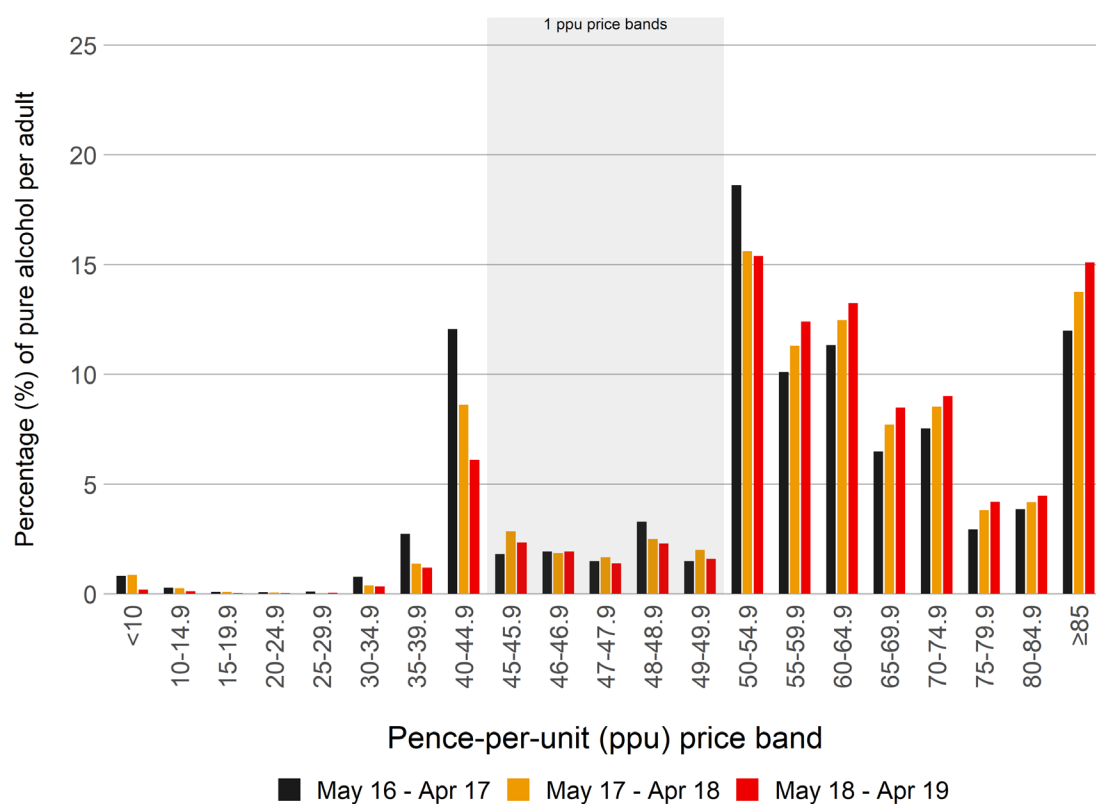
Similar to Scotland in the two years prior to implementation, the majority of off-trade wine in England & Wales was categorised above 40ppu (Figure 13). However, where the price distribution of off-trade wine changed in Scotland after MUP was implemented, this was not the case for England & Wales. England and Wales had smaller proportions in the 50 to 64.9ppu price range than Scotland, with the proportion in England & Wales accounting for 41.1% compared to the 54.8% Scotland (Figure 14). Scotland and England & Wales had similar proportions in price bands above 65ppu.

Figure 12: Estimated price distribution (%) of wine (litres of pure alcohol per adult) sold in the off-trade in Scotland, May 2016 to April 2019



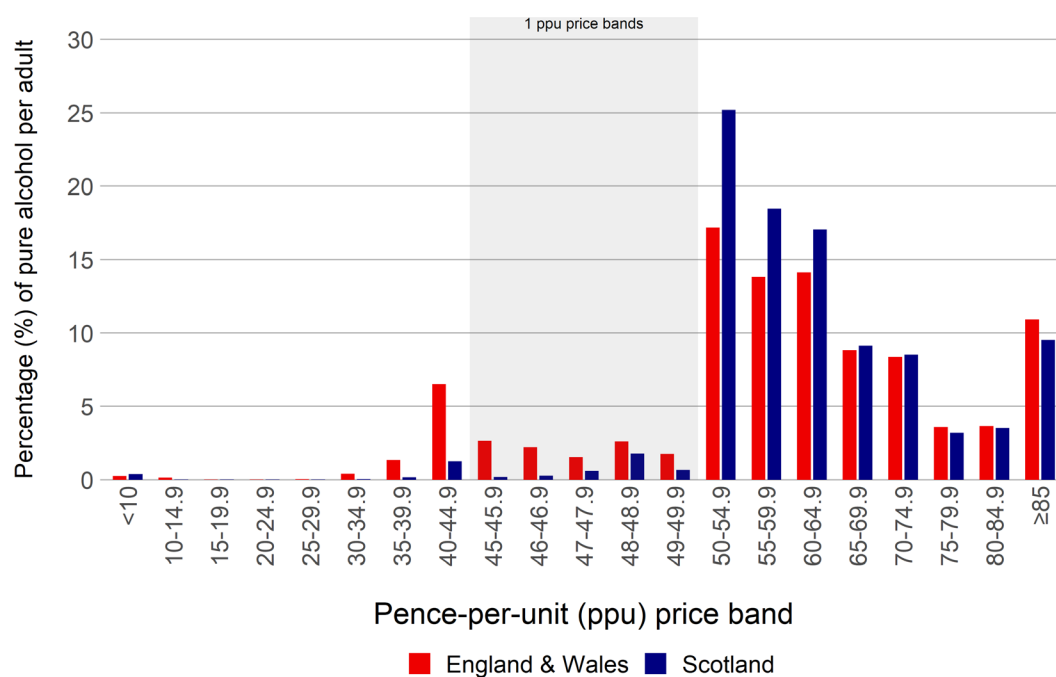
Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Figure 13: Estimated price distribution (%) of wine (litres of pure alcohol per adult) sold in the off-trade in England & Wales, May 2016 to April 2019



Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments.

Figure 14: Estimated price distribution (%) of wine (litres of pure alcohol per adult) sold in the off-trade, Scotland compared to England & Wales, May 2018 to April 2019



Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Cider

The change in the price distribution for the volume of pure alcohol per adult sold as cider through the off-trade was similar to total alcohol (Table 5, Figure 15). The proportion sold in the 50 to 59.9ppu price range increased, from 9.2% and 11.9% in the two years prior to implementation to 59.8% post-implementation. This relatively large increase reflects how cider also had relatively high proportions at lower prices prior to MUP implementation. Off-trade cider did not consistently see year-on-year increases in price bands above 60ppu – some price bands above 60ppu declined in size between May 2016 to April 2017 and May 2017 to April 2018. However, post-implementation proportions were the highest in each price band.

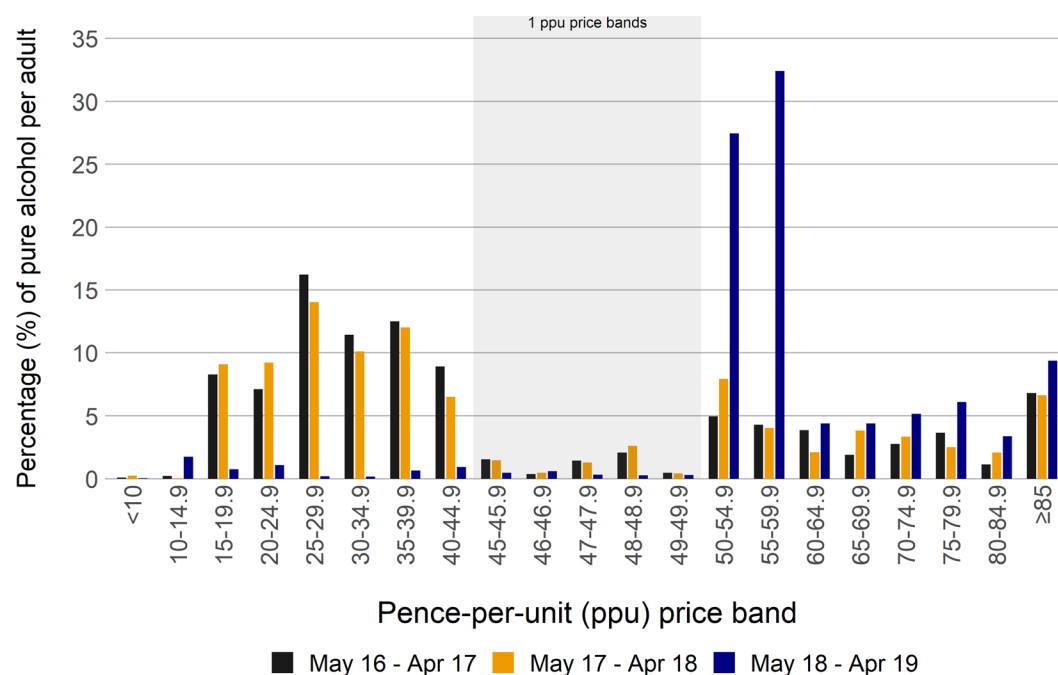
Most off-trade cider in England & Wales across the time series was categorised below 50ppu, with the 25 to 29.9ppu price band being the largest (Figure 16). This was similar to Scotland pre-MUP implementation. However, England & Wales contrast to Scotland post-implementation, with only 13.3% in the 50 to 59.9ppu price band compared to 59.8% in Scotland (Figure 17).

Table 5: Percentage (%) of cider (litres of pure alcohol per adult) by price band, Scotland and England & Wales (E & W), May 2016 to April 2019

| Price Band | Scotland May 16 – Apr 17 | Scotland May 17 – Apr 18 | Scotland May 18 – Apr 19 (MUP) | E & W May 16 – Apr 17 | E & W May 17 – Apr 18 | E & W May 18 – Apr 19 |
|-------------------|---------------------------------|---------------------------------|---------------------------------------|----------------------------------|----------------------------------|----------------------------------|
| <10 | 0.1 | 0.2 | 0.1 | 0.9 | 0.9 | 0.6 |
| 10-14.9 | 0.2 | 0.0 | 1.7 | 0.3 | 0.2 | 0.2 |
| 15-19.9 | 8.3 | 9.1 | 0.7 | 7.2 | 6.0 | 5.3 |
| 20-24.9 | 7.1 | 9.2 | 1.1 | 8.9 | 9.4 | 9.1 |
| 25-29.9 | 16.2 | 14.0 | 0.2 | 15.4 | 12.7 | 14.2 |
| 30-34.9 | 11.4 | 10.1 | 0.1 | 10.9 | 12.8 | 10.5 |
| 35-39.9 | 12.5 | 12.0 | 0.6 | 9.5 | 9.5 | 8.8 |
| 40-44.9 | 8.9 | 6.5 | 0.9 | 10.4 | 10.1 | 9.9 |
| 45-45.9 | 1.6 | 1.5 | 0.5 | 1.9 | 1.6 | 1.9 |
| 46-46.9 | 0.4 | 0.5 | 0.6 | 0.7 | 0.7 | 0.8 |
| 47-47.9 | 1.4 | 1.3 | 0.3 | 2.2 | 1.4 | 1.3 |
| 48-48.9 | 2.1 | 2.6 | 0.3 | 1.2 | 1.2 | 1.6 |
| 49-49.9 | 0.4 | 0.4 | 0.3 | 0.6 | 0.6 | 1.0 |
| 50-54.9 | 4.9 | 7.9 | 27.4 | 5.5 | 7.4 | 8.8 |
| 55-59.9 | 4.3 | 4.0 | 32.4 | 4.1 | 4.0 | 4.5 |
| 60-64.9 | 3.9 | 2.1 | 4.4 | 3.5 | 1.4 | 1.7 |
| 65-69.9 | 1.9 | 3.8 | 4.4 | 2.3 | 3.9 | 3.0 |
| 70-74.9 | 2.8 | 3.3 | 5.1 | 2.7 | 3.5 | 3.4 |
| 75-79.9 | 3.6 | 2.5 | 6.1 | 3.5 | 3.7 | 4.6 |
| 80-84.9 | 1.1 | 2.1 | 3.4 | 2.1 | 2.5 | 2.2 |
| ≥85 | 6.8 | 6.7 | 9.4 | 6.3 | 6.6 | 6.7 |

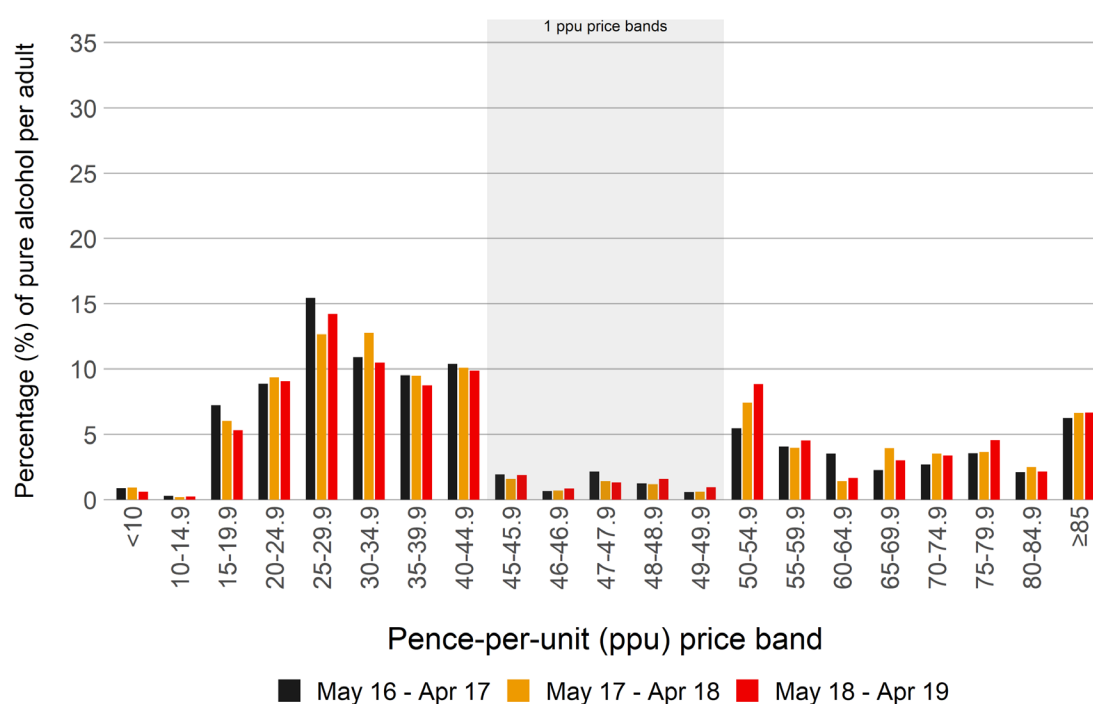
Note: 1 pence-per-unit price bands are used between 45 and 50ppu.

Figure 15: Estimated price distribution (%) of cider (litres of pure alcohol per adult) sold in the off-trade in Scotland, May 2016 to April 2019



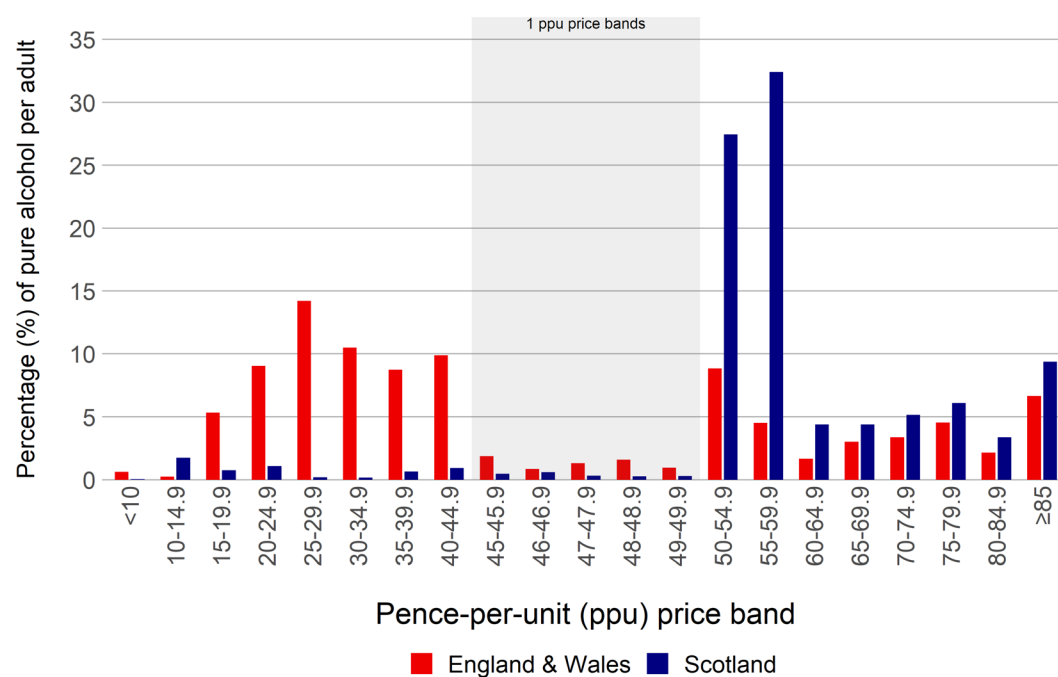
Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Figure 16: Estimated price distribution (%) of cider (litres of pure alcohol per adult) sold in the off-trade in England & Wales, May 2016 to April 2019



Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments.

Figure 17: Estimated price distribution (%) of cider (litres of pure alcohol per adult) sold in the off-trade, Scotland compared to England & Wales, May 2018 to April 2019



Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Fortified wine

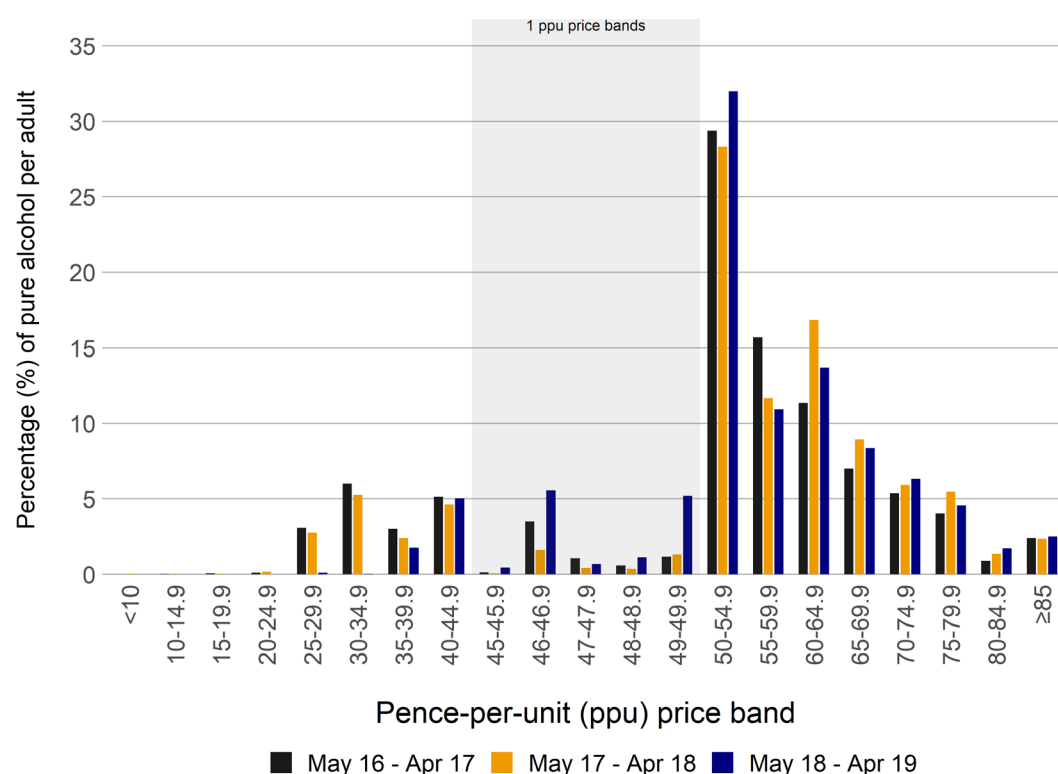
The price distribution for the volume of pure alcohol per adult sold as fortified wine through the off-trade in Scotland did not change after MUP was implemented (Table 6, Figure 18). Fortified wine also had a very different price distribution in England & Wales compared to Scotland for the whole time series (Figure 19 and Figure 20). For example, the estimated proportion in the 50 to 59.9ppu price range for each year in England & Wales was 18.0%, 18.9%, and 18.6% respectively, compared to 45.1%, 40.0%, and 42.9% in Scotland.

Table 6: Percentage (%) of fortified wine (litres of pure alcohol per adult) by price band, Scotland and England & Wales (E & W), May 2016 to April 2019

| Price Band | Scotland May 16 – Apr 17 | Scotland May 17 – Apr 18 | Scotland May 18 – Apr 19 (MUP) | E & W May 16 – Apr 17 | E & W May 17 – Apr 18 | E & W May 18 – Apr 19 |
|------------|--------------------------|--------------------------|--------------------------------|-----------------------|-----------------------|-----------------------|
| <10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 10-14.9 | 0.0 | 0.1 | 0.0 | 0.1 | 0.1 | 0.2 |
| 15-19.9 | 0.1 | 0.0 | 0.0 | 0.2 | 0.0 | 0.1 |
| 20-24.9 | 0.1 | 0.2 | 0.0 | 0.7 | 0.3 | 0.4 |
| 25-29.9 | 3.1 | 2.7 | 0.1 | 11.1 | 10.0 | 8.1 |
| 30-34.9 | 6.0 | 5.2 | 0.0 | 15.3 | 15.5 | 15.9 |
| 35-39.9 | 3.0 | 2.4 | 1.8 | 8.1 | 7.5 | 5.7 |
| 40-44.9 | 5.1 | 4.6 | 5.0 | 13.8 | 13.6 | 12.9 |
| 45-45.9 | 0.1 | 0.1 | 0.5 | 0.4 | 0.6 | 1.1 |
| 46-46.9 | 3.5 | 1.6 | 5.6 | 0.9 | 0.6 | 0.6 |
| 47-47.9 | 1.1 | 0.4 | 0.7 | 1.5 | 1.0 | 1.2 |
| 48-48.9 | 0.6 | 0.4 | 1.1 | 0.5 | 0.3 | 0.2 |
| 49-49.9 | 1.2 | 1.3 | 5.2 | 1.4 | 0.5 | 0.5 |
| 50-54.9 | 29.4 | 28.3 | 32.0 | 10.5 | 12.2 | 9.5 |
| 55-59.9 | 15.7 | 11.7 | 10.9 | 7.5 | 6.7 | 9.1 |
| 60-64.9 | 11.4 | 16.8 | 13.7 | 7.9 | 7.5 | 9.3 |
| 65-69.9 | 7.0 | 8.9 | 8.4 | 2.4 | 3.7 | 3.6 |
| 70-74.9 | 5.4 | 5.9 | 6.3 | 5.8 | 5.8 | 5.5 |
| 75-79.9 | 4.0 | 5.5 | 4.6 | 3.4 | 3.7 | 4.4 |
| 80-84.9 | 0.9 | 1.3 | 1.7 | 1.2 | 1.8 | 1.6 |
| ≥85 | 2.4 | 2.4 | 2.5 | 7.3 | 8.4 | 10.2 |

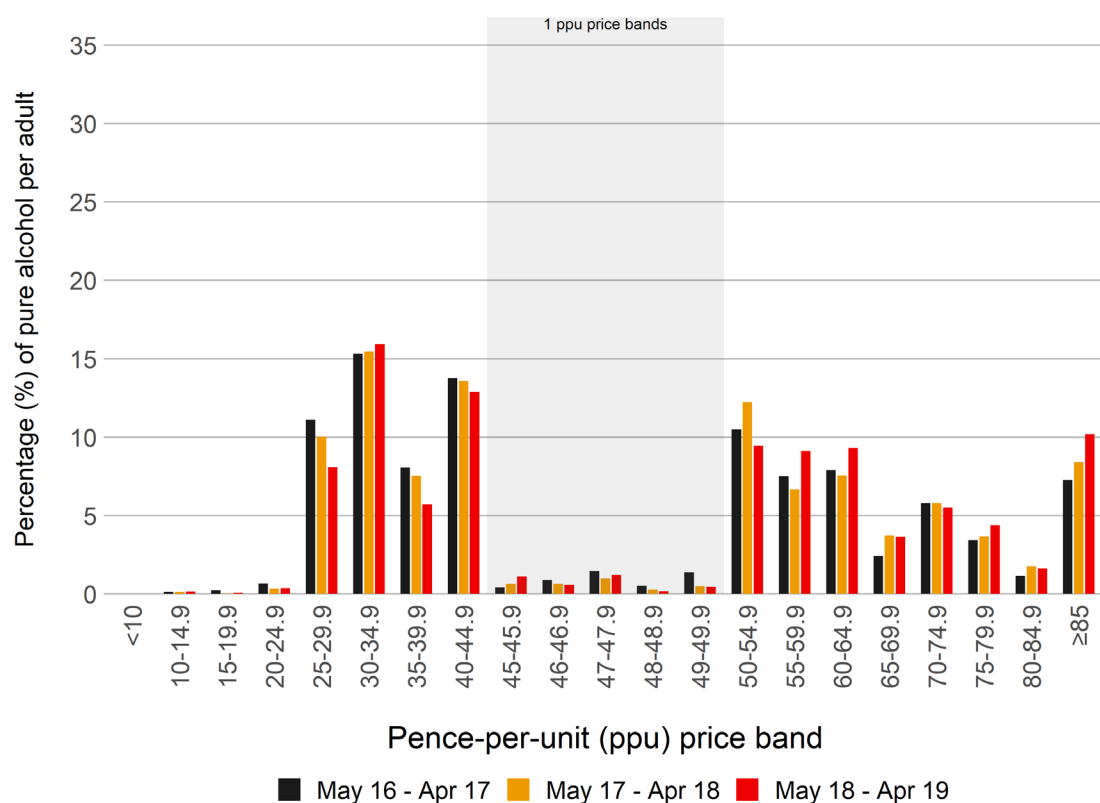
Note: 1 pence-per-unit price bands are used between 45 and 50ppu.

Figure 18: Estimated price distribution (%) of fortified wine (litres of pure alcohol per adult) sold in the off-trade in Scotland, May 2016 to April 2019



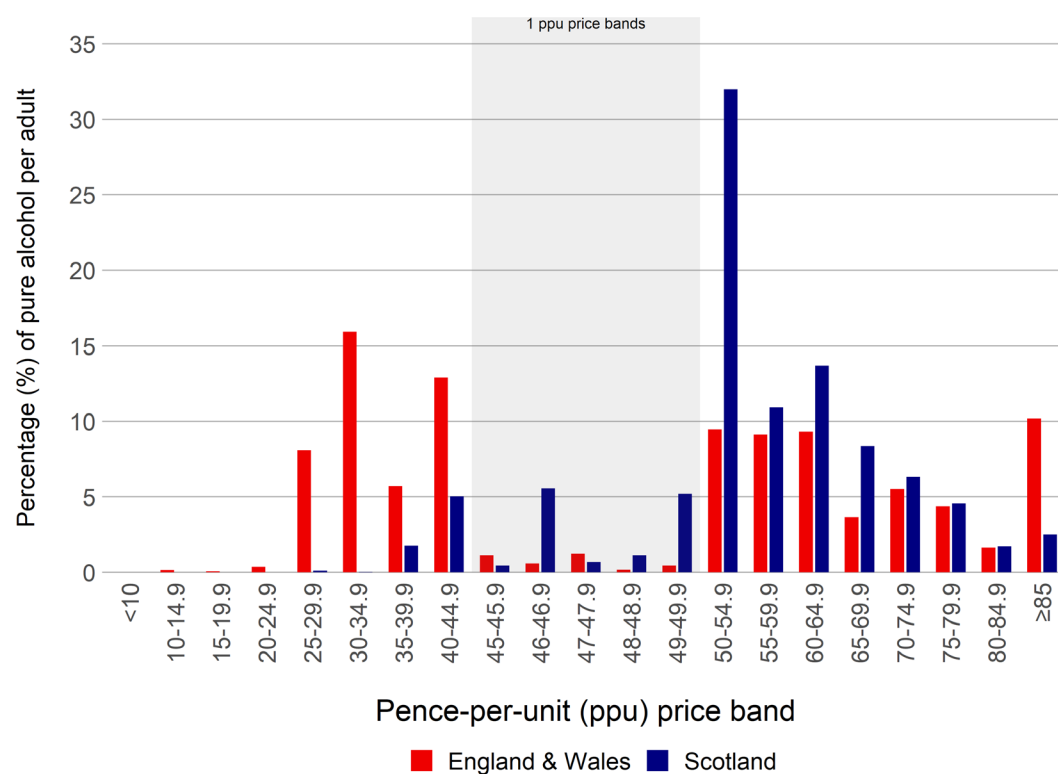
Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Figure 19: Estimated price distribution (%) of fortified wine (litres of pure alcohol per adult) sold in the off-trade in England & Wales, May 2016 to April 2019



Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments.

Figure 20: Estimated price distribution (%) of fortified wine (litres of pure alcohol per adult) sold in the off-trade, Scotland compared to England & Wales, May 2018 to April 2019



Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

RTDs

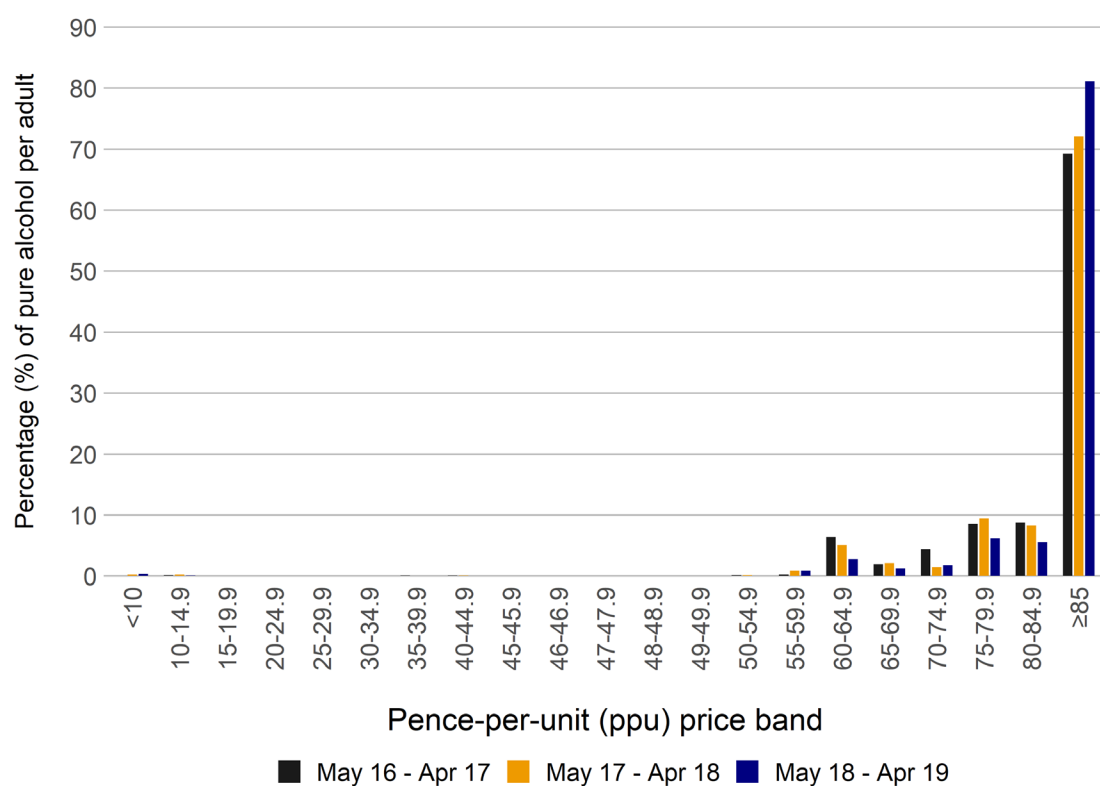
The price distribution for the volume of pure alcohol per adult sold as RTDs through the off-trade is dissimilar to other categories (Table 7 and Figure 21). In both of the two years immediately prior to MUP, more than 98% of the distribution was over 60ppu, with the ≥ 85 ppu price band alone accounting for 69.3% and 72.1% respectively. The distribution was largely similar post-implementation, although the proportion of pure alcohol sold in the ≥ 85 ppu price band increased to 81.1%, while the proportion in all other price bands decreased slightly. The price distribution of RTDs in England & Wales was similar to Scotland over the whole time series, with the proportion above 85ppu accounting for the majority in each instance (Figure 22 and Figure 23). For example, in May 2018 to April 2019 in England & Wales, 77.6%, of the total was in the ≥ 85 ppu price band compared to 81.1% in Scotland.

Table 7: Percentage (%) of RTDs (litres of pure alcohol per adult) by price band, Scotland and England & Wales (E & W), May 2016 to April 2019

| Price Band | Scotland May 16 – Apr 17 | Scotland May 17 – Apr 18 | Scotland May 18 – Apr 19 (MUP) | E & W May 16 – Apr 17 | E & W May 17 – Apr 18 | E & W May 18 – Apr 19 |
|-------------------|---------------------------------|---------------------------------|---------------------------------------|----------------------------------|----------------------------------|----------------------------------|
| <10 | 0.0 | 0.2 | 0.4 | 0.0 | 0.2 | 0.3 |
| 10-14.9 | 0.1 | 0.2 | 0.1 | 0.5 | 0.4 | 0.1 |
| 15-19.9 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.1 |
| 20-24.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 25-29.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 30-34.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 35-39.9 | 0.1 | 0.0 | 0.0 | 0.1 | 0.0 | 0.0 |
| 40-44.9 | 0.1 | 0.1 | 0.0 | 0.2 | 0.1 | 0.1 |
| 45-45.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 46-46.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 47-47.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 48-48.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 49-49.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 50-54.9 | 0.1 | 0.1 | 0.0 | 0.1 | 0.2 | 0.2 |
| 55-59.9 | 0.3 | 0.9 | 0.9 | 0.3 | 1.0 | 0.5 |
| 60-64.9 | 6.4 | 5.1 | 2.7 | 5.2 | 4.2 | 2.5 |
| 65-69.9 | 1.9 | 2.1 | 1.2 | 4.0 | 2.8 | 2.5 |
| 70-74.9 | 4.3 | 1.4 | 1.8 | 4.4 | 2.8 | 2.2 |
| 75-79.9 | 8.6 | 9.4 | 6.2 | 7.1 | 6.5 | 4.8 |
| 80-84.9 | 8.8 | 8.3 | 5.5 | 10.4 | 8.7 | 9.0 |
| ≥85 | 69.3 | 72.1 | 81.1 | 67.4 | 72.8 | 77.6 |

Note: 1 pence-per-unit price bands are used between 45 and 50ppu.

Figure 21: Estimated price distribution (%) of RTDs (litres of pure alcohol per adult) sold in the off-trade in Scotland, May 2016 to April 2019



Note: Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Figure 22: Estimated price distribution (%) of RTDs (litres of pure alcohol per adult) sold in the off-trade in England & Wales, May 2016 to April 2019

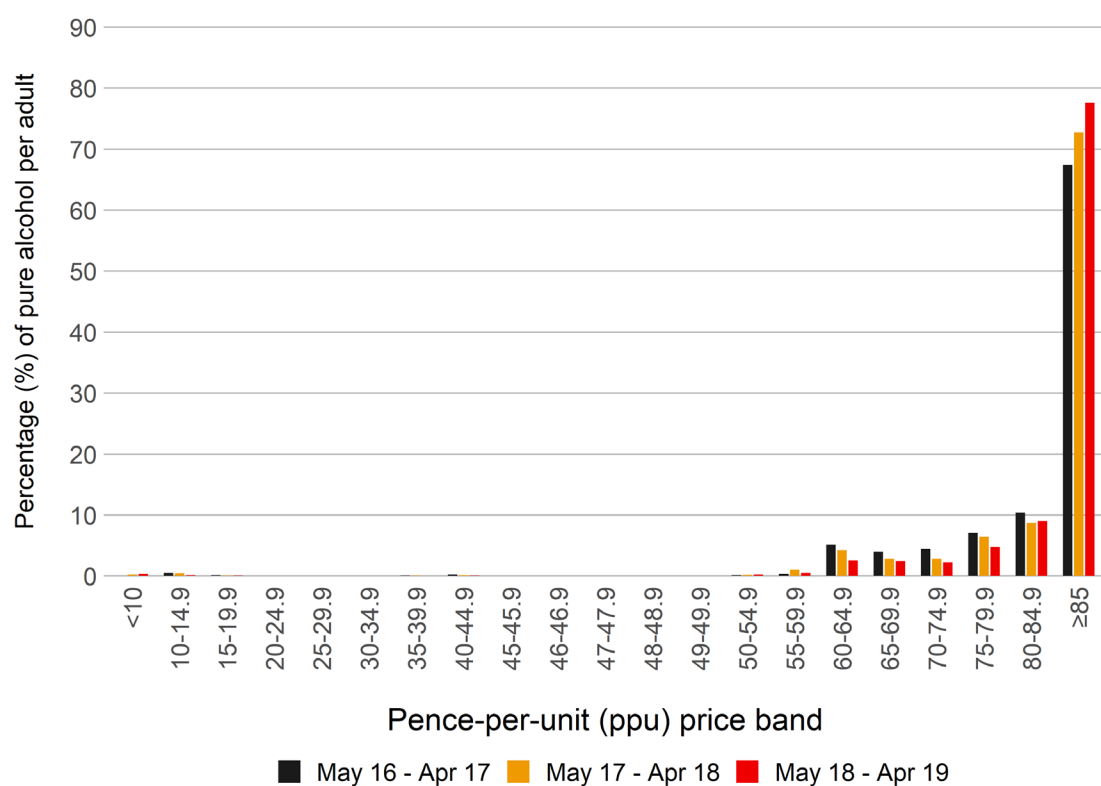
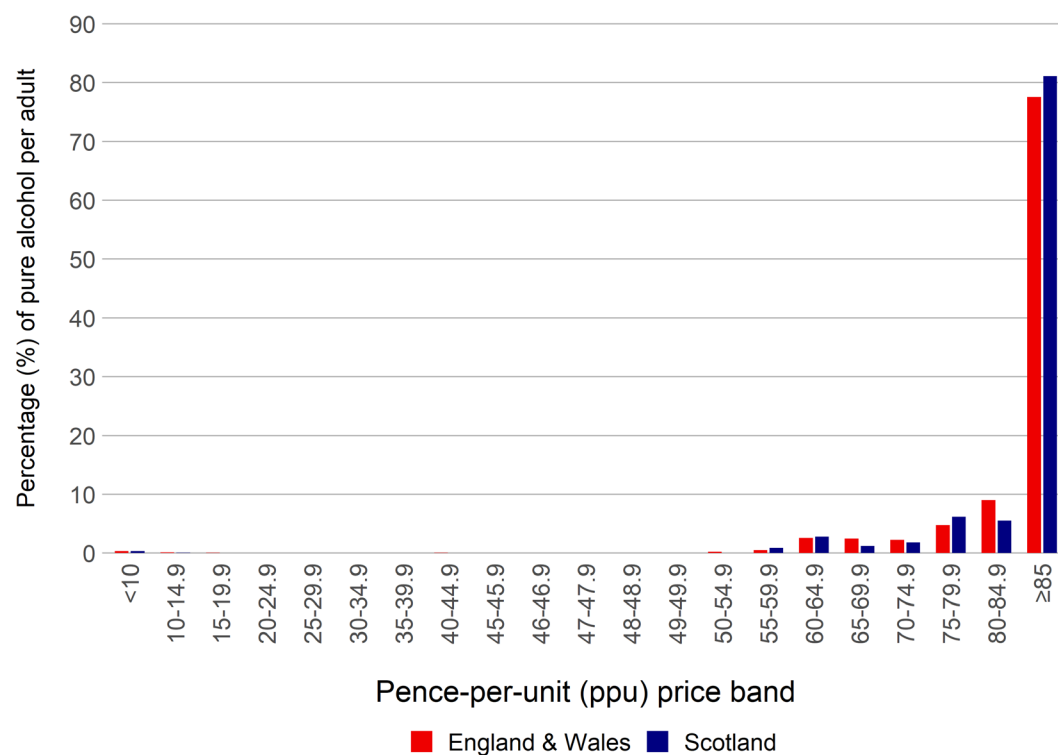


Figure 23: Estimated price distribution (%) of RTDs (litres of pure alcohol per adult) sold in the off-trade, Scotland compared to England & Wales, May 2018 to April 2019



Note: Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Perry

The price distribution for the volume of pure alcohol per adult sold as perry through the off-trade changed markedly following the implementation of MUP. (Table 8, Figure 24). Prior to MUP being implemented, the majority of perry was sold between 15 and 44.9ppu, compared to 50 and 69.9ppu after implementation. Almost no perry was sold above 75ppu in any of the three years included in the study.

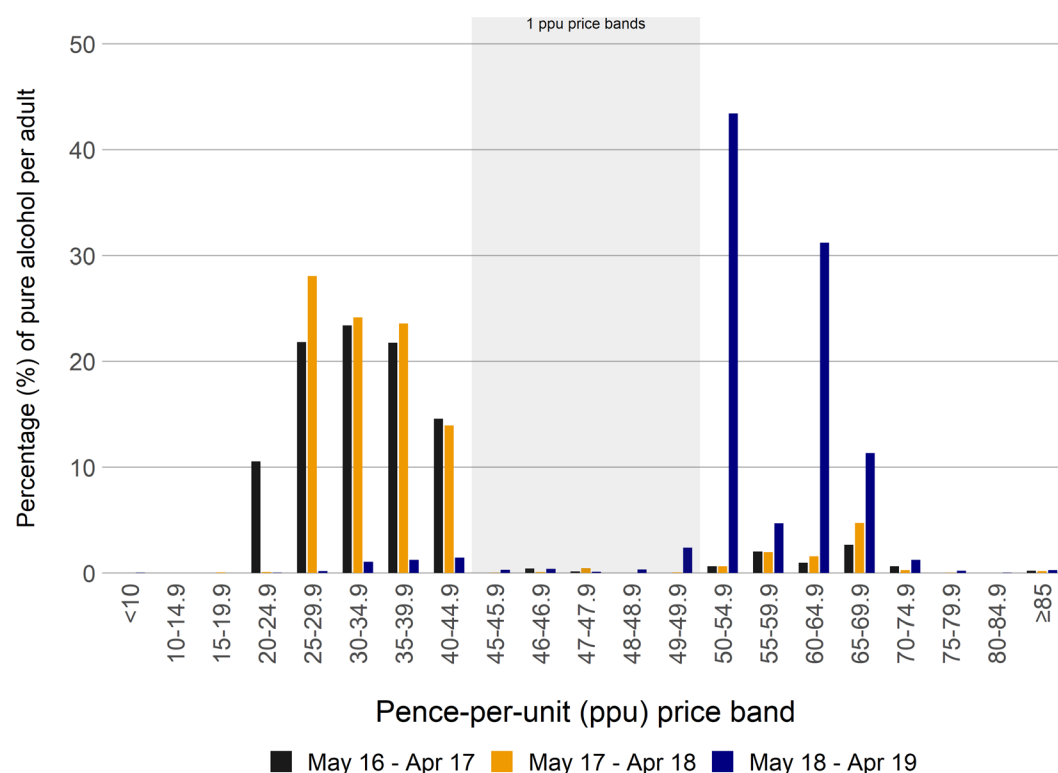
Across the whole time series, most perry in England & Wales was categorised between 15 and 45ppu (Figure 25). This was similar to Scotland prior to implementation. However, England & Wales were markedly different to post-implementation Scotland over the same time period with most perry categorised between 25 and 45 ppu, compared to 50 and 74.9ppu in Scotland (Figure 26).

Table 8: Percentage (%) of perry (litres of pure alcohol per adult) by price band, Scotland and England & Wales (E & W), May 2016 to April 2019

| Price Band | Scotland May 16 – Apr 17 | Scotland May 17 – Apr 18 | Scotland May 18 – Apr 19 (MUP) | E & W May 16 – Apr 17 | E & W May 17 – Apr 18 | E & W May 18 – Apr 19 |
|------------|--------------------------|--------------------------|--------------------------------|-----------------------|-----------------------|-----------------------|
| <10 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.0 |
| 10-14.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 15-19.9 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |
| 20-24.9 | 10.5 | 0.1 | 0.0 | 9.5 | 0.5 | 0.1 |
| 25-29.9 | 21.8 | 28.1 | 0.2 | 25.0 | 29.0 | 24.2 |
| 30-34.9 | 23.4 | 24.1 | 1.0 | 25.0 | 28.3 | 30.8 |
| 35-39.9 | 21.8 | 23.6 | 1.2 | 21.3 | 23.1 | 26.5 |
| 40-44.9 | 14.6 | 14.0 | 1.4 | 11.3 | 11.6 | 10.9 |
| 45-45.9 | 0.0 | 0.0 | 0.3 | 0.1 | 0.2 | 0.1 |
| 46-46.9 | 0.4 | 0.1 | 0.4 | 0.7 | 0.2 | 0.9 |
| 47-47.9 | 0.2 | 0.5 | 0.1 | 0.3 | 0.5 | 0.3 |
| 48-48.9 | 0.0 | 0.0 | 0.3 | 0.0 | 0.1 | 0.0 |
| 49-49.9 | 0.0 | 0.1 | 2.4 | 0.2 | 0.1 | 0.1 |
| 50-54.9 | 0.6 | 0.7 | 43.4 | 1.4 | 0.8 | 0.7 |
| 55-59.9 | 2.0 | 2.0 | 4.7 | 1.4 | 1.4 | 1.1 |
| 60-64.9 | 1.0 | 1.6 | 31.2 | 0.8 | 1.2 | 0.9 |
| 65-69.9 | 2.7 | 4.7 | 11.3 | 2.0 | 2.3 | 2.5 |
| 70-74.9 | 0.7 | 0.3 | 1.2 | 0.6 | 0.3 | 0.4 |
| 75-79.9 | 0.0 | 0.0 | 0.2 | 0.1 | 0.1 | 0.1 |
| 80-84.9 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.0 |
| ≥85 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 |

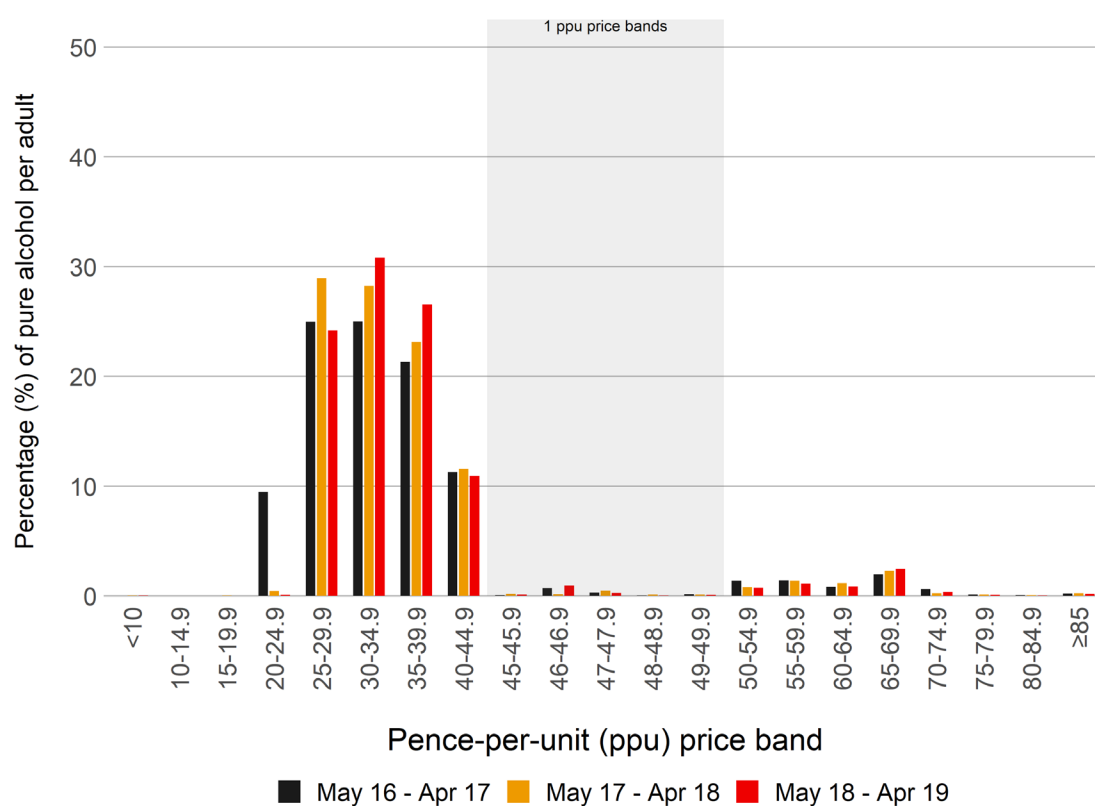
Note: 1 pence-per-unit price bands are used between 45 and 50ppu.

Figure 24: Estimated price distribution (%) of perry (litres of pure alcohol per adult) sold in the off-trade in Scotland, May 2016 to April 2019



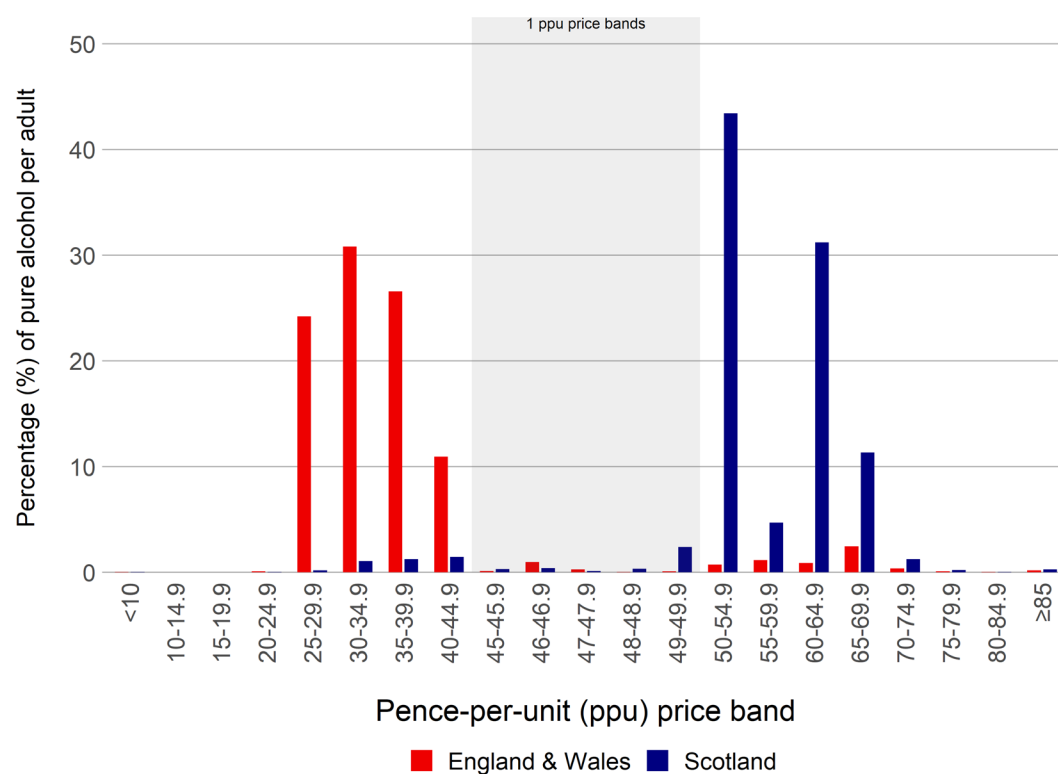
Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Figure 25: Estimated price distribution (%) of perry (litres of pure alcohol per adult) sold in the off-trade in England & Wales, May 2016 to April 2019



Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Figure 26: Estimated price distribution (%) of perry (litres of pure alcohol per adult) sold in the off-trade, Scotland compared to England & Wales, May 2018 to April 2019



Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Discussion

Principal findings

The price distribution of the volume of pure alcohol sold per adult through the off-trade in Scotland changed markedly with the implementation of MUP. Most notable was a sharp increase in the 50 to 59.9ppu price range and a smaller increase in the 60 to 64.9ppu band; this price range in total accounted for almost two-thirds (65.3%) of the volume of pure alcohol sold in Scotland following the implementation of MUP. Increases in price bands above 64.9ppu were much smaller and were in line with increases between previous years.

England & Wales were used as a comparator and had a similar price distribution to Scotland prior to MUP being implemented. However, the price distribution in Scotland post-implementation was markedly different to that in England & Wales over the same time period, with the estimated proportion of pure alcohol being sold in the 50 to 64.9ppu price range in Scotland (65.3%) being approximately double that in England & Wales (33.6%). However, proportions in price bands above 65ppu were similar between England & Wales and post-implementation Scotland.

In the first 12 months after MUP was implemented in Scotland, most drink categories reflected a similar price distribution to that seen for total alcohol. This was especially true for beer, spirits, cider, and perry. For wine, while there were increases in the proportion of alcohol sold in the 50 to 64.9ppu price range, these changes were comparatively small, reflecting how wine tended towards this price range pre-MUP. The price distribution for RTDs and fortified wine in Scotland did not noticeably change.

Strengths and limitations

Electronic sales data such as those used here are the most robust available measures of off-trade alcohol sales. As the data for England & Wales were collected in the same way, we have been able to contrast the price distribution of off-trade alcohol sold in Scotland following the implementation of MUP with a valid geographical comparator.

A key limitation of these data is that, because of both methodological and other factors, a degree of price band misallocation will occur. This is of particular importance in the Scottish data where misallocation may misrepresent a product priced at (or even slightly above) 50ppu as being non-compliant with the legislation. Of the 7.5% below the price floor after MUP was implemented, almost half (3.5%) was within one penny of 50ppu.

Information provided by Nielsen suggests that a key reason for misallocation is products being assigned to a pence-per-unit price band using a category average ABV (approximately 70% of wine by natural volume and approximately 20% of other drink categories by natural volume, including all own brand products). Thus, these products may be allocated to a price band based on an ABV that is higher than the actual ABV, resulting in misallocation to a lower pence-per-unit price band. This can be illustrated if we take gin as an example. Nielsen applies a category average ABV of 38%, based on the sales-weighted average, when calculating the price per unit of alcohol. However gin may be sold at a minimum ABV of 37.5%. If a 70cl gin product with 37.5% ABV was priced at exactly 50ppu, but the category average 38% ABV was applied during allocation, that product would mistakenly appear to cost 49.4ppu. While using Nielsen's current methodology to calculate the price per unit means that the majority of branded products will be correctly allocated to a price band, this margin of error is an important limitation.

Another important issue which affects calculations of the price at which a product is sold is the splitting of multipacks into individual items. Some retailers may split a multipack into its individual items and sell them at an appropriate price for a single item (note that, under the Alcohol (Minimum Pricing) (Scotland) Act 2012, a

multipack cannot be sold for less than the retail price of an individual item). This may lead to error when allocating a product to the correct price band, as the barcode for the individual item can be mistakenly read as if a multipack has been sold. For example, a four-pack of 440ml cans of cider, if split and sold as four individual items at the price of a single item, can be read as four multipacks being sold at a quarter of the multipack price and below the minimum unit price. In such a case if the four-pack was marked at 60ppu, the multipack split could cause it to be read at 15ppu. This may explain the proportions seen in the lower price bands of some categories, such as the 10 to 15ppu price band for strong cider (Appendix E) in the year after MUP was implemented.

A further methodological reason for price band misallocation identified by Nielsen is the degree of accuracy in the calculations used at each step to derive the price distribution. A margin of error is to be expected within each price band because the boundaries of each price band are sensitive to rounding. This can be illustrated by looking at the price distribution of blended whisky (Figure C2). A total of 28% of blended whisky is shown to be sold at below 50ppu in Scotland in the year following MUP implementation. This cannot be explained by a miscalculation based on ABV, due to the minimum legal requirement of whisky to be 40% ABV. Nor can it be explained by the splitting of multipacks as whisky is not sold as part of a multipack. Nielsen was able to show that 99% of the 28% of blended whisky categorised below 50ppu was between 49.5ppu and 50ppu. Subsequent sensitivity checks carried out by Nielsen showed that the degree of accuracy (6 decimal places) at which calculations were carried out at each step was impacting on the eventual allocation to a price band. Due to the introduction of a price floor in Scotland this becomes most apparent at the boundary between 49 and 50ppu but it is likely to occur across the distribution.

Accordingly, these limitations impact on the accuracy with which a product sold in a given store in a given week can be allocated to a pence-per-unit price band. Together these issues may explain a proportion of the alcohol sales categorised below 50ppu during the first year of MUP in Scotland. These data can therefore only be used to describe and understand the impact of MUP on the overall price

distribution of off-trade alcohol, they cannot be used to comment on retailer compliance with the 50 pence-per-unit minimum price.

Discount retailers Aldi and Lidl operate a non-cooperation policy regarding sharing their sales data with market research companies. The price of alcohol sold in these stores is therefore not included in this study's assessment of alcohol price distribution. It is unclear to what extent the price distribution of pure alcohol per adult would change if they were included.

This study employed descriptive techniques. The scope for inferential statistical analysis was explored but was deemed unnecessary due to the scale of the difference between Scotland before and after MUP was implemented and when compared to a neighbouring geographical comparator (England & Wales).

Interpretation

The change in the price distribution of pure alcohol per adult for off-trade alcohol in Scotland is likely to be explained by the implementation of MUP for several reasons: the change reflects the price floor, with increases mainly observed in the 50 to 59.9ppu price range and to a lesser extent from 60 to 64.9ppu (increases in higher price ranges were in line with previous years and with those seen in England & Wales); inflation cannot explain the scale of the change or the form it took; and, relatedly, no such change was observed in the comparator area where MUP was not introduced (England & Wales). Moreover, the change was more visible in drink categories that previously sold greater proportions below 50ppu, and not those where a greater proportion of sales were at higher prices even before MUP was implemented.

While the limitations described mean that we cannot use these data to determine the extent of any potential non-compliance, it is unlikely that the 7.5% of pure alcohol categorised as being sold below 50ppu solely represents non-compliance with the 50 pence-per-unit minimum price. First, previous studies as part of the MUP evaluation have found that compliance with the legislation was high, with instances considered few, minor and quickly resolved⁸. Second, Licensing Standards Officers considered

the 7.5% to be too high to be solely non-compliance in light of their experience of working with licence holders. Third, Nielsen's robust analyses of its own data pointed towards several explanations for the proportion of sales that appeared to be less than 50ppu (the use of average ABV, multipack splits, a margin of error in calculations). These issues were not confined to a limited number of brands, retailers or time periods as would be expected if they were solely a compliance issue.

The main findings of this study are consistent with other studies in the MUP Evaluation.

- **Small retailers.** The small retailers [study](#)⁹, published in May 2020, used pre-MUP Scotland data to investigate changes in the proportion of alcohol products sold in different price bands in the first nine months post-implementation. Findings corroborate those in this report. Using qualitative and quantitative methods, researchers reported an overall increase in price similar to the current study, with products priced below 50ppu prior to the implementation of MUP increasing in price in line with MUP after implementation, and few products with an average or minimum price below 50ppu.
- **Economic impact on the alcoholic drinks industry.** This [study](#)¹⁰, published in October 2019, took a mixed-methods approach to investigate a broad range of outcomes pertaining to the economic impact of MUP on producers and retailers. The main finding was that the effect of MUP on retailer revenue and prices was small, as increased margins compensated for decreased volumes. The findings from the current report suggest that the change in price distribution (i.e. the movement from below 50ppu to 50 to 64.9ppu) may have been a key mechanism through which this negative but small economic impact occurred.
- **Sales-based consumption.** This suite of studies investigates population-level sales and consumption post-implementation. The most recent [publication](#)¹¹ from March 2021 found that the introduction of MUP in Scotland was associated with a net reduction in per adult off-trade alcohol sales of

3.5% in the 12 months following the implementation of MUP. The changes to the price distribution of off-trade alcohol observed in the current study are a likely mechanism through which the reduction in consumption occurred. A further study will report in 2022 using data from three years after the implementation of MUP.

Conclusion

The main findings of this study, that the implementation of MUP saw the proportion beneath the price floor decrease; the proportion in the 50 to 64.9ppu price range increase greatly; and the proportions in price bands above 64.9ppu increase only slightly and in line with previous years and England & Wales, indicate that the price distribution of pure alcohol per adult in Scotland changed to reflect the 50 pence-per-unit minimum price. In the first 12 months after MUP was implemented in Scotland, small amounts were categorised under 50ppu, but methodological issues meant it was not possible to differentiate non-compliance from data limitations.

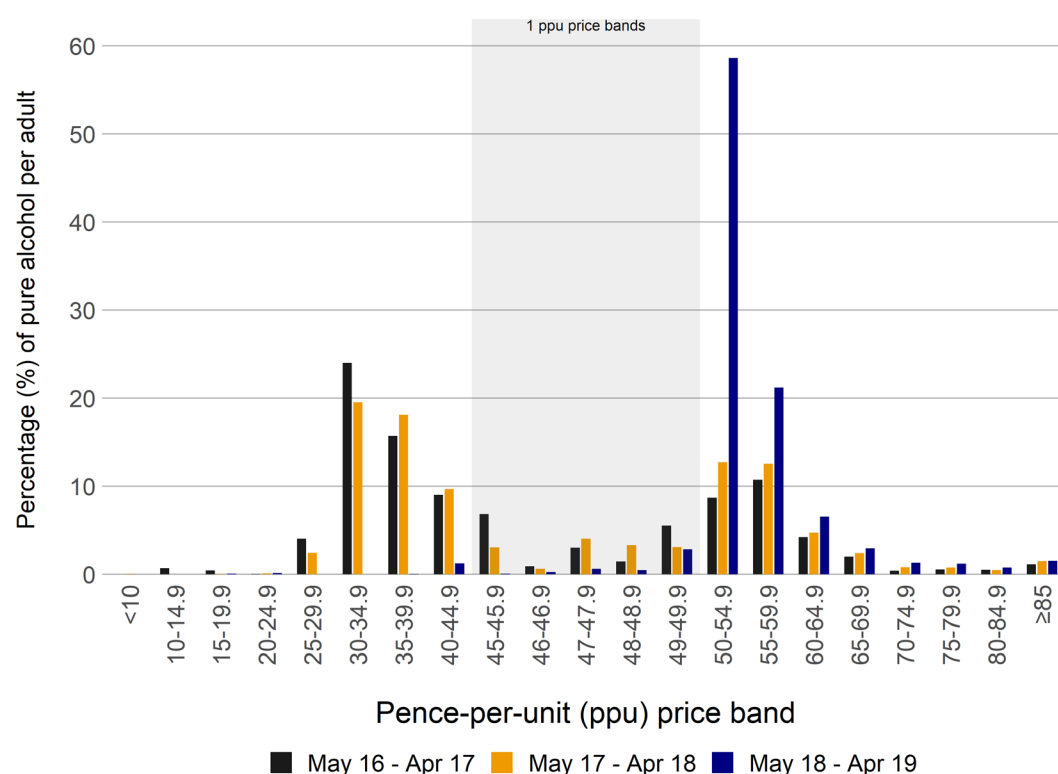
Appendix A: Absolute figure – litres of pure alcohol per adult

For tables of litres of pure alcohol per adult for Scotland and England & Wales, May 2016 to April 2019, please see the [additional documentation on the Public Health Scotland website](#).

Appendix B: Selected beer sub-categories

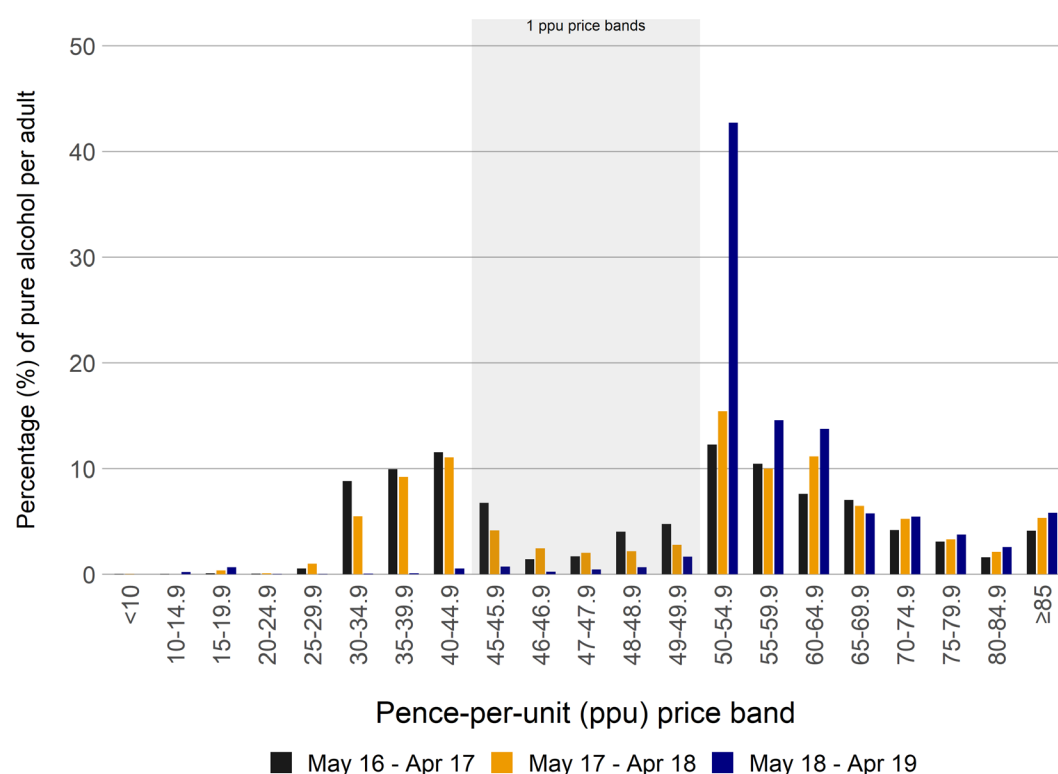
Of all beer sold in Scotland between May 2016 and April 2019, standard beer accounted for 39.1% and premium beer 58.9%, with a combined total of 98%. In the two years prior to implementation, most standard beer (Figure B1) was categorised as sold below 50ppu (71.7% and 64.1%), whereas a greater proportion (79.8%) was categorised in only the 50 to 59.9ppu price range post-implementation. Premium beer was similar (Figure B2), with high proportions below 50ppu prior to implementation, and the majority (57.3%) in the 50 to 59.9ppu price range after implementation.

Figure B1: Estimated price distribution (%) of standard beer (litres of pure alcohol per adult) sold in the off-trade in Scotland, May 2016 to April 2019



Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Figure B2: Estimated price distribution (%) of premium beer (litres of pure alcohol per adult) sold in the off-trade in Scotland, May 2016 to April 2019

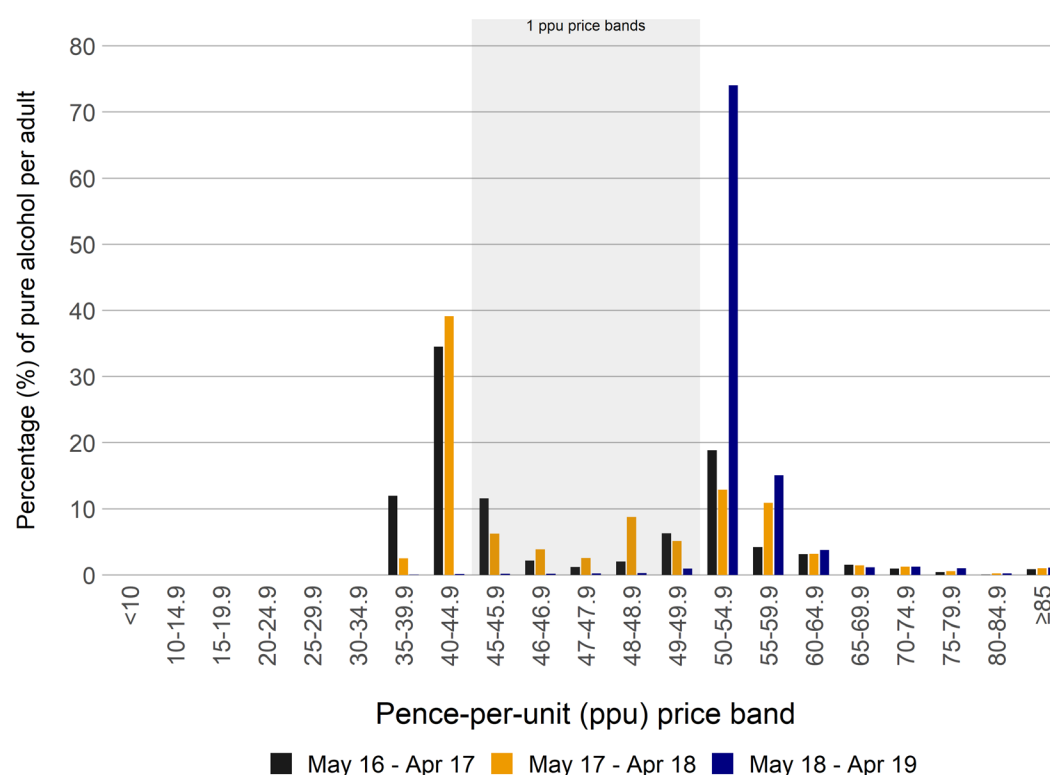


Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Appendix C: Selected spirits sub-categories

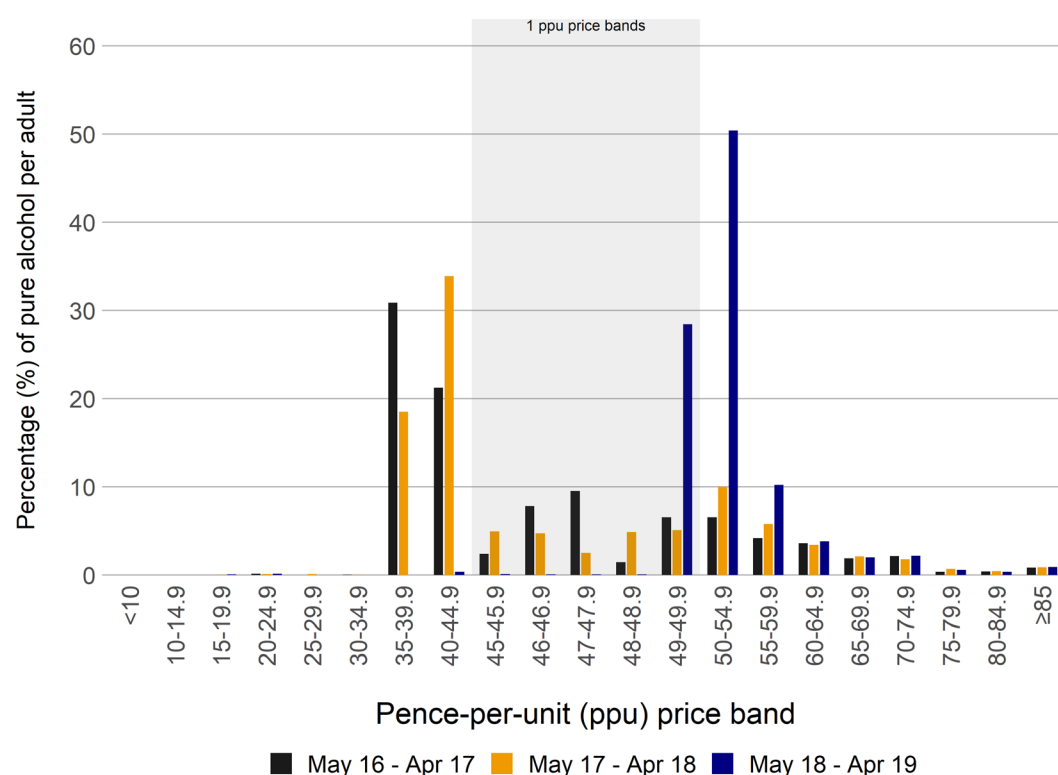
Vodka (Figure C1), blended whisky (Figure C2), and gin (Figure C3) accounted for 71.7% of off-trade spirits in the first 12 months post-implementation in Scotland (40.5%, 18.3%, and 12.9% respectively). Each also followed very similar distributions to spirits overall both pre- and post-implementation. The high proportions sold under 50ppu prior to implementation appeared to be replaced with a large increase in the 50 to 54.9ppu price band and an overall upshift in price. Note the relatively high proportions below the price floor for blended whisky and gin in the 49 to 49.9ppu price band cannot be interpreted as sales below the minimum unit price due to methodological issues discussed in the 'Strengths and limitations' section of the report.

Figure C1: Estimated price distribution (%) of vodka (litres of pure alcohol per adult) sold in the off-trade in Scotland, May 2016 to April 2019



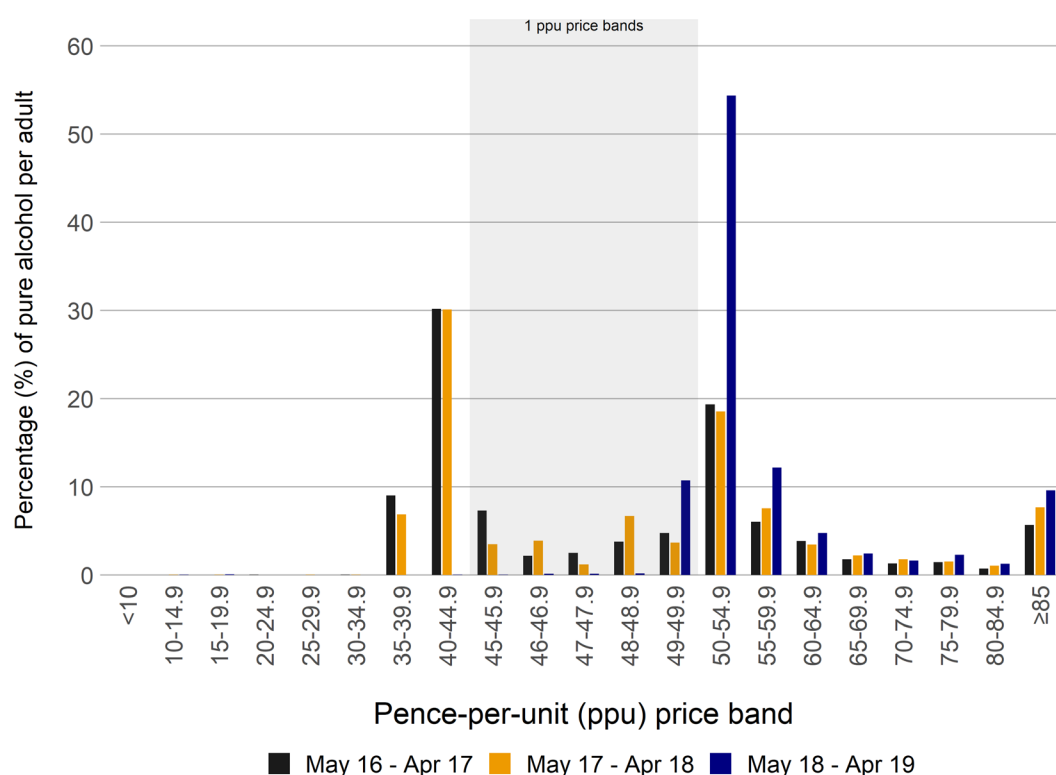
Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Figure C2: Estimated price distribution (%) of blended whisky (litres of pure alcohol per adult) sold in the off-trade in Scotland, May 2016 to April 2019



Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Figure C3: Estimated price distribution (%) of gin (litres of pure alcohol per adult) sold in the off-trade in Scotland, May 2016 to April 2019

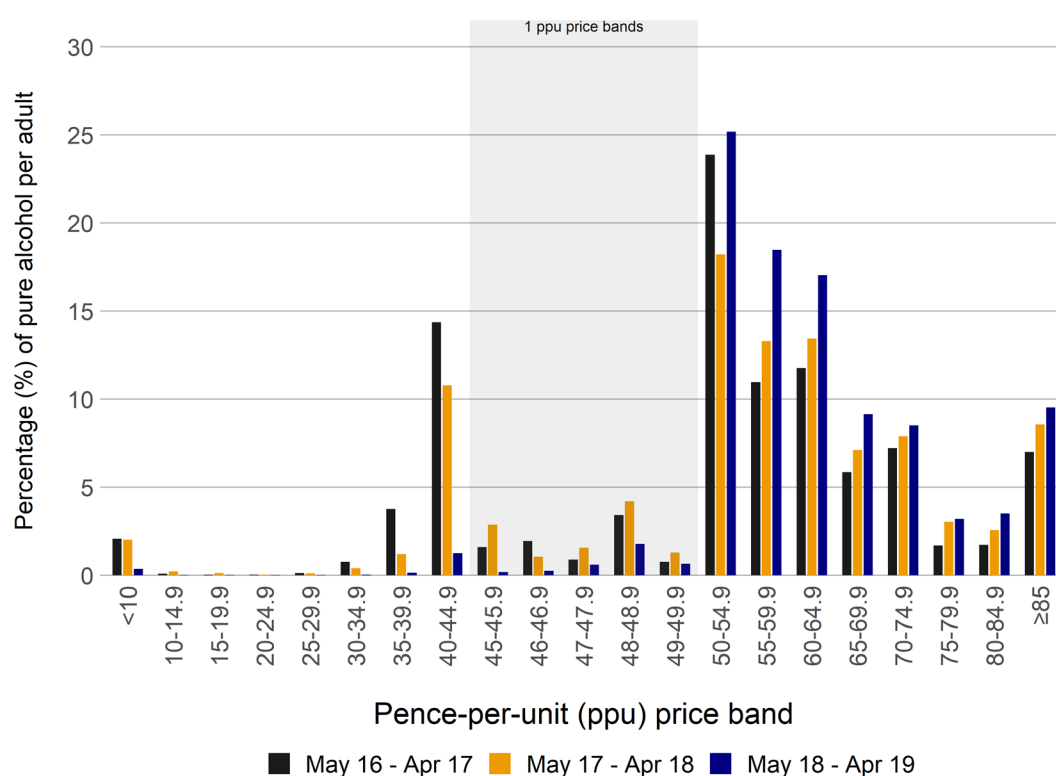


Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Appendix D: Selected wine sub-category

Still table wine accounted for 86.0% of wine sales from May 2016 to April 2019, and thus explains most of the trends for wine overall. Indeed, the price distribution for the volume of pure alcohol per adult sold as still table wine through the off-trade was very similar to wine overall (Figure D1), in that the effect of MUP was less noticeable than for most other categories as most wine was already priced above the 50ppu price floor.

Figure D1: Estimated price distribution (%) of light wine (litres of pure alcohol per adult) sold in the off-trade in Scotland, May 2016 to April 2019

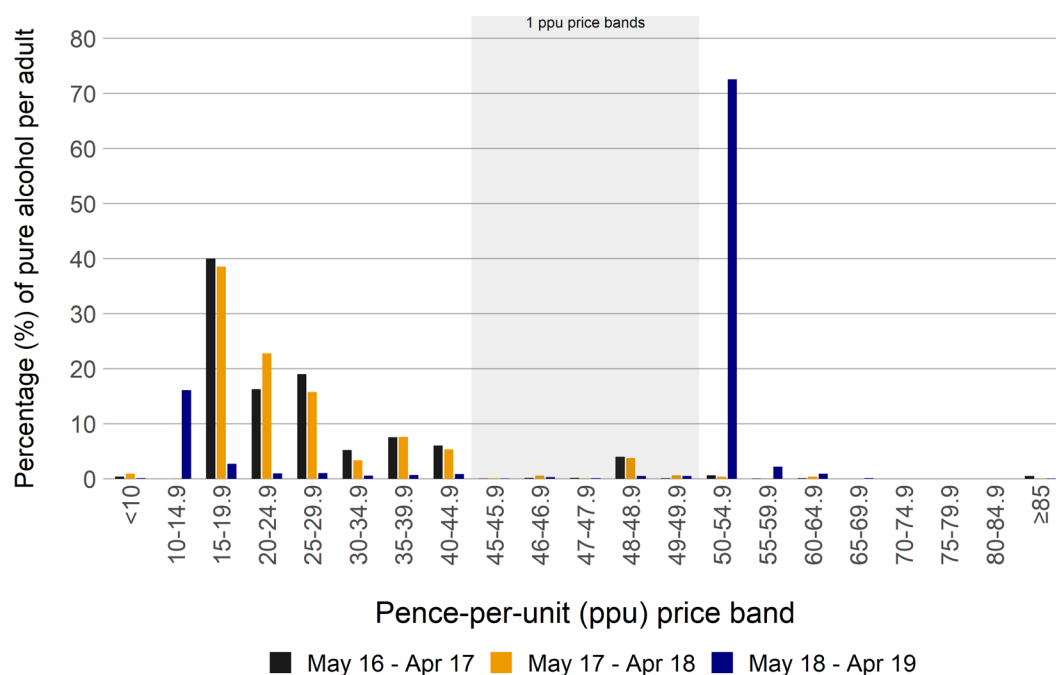


Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

Appendix E: Selected cider sub-category

Strong cider saw perhaps the clearest change in price distribution of any sub-category of alcohol, with 72.3% being in only the 50 to 54.9ppu price band (Figure E1). Notably, strong cider saw a drop in sales from 0.24 litres of pure alcohol per adult from May 2017 to April 2018 to 0.08 litres – a decline of 67.9%. From May 2017 to April 2018, strong cider accounted for 23.4% of off-trade cider sales data, but only 9.7% post-implementation. The relatively high proportion of cider categorised in the 10 to 14.9ppu price band may reflect the methodological issues already described and could be explained by the sale of multipacks as single items, rather than as sales below the minimum unit price. We are unable to differentiate these different circumstances using these data.

Figure E1: Estimated price distribution (%) of strong cider (litres of pure alcohol per adult) sold in the off-trade in Scotland, May 2016 to April 2019



Note: The grey area of the chart represents price bands in 1ppu increments, while the white areas represent 5ppu increments. Due to methodological limitations, these data cannot be used as evidence of systematic sales below the minimum unit price of 50 pence-per-unit (May 2018 to April 2019).

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Published by Public Health Scotland
1 South Gyle Crescent
Edinburgh EH12 9EB
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