

# Alcohol Price Floors and Externalities

## The Case of Fatal Road Crashes

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One in three people drink alcohol worldwide. In 2016, alcohol use was the leading global risk factor for both deaths and disability for those aged between 15 and 49, accounting for 4 percent and 12 percent of the total death toll for women and men, respectively. The main causes of alcohol-related deaths in this age group include road injuries, self-harm, and tuberculosis. To reduce the negative externalities from alcohol consumption, the World Health Organization in 2018 launched its SAFER initiative, which rests on five components. One of those components is to raise prices on alcohol through ethanol taxes and pricing policies. On May 1, 2018, Scotland (but not the rest of the United Kingdom) introduced a minimum unit price (MUP) on alcohol purchases at 50 pence per unit. Our objective was to provide a comprehensive analysis of the Scottish MUP impact on fatal road accidents, one of the main alcohol consumption risks.

Scotland was the first nation in the world to introduce an MUP for alcohol. Price floors can lower the social risks of alcohol intake by raising ethanol prices, but unlike higher taxes, they may create windfall profits for firms instead of

raising tax revenue. This is the main reason why they typically have not been favored by economists. But price floors could be effective if a large fraction of heavy drinkers who buy cheap alcoholic beverages (such as can-packaged beer and alcopops) are willing to move away from their usual consumption without switching to other more expensive drinks (e.g., wine and spirits) or make the switch while reducing consumption. Previous work on the Scottish MUP has found that the largest reductions in alcohol sales occurred among heavy drinkers because these drinkers consumed a greater share of alcohol products previously priced below the floor. This has important policy implications; if heavy drinkers pose the greatest risk to society, then a price floor could achieve larger welfare gains than an ethanol tax because the MUP—being better targeted at heavy drinkers—may yield a stronger reduction in risk and more than offset lower tax revenues.

Risks from ethanol intake, however, are related not only to alcohol purchases or consumption but also to other life domains. The main contribution of our work is to evaluate for the first time whether the MUP policy had an effect on



Editor, **JEFFREY MIRON**, Harvard University and Cato Institute.

traffic fatalities. This specific line of inquiry is motivated by the well-documented relation between blood alcohol concentration and fatal car crashes and previous findings that the MUP reform reduced offsite (nonrestaurant and nonbar) alcohol purchases in Scotland. If lower purchases due to the price floor translate into lower consumption, and if drivers are more likely to be sober as a result, we expect to observe a reduction in road fatalities, especially if heavy drinkers disproportionately reduce consumption.

A concern could be that the Scottish MUP intervention has limited scope for our research if traffic fatalities and drunk-driving violations are caused overwhelmingly by consumption in pubs, bars, and restaurants. This is because offsite alcohol has become much more affordable than onsite alcohol in the past few decades, which suggests that the MUP left onsite alcohol prices relatively unchanged. There is, however, a wealth of cross-country evidence showing that most ethanol intake is through offsite purchases, including in Britain. Moreover, a large fraction of drunk-driving offenses and road traffic fatalities are attributable to individuals who purchase alcohol offsite and consume it in unlicensed premises (e.g., at home and private parties) rather than pubs. Much public health research has emphasized a specific age pattern in the locations where drunk drivers have consumed alcohol: young adults tend to drink away from home, such as at bars but also car parks (where they would typically consume alcohol sold offsite), while older drunk drivers drink at home or at friends' houses more frequently. There is also evidence that drinkers who preload (i.e., they drink heavily at home before going to pubs or nightclubs) are likely to engage in drunk driving. If the MUP reform curbs this type of drinking behavior across all types of consumers, it could unambiguously reduce drunk-driving collisions.

Using official administrative data of vehicle collisions observed in Britain between November 2009 and December 2019, we do not find that the MUP had an effect on fatal road crashes. We also do not find an impact on drunk-driving accidents or serious- and slight-injury collisions. As there is evidence of an effect of the Scottish price floor on alcohol purchases among heavy drinkers and poor households, we consider the possibility that the reform has varying effects on motor vehicle accidents across dimensions where we expect

differential ethanol intake, such as drivers' income, age, and gender as well as times of collisions (hours of the day and days of the week). There is no evidence that the price floor had an impact on road crash deaths across any of these dimensions. We also do not find evidence of cross-border effects; we might expect Scottish consumers living near the English border to travel into England to purchase cheaper alcohol, thus inflating accident rates in these regions and muting the overall effect of the MUP. We repeat our analysis excluding border regions and continue to find no effect on road crash deaths. Our results are in line with recent studies that have also found no effect of other alcohol control policies on traffic fatalities and that the prior consensus that higher alcohol prices translate into fewer fatal crashes is breaking down.

Our results have implications for policy and future research. Explaining why the MUP reform, which curtails ethanol intake, does not translate into lower fatal and drunk-driving crash rates is important but goes beyond the scope of our research. This will require, for example, a thorough analysis of the potential changes in driving habits among alcohol consumers, the availability of alternative means of transportation, and law enforcement. Even though the evidence indicates that the alcohol price floor is ineffective to correct the danger of alcohol-related car crashes, it is important to keep in mind there might be other short-term negative implications (e.g., crime) and longer-term harm to health that could be sensitive to the price floor. More research is needed to test the existence of such links. Furthermore, the price floor is just one policy tool to harness alcohol-related harm on the road. Its success might be realized only with the introduction of other policies, such as information and awareness campaigns targeted to individuals who are likely to pose the greatest accident risk, as well as accident-preventing law enforcement and efficient police deployment on the road.

## NOTE

This research brief is based on Marco Francesconi and Jonathan James, "Alcohol Price Floors and Externalities: The Case of Fatal Road Crashes," CESifo Working Paper no. 9745, May 2022; and forthcoming in the *Journal of Policy Analysis and Management*.



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