

IEA Perspectives 2

ALCOHOL ADVERTISING

What does the evidence show?

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Summary

The economics literature shows that advertising can increase the sale of individual brands but, in mature markets, does not increase aggregate sales of the type of product being advertised. Public health campaigners claim that a ban on alcohol advertising would reduce alcohol-related harm by reducing per capita alcohol sales. This paper examines the empirical evidence.

A small number of studies looking specifically at the impact of alcohol advertising bans have produced mixed results, but the majority have found no impact on aggregate sales.

Cross-sectional observational studies typically find a relationship between exposure to alcohol advertising and higher alcohol consumption, but neither variable is measured objectively. Both exposure to advertising and alcohol consumption are self-reported and therefore susceptible to recall bias. It is likely that heavier drinkers pay more attention to alcohol advertisements. Longitudinal studies can partially address this, but it is difficult to control for a young person's propensity to drink, and there is selection bias because advertisers target those who are most likely to consume the product.

Econometric studies looking at the relationship between expenditure on alcohol advertising and per capita alcohol sales use objectively measured variables and have consistently found no relationship.

A small number of randomised controlled trials have looked at whether exposure to alcohol advertising acts as a cue to drink alcohol in the short term. They have produced mixed and contradictory results.

The study of alcohol advertising poses a number of methodological challenges, but there is no robust evidence in favour of alcohol advertising bans. Banning alcohol advertising should not be presented as an evidence-based policy.

Introduction

Alcohol advertising regulation varies enormously across Europe. Several Eastern European countries take a hard line on spirits advertising and most of Scandinavia has a total ban on all alcohol advertising. In 1991, France passed the 'Loi Évin' prohibiting TV advertising of alcohol and heavily restricting the content of alcohol advertisements in other media. In 2018, Lithuania introduced a ban on alcohol advertising that was so extreme that importers of foreign magazines had to employ people to put stickers over the advertisements.

Most countries, including the UK, take a more liberal approach, but Ireland banned various forms of alcohol sponsorship in 2021 and both Scotland and Belgium have since proposed new restrictions on alcohol advertising. The World Health Organisation recommends advertising bans as one of its 'best buys' to tackle the harmful use of alcohol (along with tax rises and restricting when alcohol can be sold).

Anti-alcohol pressure groups have always regarded a total ban on alcohol marketing as a priority and are increasingly insistent that the evidence supports it. When the Scottish Government (2022: 6) launched a public consultation on the issue, it asserted that the 'strongest academic evidence underpins the impact alcohol marketing has on children and young people'. The Scottish Government heavily cited a report from the pressure group Alcohol Focus Scotland (2022: 34), which repeatedly makes strong claims about the academic evidence, such as: 'There is conclusive evidence of a small but consistent association of advertising with consumption at a population level' and 'There is a wealth of evidence that exposure to alcohol marketing is causally linked to consumption.'

This discussion paper summarises the relevant academic literature. Firstly, it looks at what impact alcohol advertising restrictions have on alcohol

consumption. Secondly, it examines the evidence on alcohol advertising expenditure and consumption. It then looks at the effect of alcohol advertising on individuals according to observational studies and randomised controlled trials. It concludes with a discussion about the strength of the evidence.

The impact of alcohol advertising bans

In 2014, a Cochrane Review¹ titled 'Does banning or restricting advertising for alcohol result in less drinking of alcohol?' concluded that 'There is currently a lack of robust evidence for or against recommending the implementation of alcohol advertising restrictions.' (Siegfried et al. 2014: 2)

The review's authors found only one relevant randomised controlled trial (which did not actually look at the impact of alcohol advertising bans) and described it as 'very-low-quality' with a 'serious risk of bias, serious indirectness of the included population and serious level of imprecision' (ibid.).

The other three studies used interrupted time-series based on evidence from Canada. The first looked at a short-lived ban on alcohol advertising in British Columbia introduced in 1971 and found 'little support for the view that the B.C. advertising ban reduced alcohol consumption' (Smart and Cutler 1976: 20).

The second looked at restrictions on beer advertising in Manitoba and concluded that there was 'little evidence that per capita beer consumption has changed in any way since beer advertising ceased to feature in Manitoba media' (Ogborne and Smart: 294).

The third looked at the lifting of a 58-year ban on alcohol advertising in Saskatchewan in 1983. It found evidence that consumers shifted from

¹ A Cochrane Review is a systematic review of randomised controlled trials. Cochrane Reviews are widely considered to be the 'gold standard' of evidence in healthcare and health policy.

spirits to beer, but that there was 'no impact on wine and total alcohol sales from the introduction of alcohol advertising' (Makowsky and Whitehead 1991: 555) and 'This evaluation suggests that alcohol advertising is not a contributory factor that influences the overall level of alcohol consumption.'

In 1991, the economist Henry Saffer published a cross-sectional study looking at 17 countries between 1970 and 1983 and concluded that alcohol advertising bans were associated with lower rates of alcohol consumption, liver cirrhosis mortality and motor vehicle fatalities (Saffer 1991). The effect size was relatively large, with a ban on spirits advertising associated with a 16 per cent reduction in alcohol consumption, but this claim was challenged by another economist, Douglas J. Young, who argued that Saffer's associations were due to reverse causation, with countries that were culturally more averse to alcohol being more likely to ban advertisements for it. Reanalysing the same dataset, Young (1993: 215) concluded:

Saffer's finding of significant negative associations between advertising bans and alcohol consumption and cirrhosis and motor vehicle deaths are generally refuted when cultural traits of individual countries are accounted for, consumption is disaggregated, and more appropriate statistical models are employed. Indeed, the results are often the opposite of what would be expected if advertising bans are actually effective.

Another cross-sectional study published in 2001 used panel data from 17 OECD countries between 1977 and 1995, and concluded (Nelson and Young 2001: 293):

The empirical results do not support the notion that bans of broadcast advertising of alcoholic beverages will reduce consumption or alcohol abuse. The evidence indicates that a complete ban of broadcast advertising of all beverages has no effect on consumption relative to countries that do not ban broadcast advertising. Equally important for alcohol policy, the results fail to provide evidence that advertising bans have significant negative effects on alcohol abuse outcomes, including cirrhosis mortality and motor vehicle fatalities.

Jon Nelson updated this research in 2010 using data from 1975 and 2000 and again concluded that ‘advertising bans do not reduce alcohol demand. This finding is robust across a variety of model specifications and estimation procedures’ (Nelson 2010b: 818). However, Saffer and Dave (2002) looked at 20 OECD countries and concluded that a ban on all alcohol advertising would reduce alcohol consumption by 8 per cent.

Several European countries have introduced alcohol advertising bans since the 1970s, but they have rarely been evaluated. Calfee and Scheraga (1994) found that Sweden’s ban, which began in 1979, had no impact on the sale of alcohol. By contrast, Rossow (2021) looked at Norway’s ban on alcohol advertising, introduced in 1975, and estimated that it had reduced alcohol consumption by 7.4 per cent. Consumption continued to rise for several years in Norway after 1975, and the author acknowledged that ‘it is not obvious that the ban was effective’ by looking at the raw figures. One limitation of the study is that it could not measure unrecorded alcohol consumption, which is thought to have accounted for ‘around a fifth of total consumption in Norway between 1973 and 1994’ (ibid.: 1,394).

Cross-sectional studies have therefore produced mixed results, even when the same countries are studied. Endogeneity between alcohol advertising bans and alcohol consumption muddies the waters,² and much depends on the dummy variables used to account for it. If the public has a generally negative attitude towards alcohol, they are less likely to drink and more likely to support alcohol advertising bans. It does not follow from this that advertising bans reduce alcohol consumption, although it may appear so from a naive scanning of international statistics.

The endogeneity problem can be nicely illustrated by a recent study from public health researchers who claimed that ‘comprehensive marketing restrictions may be influential for the protection of alcohol abstention’ (Leung et al. 2022: 6). Using lifetime abstinence from alcohol as the outcome measure, the researchers selected thirteen countries and plotted this against their score for marketing restrictions from the International Alcohol Control (IAC) policy index. The countries were Australia, Chile, England, Hong Kong Special Administrative Region (SAR), the Netherlands, New Zealand, Mongolia, Scotland, South Africa, St Kitts and Nevis, Thailand, Turkey and Vietnam. These countries have no obvious connection

2 i.e. lower rates of alcohol consumption and the implementation of alcohol advertising bans can both be independently attributed to a third variable (public opposition to alcohol).

to one another, and their selection was based on nothing more than ‘researchers who obtained funding and were willing to participate in the IAC study’ (ibid.: 3).

The small sample size is unsatisfactory since it leaves the results vulnerable to outliers and spurious correlations. The association between the two variables is clearly driven by the country in the top right corner of Figure 1. That is Turkey, the only Muslim country in the study, where the proportion of teetotallers is reported to be 89 per cent. It seems reasonable to conclude that Turkey’s strict alcohol advertising ban is more of a symptom of Islamic attitudes towards alcohol than the *cause* of Turkish abstinence from alcohol. Removing Turkey as an outlier in Figure 2, we see the correlation virtually disappear. Insofar as a correlation exists, it is not statistically significant. The researchers nevertheless conclude: ‘Our findings suggest that restricting alcohol marketing could be an important policy for the protection of alcohol abstention’ (ibid.: 1). This study is a reminder that despite economists’ efforts to improve research methodology since the 1990s, weak studies continue to be published by advocates of advertising bans.

Figure 1: Association between alcohol advertising restrictions and lifetime abstinence from alcohol (from Leung et al. 2022)

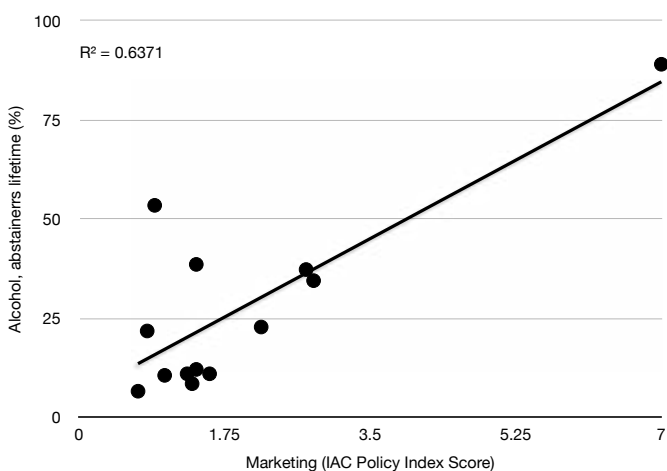
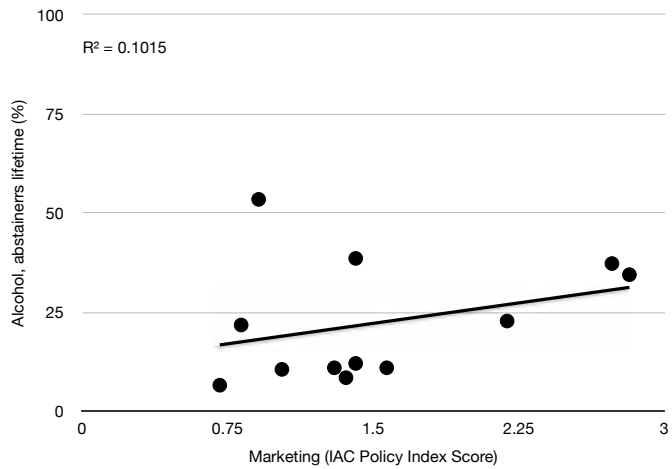


Figure 2: Association between alcohol advertising restrictions and lifetime abstinence from alcohol (excluding Turkey) (from Leung et al. 2022)



Alcohol advertising expenditure and consumption

The hypothesis that alcohol advertising has little or no effect on aggregate consumption is supported by studies of alcohol advertising expenditure, which have almost unanimously found no association with overall alcohol sales (e.g. Nelson 1999; Duffy 1995). There are too many of these studies to discuss individually, but the following are typical:

In his study of spirits advertising in the USA between 1976 and 1989, Mark Gius (1996: 75) concluded that 'brand-level spirits advertising results only in brand switching and does not increase the size of the spirits market'.

A study of the US beer market found that sales were affected by price but not by advertising (Lee and Tremblay 1992).

A study using data from Ontario, Canada, concluded that 'advertising is not effective in enlarging markets, and this suggests that firms (especially breweries) use advertising to compete in zero-sum market share games' (Larivière et al. 2000: 147).

In the USA, alcohol advertising expenditure rose by nearly 400 per cent in real terms between 1971 and 2012, and yet there was little change in per capita alcohol consumption (Wilcox et al. 2015).

Most of this evidence comes from North America, but Duffy (2001: 454) found the same null effect in the UK:

Advertising is found to have had no significant effect upon the 'product composition' or 'level' of total alcoholic drink consumption

in the UK over the period from 1964-1996, and this result is robust with respect to variations in the specification of functional form. The consumption of alcoholic drink is affected by relative prices, total consumer budgeted expenditures and, to some extent, by autonomous shifts in tastes. These results imply that manipulation of the aggregate level of alcohol consumption (and its distribution between beer, spirits and wine) is not an easy matter for policy makers to achieve.

In Britain, alcohol advertising spending fell by 10.8 per cent in real terms between 1991 and 2001, but alcohol consumption rose by 15.8 per cent (Dorsett and Dickerson 2004: 152). Nearly all the rise in consumption was due to increased sales of wine, which tends to be less advertised than beer and spirits (*ibid.*).

These findings are supported by the broader economics literature which indicates that advertising generally only affects brand share in mature markets and has no impact on aggregate consumption. Since alcohol is a mature market, it is implausible that it would be an exception to this rule. As Ambler (1996: 172) notes: 'The understanding that total advertising does not affect total market size is not particular to alcohol; it is normal for other mature categories.'

Advertising exposure and consumption: observational studies

As Aspara and Tikkanen (2013: 2-3) note, there is a split in the academic literature between ‘alcohol and addiction researchers’ who believe that alcohol advertising is ‘a significant underlying cause of heightened alcohol consumption, especially for adolescents’, and economists who ‘have concluded that statistical evidence does *not* support the claim that advertising increases the amount of alcohol consumed by adolescents’ [emphasis in the original].

The obvious way to test the hypothesis that alcohol advertising bans reduce alcohol consumption (and alcohol-related harm) is to see them in action. As we have seen, relatively few studies have done this, which is surprising since France, Russia, Sweden, Finland and Norway – to name but five – have heavy restrictions on alcohol advertising. When economists have studied alcohol advertising bans, they have mostly found no impact on overall alcohol consumption, and the literature is consistent in finding no effect on consumption from the amount of money spent on alcohol advertising.

By contrast, public health campaigners tend to focus on observational studies looking at whether individuals who see more alcohol advertising tend to drink more alcohol and whether young people who see more alcohol advertising are more likely to start drinking. The implication is that if advertising increases consumption, advertising bans are bound to reduce it. This is not a sound inference, however, since advertising bans have dynamic effects that are not wholly predictable. Faced with advertising restrictions, firms may shift their advertising to other media, cut prices, or

engage in other forms of marketing and promotion, potentially cancelling out any impact on sales.

Much of the research in the public health literature is cross-sectional, using surveys to ask consumers – particularly young people – how much alcohol advertising they have seen in a specific period of time, e.g. 'in the last month'. Some studies simply ask young people how much they like alcohol advertisements on a scale of one to five. The researchers then look for a correlation between these variables and the amount of alcohol they consume, the age at which they started drinking and how frequently they drink.

These studies usually find a modest association between advertising and consumption, but they are plagued by confounding factors. There are major endogeneity issues that are exacerbated by various potential biases, including selection bias and recall bias. Neither the amount of advertising seen nor the amount of alcohol consumed is measured objectively in these studies. Both are self-reported by the people being studied, and it is easy for participants to guess the purpose of the study. This can lead to problems with demand effects, as Aspara and Tikkanen (2013: 13-14) note:

For instance, if teenagers assume it is socially 'cool' to remember many ads or to drink beer on weekends, they may give high scores to both questions (giving rise to a correlation), regardless of how they actually behave. Another common version of this bias is that participants may try to guess the purpose or the research question of the study and then deliberately give answers that 'confirm' the question by the researchers. (E.g., if teenagers guess that researchers are studying the relationship between advertising and alcohol consumption, they may deliberately say that they have seen numerous ads and consumed a lot of alcohol, regardless of the actual number of ads seen and amount of alcohol consumed).

Even if respondents answer as honestly as possible, their recollection of how much advertising they have seen is susceptible to the well-recognised problem of recall bias. People who consume a product are more likely to notice and remember advertisements for it, and heavy consumers may be especially likely to pay attention to them. Longitudinal studies can partially address this, but it is very difficult to control for a young person's *propensity* to drink as well as other inherent differences between groups. For example, someone who sees little or no television advertising for alcohol either watches very little television or watches very different

programmes from someone who sees a lot of alcohol advertising. It is not difficult to imagine such a person having different tastes and character traits that influence their attitude towards alcohol, particularly since alcohol companies target specific demographics (as discussed below). Some studies of young people have found an association between *susceptibility* to drinking³ and positive reactions to alcohol advertising (Critchlow et al. 2019; Boniface et al. 2022). The authors of such studies typically infer that the advertising creates the susceptibility, whereas it seems more plausible to assume that young people who are not interested in drinking pay less attention to alcohol advertisements and find them less appealing when they see them.

An alternative approach is to ask individuals about their television viewing or magazine reading habits. Researchers then estimate how many alcohol advertisements they have seen based on the number of ads that appear on each channel or in each title. One such study found ‘a small but consistent positive association between alcohol advertising exposure and past 30-day drinking behaviour’ (Niederdeppe et al. 2020: 8). However, as several researchers have noted, there is selection bias in these studies because companies target their advertising at particular demographics. Lillard et al. (2018: 890) found that people who drink more tend to see more alcohol advertising, but that ‘firms concentrate alcohol advertising in particular magazines and on particular programs consumed by men, especially young men.’

If alcohol advertising could actually induce people to drink (who were otherwise not so inclined), one would expect a profit-maximising firm to advertise in a wider variety of media read by different consumers than the ones who consume the media firms currently use. (ibid.)

In short, drinkers may see more alcohol advertisements because alcohol companies aim their marketing at drinkers. This endogeneity problem also affects the cross-sectional and longitudinal studies favoured by public health academics. Economists are aware of the issue, but there have so far been few attempts to design studies that control for this reverse causation (Saffer 2020). Having acknowledged the problem that drinkers ‘may systematically select different television programs and magazines than non-drinkers’, Molloy (2016: 150) attempted to control for targeting

3 Non-susceptible young people are defined as those who tell the researchers that they definitely will not drink alcohol in the near future.

and found that ‘alcohol advertising is, at most, a small influence on youth drinking’ (ibid.: 162).

A more obvious example of reverse causation and selection bias is the association between heavy drinking and the ownership of alcohol brand merchandise, including branded glassware (e.g. Critchlow et al. 2019). Similar associations have been found between heavy drinking and following or liking alcohol brands on social media (e.g. Carrotte et al. 2016). Although the authors of these studies often imply that this kind of active engagement with alcohol brands is a *cause* of heavy drinking, it seems more reasonable to see it as a *complement* to heavy drinking, just as we would when consumers express an affection for popular brands in other markets.

In summary, longitudinal studies are the best (or least bad) of the survey-based research, but are nevertheless inherently limited and prone to bias. Although they usually find at least one correlation between some form of alcohol marketing and alcohol consumption, most of them also find at least one null result, as Nelson (2011: 201) notes: ‘In general, the longitudinal studies contain a wide variety of empirical results that could be used to support or refute claims of adverse effects due to alcohol advertising.’

The null results tend to be ignored in the numerous systematic reviews published by advocates of alcohol advertising bans in the public health field. These advocates make strong claims about the relationship between advertising and consumption that are not supported by the academic literature as a whole.

Randomised controlled trials

A number of randomised controlled trials have been conducted to see whether alcohol advertising makes people drink more impulsively. These tend to use a quasi-naturalistic setting, almost exclusively with college students. Their strength is the randomisation of participants, and their weakness is that some participants guess the true purpose of the experiment. They also tend to be small-scale (and therefore have low statistical power) and typically give the alcohol away for free, which is unrealistic.

A 2016 systematic review identified seven randomised controlled trials of alcohol advertising using observational experiments involving between 66 and 125 adult drinkers (Stautz et al. 2016). The evidence is mixed and far from compelling. Kohn and Smart (1984) found that showing beer commercials during a football game 'had no significant effect on total beer consumption'. The same researchers found that women who saw three wine commercials during two hours of watching television drank *less* wine than those who saw no such advertisements, but women who saw nine wine commercials drank more (Kohn and Smart 1987).⁴ Wilks et al. (1992: 20) also found 'mixed support for the belief that exposure to televised alcohol advertisements stimulates consumption of alcohol among students', but in their study it was the people who saw the most alcohol commercials (twelve) who drank more than those who saw no alcohol commercials, while those who saw six commercials drank less.

Sobell et al. (1986) showed 96 male college students an episode of *Dallas* on video interspersed with alcohol, soft drink or food advertisements. Half the students were also shown a version of the episode with scenes involving

4 Another study by these researchers, which did not appear in the review, found 'no evidence that exposure to alcohol advertising increases consumption in the short or long term' (Kohn et al. 1984).

drinking edited out. The researchers concluded that 'neither drinking scenes in television programs nor beer commercials on television precipitated drinking by viewers.'

By contrast, Engels et al. (2009) showed male students either a film that depicted alcohol consumption or a film that did not depict alcohol consumption, both with and without alcohol commercials, and found that 'people drank more when exposed to alcohol portrayal in films as well as commercials.' A Cochrane Review later judged the quality of this study to be 'very low' with a 'serious' risk of bias because 'randomisation was inadequate (the groups differed on the baseline prognostic factor prior drinking levels), allocation concealment was unclear and the researchers were not blinded to group allocation so detection bias may be present' (Siegfried et al. 2014: 5-6).

Koordeman et al. (2011) found that heavier drinkers tended to buy more beer in the cinema if they were shown four alcohol commercials beforehand, but there was no such association among moderate drinkers. The same researchers followed this up with a study in which young men were shown a film on television with or without alcohol commercials. They concluded that '[v]iewing alcohol advertising did not increase alcohol consumption' (Koordeman et al. 2012).

Of these seven studies, three found no effect on consumption; one found that advertising and consumption were positively associated; two found mixed results; and one found an effect on heavier drinkers but no effect on moderate drinkers. Given these inconsistencies, even the tentative conclusion of the Stautz review – that these studies 'suggest that exposure to alcohol advertisements may increase consumption of alcoholic beverages by small amounts' – seems overly generous (Stautz et al. 2016: 14).

Two of the authors of the Stautz review were later involved in their own randomised controlled trial in which heavy drinkers were shown 'alcohol-promoting advertisements' on television in a bar laboratory and then given unlimited free alcohol for ten minutes. They found that 'alcohol consumption did not differ between participants exposed to alcohol-promoting, alcohol-warning, or non-alcohol advertisements' (Stautz et al. 2017: 144).

Conclusion

This narrative review has shown that the academic literature has produced mixed findings, but the weight of evidence leans towards alcohol advertising having no important effect on the aggregate demand for alcohol. It can be said with some confidence that *expenditure* on alcohol advertising is not linked to per capita alcohol consumption, although it can influence market share. Randomised controlled trials have failed to find any consistent relationship between alcohol advertising and alcohol consumption in the short term.

The survey-based evidence cited by advocates of alcohol advertising bans typically finds at least one modest association between alcohol consumption and at least one form of alcohol marketing at the individual level, but these studies suffer from well-known problems of recall bias, endogeneity and reverse causation that render them unreliable.

Even if it could be shown that there was a causal link between alcohol advertising and alcohol consumption, it would not necessarily suggest that a ban on such advertising would reduce per capita consumption. Indeed, most studies using interrupted time-series find no impact of advertising bans on alcohol consumption. Moreover, reducing per capita consumption is not a defensible or desirable policy goal unless it leads to a reduction in alcohol-related harm, something that very few studies have even attempted to show.⁵

For some public health and temperance campaigners, the mere existence of advertising is proof that it leads to greater consumption. They often say

5 Although public health academics often assume that an increase or decrease in per capita consumption will lead to a commensurate change in alcohol-related health harms, this has often been contradicted by real-world evidence (Snowdon 2022).

of alcohol advertising: 'If it doesn't work, why would the industry spend so much money on it?'. Their mistake is to see the alcohol industry as a monolithic entity rather than a group of rival businesses. The alcohol *industry* does not advertise. Alcohol *companies* advertise, and it is worth their while to spend money attracting other companies' customers and keeping hold of their own. It is surprising that politicians, of all people, sometimes fail to understand this. Their own advertising during elections is aimed at getting voters to switch from one party to another.

The study of alcohol advertising poses a number of methodological challenges, and there is ample scope for future research, but it is difficult to argue with the Cochrane Review's conclusion that there is no robust evidence in favour of alcohol advertising bans. Banning alcohol advertising should not be presented as an evidence-based policy.

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