CHAPTER 4: HEALTH AND ECONOMIC IMPACT OF AN MUP ON ALCOHOL

Naomi Gibbs, Corné van Walbeek, Chengetai Dare

Contents

ABSTRACT

Alcohol is responsible for about 3 million premature deaths worldwide. In South Africa, alcohol is responsible for approximately 62,300 (95% UI 27,000–103,000) premature deaths in South Africa. While only a third of South African adults consume alcohol, alcohol consumption among drinkers and the prevalence of binge drinking is very high. High alcohol consumption contributes to non-communicable disease (liver cirrhosis, cancers, cardiovascular disease) and infectious disease (TB and HIV) among drinkers. Alcohol consumption also results in unintentional injuries, imposing a very large burden on non-drinkers in the form of, amongst other things, foetal alcohol spectrum disorders (FASD), domestic and gender-based violence, and road accidents.

The mortality and morbidity impact of alcohol use in South Africa, as in other countries, is concentrated among people from lower socio-economic status (SES) groups. The alcohol-attributable mortality rate among the lowest SES groups is between four and times the alcohol-attributable mortality rate among the highest SES groups.

From a health perspective, a minimum unit price (MUP) on alcohol is expected to reduce the morbidity and mortality impact of alcohol. The higher the MUP is set, the greater will be the health benefits from such a policy. For example, if the MUP is set at R8.00 per unit, modelling exercises indicate that, over a period of 20 years, there would be 278 000 less occurrences of a person getting alcohol-related HIV, TB, interpersonal violence and self-harm, road injury, liver cirrhosis or breast cancer in the Western Cape. The MUP is estimated to generate R503 million savings in healthcare costs and R79 million in crime costs.

Increases in the excise tax and the implementation of an MUP on alcohol should be regarded as complementary strategies. Compared to excise tax increases, which will increase the retail price of alcohol across the board, a MUP is a more targeted instrument to reduce heavy drinking. This is because heavy drinkers tend to drink much cheaper alcohol than moderate drinkers, and the MUP specifically targets cheap alcohol.

An MUP of R8.00 per unit will have the largest impact on sugar-fermented beverages, cheap (boxed) wine and possibly some beer brands; it will not affect most bottled wines, liqueurs and spirits. However, if the MUP is set at higher levels than R8.00 per unit, it could affect the price of beer, some wines, liqueurs and spirits.

The aim of an MUP is not to raise additional revenue for government. An MUP is expected to decrease excise tax revenue, because the volume of alcohol is expected to decrease (excise tax revenue is positively related to the volume of alcohol sold). However, it is expected to increase VAT revenues from alcohol, since the total amount of money spent on alcohol would be expected to increase (VAT revenue is directly proportional to the value of alcohol sales). The net effect on government revenue is negligible.

It is likely that an MUP would require a substantial change in the production, pricing and marketing strategies of manufacturers of very cheap alcohol. The MUP will result in substantially more competition at the low-end of the market. The MUP would remove the price competition, so producers would have to compete on quality and other non-price characteristics. It is possible that companies that are unable to compete will be eliminated from the industry.

Evidence from Scotland indicates that an MUP is likely to increase total turnover in the industry, even though the volume of alcohol sold is likely to decrease. Economic theory indicates that the additional revenue will accrue to the players in the value chain (e.g. producers, wholesalers and retailers) that have the most economic power. In the beer industry, production is highly concentrated, and it is thus likely that most of the additional revenues created by the MUP will be acquired by the producers. In the wine industry, market power is more diffuse and thus the benefits are likely to be spread between producers and retailers.

An MUP is likely to be opposed by companies who feel that they are likely to be disadvantaged by it. The evidence from Scotland indicates that the economic impact of the MUP has generally been positive or neutral. This does not imply that there will be no economic costs associated with the policy, but the conclusion is that the likely benefits of such a strategy greatly outweigh the costs.

INTRODUCTION

South Africa has recently emerged from the Covid-19 epidemic. Officially just more than 100 000 people died because of Covid-19 (SAMRC, 2022), although estimates based on excess deaths indicate that the actual death toll may be at least twice or three times the official toll (SAMRC, 2022). The economic consequences of the pandemic have been devastating to many individuals and households. In 2020 the GDP shrank by 7.2% (National Treasury, 2021), the largest decrease in a single year for nearly a century, while unemployment increased from its already high levels to unprecedented levels. The NIDS-CRAM surveys indicate that, especially during the lockdowns, there has been a sharp increase in the prevalence of hunger, unemployment and poverty (CRAM, 2021).

To reduce deaths from Covid, the South African national government imposed measures (e.g. lockdowns, shutting of schools and restricting trading hours) that adversely affected South Africans. The actions of government to curb COVID 19 spread indicated that it valued life and was willing to impose a large cost on society to protect it. If the government was willing to go such lengths to reduce the number of Covid deaths, it should implement measures that would protect the lives and health of people in other contexts as well.

In recent decades non-communicable diseases (mainly cancer, heart disease, lung disease and diabetes) have become the dominant cause of death in many countries. HIV/AIDS deaths have imposed a huge toll on South Africa since the early 1990s, but death toll peaked in the early 2000s (Pillay-van Wyk et al., 2016). South Africa's death toll due to non-communicable diseases is lower than most other countries, but since the early 2000s the share has been growing (Pillay-van Wyk et al., 2016). Non-communicable diseases, also known as diseases of lifestyle, are closely associated with the consumption of tobacco, alcohol, unhealthy food and drinks, and a sedentary lifestyle. Many countries have implemented measures to reduce the consumption of these products. The World Health Organisation has been at the forefront of many of these initiatives and have published many papers and studies that aim to provide guidance to countries to improve the health of their populations. In tobacco control the WHO has made the most progress, with the establishment of the Framework Convention on Tobacco Control in 2005, the world's first public health treaty. It has been ratified by more than 180 countries, including South Africa.

Since the late 20th century many countries have used price-based measures to decrease the demand for these products. In most cases, the tool of choice is an increase in the excise tax. The first product

to be targeted was tobacco. Research has shown conclusively that excise tax increases that result in an increase in the price of tobacco, decreases the demand for tobacco products, despite the fact that nicotine is highly addictive (IARC,2011). Of all the anti-tobacco tools, the single most effective one is an increase in the excise tax. Between 1990 and 2020 global smoking prevalence has decreased by 27.2% (from 44.8% to 32.6%) among adult males and by 37.9% (from 10.5% to 6.5%) among adult females (Dai, Gakidou and Lopez, 2022).

While the demand for alcohol has not been investigated to the same extent as tobacco, the existing evidence clearly indicates that consumption of alcohol decreases in response to an increase in the retail price (Wagenaar, Salois and Komro, 2009). Like with tobacco, an increase in the excise tax on alcohol is recommended by the WHO as a highly cost-effective intervention (World Health Organization, 2022a). Similarly, an increase in the prevalence of overweightness and obesity in many countries (World Health Organization, 2021), has encouraged many countries to implement taxes on sugar-sweetened beverages (SSBs). An excise tax on SSBs is regarded as the first fiscal step in discouraging unhealthy eating and drinking behaviour. In South Africa, the Health Promotion Levy (HPL) introduced an excise tax on SSBs in 2018 and has been instrumental in greatly reducing the SSB-based sugar intake in the recent past.

The excise taxes on tobacco and alcohol products and the HPL on SSBs clearly illustrate that government understands that it can change behaviour and improve public health by increasing the price on unhealthy and (potentially) detrimental products. The fact that that these taxes and levies raise revenue certainly enhance their appeal.

Provinces in South Africa do not have the authority to impose a province-specific excise tax on products like tobacco and alcohol. In fact, provinces have limited authority to generate their own revenue. The main sources of revenue are fees for motor vehicle licences, gambling licences and hospital services (National Treasury, 1995). The various fees differ between the various provinces.
In most countries (the US and Canada being notable exceptions), implementing and increasing an excise tax is done by national government, not sub-national government. In the international context, Scotland (in the UK) and Northern Territory (in Australia) do not have the authority to implement a sub-national excise tax. In order to reduce the high levels of alcohol consumption in these jurisdictions, their governments imposed a minimum unit price (MUP) on alcohol. Implementing an MUP is within these jurisdictions' authority. Based on a legal opinion obtained by the DG Murray Trust, implementing

an MUP on alcohol in the Western Cape is within the authority and jurisdiction of the Western Cape government.

This report summarises the health and economic consequences of such a policy. It summarises and expands on the empirical work that has been conducted in the first phase of the study. The economic analysis rests heavily on economic theory, and studies that have been conducted in jurisdictions that have implemented an MUP on alcohol.

HEALTH EFFECTS OF ALCOHOL

Harm to drinkers

Alcohol consumption contributes to a wide range of chronic and acute health harms leading to around 3 million annual deaths worldwide (World Health Organisation, 2018). Overall, approximately 62,300 (95% UI 27,000–103,000) adults died from alcohol-attributable causes in South Africa in 2015, with 60% of deaths occurring in people in the low, and 15% in the high SES groups (Probst et al., 2018b). Acute health harms are primarily related to binge drinking and include violence, self-harm, and road injury (Institute for Health Metrics and Evaluation, 2019). These harms are particularly relevant in the South African context which records very high levels of alcohol consumption amongst drinkers. Vellios and Van Walbeek (2018) estimated that in 2015, the prevalence of self-reported binge drinking as a percentage of the total South African population was 14% (23% males, 6% females). Current alcohol use (any amount) was reported by 33% of the population (48% males, 20% females). The World Health Organisation (World Health Organisation, 2021) estimates South African adult (15+) per capita annual consumption (in litres of pure alcohol, 2016 -2018) to be at 9.5 litres, which is higher than both the global average (6.4) and the WHO Africa region (6.3) (World Health Organisation, 2020). These high levels of consumption also contribute to a wide range of chronic diseases. These include both non-communicable disease (liver cirrhosis, cancers, cardiovascular disease) and those with an infectious origin, such as TB and HIV. In South Africa, the high levels of alcohol consumption coupled with the triple burden of disease (non-communicable disease, infectious disease, and injury) combine to create a very high and negative health impact (World Health Organisation, 2021).

Harm to non-drinkers

An additional concern for policy makers is the impact of alcohol on non-drinkers, in particular women and children. In the context of South Africa's high abstinence rates this is particularly important as self-reported abstainers are in the majority particularly amongst women (National Department of

Health (NHoH), 2019). These non-drinking women would benefit from a reduction in consumption by corresponding reductions in intimate partner violence (Matseke et al., 2021, Cluver et al., 2020).
An MUP may also reduce the prevalence of Foetal Alcohol Spectrum Disorders (FASD), which is particularly relevant to the Western Cape that records one of the highest incidences of FASD globally Lubbe et al. (2017), (Popova et al., 2017).

The evidence and methods for estimating alcohol harm to others are still developing and currently limited to high-income countries (Kraus et al., 2019). Estimating alcohol harm, which combines survey data with estimates of the faction of the total burden attributable to drinking, to South Africa, should be a priority for future research. Given the baseline health burden and levels of consumption estimating the harm to others would likely be an important and compelling addition to the body of evidence relating to the negative health impact of alcohol in South Africa (Matzopoulos et al., 2014, Gibbs, 2021, Gibbs et al., 2021b, Probst et al., 2018a, Probst et al., 2018b, Vellios and Van Walbeek, 2018).

Inequality of harm

International evidence suggests that lower socioeconomic groups experience higher levels of alcohol-related harm (Mackenbach et al., 2015). This is also true for South Africa with the poorest groups bearing the largest burden of alcohol related-health harm. HIV/AIDS mortality attributable to alcohol use is far more prevalent for those in the lowest socioeconomic groups (Probst et al., 2018a). This unequal distribution of harm is not limited to HIV but extends across many causes of alcohol attributable harm. Overall alcohol-attributable mortality is highest in the lowest socioeconomic group, 727 per 100,000 deaths, compared with 163 deaths per 100,000 for the highest socioeconomic group (Probst et al., 2018b). The largest cause of alcohol-attributable deaths in the low SES group resulted from infectious disease as opposed to chronic disease in the high SES group (Probst et al., 2018b).

Current South African policy context

Alcohol consumption as a policy relevant issue in South Africa has recently come into sharp focus due to Covid-19. At various stages of the pandemic, the government banned the sale of alcohol, to reduce the burden on hospitals and to reduce the burden on policemen who were tasked with enforcing lockdown regulations (Rehm et al., 2020, Matzopoulos et al., 2020). Academic evidence on the impact of the alcohol ban on trauma admissions is emerging and, as expected by policy makers and public health experts alike, is indicating a strong link between alcohol consumption and the demand for acute hospital care (Barron et al., 2020, De Jong et al., 2020, Navsaria et al., 2021).

The global media has recently reported on the tavern tragedy in East London in which 21 teenagers died, the youngest just 13 (Reuters, 2022). The cause of death is yet to be confirmed but the deaths have highlighted the often-unsafe drinking environments which young people are exposed to. Addressing unsafe drinking is a priority.

Potential health impact of a Minimum Unit Price

There are a wide range of policy options available to the government to address alcohol-related harm. Increasing the price of alcohol is both highly effective in reducing consumption, but is also the most cost-effective option (World Health Organisation, 2010, Chisholm et al., 2018, World Health Organisation, 2019). However, a perennial argument raised against pricing policies is that tax increases are regressive: the impact on the poor is greater as they spend proportionally more of their money on alcohol compared to rich people. Policy makers will therefore need to understand whether the poorer groups benefit proportionally more in other ways, critically in a reduced burden of alcohol health harm.

Modelling evidence for introducing a Minimum Unit Price on alcohol in South Africa estimates that the health benefits will accrue to the bottom three wealth quintiles who accrue 86% of the lives saved resulting from the policy, that is 17,703 people over 20 years (Gibbs et al., 2021b, Gibbs et al., 2022). The reason the bottom three quintiles accrue the most health benefit is because they currently suffer a much higher health burden and they also currently buy the cheapest alcohol, which this policy is designed to target. This modelling work was adapted, by the same team, to the Western Cape and estimated that if the provincial government introduced a R8 minimum unit price the population would see significant health improvement. There would be 278,000 less occurrences of a person getting alcohol related HIV, TB, interpersonal violence and self-harm, road injury, liver cirrhosis or breast cancer (over 20 years) (Van Walbeek, 2021). A R8 MUP in the Western Cape Province is estimated to generate R503 million savings in healthcare costs, R79 million in crime costs, increases in revenue to retailers (R2,454 million) and taxation to the government (R263 million). This does not cover all alcohol-related health conditions and so just represents a proportion of the positive health benefit.

ECONOMIC IMPACT

An MUP versus an increase in the excise tax

Excise taxes have been levied on alcohol products for centuries. Initially the primary aim of the excise tax was to generate government revenue. In recent decades excise taxes are increasingly seen as a mechanism to reduce alcohol consumption. In the previous section the detrimental health and social consequences of alcohol misuse were described. Alcohol use and abuse imposes substantial costs, known as negative externalities, on society. By increasing the excise tax on alcohol, the government increases the retail price of the product. The revenues collected by the excise tax are meant to offset at least a portion of the negative externality.

However, an increase in the excise tax on alcohol is not a particularly well-targeted instrument in reducing heavy drinking. Ideally one would want the excise tax to reflect the cost imposed by the different categories of drinkers. Heavy drinkers impose a much higher social cost (i.e. externality) on society than moderate drinkers, and thus should pay a much higher excise tax amount than moderate drinkers. This does not happen in practice, because the social costs associated with alcohol use is not linearly related to alcohol consumption. Furthermore, because heavy drinkers consume cheaper alcohol (which generally carry a lower excise tax burden than more expensive alcohol) the tax amount per unit of alcohol is less than that of moderate drinkers.

A given percentage increase in the excise tax increases the retail price of all alcohol products. This is likely to decrease the consumption of moderate drinkers by a relatively larger percentage than that of heavy drinkers, because moderate drinkers tend to be more price sensitive than heavy drinkers. If the aim is to specifically decrease the consumption of heavy drinkers, an increase in the excise tax is not particularly effective.[1]

An MUP on alcohol is a much more targeted instrument to reduce heavy drinking than an increase in the excise tax. Heavy drinkers tend to drink much cheaper products than moderate drinkers. The MUP specifically targets cheaper products. Thus, even though heavy drinkers are less price sensitive than

[1] In contrast to the excise tax on alcohol, an increase in the excise tax on tobacco is a particularly sharp instrument. Most people agree that adolescents should not smoke, and that tobacco control interventions should specifically target youth smoking. It turns out that an excise tax increase is particularly effective in curbing youth smoking, because young people's demand for tobacco is much more price sensitive (i.e. price elastic) than the price elasticity of the general population. Thus a given tax increase will reduce youth smoking by a greater percentage than adult smoking. This is a particularly fortuitous outcome, because the tax increase has a bigger effect on the population group that is targeted than the rest of the population.

moderate drinkers, an MUP will result in a larger decrease in their consumption, precisely because it increases the price of products that are consumed mostly by heavy drinkers. Moderate drinkers, who tend to consume more expensive alcohol, would be much less affected by the MUP, simply because they do not consume the products that are affected by the MUP.

Impact on alcohol products

The MUP will have the largest impact on the beverages with the lowest price per unit of alcohol. In the first phase of this study, we showed that the products that would be most affected are sugar-fermented beverages (FSBs), followed by cheap (typically boxed) wine, and then beer. Currently FSBs incur an excise tax similar to that of wine, which (other than sorghum beer) is taxed at the lowest average tax incidence. Thus, compared to beer and spirits, the prices of FSBs and wine are least affected by the excise tax, and can be sold at very low prices.

If the MUP is levied at a rate of R8 per unit, our analysis shows that (at least some of) these products would be affected by the MUP. Other products like bottled wine, liqueurs and spirits would probably not be affected by the MUP if it is set at R8 per unit. However, if the MUP is levied at a rate of R10 per unit or more, bottled wine, some liqueurs and some spirits are likely to be affected as well.

Government revenue considerations

In South Africa, alcohol has been taxed since at least 1910. Alcohol excise taxes currently generate between 2% and 3% of total government revenue. Alcohol is subject to a specific tax, with spirits taxed the highest, followed by beer, wine and sorghum beer. Since the early 1990s, the government has increased the nominal excise tax on alcohol (other than sorghum beer) on an annual basis. Statistics published by the National Treasury clearly indicate that alcohol tax revenue increases when the government increases the alcohol excise tax.

A MUP is not aimed at generating more revenue. In fact, in our simulation exercises we showed that an MUP is roughly revenue-neutral (Van Walbeek et al, 2021). The government collects revenue from alcohol from two main sources: the excise tax and Value-added Tax (VAT). Consider the impact of an MUP on excise tax revenue first. Excise taxes, as specific taxes, are levied on the volume of alcohol, not the value of alcohol sold. An MUP is likely to reduce the volume of alcohol sold. After all, this is the main aim of the policy. Specifically, it is aimed to reduce the quantity of the cheapest products; these are consumed disproportionately by heavier drinkers, who account for a large proportion of overall alcohol sales (Bhattacharya et al., 2018). Since an MUP is aimed to reduce alcohol sales

volumes, it is likely to reduce revenue from alcohol excise taxes if tax rates remain unchanged. Since excise taxes are levied on the volume (not the value) of alcoholic beverages, a decrease in the volume of alcoholic beverages sold implies a decrease in the excise tax revenue collected.

The introduction of MUP in Scotland for instance, was predicted to cost the Scottish government £40 million a year; similarly, the MUP in Wales was predicted to cost the Wales government £25 million a year in foregone excise tax (Office for Budget Responsibility, 2018, Office for Budget Responsibility, 2020). An MUP would be expected to decrease excise tax revenue in South Africa as well, especially of wine, and to a very limited extend on beer. It will not have an impact on the excise tax revenue collected from spirits.

However, the excise revenue loss is likely to be partially offset by higher revenue from Value Added Tax (VAT), which increases in tandem with prices (World Health Organization, 2022b). This was found in previous simulation exercises. VAT is levied as an ad valorem tax, not as a specific tax. Thus, an increase in total turnover, which would be the logical result of an MUP, would result in an increase in VAT revenue.

Gibbs et al., estimates that in South Africa, a R10 MUP on alcohol is estimated to result in an increase in VAT by R4.27 billion because of the increased prices (Gibbs et al., 2021a). However, the MUP would result in a reduction in excise taxation by R1.24 billion due to the reduced volume of alcohol sold. Van Walbeek (2021), using somewhat different data and a different approach also finds that the decrease in the excise tax revenue is roughly counteracted by the increase in alcohol-related VAT revenue. The net effect of these two opposing forces is roughly zero, which means that central government will not be financially affected by a province specific MUP.

The choice between an increase in the excise tax or the implementation of a MUP is not an either/or decision. Excise taxes on alcohol are important to reduce the overall demand for the product and to raise revenue. They are Pigouvian taxes, levied to ensure that the retail price of alcohol approximates its social cost. A MUP, on the other hand, is more targeted at reducing the demand for alcohol among heavy drinkers.

Impact on alcohol producers and retailers

For companies that are currently producing low-priced alcohol (even if they are paying the full amount of excise taxes that are due), the MUP would potentially be challenging and would most certainly

demand a strategic response. A number of scenarios can materialise, based on the assumption that the MUP will be effectively implemented and enforced.

When the MUP is implemented, the price of all cheap and/or low-quality alcohol increases and will be concentrated around the MUP price. Consumers, who previously bought very cheap alcohol, precisely because it was cheap, now have more options. Assuming that they are unable to purchase alcohol at a price below the MUP, they may continue purchasing the same product as before, but now at higher prices, or they can switch to products that they previously would not have purchased because it was perceived as being too expensive.

Producers who previously produced very cheap alcohol and are unable to change their product are likely to experience a decrease in their sales volumes as people switch to higher quality products. This could mean that they will be forced out of business.

An alternative scenario is that they increase the perceived quality of their product, so that it matches the quality of other alcohol products that are being sold at the MUP level. There is likely to be substantial turmoil among producers at the lower end of the market. In fact, WHO (2022) points out that an MUP is likely to influence competition at the lower end of the market.

The increased competition at the low end of the market is unlikely to be on the basis of price (because the MUP rules this out), but rather on the basis of (perceived) quality. A similar situation applies in the petrol sector, where the retail price of petrol is set by the Department of Energy. Different petrol companies are forced to compete on non-price characteristics (e.g. different additives and advertising), while individual petrol stations compete on things like appearance, location, and service. Under-performing petrol stations will lose customers and may be pushed out of the market.

Producers of cheap alcohol whose product is perceived as substandard in the MUP price range, may experience a decrease in the demand for their product. However, for producers that are able to improve the quality of their product, the MUP can be quite positive if the average price increases. Should there be a decrease in sales volume, as is the intention of the MUP, this is likely to be offset by an increase in average prices. Indeed, prospective modelling in Scotland suggested that the total value of the alcohol market in Scotland would grow by 0.7% following the introduction of a £0.50 MUP (Angus et al., 2016). In South Africa a R10 MUP would increase the retail turnover by R30 billion (Gibbs et al., 2021a).

It is not possible, ex ante, to determine empirically whether the benefits of the higher retail prices will accrue to the producers of the alcohol, or to the rest of the value chain (i.e. distributors, wholesalers and retailers). It depends largely on the relative power of the players. Economic theory indicates that firms with more power can influence the price more than firms with less power. The beer producing industry, for example, is highly concentrated, and thus yields much pricing power. The wine producing industry is much more diffused, and thus yields less pricing power. The alcohol retail sector comprises a number of large chains, but also a large number of independent outlets, which means that the economic power of this sector is difficult to determine.

In the market for beer, economic theory indicates that, should the MUP be effective, the additional benefits of the higher price are likely to accrue more to the beer producers than to the retailers. In the market for wine, the impact is less clear, at least on theoretical grounds. It seems likely that the higher price of wine will be shared between the wine producers and the retailers.

Because alcohol cannot be sold at a price lower than the MUP, retailers are unable to use price discounts and sales campaigns to increase their sales (at least not on the products that are priced at the MUP). Removing the price aspect from the competitive landscape will level the playing field between the large retailers and the smaller liquor outlets. Some consumers might be more inclined to purchase their alcohol from local retailers, rather than from large supermarkets. The empirical evidence from Scotland supports this line of thinking. Following the introduction of the MUP in Scotland, smaller retailers felt the policy had been beneficial to them, as it had removed the competitive advantage from large supermarkets (Stead et al., 2020).

Based on economic logic and intuition, as well as the ex-post experience of Scotland, the overall effect of an MUP is likely to be positive for both producers and retailers as a whole. However, at the micro-level it is impossible to predict the impact on any individual producer, in particular those that currently produce and sell alcohol at prices well below the intended MUP level. It is possible that some of these companies, if they are unable to restructure themselves, may face significant challenges, and even closure.

Societal savings from an MUP

Considering that a substantial proportion of alcohol-related harm occurs in people of working age (OECD, 2015, Brennan et al., 2021) and that heavy drinking is associated with a significant reduction in GDP (OECD, 2021), an MUP is likely to bring benefits to the wider economy beyond the alcohol

industry, with the potential to reduce alcohol-related harm and unemployment (World Health Organization, 2022b). In England, a £0.50 MUP was expected to result in a 2% reduction in workplace absence, worth an estimated £13 million per year to the economy (Angus et al., 2015). In Wales, £0.50 MUP was estimated to lead to a cumulative saving to society of £882 million over 20 years. This amount was calculated as the sum of the following: reductions in direct health costs (£131 million), crime costs (£248 million), reduced workplace absence (£14 million) and gains in societal health, measured as Quality-Adjusted Life Years (£489 million) (Meng Yang et al., 2014). Evidence from the US also supports the conclusion that reducing alcohol consumption can lead to wider economic benefits (Cesur and Kelly, 2014). They found that a 10% increase in beer consumption was associated with a 0.41% fall in annual income growth. Presumably, this implies that a decrease in beer consumption will lead to an increase in income growth.

CONCLUSION

South Africa has a substantial alcohol problem. While alcohol use has undeniable economic benefits and, when consumed in moderation, social benefits, it also imposes large costs onto society. The cost of harmful alcohol use is borne not just by the drinkers, but also by innocent third parties. In this report we have shown that the harms associated to harmful alcohol use fall disproportionately on the poorer segments of society. Heavy drinkers impose a disproportionally high burden on themselves and on society. The excise tax revenue collected from heavy drinkers is nowhere near the cost that they impose, for two reasons: (1) heavy drinkers tend to drink relatively cheap alcohol, that is subject to comparatively little excise tax, and (2) the relationship between the cost to society and the volume of alcohol consumed is non-linear, increasing sharply with higher volumes. The fact that alcohol is subject to excise tax in the vast majority of countries acknowledges the fact that it imposes external costs. However, the excise tax is not borne equally between the different groups of consumers. Moderate drinkers tend to pay more revenues than the cost that they incur, and heavy drinkers pay less than the cost that they incur.

Whereas an excise tax on alcohol tends to reduce alcohol use across all drinking categories, an MUP on alcohol is targeted on drinkers who consume cheap alcohol, of which heavy drinkers comprise a substantial proportion. As such, an MUP is a more precise instrument than raising the excise tax, if the aim is to reduce harmful alcohol use.

The MUP will be opposed by some segments of the alcohol industry, primarily on economic grounds. They may feel, possibly quite understandably, that they will be disadvantaged by the MUP. The

reaction of the alcohol industry, and especially those that believe that they will be disadvantaged, is likely to be similar to the reaction of the sugar-sweetened beverage and tobacco industries, when excise taxes were implemented (in the case of the SSB industry in 2018) or increased (in the case of the tobacco industry, ever since the mid-1990s). These two industries railed strongly against these interventions. Their leading argument was that many jobs would be lost.

While any intervention comes with some degree of disruption, and may require adaptation, the affected companies are typically not best placed to comment about the effects of the intervention, because they have a strong incentive to exaggerate the negative impact.

Before a policy is implemented, research about the likely impact of the policy in the country concerned can at best be based on assumptions, modelling exercises, scenario building and surveys. One cannot evaluate the policy because the policy is not in place. However, one can use the ex-post experiences of other countries to determine the likely outcomes of the intervention in the country where it is considered. Scotland fulfils this role in the case of an MUP on alcohol.

In this report we highlight that the economic impact of the MUP in Scotland has generally been neutral or positive. We acknowledge that these are average effects. It is possible that individual producers and/or retail outlets may be negatively affected. The losers from the policy would experience the loss quite acutely. The gains from the policy are likely to be less obvious, and companies that experience such gains may not even realise that the benefit is due to the new policy.

In total, while we cannot be quite sure of the health and economic outcomes, should the Western Cape government implement an MUP on alcohol, the evidence overwhelmingly indicates that the benefits outweigh the costs. If the Western Cape government wants to improve the quality of life of its citizens, especially the poor and marginalised, implementing an MUP on alcohol would be a great intervention.

REFERENCES

ANGUS, C., GILLESPIE, D., ALLY, A. & BRENNAN, A. 2015. Modelling the impact of minimum unit price and identification and brief advice policies using the Sheffield Alcohol Policy Model version 3. *Sheffield, UK: ScHARR, University of Sheffield*.

ANGUS, C., HOLMES, J., PRYCE, R., MEIER, P. & BRENNAN, A. 2016. Model-based appraisal of the comparative impact of Minimum Unit Pricing and taxation policies in Scotland. *Sheffield: ScHARR, University of Sheffield*.

BARRON, K., BRADSHAW, D., PARRY, C. D., DORRINGTON, R., GROENEWALD, P., LAUBSCHER, R. & MATZOPOULOS, R. 2020. Alcohol and short-run mortality: Evidence from a modern-day prohibition. *Available at SSRN 3744031*.

BHATTACHARYA, A., ANGUS, C., PRYCE, R., HOLMES, J., BRENNAN, A. & MEIER, P. S. 2018. How dependent is the alcohol industry on heavy drinking in England? *Addiction,* 113**,** 2225-2232.

BRENNAN, A., ANGUS, C., PRYCE, R., BUYKX, P., HENNEY, M., GILLESPIE, D., HOLMES, J. & MEIER, P. S. 2021. Potential effects of minimum unit pricing at local authority level on alcohol-attributed harms in North West and North East England: a modelling study. *Public Health Research,* 9.

CESUR, R. & KELLY, I. R. 2014. Who pays the bar tab? Beer consumption and economic growth in the United States. *Economic Inquiry,* 52**,** 477-494.

CHISHOLM, D., MORO, D., BERTRAM, M., PRETORIUS, C., GMEL, G., SHIELD, K. & REHM, J. 2018. Are the "best buys" for alcohol control still valid? An update on the comparative cost-effectiveness of alcohol control strategies at the global level. *Journal of studies on alcohol and drugs,* 79**,** 514-522.

CLUVER, L., SHENDEROVICH, Y., MEINCK, F., BEREZIN, M., DOUBT, J., WARD, C., PARRA-CARDONA, J., LOMBARD, C., LACHMAN, J. & WITTESAELE, C. 2020. Parenting, mental health and economic pathways to prevention of violence against children in South Africa. *Social Science & Medicine,* 262**,** 113194.

CRAM. 2021. *NIDS-CRAM Wave 5 Reports* [Online]. Available: https://cramsurvey.org/reports/ [Accessed 28 November 2022].

DE JONG, M., VONK, M., JENKINS, L. S., REID, S. & REUTER, H. 2020. Prohibiting alcohol sales during the coronavirus disease 2019 pandemic has positive effects on health services in South Africa. *African Journal of Primary Health Care and Family Medicine,* 12**,** 1-4.

GIBBS, N., ANGUS, C., DIXON, S., CHARLES, D., MEIER, P. S., BOACHIE, M. K. & VERGUET, S. 2022. Equity impact of minimum unit pricing of alcohol on household health and finances among rich and poor drinkers in South Africa. *BMJ global health,* 7**,** e007824.

GIBBS, N., ANGUS, C., DIXON, S., PARRY, C. & MEIER, P. 2021a. Effects of minimum unit pricing for alcohol in South Africa across different drinker groups and wealth quintiles: a modelling study. *BMJ open,* 11**,** e052879.

GIBBS, N. K. 2021. *Appraising the potential impact of a Minimum Unit Price of Alcohol in South Africa: a modelling study with a focus on equity.* University of Sheffield.

GIBBS, N. K., ANGUS, C., DIXON, S., PARRY, C. D. & MEIER, P. S. 2021b. Effects of Minimum Unit Pricing for Alcohol in South Africa Across Different Drinker Groups and Wealth Quintiles: A Modelling Study. *BMJ open,* 11.

INSTITUTE FOR HEALTH METRICS AND EVALUATION. 2019. *GBD Compare* [Online]. Seattle, WA: IHME, University of Washington. Available: http://vizhub.healthdata.org/gbd-compare [Accessed 20/03/2019].

KRAUS, L., SEITZ, N.-N., SHIELD, K. D., GMEL, G. & REHM, J. 2019. Quantifying harms to others due to alcohol consumption in Germany: a register-based study. *BMC medicine,* 17**,** 1-9.

LUBBE, M., VAN WALBEEK, C. & VELLIOS, N. 2017. The prevalence of fetal alcohol syndrome and its impact on a child's classroom performance: A case study of a rural South African school. *International Journal of Environmental Research and Public Health,* 14**,** 896.

MACKENBACH, J. P., KULHÁNOVÁ, I., BOPP, M., BORRELL, C., DEBOOSERE, P., KOVÁCS, K., LOOMAN, C. W., LEINSALU, M., MÄKELÄ, P. & MARTIKAINEN, P. 2015. Inequalities in alcohol-related mortality in 17 European countries: a retrospective analysis of mortality registers. *PLoS medicine,* 12**,** e1001909.

MATSEKE, M. G., RUITER, R. A., RODRIGUEZ, V. J., PELTZER, K., LEE, T. K., JEAN, J. & SIFUNDA, S. 2021. Prenatal and postnatal intimate partner violence and associated factors among HIV-infected women in rural South Africa: a longitudinal study. *Violence against women***,** 1077801221992872.

MATZOPOULOS, R., WALLS, H., COOK, S. & LONDON, L. 2020. South Africa's COVID-19 Alcohol Sales Ban: The Potential for Better Policy-Making. *International Journal of Health Policy and Management*.

MATZOPOULOS, R. G., TRUEN, S., BOWMAN, B. & CORRIGALL, J. 2014. The cost of harmful alcohol use in South Africa. *South African Medical Journal,* 104**,** 127-132.

MENG YANG, SADLER SUSANNAH, GELL LUCY, HOLMES JOHN & ALAN, B. 2014. Model-based appraisal of minimum unit pricing for alcohol in Wales: An adaptation of the Sheffield Alcohol Policy Model version 3. Welsh Government Social Research.

NATIONAL DEPARTMENT OF HEALTH (NHOH), S. S. A. S., SOUTH AFRICAN MEDICAL RESEARCH COUNCIL (SAMRC), AND ICF. 2019. South African Demographic and Health Survey 2016. Pretoria South Africa: NHoH, Stats SA, SAMRC, and ICF.

NATIONAL TREASURY. 1995. *Division of Revenue* [Online]. Available: http://www.treasury.gov.za/documents/mtbps/1999/5.pdf [Accessed 28 November 2022].

NATIONAL TREASURY. 2021. *2021 Budget Review - Economic Outlook* [Online]. Available: http://www.treasury.gov.za/documents/national%20budget/2021/review/Chapter%202.pdf [Accessed 20 November 2022].

NAVSARIA, P., NICOL, A., PARRY, C., MATZOPOULOS, R., MAQUNGO, S. & GAUDIN, R. 2021. The effect of lockdown on intentional and non-intentional injury during the COVID-19 pandemic in Cape Town, South Africa: A preliminary report. *South African Medical Journal,* 111**,** 110-113.

OECD. 2015. *Tackling harmful alcohol use: economics and public health policy. Paris: Organisation for Economic Co-operation and Development* [Online]. Available: https://www.oecd.org/health/tackling-harmful-alcohol-use-9789264181069-en.htm [Accessed].

OECD. 2021. *Preventing harmful alcohol use. OECD health policy studies. Paris: Organisation for Economic Co-operation and Development* [Online]. Available: https://www.oecd-ilibrary.org/social-issues-migration-health/preventing-harmful-alcohol-use_6e4b4ffb-en [Accessed].

OFFICE FOR BUDGET RESPONSIBILITY 2018. *Office for Budget Responsibility: economic and fiscal outlook*, The Stationery Office.

OFFICE FOR BUDGET RESPONSIBILITY 2020. *Office for Budget Responsibility: economic and fiscal outlook*, The Stationery Office.

PILLAY-VAN WYK, V., MSEMBURI, W., LAUBSCHER, R., DORRINGTON, R. E., GROENEWALD, P., GLASS, T., NOJILANA, B., JOUBERT, J. D., MATZOPOULOS, R. & PRINSLOO, M. 2016. Mortality trends and differentials in South Africa from 1997 to 2012: second National Burden of Disease Study. *The Lancet Global Health,* 4**,** e642-e653.

POPOVA, S., LANGE, S., PROBST, C., GMEL, G. & REHM, J. 2017. Estimation of national, regional, and global prevalence of alcohol use during pregnancy and fetal alcohol syndrome: a systematic review and meta-analysis. *The Lancet Global Health,* 5**,** e290-e299.

PROBST, C., PARRY, C. D. & REHM, J. 2018a. HIV/AIDS mortality attributable to alcohol use in South Africa: a comparative risk assessment by socioeconomic status. *BMJ open,* 8**,** e017955.

PROBST, C., PARRY, C. D., WITTCHEN, H.-U. & REHM, J. 2018b. The socioeconomic profile of alcohol-attributable mortality in South Africa: a modelling study. *BMC medicine,* 16**,** 97.

REHM, J., KILIAN, C., FERREIRA-BORGES, C., JERNIGAN, D., MONTEIRO, M., PARRY, C. D., SANCHEZ, Z. M. & MANTHEY, J. 2020. Alcohol use in times of the COVID 19: Implications for monitoring and policy. *Drug and Alcohol Review,* 39**,** 301-304.

REUTERS. 2022. *Teen survivors of S.African tavern disaster quit nightlife in horror* [Online]. Available: https://www.reuters.com/world/africa/teen-survivors-safrican-tavern-disaster-quit-nightlife-horror-2022-06-30/ [Accessed].

SAMRC. 2022. *Report on Weekly Deaths in South Africa* [Online]. Available: https://www.samrc.ac.za/reports/report-weekly-deaths-south-africa?bc=254 [Accessed 22 November 2022].

STEAD, M., CRITCHLOW, N., EADIE, D., FITZGERALD, N., ANGUS, K., PURVES, R., MCKELL, J., MACKINTOSH, A., MITCHELL, H. & SUMPTER, C. 2020. Evaluating the impact of alcohol minimum unit pricing in Scotland: Observational study of small retailers. *University of Stirling: Stirling, UK*.

VAN WALBEEK, C., GIBBS, NK. 2021. Modelling the impact of a minimum unit price (MUP) on alcohol consumption in the Western Cape. (unpublished report for DGMT).

VELLIOS, N. & VAN WALBEEK, C. 2018. Self-reported alcohol use and binge drinking in South Africa: Evidence from the National Income Dynamics Study, 2014-2015. *South African Medical Journal,* 108**,** 33-39.

WORLD HEALTH ORGANISATION. 2010. *Global strategy to reduce the harmful use of alcohol* [Online]. Geneva: WHO. Available: https://www.who.int/substance_abuse/publications/global_strategy_reduce_harmful_use_alcohol/en/ [Accessed 10/06/2019].

WORLD HEALTH ORGANISATION. 2018. *Global Information System on Alcohol and Health: World Health Organisation* [Online]. Geneva: WHO. Available: http://apps.who.int/gho/data/node.gisah.GISAHhome?showonly=GISAH [Accessed 14/02/2019].

WORLD HEALTH ORGANISATION 2019. The SAFER technical package: five areas of intervention at national and subnational levels. Geneva.

WORLD HEALTH ORGANISATION. 2020. *World Health Data Platform* [Online]. Available: https://www.who.int/data/gho/data/themes/topics/topic-details/GHO/levels-of-consumption [Accessed 03/03/2021 2021].

WORLD HEALTH ORGANISATION. 2021. *WHO Global Information System of Alcohol and Health (GISAH): Global Health Observatory data repository* [Online]. Available: https://apps.who.int/gho/data/node.main.GISAH?lang=en [Accessed 15/05/2021 2021].

WORLD HEALTH ORGANIZATION. 2021. *Obesity and overweight* [Online]. Available: https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight [Accessed 29 November 2022].

WORLD HEALTH ORGANIZATION. 2022a. *New WHO signature initiative shows raising alcohol taxes could save 130 000 lives per year* [Online]. Available: https://www.who.int/europe/news/item/23-02-2022-new-who-signature-initiative-shows-raising-alcohol-taxes-could-save-130-000-lives-per-year [Accessed 29 November 2022].

WORLD HEALTH ORGANIZATION 2022b. No place for cheap alcohol: the potential value of minimum pricing for protecting lives. Copenhagen: : WHO Regional Office for Europe.