



A STEALTH TAX

NOT A HEALTH TAX



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A STEALTH TAX, NOT A HEALTH TAX

The cash-strapped South African government needs to bring in more revenue but is reluctant overtly to raise the VAT rate, which would unleash a political storm. Instead, it is planning to raise some R10.5bn – half of what an increase in the VAT rate from 14% to 15% would yield – by introducing a 20% tax on sugar-sweetened beverages (SSBs).

This tax, it claims, will help reduce obesity in South Africa, especially among the poor. As evidence, it cites a recent academic study or ‘mathematical model’ developed by Professor Karen Hofman of Wits University, among others. However, this study has no hard data or credible evidence to substantiate its conclusions. Instead, it rests on five assumptions unlikely to hold true in the real world. The study also acknowledges that a 20% SSB tax might reduce the number of obese South Africans by a mere 32 610 people.

At the same time, a comprehensive recent study by the McKinsey Global Institute of 44 anti-obesity interventions being used around the world shows that sugar taxes are among the least effective. They nevertheless get by far the most media attention, which helps skew policy decisions in their favour. That sugar taxes yield useful amounts of revenue is also, of course, why governments prefer them to initiatives known to work far better in countering obesity.

Introduction

The National Treasury plans to introduce a roughly 20% excise tax on all sugar-sweetened beverages (SSBs) that contain added as well as natural sugars. The likely yield from the tax – based on 2015 sales figures for the SSBs to be subjected to the tax – will be R10.5bn a year. The burden of the tax will fall most heavily on the poor, who spend more of their income on food and drink than the rich.

According to the Treasury, the primary rationale is not to increase the government’s tax take, but rather to help overcome obesity. Moreover, since obesity is more prevalent among the poor, the resulting reduction in obesity will benefit the poor the most, so offsetting the impact of an admittedly regressive tax.

However, if this compensating benefit does not transpire, the tax will simply impose an increased economic burden on those consumers who are already the hardest pressed.



In 2014 the McKinsey Global Institute studied 44 anti-obesity interventions around the world and found that sugar taxes are among the least effective in countering obesity. Yet sugar taxes get by far the most media attention, helping to skew public debate and encouraging policy makers to embrace them. That these taxes yield useful amounts of revenue is also, of course, why governments tend to favour them.

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The Treasury claims that a 20% SSB tax will reduce obesity in South Africa by 3.8% among men and by 2.4% among women. As evidence of this, it cites a 'mathematical model' developed by Professor Karen Hofman of the School of Public Health at the University of the Witwatersrand, among others. This study also predicts that the SSB tax will reduce the number of obese adults by more than 220 000.

However, the Hofman model has little hard data to support it. Instead, it rests primarily on five unproven assumptions, none of which is likely to hold true in the real world. It has other methodological weaknesses too, while its predictions span a wide range of possible outcomes. It thus acknowledges that, even if all its assumptions are fulfilled, the number of obese adults might in fact decrease by a mere 32 610 people. Such a small gain in the fight against obesity hardly warrants the extraction of another R10.5bn in tax from already struggling consumers.

The tax proposed

The tax is to be levied on sugar-sweetened beverages (SSBs), which are defined in the policy paper as 'beverages that contain added caloric sweeteners such as sucrose, high-fructose corn syrup (HFCS), or fruit-juice concentrates'. Among such beverages are: '(i) soft drinks, (ii) fruit drinks, (iii) sports and energy drinks, (iv) vitamin water drinks, (v) sweetened iced tea, and (vi) lemonade, among others'. Beverages that have no added sugar but only the sugar that is 'naturally built... into the structure of the ingredients' (known as intrinsic sugars) are to be excluded from the tax. Examples of exempted beverages include unsweetened milk and 100% fruit juice.¹

The tax will be levied (says the policy paper) 'in direct proportion to the level of added sugar' in the relevant beverages.² The proposed tax rate is 2.29 cents per gram of sugar for beverages with labels that disclose their sugar content. According to the policy paper, 'this rate roughly equates to a 20 per cent tax incidence for the most popular soft drink, ie Coca Cola, averaging 35g per 330 ml'.³

Significantly higher sugar content, at 50g per 330 ml, will be presumed for 'SSBs that currently do not apply nutritional labelling'. This is intended to provide 'an incentive for producers to move towards nutritional labelling until [a] mandatory labelling legislative framework is put in place'.⁴ However, as journalist Ivo Vegter comments, this is 'a punitive' assumption which presumes the sugar level in such beverages to be 43% more than the sugar found in Coca Cola,⁵ when this may not in fact be so.

Differential impact of the proposed tax rate

Most countries with taxes on SSBs apply a flat tax rate per litre, making Mauritius the only state which uses the approach that South Africa proposes. The *Treasury's* idea is that the tax should increase the price of SSBs by roughly 20%. Since a litre of Coca Cola contains 106g of sugar and retails for roughly R11.50, this has led to a proposed tax of 2.29c per gram of sugar. However, as an article in *City Press* reports, this approach will result in significantly different price increases for products of *varying* size and sugar content.⁶



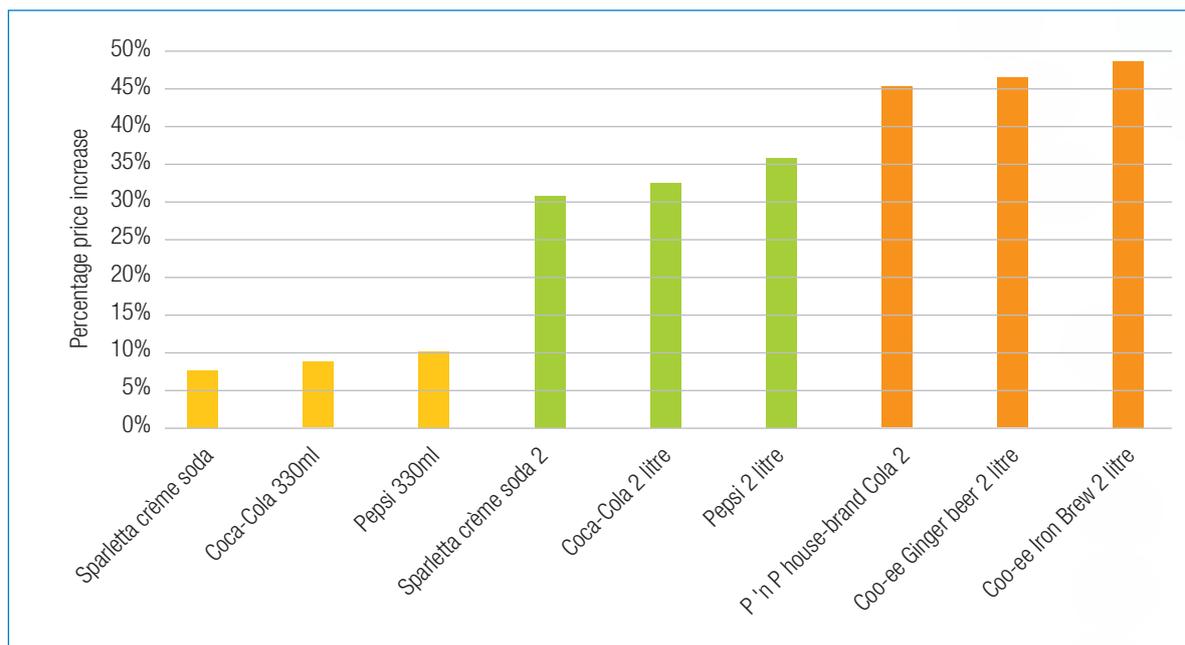
According to the policy paper, the primary rationale is not to increase the government's tax take but rather to help counter the problem of obesity in South Africa.

As this article points out, the resulting price increase will vary according to the volume of the units sold and will be less on a 330ml can than on a 2-litre bottle. Writes Dewald van Rensburg: 'A 330ml can of Coke goes for R9 at Pick 'n Pay, but 2 litres cost R14.50. The proposed tax would add 9% [to the price of] a can of Coke, but 33% [to the price of] the 2-litre bottle.' Price increases will thus be greatest for consumers who generally buy in larger units in order to save money – and also for producers who sell in these larger units so as to target the low-cost end of the market.⁷

The proposed tax could hold particularly negative ramifications for SoftBev, which bottles not only PepsiCo products but also lower-cost local products such as Coo-ee and Jive.

Writes Mr van Rensburg: 'Coo-ee is usually priced lower than Coca-Cola products and is sold only in large units. At the current price, the tax would [add] close on 50% to [the price of] some Coo-ee products' (see Table 1 below). The tax could thus inhibit competition in the soft drinks industry by 'squeezing out "B" brands'.⁸

Table 1: Likely price increases on various sizes and brands of sugary drinks from SSB tax



This assessment presumes that the SSB tax will be fully (100%) passed through by retailers. Larger enterprises could, however, choose to absorb some of the increased price and pass through only a portion of the tax. However, smaller retailers with limited turnover – especially those operating in spaza shops and the like – will have less capacity to absorb any part of the tax and would have little choice but to pass it on to consumers in full. This could reduce their sales volumes, causing them significant harm (see *The likely economic costs*, below).

A recent *Business Day* editorial estimates that ‘the tax could bring in R3.6bn to R4.5bn’ a year in additional revenue. Though the actual yield is more likely to be some R10.5bn (see *The likely economic costs*, below), this amount is still small compared to overall tax revenues of some R1 trillion a year.⁹ According to the policy paper, the primary rationale is not to increase the government’s tax take but rather to help counter the problem of obesity in South Africa.¹⁰

Reducing obesity the supposed rationale

Obesity is becoming a major problem, not only in South Africa, but also in many other countries around the world. As the policy paper points out, the prevalence of obesity is measured using a ‘body mass index’ (BMI). This is based on the formula of weight in kilograms, divided by height squared (kg/m^2). A person with a BMI level of 30 or more is classified as obese, while an individual with a BMI level of 25 or more is regarded as overweight.¹¹

According to the Global Burden of Disease 2013 Obesity Collaboration, the prevalence of obesity in South Africa stands at 13.5% among adult men and at 42% among adult women.¹² It is these figures that the policy paper cites, though somewhat different statistics have been compiled by the South African National Health and Nutrition Examination Survey (SANHANES-1). This survey, which was carried out in 2013, puts the adult male prevalence rate at 11% and the equivalent figure among adult women at 39%.¹³

Both in South Africa and elsewhere in the world, women are generally more prone to obesity than men. Prevalence is also generally higher among those who have less education and a lower socio-economic status.¹⁴

In many different states across the world, a wide range of economic and other policies have been developed to counter obesity. Non-economic policies include detailed nutritional information to help consumers make more informed choices, mass media campaigns to raise awareness of health risks, the regulation of food advertisements, and the promotion of exercise and active sports. Economic policies include taxes on foods and beverages regarded as unhealthy, as well as subsidies or tax exemptions for foods and beverages seen as positive for health. Yet, despite all the interventions that have been tried, overweight and obesity rates have continued to increase in many countries, both developed and developing. According to the Organisation for Economic Co-operation and Development (OECD), no OECD country has managed to reverse the trend since rates began growing steadily across most OECD countries in the 1970s and 1980s.¹⁵



Obesity is a complex condition with many causes. However, among the factors driving it is a large increase in the availability of cheap vegetable oils. In addition, the intensive production of beef, pork, dairy products, eggs, and poultry has increased food intake from animal sources, especially in low- and middle-income countries.

Part of the problem, as IRR Policy Fellow Jasson Urbach points out, is that ‘industrialised food processing and modern food science have made a vast range of low-cost, ultra-processed and ready-to-consume products available to consumers with intense palatability... Ingredients typically include a combination of highly refined sugars and starches, edible oils extracted from whole foods, processed animal products, sodium, and other additives. These ultra-processed products are harmless when consumed in small amounts with other healthy sources of calories. However, in large quantities, the products diminish the sensitivity of endogenous satiety

mechanisms and so promote energy over-consumption.’ In addition, though alternatives are often available to consumers in the form of fresh and perishable goods, these are often not as palatable. They also require greater preparation, which further reduces their appeal for many.¹⁶

Obesity is a complex condition with many causes. However, among the factors driving it is a large increase in the availability of cheap vegetable oils. In addition, the intensive production of beef, pork, dairy products, eggs, and poultry has increased food intake from animal sources, especially in low- and middle-income countries. There has also been a widespread reduction in the intake of nutritionally important foods, including legumes, coarse grains, and fresh vegetables, while a growing proportion of foods and beverages now contain caloric sweeteners to enhance flavour. All these factors have contributed to a ‘nutrition transition’ – from traditional to ‘westernised’ consumption patterns – which has added to the problem of obesity.¹⁷

A growing and multifaceted obesity challenge

In 2014 the McKinsey Global Institute (MGI or McKinsey) published a discussion paper entitled *Overcoming obesity: An initial economic analysis* (the McKinsey study).¹⁸ The McKinsey study identified obesity as a ‘critical global issue’, as shown by the fact that nearly 30% of the world’s population is overweight or obese. As the study points out, more than 2.1 billion people are overweight, of whom some 671 million are obese.¹⁹

According to the World Health Organisation, obesity accounts for some 2.8 million global deaths a year, making up roughly 5% of 59 million such fatalities.²⁰ As the policy paper acknowledges, there are various other factors which account for still higher proportions of global deaths – high blood pressure is responsible for 13 per cent of such deaths, while tobacco use accounts for 9 per cent and physical inactivity for 6 per cent²¹ – but obesity nevertheless remains a critical concern.

Obesity also contributes to a number of non-communicable diseases (NCDs). These include cardiovascular diseases (such as heart attacks and strokes), cancers, chronic respiratory diseases (such as asthma) and type 2 diabetes.²² These diseases add significantly to health care costs, while obesity also reduces the productivity of employees and so undermines the competitiveness of companies.²³

The complex causes of obesity

As the McKinsey study stresses, ‘the root causes of rising obesity are highly complex, spanning evolutionary, biological, psychological, sociological, economic, and institutional factors’. This is confirmed by a recent analysis of the reasons for obesity, carried out by the United Kingdom government, which identifies ‘more than 100 variables that directly or indirectly affect obesity outcomes’.²⁴

Notes the McKinsey study: ‘Because of centuries of food insecurity, human beings have evolved with a biological capacity to cope with food scarcity rather than abundance. The human body seeks out energy-dense foods and tries to conserve energy as fat. Hormones that regulate hunger and satiety encourage people to seek extra food when food is scarce, but do not seem to have the ability to prevent over-consumption or encourage extra calorie burning when food is abundant. Modern life also makes fewer physical demands on many people, who lead less active lifestyles as technology replaces the need for physical labour. With many jobs now sedentary, exercise is a conscious and optional choice.’²⁵

Human beings have a psychological relationship with food that goes beyond a need for basic sustenance. Many of us use food as a reward or to relieve stress, or have a compulsive relationship with certain types of food. There is also a correlation between obesity and high rates of some mental health conditions, including depression.

These factors have greatly affected the net energy balance, adding to the risks of people putting on weight if they eat more than they need and exercise too little. At the same time, the cost of food has come down sharply over the past 60 years. In the United States, for instance, as the McKinsey study records, ‘the share of average household income spent on food fell from 42 per cent in 1900 to 30 per cent in 1950 and then to 13.5 per cent in 2003’.²⁶

Complex medical factors also seem to be in issue, though these still require more research. For example, there is growing evidence that different nutrients may have a differential impact on the hormones that regulate satiety and hunger. In addition, people with a greater diversity of bacterial species in their intestinal bacteria ecosystem seem to be less likely to gain weight than others, though this too needs more investigation.²⁷

Psychological and social factors also play a part in what people eat. Notes the McKinsey study: ‘Human beings have a psychological relationship with food that goes beyond a need for basic sustenance. Many of us use food as a reward or to relieve stress, or have a compulsive relationship with certain types of food. There is also a correlation between obesity and high rates of some mental health conditions, including depression.’²⁸

Social norms and cues also have significant influence, for people tend to increase or reduce the amount of food they eat depending on whether their companions consume a lot or a little. In addition, a person with a friend who has become obese is 57% more likely to become obese as well, in response to this ‘social normalisation of the condition’.²⁹

There is also evidence to suggest that obesity can be passed on from one generation to the next through both physiological and behavioural mechanisms. Hence, a mother with high BMI is likely to have children who also become obese when they grow to adulthood. This is partly, as the McKinsey study notes, because ‘foetuses develop a compromised metabolism and a resistance to insulin’. However, it is also because children are likely to develop the same eating habits as their parents.³⁰

In many countries, there seems to be an inverse correlation between income levels and the prevalence of obesity in women (and hence often also in their children). A study conducted by the US Centers for Disease Control and Prevention found that obesity prevalence is generally similar at all income levels for men in the US (about 30 per cent), whereas for women it was 42 per cent at low-income levels and 29 per cent at high-income levels. A similar pattern is evident in the UK, for the prevalence of obesity is almost double among women with unskilled occupations (35 per cent) than it is among professional women (18 per cent).³¹

Tackling a condition with many complex causes

As the McKinsey study stresses, ‘obesity is the result of a multitude of factors, and therefore no single solution is likely to be effective in tackling it’. A range of interventions is needed to ‘encourage and empower individuals to make the required behavioural changes’. In addition, ‘these interventions need to be systematic, not only aiming for immediate impact on the net energy balance but also making sure that the change is sustained’ over time.³²

The McKinsey study identified 74 anti-obesity interventions that are being discussed or piloted around the world. These 74 interventions fall roughly within 18 groups and reflect four key needs: (i) to inform people, (ii) to enable them (by making the option to change easier), (iii) to motivate them, and (iv) to influence them by addressing social norms.³³

The McKinsey study found that ‘there had been little systematic attempt to analyse the relative potential cost-effectiveness and impact’ of these 74 interventions. It managed to gather information on 44 of them (which covered 16 of the 18 groups). In carrying out its analysis, it conducted ‘an extensive review of more than 500 research studies from around the world’. It also ‘pressure-tested’ these studies for factors such as the quality of the research design and the comprehensiveness and relevance of the evidence cited. However, since ‘the science of addressing obesity is relatively young’, the McKinsey study stresses that its evaluation is nothing more than ‘an initial attempt to determine the potential impact and cost-effectiveness of a subset of policy interventions’.³⁴

The likely impact of different interventions

Interventions analysed in the McKinsey study fall roughly into 16 ‘intervention’ categories. These are ranked according to their estimated impact on obesity, along with the strength of the evidence of their effectiveness (see *Table 2*, below).

This analysis shows that introducing a tax on products high in sugar (or fat) is one of the *least effective* interventions that can be made, ranking fourth last within the 16 categories analysed. In addition, there is no direct evidence at all that such a tax brings about any change in weight, or even any change in consumption or physical activity levels. That a tax of this kind will bring about a reduction in BMI is thus an unproven assumption – and is based on nothing more than a supposedly logical deduction from indirect evidence of other changes.³⁵

The McKinsey study also identifies the interventions that are likely to be the most effective. Its conclusions are as follows: ‘The highest impact intervention area is portion control, and this might also have the advantage of being profitable as there is a saving in ingredients. Reformulation of fast food and processed food is the second-highest impact intervention type, but here some costs are involved... Other high-impact interventions [include] parental education, introducing healthy meals in schools and workplaces, and [making] changes in the school curriculum to include more physical exercise.’ Also worth considering, the study adds, are workplace wellness programmes, which have an impact on weight levels and could probably be implemented at relatively low cost.³⁶



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Adds the McKinsey study: ‘Our assessment finds that the single highest-impact intervention area is reducing the size of portions in packaged foods, fast-food restaurants, and canteens.’ This saves more than 2 million ‘disability adjusted life years’ or DALYs – years of life lost or impaired because of disease – over the lifetime of the UK’s 2014 population. However, even this gain counters only ‘about 4 per cent of the total disease burden attributable to high BMI’. It thus signals that even the intervention with the most impact will ‘achieve only a modest reduction in the overall burden of obesity’. Hence, if significant overall impact is to be achieved, this requires ‘as many interventions as possible... by as wide as possible a range of sectors of society – particularly if the aim is to shift cultural norms around eating and physical activity habits’.³⁷

Table 2: Impact of obesity levers, United Kingdom, over lifetime of 2014 population

The strength of the evidence of any impact on obesity (third column) ranges from:

- ■ ■ ■ ■ Sufficient evidence of **weight change**
- ■ ■ ■ Limited evidence of **weight change**
- ■ ■ Sufficient evidence for behaviour change (reflected in changes either in consumption or in physical activity levels)
- ■ Limited evidence for behaviour change (ditto)
- *Logic based on parallel evidence* (no direct evidence of change in weight or change in consumption or physical activity levels, but logical deduction based on parallel or indirect evidence)

CATEGORY OF INTERVENTION	ESTIMATED IMPACT THOUSAND DALYS SAVED*	STRENGTH OF EVIDENCE
Portion control	2 126	■ ■ ■
Reformulation	1 709	■ ■
High calorie food/beverage availability	1 137	■ ■
Weight management programmes	967	■ ■ ■ ■ ■
Parental education	962	■ ■ ■ ■
School curriculum	888	■ ■ ■
Healthy meals	868	■
Surgery	615	■ ■ ■ ■ ■
Labelling	575	■ ■
Price promotions	561	■
Pharmaceuticals	430	■ ■ ■ ■ ■
Media restrictions	401	■ ■
10% tax on high sugar/high fat products	203	■
Workplace wellness	139	■ ■ ■ ■
Active transport	67	■
Public health campaigns	49	■

Source: Dobbs et al, *Overcoming obesity*, McKinsey Global Institute, p38; assessment based on literature review, expert interviews, and MGI analysis.

* DALYs or disability adjusted life years. DALYs capture the burden of poor health by measuring years of life lost and years of life impaired by a disease condition.³⁸

The media attention given to different types of intervention

The McKinsey study also examines media coverage of the various interventions that may be used to reduce obesity. It finds that the media tend to overlook the interventions likely to have the highest impact – and instead focus mainly on initiatives with little or no proven impact on either weight change or behaviour change, as set out in *Table 3*.³⁹

Table 3: Estimated impact of interventions compared to their media coverage

CATEGORY OF INTERVENTION	ESTIMATED IMPACT THOUSAND DALYS SAVED	NUMBER OF MEDIA COUNTS IN PAST YEAR IN MAJOR UK NEWS AND BUSINESS PUBLICATIONS
Portion control	2 126	182
Reformulation	1 709	233
High calorie food/beverage availability	1 137	n/a
Weight management programmes	967	13
Parental education	962	4
School curriculum	888	380
Healthy meals	868	n/a
Surgery	615	512
Labelling	575	350
Price promotions	561	114
Pharmaceuticals	430	364
Media restrictions	401	91
<u>10% tax on high-sugar or high-fat products</u>	<u>203</u>	<u>930</u>
Workplace wellness	139	197
Active transport	67	n/a
Public health campaigns	49	n/a

Source: Dobbs et al, *Overcoming obesity*, McKinsey Global Institute, p52; assessment based on literature review, expert interviews, and MGI analysis.

This analysis shows that the interventions most likely to succeed are given very little coverage in the media. By contrast, by far the most media coverage is reserved for 10% taxes on high-sugar (or high-fat) products. However, there is no evidence that such taxes result in positive changes in consumption or physical activity levels – and even less proof that they have any impact at all in reducing weight or obesity.

Though the McKinsey study does not spell this out, this skewed media coverage is also likely to skew policy interventions in favour of a sugar tax. In doing so, it is likely to downplay and distract attention away from other interventions with greater prospects of success. This seems calculated to undermine the battle against obesity, rather than advance it in any meaningful way.



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International experience regarding SSB taxes

The policy paper notes that ‘a tax on sugar-sweetened beverages has been implemented in various countries’, including (in alphabetical order) Denmark, Finland, France, Hungary, Ireland, Mauritius, Mexico, and Norway.

According to the policy paper, SSB taxes in various countries have led to increased prices and reduced demand for taxed products, as summarised in *Table 4* below.

Table 4: Countries with SSB taxes and their impact on prices and demand

COUNTRY	DATE/RATE OF SSB TAX	PRICE INCREASES	REDUCED DEMAND
Finland	2011, €0.220/ per litre on high-sugar drinks	7.3% in 2011 7.3% in 2012 2.7% in 2013	0.7% in 2011 3.1% in 2012 0.9% in 2013
France	2012, £0.059* per litre	5% in 2012 3.1% in 2013	3.3% in 2012 3.4% in 2013
Hungary	2011, \$0.02 tax on certain high-sugar sodas	3.4% in 2011, 1.2% in 2012, 0.7% in 2013	2.7% in 2011 7.5% in 2012, 6% in 2013
Mauritius	2013, 3c per gram of sugar	no evidence cited	no evidence cited
Mexico	2014, 1 peso per litre	no evidence cited	10% in 2014**

Source: Policy paper, Appendix II and Appendix III

*The policy paper gives a figure in pounds sterling, rather than euros, but other sources put the tax at some 7.55cents per litre.⁴⁰

**This figure is at odds with the 6% reduction cited in a 2016 article on the impact of this tax, as well as data from Mexico’s National Institute of Public Health which shows increased SSB sales after the introduction of the tax (see *Mexico’s SSB tax*, below).

There are major discrepancies in the figures cited for price increases and (presumed) reductions in demand, raising doubts as to the strength of the causal link between the two. In addition, even if SSB taxes do succeed in reducing consumption of the taxed products, they will not necessarily reduce overall sugar intake because people may switch to cheaper brands, or shift to other sugared products (including coffee or tea), or cut down on other items so that they can still afford to buy the taxed products.⁴¹

The policy paper makes little mention of the fact that Denmark abolished its SSB tax in January 2014. Among the reasons it cited for this decision were inflated prices, employment risks, an impetus to cross-border shopping, an increased administrative burden, and evidence of hoarding and higher calorie intake. The decision also reflected the Danish tax ministry’s view (expressed in 2012) that ‘suggestions to tax foods for public health reasons are misguided at best and may be counter-productive at worst’. The ministry also warned that sugar taxes could ‘become expensive liabilities for the businesses forced to become tax collectors on the government’s behalf’.⁴²

After the Danish tax was repealed, Alain Beaumont, secretary-general of European soft drinks association Unesda, commented: ‘Soft drinks taxes are on the wane and are being voted down by governments and parliaments across Europe. They have not been proven to achieve any public health objectives and they destroy jobs and economic value.’⁴³

Ireland's tax on soft drinks was introduced as far back as 1916 and then repealed in 1992, so the country hardly provides a relevant example. The soda tax in Norway was introduced in 1981, and is unlikely to have affected the frequency of soft-drink consumption in the period from 2001 to 2008, as cited by the policy paper. In addition, if there was indeed a decline in consumption in those years (no supporting citation is provided), this was probably the result of the 'complimentary (sic) measures' taken, which included bans on advertising unhealthy drinks to children.⁴⁴

In addition, the policy paper makes no mention of other countries which have either abandoned SSB taxes or declined to introduce them. Iceland, for example, discontinued its sugar tax on beverages and foods in January 2015, saying this step was necessary to benefit households and simplify the tax system. Romania considered introducing fast food and SSB taxes in 2010 and 2011 but abandoned the initiative in 2012, citing concerns about the difficulty of implementing the tax and industry warnings about potential job losses.⁴⁵

Recent research by Ecorys, a leading European research and consultancy company, confirms that SSB (and food) taxes have generally had an 'uncertain' impact on obesity in Denmark, Finland, France, and Hungary. In July 2014, in a report entitled *Food taxes and their impact on competitiveness in the agri-food sector*,⁴⁶ Ecorys concludes that 'the effectiveness of such taxes in discouraging the consumption of the targeted foods or ingredients is... uncertain'. This is partly because many other factors are often also at work, making it hard to isolate the impact of the relevant taxes on price and demand.⁴⁷

The Ecorys article notes that price increases are 'generally associated with a reduction in the consumption of the taxed product'. However, these decreases are often far smaller than the price increases, pointing to inelasticity in demand. In addition, 'consumers may move to cheaper versions of the taxed product (brand substitution), or to non-taxed products or less heavily taxed products (product substitution)'. There is, of course, no guarantee that substitute products will contain less sugar (or less fat or salt). Hence, there is no proven link between reduced consumption and a positive impact on obesity or public health. As the Ecorys study puts it: 'To what extent changes in consumption resulting from a food or SSB tax actually lead to public health improvements is still widely debated, and evidence from academic literature is inconclusive and sometimes contradictory.'⁴⁸

What is clear, however, as the Ecorys study notes, is that food and SSB taxes have a major economic impact on firms active in the agri-food sector. These taxes increase costs for such firms, including their administrative costs. In addition, 'the profit margin for the taxed product is negatively affected which, together with the decline in demand for the taxed product, negatively impacts firm profitability'. Moreover, 'the impact of these burdens on small and medium enterprises (SMEs) is likely to be larger'. Food and SSB taxes may also lead to 'a decline in the need for labour inputs and thus employment, especially at local level'. This may have particular ramifications for the often 'large numbers of local SMEs that manufacturers work with, mostly...in bottling, packaging, advertising, and retail'. Food and SSB taxes may thus 'have a direct effect on local employment, as well as a trickle-down effect on employment through the value chain'.⁴⁹



In addition, the policy paper makes no mention of other countries which have either abandoned SSB taxes or declined to introduce them. Iceland, for example, discontinued its sugar tax on beverages and foods in January 2015, saying this step was necessary to benefit households and simplify the tax system.

Reduced profitability and job losses may sometimes be ‘compensated by growth in other product lines’, the Ecorys study points out. However, this is not always the case – and ‘especially not for SMEs which do not have much flexibility to offset the loss of profit margins on other products’. Moreover, even large multinational companies which produce only sweetened foods or beverages will find it difficult to switch to other products.⁵⁰

Like the McKinsey study, the Ecorys report notes that ‘food and SSB taxes are not the only options available to policy makers to impact on the consumption of foods and beverages with a high percentage of fat, salt, or sugar’. It highlights some of the other steps that could be taken, saying these vary from the subsidisation of fresh fruit and vegetables to the use of ‘information and education schemes’ to increase awareness of the importance of a balanced and healthy diet.⁵¹

Mexico’s SBB tax

According to the policy paper, the SSB tax introduced in Mexico (at the rate of 1 peso per litre) resulted in ‘purchases of taxed beverages decreasing by an average of 6 per cent’ and as much as 12 per cent in December 2014. In addition, ‘reductions were higher among households of lower economic status, averaging a 9 per cent decline during 2014 and up to a 17 per cent decrease by December 2014, compared with pre-tax trends’.⁵²

These figures are taken from an article by Arantxa Colchero and others, entitled ‘Beverage purchases from stores in Mexico under the excise tax on sugar-sweetened beverages: observational study’. It was published in the *British Medical Journal* in January 2016 and seeks to analyse the purchase of beverages from January 2012 to December 2014 ‘from an unbalanced sample of 6 253 households’ in 53 cities in Mexico.⁵³

This study seeks to compare actual SSB consumption by December 2014 – 12 months after the implementation of a 10% tax on SSBs in January – with predicted consumption if the tax had not been implemented, based on trends established in 2012 and 2013. It finds an average decrease in consumption of 6% over the year, as the policy paper stresses. However, the conclusions reached, as cited in the policy paper, may be over-stated. The authors themselves acknowledge that they could not establish a causal link between the tax and subsequent consumption patterns, as other changes had also occurred ‘concurrent with the tax’.⁵⁴

However, even if the 6% average decrease could be attributed solely to the SSB tax – and not to declining trends in soft drink consumption, especially in December, that were already apparent in both 2012 and 2013 – the diminution would still be insignificant. According to the Colchero article, ‘during 2014 the average urban Mexican purchased 4.2 litres fewer taxed beverages’ over the course of the year. This translates into 11.5ml per person per day, which is roughly the equivalent of one less 330ml can of Coca Cola per Mexican per month.⁵⁵ This is a meaningless reduction, which is unlikely to have had any impact on obesity.



These conflicting assessments of SSB purchases in Mexico in the post-tax period underscore the difficulty of measuring the impact of an SSB tax on the consumption of taxed products.

In addition, sales data gathered by Mexico's National Institute of Public Health (NIPH) seem to contradict the conclusions reached in the Colchero article, for the NIPH data shows that sales of SSBs in fact rose by 6.4% in 2014 and by 7% in 2015.⁵⁶ The NIPH attributes these increased sales to confounding factors such as economic growth, higher seasonal temperatures, and the impact of marketing and promotions, which (it says) can increase consumption by up to 20%. The NIPH tries to argue for the effectiveness of the SSB tax in any event but, as Mr Vegter writes, 'if industry marketing can totally overwhelm the effects of fiscal intervention in the consumption of SSBs, then the case for such an intervention is fatally undermined'.⁵⁷

These conflicting assessments of SSB purchases in Mexico in the post-tax period underscore the difficulty of measuring the impact of an SSB tax on the consumption of taxed products. The extent to which an SSB tax might trigger brand or product substitution is even more complex and uncertain, making it impossible to measure the impact of the tax in reducing obesity. The Colchero article implicitly acknowledges this key shortcoming, saying its authors were unable to 'quantify any potential changes in calories or other nutrients purchased and their potential health implications'.⁵⁸

In 2015 Mexico's lower house of congress voted overwhelmingly (by 423 to 33) to approve a package of fiscal measures that includes a 50% cut in taxes on soft drinks with less than 5 grams of added sugar per 100ml. The aim is to encourage the industry to offer more diet colas and similar low-calorie options, which have thus far not been popular. There is as yet little impetus to abolish the tax altogether – despite its lack of success in countering obesity – because it yields around 20 billion pesos annually, according to the Mexican finance ministry.⁵⁹

The 'mathematical model' on which the policy paper relies

According to the policy paper, 'a South African study estimated the effects of a 20 per cent tax on SSB on the prevalence of obesity and found a reduction in obesity of 3.8 per cent in adult males and 2.4 per cent in females'.⁶⁰ The South African study in question is one by Mercy Manyema, a researcher at the University of the Witwatersrand (Wits), and various other authors. Among these is Professor Karen Hofman, director of Priceless SA (Priority Cost Effective Lessons for Systems Strengthening), a policy unit based at the Wits School of Public Health.

Entitled 'The Potential Impact of a 20% Tax on Sugar-Sweetened Beverages on Obesity in South African Adults: A Mathematical Model', the study was published in October 2014.⁶¹ This Manyema article is tentative at times, for it concludes by emphasising the need for further research into various important issues, including:⁶²

- 'the possible effect of SSB consumption on the daily energy balance and weight change';
- 'the extent to which reduced SSB sales would have adverse economic or social consequences, such as job losses', and
- 'whether these adverse consequences would outweigh the benefits of reduced obesity'.

However, the Manyema article also starts off with a clear objective. This is to 'model the effect of a 20% SSB tax on the prevalence of obesity in South African adults' and so 'enable the Department of Health to consider this as a lever to prevent and reduce the burden of disease resulting from obesity-related NCDs (non-communicable diseases)'.⁶³

The article also begins by claiming that ‘it will provide evidence on the potential impact of fiscal policy on SSB consumption and obesity in South Africa’.⁶⁴ However, it does not in fact provide any hard data or other credible evidence to support its claim that a 20% SSB tax will have a significant impact in reducing obesity. Rather, it sets out a ‘model’ of what might perhaps occur. This, as Mr Vegter writes, is ‘at best speculation based on a range of assumptions derived from the US, France, Mexico, and Brazil’.⁶⁵

The article begins by claiming that ‘it will provide evidence on the potential impact of fiscal policy on SSB consumption and obesity in South Africa’. However, it does not in fact provide any hard data or other credible evidence to support its claim that a 20% SSB tax will have a significant impact in reducing obesity.

The Manyema article uses data from SANHANES-1 to show that, on average, South African adults consume 184 ml of SSBs, 200 ml of unsweetened fruit juice, and 204 ml of milk a day. It assumes that SSBs have an average energy density of 1 800 kilojoules (kJ)/litre, while the equivalent figure for unsweetened fruit juice is 1 340 kJ/l and that for milk is 2 540 kJ/l. Based on six (and often conflicting) studies from the US – and one each from Brazil, France, and Mexico – it estimates that a 10% increase in the price of SSBs will lead to a 13% decrease in their consumption. It also cites research showing that a daily increase in energy intake of 94 kJ/day is likely to increase body weight by 1 kg for adults – and presumes that the converse will also apply, though this might not in fact be so.⁶⁶

Based on such factors, the Manyema article estimates that a 20% SSB tax will result in a reduction in daily energy intake of anything between 9kJ and 68kJ, with an overall average of about 36kJ. It further estimates that this reduction will result in a decline in obesity prevalence among South African men of between 0.4% and 7.2% (average 3.8%), and among women of between 0.3% and 4.4% (average 2.4%). As Mr Vegter notes, these are ‘very small changes, with a very wide range of uncertainty’.⁶⁷

Moreover, as the Manyema article itself acknowledges, even if an average reduction of 3.8% is in fact achieved among men, this will merely ‘equate to a 0.5 percentage point change’ in the overall male prevalence rate. Likewise, even if an average reduction of 2.4% is indeed achieved among women, this will be ‘equivalent to a 0.8 percentage point change’ in the female rate.⁶⁸

Notes Mr Vegter: ‘The Treasury policy paper cites only the 3.8% and 2.4% change figures, without explaining what they really mean. Using the Global Burden of Disease statistics for obesity, and assuming that the average changes predicted by the Manyema paper will be realised, these percentage changes mean male obesity will decrease from 13.5% to 13.0% of the population, while female prevalence will decrease from 42% to 41.2%. Such low numbers, speculative as they are, hardly seem to justify a substantial tax on a wide range of arbitrarily-selected products such as sugar-sweetened beverages.’⁶⁹

The Manyema article also makes some extraordinarily specific claims about how the numbers of obese South Africans will come down in response to a 20% tax on SSBs: by 142 217 for women and by 80 452 for men, yielding a total reduction in the number of obese people of 222 669. But these figures are in fact averages of estimates that vary widely on either side. Among women, the number that experience a reduction in obesity could thus be 16 550, though it might also rise to 265 039. Among men, the number experiencing such a reduction could be 16 060, though it might also come in at 147 284.⁷⁰

In other words, even if all the assumptions on which these estimates hold true, the number of South Africans experiencing a reduction in obesity could be a mere 16 550 among women and a mere 16 060 among men. Moreover, even if 222 669 people were in fact to experience a diminution in obesity, this total would amount to only 0.4% of the South African population. Again, such low numbers hardly justify the introduction of a substantial tax on SSBs, which could have many negative economic outcomes.

In addition, the Manyema article is based, not on hard data, but rather on five key assumptions of doubtful validity. First, it assumes that a 20% tax on SSBs will result in a 20% increase in the price of SSBs. Second, it assumes that this price increase will result in a major reduction in SSB consumption. Third, it assumes that this reduction in SSB consumption will lead to an average reduction in daily energy intake of 36kJ, whereas consumers could instead shift to other sugary products not subject to the tax. Fourth, the article assumes that this mooted reduction in daily energy intake will be enough to result in significant weight loss. However, 36kJ a day is a small amount, representing less than 1% of the recommended daily energy intake of a child or adult man. Fifth, it assumes that this diminution in body weight will reduce the prevalence of obesity in South Africa by the stated (and wide-ranging) percentages, the basis for which is not adequately explained.⁷¹

The Manyema article claims to have taken proper account of substitution effects, but this is not so. It acknowledges that it lacked 'SA-specific own- and cross-price elasticity data', which is why it had to rely on figures from the US and elsewhere. It recognises that 'a lower own-price elasticity' (as found in a report dealing with obesity in India, for example) would lead to 'smaller changes in SSB consumption and subsequently more modest changes in obesity'. It admits that 'its model does not include the substitution effect of other sweetened drinks such as coffee, tea, and hot chocolate', even though 'other studies have shown that the demand for tea and coffee... goes up with SSB price increases'. It also acknowledges that it made no attempt to 'account for substitution of SSBs with other sugar-sweetened food items', instead assuming that such substitution would be insignificant.⁷²

As these acknowledged weaknesses underscore, the Manyema article cannot accurately predict likely substitution effects. Nor can it provide any hard data or factual evidence to substantiate the five key assumptions on which its conclusions about reduced obesity rest.

The policy paper overlooks all the many shortcomings in the Manyema article. Instead, it seizes on only two of the figures it provides – and simplistically cites these as evidence that a 20% tax on SSBs will indeed reduce the prevalence of obesity by 3.8 per cent among men and by 2.4 per cent among women.⁷³



The Manyema article also makes some extraordinarily specific claims about how the numbers of obese South Africans will come down in response to a 20% tax on SSBs: by 142 217 for women and by 80 452 for men, yielding a total reduction in the number of obese people of 222 669. But these figures are in fact averages of estimates that vary widely on either side.

Irrationality of the proposed SSB tax

The Manyema article provides no credible evidence that a tax on SSBs will reduce the prevalence of obesity in any significant way. In addition, as the Institute of Economic Affairs (IEA) in the UK has pointed out, models of the kind used in the Manyema article work solely if all the assumptions on which they are based hold true. However, any causal connection between SSB taxes and diminished obesity breaks down if any of the underlying assumptions is in fact incorrect.⁷⁴

As earlier indicated, there are several ways in which the chain from taxation to better health outcomes can break down. First, businesses with the financial capacity to do so may decide to absorb some or all of the cost of an SSB tax, instead of passing it on to consumers through higher prices. Second, if prices do rise, consumers may value the product enough to absorb its higher costs by making cuts elsewhere in their spending. This means that the demand for SSBs and other food products may be more inelastic than articles such as the Manyema one assume. Third, consumers may respond to the tax by switching to cheaper brands of the SSB, or by buying it in cheaper shops or informal outlets. Fourth, consumers may reduce their consumption of SSBs but buy more of other high-calorie products.⁷⁵



Models of the kind used in the Manyema article work solely if all the assumptions on which they are based hold true. However, any causal connection between SSB taxes and diminished obesity breaks down if any of the underlying assumptions is in fact incorrect.

International experience confirms that the causal chain is likely to break down in precisely these ways. When a soda tax was introduced in Berkeley (California), for instance, retail prices rose by less than half of the amount of the tax, probably because of price competition from neighbouring areas which did not have a similar tax.⁷⁶ Where prices do rise, a reduction in consumption may occur – but this is often less than anticipated, as the demand for food and SSBs is frequently inelastic, staying at much the same level despite higher prices. In Finland, for example, as the IEA study records, ‘a 14.8% increase in the price of confectionery coincided with a mere 2.6 per cent drop in consumption’. In addition, when the price of soft drinks rose by 7.3 per cent for two years running in Finland, consumption fell by less than one per cent in the first year and by 3.1 per cent in the second year.⁷⁷

SSB taxes are often equated with ‘sin’ taxes on cigarettes and are assumed to work in much the same way. However, this overlooks the fact that food falls into a different category from cigarettes. Writes the IEA: ‘Unlike smoking, food is a biological necessity. If one source of calories becomes more expensive, consumers will switch to another food or drink product or to a cheaper variety of the same product. There is no guarantee that the substitute products will have fewer calories or be better for health. Since humans are hard-wired to seek out energy-dense foods, the most likely effect of taxing calorific products is, as Ryan Edwards notes in *Preventive Medicine*, that “consumers will probably increase their demand for cheaper calories, leaving obesity unchanged”.’⁷⁸

That sugar taxes have little impact on obesity has also been confirmed by research in both the US and Mexico. Writes the IEA: ‘Studying soda taxes in the US, Fitts and Vader (2013) conclude that their research “does not support the theory that soda taxes have a negative effect on body-mass index”’. An earlier research paper in the US also found ‘no statistically significant associations between state-level soda taxes and adolescent BMI’ (Powell et al, 2009), while a further US study found that changes in food prices had no effect on obesity (Han and Powell 2011).⁷⁹

A systematic review of some 880 studies dealing with the assumed link between food and SSB taxes and the prevalence of obesity has found little evidence of this causal connection. Writes the IEA: ‘There is a striking contrast between theoretical studies, which generally predict that such taxes “work”, and studies of hard data in places that have actually implemented them, which generally show the opposite.’

Some commentators have tried to discount these findings by arguing that the taxes in issue were not high enough to affect BMI. However, a 2014 US study has shown that, even in areas where soda taxes are unusually high, they still fail to have any effect on obesity. According to these authors: ‘Our results cast serious doubt on the assumptions that proponents of large soda taxes make on their likely impacts on population weight. Together with evidence of important substitution patterns in response to soda taxes that offset any caloric reductions in soda consumption, our results suggest that fundamental changes to policy proposals relying on soda taxes as a key component in reducing population weight are required.’⁸⁰

In Mexico, the extent to which SSB consumption came down in response to the country’s 10% SSB tax is itself disputed, as earlier noted. However, even if the Colchero article is correct in reporting a 6% reduction in consumption of SSBs, it nevertheless puts the average decline in the consumption of sugary drinks at a mere 11.5ml per person per day.⁸¹ According to Tom Sanders, a professor of nutrition and dietetics, this is ‘a drop in the caloric ocean’, whereas if obesity is effectively to be countered ‘long-term reductions in the range of 300–500 kcal/day are probably needed’.⁸²

In addition, as the IEA article points out, a systematic review of some 880 studies dealing with the assumed link between food and SSB taxes and the prevalence of obesity has found little evidence of this causal connection. Writes the IEA: ‘There is a striking contrast between theoretical studies, which generally predict that such taxes “work”, and studies of hard data in places that have actually implemented them, which generally show the opposite. Lacking real world evidence that sugar taxes are effective as health measures, campaigners continue to cite findings from crude economic models which do not adequately account for the ability of consumers to choose cheaper or discounted brands, to shop at cheaper shops, or to switch to alternative high-calorie food and drink products.’⁸³

There is no rational basis, thus, for introducing an SSB tax as a mechanism to reduce obesity. It is also irrational to single out the sugar in certain beverages for the imposition of a tax, rather than the sugar found in other foods and drinks. As an editorial in *Business Day* has asked, why focus on the specified SSBs rather than on ‘sugar-rich tomato sauce or jelly beans?’⁸⁴ The policy paper suggests that the sugar in SSBs is particularly damaging because these drinks have no compensating nutritional benefits, but there is little clear evidence to suggest that a calorie from one source is any more fattening than a calorie from another.⁸⁵

In addition, there is little scientific evidence that sugar is ‘addictive’, as some proponents of an SSB tax have claimed. As the IEA writes, ‘although “eating addiction” may be a behavioural problem, it is not the result of inherently addictive substances in food’. There is also little evidence of a clear causal link between sugar consumption and obesity. In the UK, Australia, and Canada, for instance, sugar consumption has gone down in recent decades, even as obesity has increased.⁸⁶

The same is true in South Africa, where average sugar consumption has decreased from 354 calories per day in 1990 to 300 calories per day in 2011, a reduction of 15%. Despite this diminution, the overall obesity rate (according to figures compiled by the Food and Agriculture Organisation and the United Nations) went up over the same period, from 14% in 1990 to 19.6% in 2011. This 40% increase in obesity clearly cannot be linked to increased sugar consumption. However, it could be the result of increases in the consumption of vegetable oils and poultry.⁸⁷ The increased consumption of these products has clearly added significantly to daily energy intake, even as average levels of physical activity have come down.



South Africa's proposed SSB tax is thus irrational. If it is nevertheless introduced, it could also create the false impression that the obesity problem is being countered, when this is not the case.

In addition, sugary drinks provide only a small portion of people's energy intake: around 3 per cent in Britain⁸⁸ and roughly the same in South Africa, according to Oxford Economics, a consultancy, in an analysis commissioned by the Beverage Association of South Africa (BevSA).⁸⁹ Hence, even if the consumption of SSBs goes down in response to a tax, this will have only a marginal impact on sugar consumption – and an even smaller effect on obesity.⁹⁰

Sugar consumption in South Africa is also already relatively low. Writes Mr Vegter:⁹¹

The SANHANES-1 survey assessed dietary sugar intake among South Africans on a scoring scale of 0 to 8. A score of 0–2 implies a person is accustomed to a low sugar intake, 3–5 indicates a moderate sugar intake, and 6–8 shows a high sugar intake. The mean score for South Africans was 3.0, which is at the low end of the moderate band. Among young people, the mean was slightly higher, at 3.47. A similar bias is seen towards urban formal areas, where the mean score was 3.36, and towards white consumers, who scored 3.44. Sugar intake is lowest among black Africans, and in rural and informal areas. These scores indicate that South Africans on average do not consume too much sugar.

In total, SANHANES-1 found that only 19.7% of South Africans have a high sugar consumption score, 38.2% consume moderate amounts, and the largest share of the population, 42.1%, has a low sugar intake. This distribution is similar to the distribution of fat intake among South Africans: only 18.3% have a high fat intake, 46.4% consume fat in moderate amounts, and 35.3% eat fat only in low amounts.

What these results confirm, as Mr Vegter writes, is that 'more than 80% of the population does not have a high sugar (or fat) intake. As a result, fiscal interventions will largely impact upon people that do not require them, especially among the urban and rural poor'.⁹²

In addition, as the McKinsey study has stressed, the causes of obesity are multiple and complex. This means that the problem can be overcome solely through a multi-faceted response. There are also many other interventions likely to be more effective than a tax on SSBs. South Africa's proposed SSB tax is thus irrational. If it is nevertheless introduced, it could also create the false impression that the obesity problem is being countered, when this is not the case. By contrast, the tax could have various negative economic consequences, which must also be taken into account and weighed against the nebulous health benefits of the intervention.

The tax envisaged and its likely economic costs

As earlier noted, the SSB tax will be an excise tax which will be levied at a rate of 2.29c per gram of sugar in those beverages which contain ‘added’ as well as ‘intrinsic’ sugars. Most SSB taxes in other countries are levied at a flat rate per litre (for example, R2 per litre), but the policy paper rejects this approach because it ‘taxes low sugar content SSBs at the same rate as high sugar content SSBs’ and thus provides no incentive for manufacturers to reformulate SSBs to reduce their sugar content. The Treasury acknowledges that a tax per gram of sugar is ‘administratively slightly more complex’, but claims that this is justified as it will help promote a shift to products with less sugar.⁹³

However, what this approach also means is that no distinction will be drawn between the intrinsic sugars that many beverages contain and the ‘added’ sugars that are the target of the tax. Hence, beverages with only intrinsic sugars, such as 100% fruit juices, will not be taxed at all. Yet the sugar content of such beverages is generally the same as, if not greater than, the sugar content of products such as Coca Cola. A 330 ml can of Coke, for example, contains 35 grams of sugar, whereas the sugar content of the same quantity of orange juice, apple juice and grape juice is 31, 46, and 55 grams respectively.⁹⁴ This adds to the irrationality of the tax.

A ‘duty-at-source’ (DAS) system will be used, which means that the tax will be collected from the producers or importers of SSBs at factory gates or ports of entry. These entities are expected – so as to maintain their current profit margins – to pass the full amount of the tax on to the bottlers, transporters, wholesalers, and retailers that make up the remainder of the value chain. In this way, the price increases resulting from the tax will ultimately be passed on to all SSB consumers.⁹⁵



If the SSB tax on Coca Cola is taken as the basis for calculating a rough total, the SSB tax could yield R10.5bn in its first year and possibly more.

The policy paper makes no attempt to quantify the likely tax yield or to assess what the overall economic costs of the tax might be. However, Oxford Economics states that some 5.480 billion litres of soft drinks were sold in South Africa in 2015, of which roughly 80% or R4.377bn are likely to be subject to the proposed SSB tax.⁹⁶ Since a 330 ml can of Coca Cola has 35 grams of sugar, the SSB tax on such a can would be 80c. Hence, the SSB tax on three such cans (roughly equivalent to a litre) would be R2.40. If the SSB tax on Coca Cola is taken as the basis for calculating a rough total, the SSB tax on 4.377bn litres could yield R10.5bn in its first year – assuming, of course, that there is no substantial decline in consumption. If this assumption holds true, the actual yield could be even higher, as there are many SSBs with a higher sugar content than Coca Cola.⁹⁷

R10.5bn is a small part of South Africa’s overall annual tax revenues, which currently amount to some R1 trillion.⁹⁸ Such an additional tax could nevertheless be large enough to have a major negative impact on the soft drinks industry in the country.

How great the overall economic impact would be is difficult to predict, for it will largely depend on the extent to which the consumption of SSBs declines in response to the tax. Demand for SSBs may well prove more inelastic than the 2014 Manyema article assumes. However, if this article is taken as definitive – as the policy paper clearly believes it should be – then the economic consequences could be extensive.

The impact would fall most heavily on the informal and often home-based 'spaza' shops which currently employ some 360 000 people and which rely on soft drink sales for some 15% to 20% of their revenue.

Oxford Economics has modelled the likely impact of the proposed SSB tax, using both government-provided input-output tables as well as the elasticities (own-price and cross-price) set out in the Manyema article. Based on this data, it has estimated both volume changes in demand for SSBs and the probable economic consequences of the projected decreases.⁹⁹

At present, notes Oxford Economics, the beverage industry in South Africa contributes some R59.7bn in gross value added (GVA). (As the consultancy explains, GVA is a proxy linked to GDP via the following relationship: $GVA + \text{taxes on products} - \text{subsidies on products} = \text{GDP}$.) The industry also employs some 188 500 people, both directly and indirectly. Included within this total are some 14 500 individuals who are directly employed in the industry itself. Also included are roughly 107 500 indirect employees, whose jobs result from the procurement spending of the soft drinks industry in agriculture and elsewhere. Relevant too are some 66 500 people in the wider economy, whose jobs are supported by the spending of those in direct or indirect employment attached to the beverage industry. The beverage industry thus contributes significantly to GVA and jobs. It also pays some R17.9bn in taxes, a figure which includes R5.8bn in income tax, R4.5bn in corporate tax, and R7.6bn in VAT.¹⁰⁰

Using the elasticities cited in the Manyema article, Oxford Economics estimates that the consumption of taxed SSBs would decrease from 4.377bn litres to around 3.014bn litres. This would result in a R13bn reduction in the industry's contribution to GVA. It would also bring about the loss of some 42 000 direct, indirect, and induced jobs. The industry's contributions to income tax, corporate tax and VAT would decline from R17.9bn to R14.9bn, a decrease of R3bn. The industry would also have to pay some R7.6bn in SSB taxes (on the reduced number of litres of SSBs consumed). However, the overall benefit to the fiscus from the new tax would be virtually cut in half by the R3bn reduction in its contribution to existing taxes.¹⁰¹

The SSB tax would also have a negative impact on the entire value chain, from agriculture (where some 79 000 people are directly employed in the sugar sector alone)¹⁰² through to utilities, construction, the hospitality industry, the wholesale and retail sector, the transport industry, and the financial and business services sector, among others. In all these spheres, current contributions to GVA would be diminished, jobs would be lost, and tax payments would come down – but without any offsetting contribution, in these spheres, from the new SSB tax.¹⁰³

According to Oxford Economics, the retail sector would be particularly hard hit. It could well lose another 15 000 jobs (over and above those earlier identified), while between 10 000 and 20 000 anticipated jobs would become more difficult to generate. Within the retail sector, the impact would fall most heavily on the informal and often home-based 'spaza' shops which currently employ some 360 000 people and which rely on soft drink sales for some 15% to 20% of their revenue.¹⁰⁴ The SSB tax would significantly reduce the sales and profit margins of these small enterprises, which could lead to the closure of between 6 500 and 11 500 of them. Major supermarkets and discount stores would find it easier to absorb the impact, but spaza shops – along with other local and traditional retailers – would be hard hit.¹⁰⁵

The South African economy already stands on the brink of recession and the downgrading of its international credit ratings to sub-investment (junk) status. The country also confronts a major crisis of joblessness, with the unemployment rate currently standing (on the broad definition which includes discouraged would-be workers) at 36% in general and at 67% among young people aged 15 to 24. No other country that has seen fit to introduce a sugar tax has confronted an equivalent burden of joblessness. In circumstances such as these, South Africa cannot afford to put some 60 000 jobs at risk – and especially not when the claimed health benefits of the proposed tax are most unlikely to be realised.

If the SSB tax is introduced, demand for taxed products could well prove more inelastic than the Manyema article assumes. In that event, the consumption of taxed SSBs will not decrease as sharply and the negative impact on GVA, jobs, and tax revenues within the soft drinks industry will be much reduced. However, the health rationale for the SSB tax will also be shown to be deeply flawed, raising yet further questions as to why the tax should be imposed at all.

In addition, the SSB tax is a regressive measure likely to have a particularly negative impact on low-income households, which spend a higher proportion of their income on food and beverages than wealthier households do. Writes Mr Vegter: 'It is well established that poor people seek out foods high in energy, since this offers the most economical choice. As a share of their income, the poor spend 1.3% on mineral water, soft drinks, and fruit and vegetable juices. The rich spend only 0.55% of their income similarly. As a consequence, a tax on SSBs will undoubtedly be regressive, hitting the poor harder than the rich.'¹⁰⁶

The policy paper discounts this adverse consequence on the basis that the poor – who generally suffer higher levels of obesity than the rich – will benefit the most from the diminution in obesity that the SSB tax will supposedly bring about. But if that diminution proves marginal at best, as is likely to be the case, then there will be little compensating benefit for the poor. In addition, since 80% of the population does not have a high sugar (or fat) intake, as SANHANES-1 shows, most South Africans have no need of the supposed health advantages of the tax and will derive no benefit from it at all.¹⁰⁷

Perversely, the tax will also signal to consumers that they ought to switch from taxed products, such as Coca Cola, to 100% fruit juice, which will be exempt because it has only 'intrinsic' rather than 'added' sugars. But some fruit juices contain even more sugar than Coca Cola. (Apple juice, for example, has 46 grams of sugar in a 330ml can and grape juice has 55 grams of sugar in such a can, whereas the same amount of Coke has 35grams of sugar.) At the same time, these highly sugared 100% fruit juices are roughly 60% more expensive than most SSBs. Hence, as Mr Vegter writes, those who make the switch will incur significant costs – and without achieving any compensatory health gains.¹⁰⁸



The SSB tax is a regressive measure likely to have a particularly negative impact on low-income households, which spend a higher proportion of their income on food and beverages than wealthier households do.

Also important is the fact that South African consumers already confront a host of daunting challenges. In recent months, the inflation rate has generally exceeded the South African Reserve Bank's target band of 3% to 6% a year. Inflation has been driven by food, petrol, and electricity price increases, along with rising interest rates and a shrinking rand, and cannot easily be contained. In addition, the proportion of consumers already seeking credit to cover their daily living costs is higher in South Africa than in most other countries, standing at

86% compared to a global average of 40%. As a result, the number of individuals having to seek debt relief is already growing exponentially.¹⁰⁹ In circumstances such as these, the price increases the tax is intended to bring about could cause significant harm to consumers who are already over-stretched.

The tax is also likely to have a particularly adverse impact on small retailers and their often low-income customers. Why this is so has already been demonstrated in France, where the largest retailing groups had the negotiating clout to bargain with producers for an ‘under-shifting’ of the French SSB tax to them. As a result, producers passed on less than 100% of the tax to these particular firms. By contrast, smaller retailers had less bargaining power, so producers shifted the tax fully on to them. This left them with two options: to pass the tax on to their customers in full and risk a reduction in sales, or to absorb a part of the increased price, which would reduce their profit margins. Most were unable to reduce their profit margins, so they passed on the tax in full. The upshot, as a 2016 study shows, is that there was a higher pass-through on lower-priced products aimed at low-income households.¹¹⁰

Not the most ‘cost-effective’ policy option

The policy paper describes the proposed SSB tax as the most ‘cost-effective’ option available to help counter obesity. What the Treasury really means, however, is that the tax is the *cheapest* way the government can (purport to) tackle the obesity problem.

As the policy paper notes, implementing a fiscal measure like the SSB tax is likely to cost only R0.20 per head to implement (according to 2010 data). By contrast, regulating food advertising would cost R0.90 per head, while food labelling would cost R2.50 per head, worksite interventions would cost R4.50 per head, mass media campaigns would cost R7.50 per head, school-based interventions would cost R11.10 per head, and physician counselling would cost R11.80 per head.¹¹¹ In other words, implementing an SSB tax will be cheaper for the government to implement than any other measure, but whether it will be *effective* in countering obesity is doubtful.

Across the world, food and beverage taxes, as the McKinsey study has shown, are among the least effective ways of overcoming obesity. Moreover, because obesity has such diverse and complex causes, it can be countered only through a wide range of interventions. The policy paper implicitly acknowledges this when it claims that the SSB tax will be part of a ‘comprehensive package of measures’ aimed at stimulating ‘healthy food choices’, promoting physical activity, educating and mobilising communities, and establishing ‘a surveillance system’ to strengthen monitoring and evaluation.¹¹²

However, whether any such additional measures will in fact be taken remains to be seen, for the government lacks the means to embark on the more expensive interventions the policy paper outlines. Nor is the additional revenue from the SSB tax likely to be used for such purposes. In reality, SSB tax revenue will be paid into the National Revenue Fund, which has no way of earmarking the funds paid into it for specific health (or other) purposes.



The policy paper describes the proposed SSB tax as the most ‘cost-effective’ option available to help counter obesity. What the Treasury really means, however, is that the tax is the cheapest way the government can (purport to) tackle the obesity problem.

As finance minister Pravin Gordhan has stressed, the National Revenue Fund is a general fund into which most revenue is paid and from which most appropriations are made. There is no system through which monies collected from different sources can be earmarked and distinguished from other monies in the fund. This makes it impossible to draw a direct link between the money collected under any specific levy and the way in which that money is ultimately spent. In addition, the government already faces so many financial pressures that the tax is far more likely to be used to fund general consumption than for anti-obesity campaigns.

A stealth tax, not a health tax

As Mr Vegter points out, almost every policy paper that recommends an SSB tax as a way of countering obesity also strongly urges that the revenue thus raised must be used for ‘health care interventions or public education campaigns’ aimed at reducing obesity. However, South Africa’s ‘SSB tax revenue will not be ring-fenced; instead it will get lost in the general tax revenue pot’.¹¹³

This, combined with the fact that more than 80% of South Africans already consume only moderate amounts of sugar and do not need state intervention in this sphere, suggests that the real motive for the proposed SSB tax is simply to raise additional revenue for a cash-strapped fiscus already having to cut back on public service appointments and hold public service wages in check. As the *2016 Budget Review* makes clear, appointments to fill administrative and managerial vacancies now need special permission from the Treasury, while compensation budgets have to be reduced and increased efficiencies attained.¹¹⁴

In addition, public debt is expected to rise to R2 trillion by the end of the current fiscal year. This means it has already more than doubled since 2009, when it stood at R805bn.¹¹⁵ Public debt amounts to roughly 50% of GDP,¹¹⁶ and stands higher still if government guarantees for state-owned enterprises (amounting to some R467bn)¹¹⁷ are factored in. The government’s annual interest bill has been rising fast in recent years and currently amounts to some R150bn – which is almost as much as the budget for public health care.¹¹⁸

In these circumstances, the policy paper’s focus on the supposed health benefits of the SSB tax seems little more than a distraction from the government’s urgent need for increased revenue. This suggests that the SSB tax is mainly an attempt to dodge the political bullet that would accompany any increase in the VAT rate.

Several economists have argued that South Africa needs to raise the VAT rate so as to bring in more revenue and help reduce public debt. Personal income and corporate tax rates are already high and cannot easily be increased, whereas South Africa’s VAT rate (14%) remains the same as it was in 1991, when the tax was introduced. It is also below the VAT rates levied in many other countries, including Brazil (17%), Chile (19%), Mexico (16%), Morocco (20%), and Russia (18%).¹¹⁹ Politically, however, increasing VAT is too unpalatable an option for the African National Congress (ANC) to endorse – and especially now that voters have begun to turn their backs on the ruling party, as the outcomes of the recent local government elections have shown.¹²⁰



The policy paper’s focus on the supposed health benefits of the SSB tax seems little more than a distraction from the government’s urgent need for increased revenue. This suggests that the SSB tax is mainly an attempt to dodge the political bullet that would accompany any increase in the VAT rate.

If the government genuinely wants to change what South Africans eat and drink, it needs to adopt measures – particularly information and communication campaigns – likely to be far more effective in shifting consumer behaviour.

As earlier indicated, the SSB tax (on current soft-drink consumption patterns) is likely to generate roughly R10.5bn a year. This is roughly half the R20bn in additional revenue that a one percentage point increase in the VAT rate (from 14% to 15%) would bring in. Moreover, once the SSB tax has been implemented, the government is already planning to push for similar taxes on other sugary foods, as well as on other products seen as contributing to obesity, such as ‘fast foods’ and those high in salt.¹²¹ The overall result could be to generate an extra R20bn in revenue (the equivalent of a one percentage point rise in the VAT rate) – without the government having to confront the public outcry that an overt VAT increase would bring.

Any such development would doubtless increase the temptation for the ANC to pursue all manner of other ‘back-door’ taxes. However, such interventions would worsen the economic challenges confronting the country, while failing to deal with their underlying causes.¹²²

South Africa’s economic woes have largely been brought about by policies increasingly hostile to investment, growth, and the generation of new jobs. Hence, the only solution to the current malaise is for the ANC to embark on convincing policy reforms. The government cannot tax its way out of current economic and political troubles. It could, however, make those troubles worse by increasing the already high burden on consumers.

Consumer spending contributes around 60% to South Africa’s GDP, making it a critical factor in the country’s growth rate. However, consumers already face a toxic mix of rising inflation, higher interest rates, crippling debt levels, and declining employment – with some 500 000 jobs having already been lost this year.¹²³ Not surprisingly, the *2016 Budget Review* anticipates that household consumption expenditure will increase by only 0.7% in 2016.¹²⁴ Yet even this projection could be an over-estimate, as consumer confidence has plummeted in recent months to levels worse than those recorded in the 2008 global financial crisis.

The newly emergent (first-generation) black middle class is particularly stressed, as are most lower-income households. The more financial pressure these groups encounter, the more their confidence in the ruling party is likely to decline. In time, this could spark an increase in already high levels of (often violent) demonstrations, so undermining the country’s stability. It could also weaken the ANC’s hold on power, making it easier for opposition parties to defeat it in the 2019 general election.

With consumers already so hard pressed – and the country already facing so much volatility – increasing the tax burden on the many in an attempt to change the buying habits of the few simply cannot be justified. Moreover, since the proposed SSB tax is unlikely to reduce obesity, it amounts to little more than a stealth tax: an attempt to increase the VAT rate without having to pay the political price of an overt decision to do so.

If the government genuinely wants to change what South Africans eat and drink, it needs to adopt measures – particularly information and communication campaigns – likely to be far more effective in shifting consumer behaviour. However, before any government tries to influence people in this way, it needs to be very sure that its interventions will not lead to worse outcomes. This is what seems to have happened in the late 1970s, when various Western governments decided to reduce people’s consumption of saturated fats – and did so without having sound information on which to base their interventions.

Government dietary guidelines can be mistaken and damaging

From the late 1970s, as Mr Vegter notes, many Western governments became convinced of the dangers of saturated fats. They thus began issuing low-fat dietary guidelines, which soon had a major impact on what consumers ate. In doing so, these governments believed they were acting on solid scientific evidence derived primarily from the 'lipid hypothesis' developed by American scientist Ancel Keys – and supposedly confirmed by data from seven countries.¹²⁵

However, the Keys study was criticised at the time for having cherry-picked its data and ignored countries in which no correlation between the intake of saturated fats and heart disease was evident. Some critics also drew a link between refined carbohydrates (particularly sugar) and obesity and heart disease, but this alternative hypothesis (as Mr Vegter writes) was 'vigorously squashed by Keys and the mainstream of scientific thought on nutrition and health'.¹²⁶ Adds Mr Vegter:

For decades, government and health organisations around the world confidently recommended low-fat diets, and the dangers of saturated fats and cholesterol were given front-page treatment in the media. Bacon and eggs were demonised, butter was replaced with margarine, lard gave way to vegetable oil, and endless displays of low-fat or fat-free products on supermarket shelves promised a slimmer, healthier future for all.

This demonstrated that no tax was necessary to change the behaviour of food producers or consumers. Official guidelines, media coverage, and public education campaigns were more than sufficient to convince a large share of the population to jump on the low-fat bandwagon. After all, if their governments told them it was good for them, who was going to argue?

However, reducing fat in foods had unintended consequences. To compensate for the loss of flavour resulting from lower fat content, food manufacturers began to add other flavourants to make food more palatable, one of which was sugar.

Most alarmingly, the publication of the low-fat dietary guidelines in the US in 1977 coincided with the start of what are today known as the epidemics of obesity and diabetes. Meanwhile, data from countries other than those in the Seven Countries Study showed that those with higher saturated fat intake actually suffered less heart disease, not more. The apparent effect on health was the exact opposite of what Keys, the mainstream of dietary science, and governments, had predicted. In recent years, several scientists have concluded that there was in fact no evidence to support the introduction of low-fat guidelines.

A misplaced hostility to saturated fats is now being followed by what could be an equally mistaken hostility to sugar. 'Yet replacing one caricature with another does not feel like a solution', as cardiologist Rahul Bahl has written.

A misplaced hostility to saturated fats is now being followed by what could be an equally mistaken hostility to sugar. The idea that sugar not only contributes to obesity and diabetes but is actually poisonous and must be taxed to reduce its consumption comes mainly from Dr Robert Lustig, a paediatric endocrinologist in the US.

Dr Lustig's claim that sugar is 'toxic' has been widely endorsed by the media. So too has his view that 'the science is in: the case for a sugar tax is overwhelming'. This suggests that his research is comprehensive and incontrovertible, when this is not so. Writes Mr Vegter:¹²⁷

Lustig studied only 43 children, all of whom were already obese and over-consuming sugar. The study lasted a grand total of ten days. There was no control group. Although the idea was to give the kids calorie-equivalent foods to replace sugar so that they maintained their weight, their food intake was not strictly monitored and 33 of the 43 subjects did, in fact, lose weight...

Lustig also measured a large number of 'surrogate metabolic parameters', which in statistics is known as 'multiple testing' or the 'multiple comparisons problem'. If you measure enough variables, you are likely to get statistically significant results, purely by chance. That does not imply that a causal relationship exists. In short, Lustig's study has glaring flaws and does not justify his conclusions.

The shortcomings in the Keys and Lustig research underscores the need for governments to be careful before they jump to simplistic and unfounded conclusions about what people should and should not consume. Cardiologist Rahul Bahl, writing in the *British Medical Journal*, puts it thus: 'There is certainly a strong argument that an over-reliance in public health on saturated fat as the main dietary villain for cardiovascular disease has distracted attention from the risks posed by other nutrients, such as carbohydrates. Yet replacing one caricature with another does not feel like a solution. It is plausible that both can be harmful, or indeed that the relationship between diet and cardiovascular risk is more complex than a series of simple relationships with the proportions of individual macronutrients.'¹²⁸

Concludes Mr Vegter: 'Activist scientists and governments alike have a poor record of dietary advice. Instead of hurriedly imposing regulatory interventions hoping to curb the intake of sugar, it seems wise to recall that the obesity epidemic was likely caused (at least in part) by misguided government intervention in the first place. As the pendulum swings from one extreme to the other, the public is unlikely to benefit from radical policy changes based on flimsy evidence.'¹²⁹

Better solutions

The Treasury has dismissed warnings about reduced investment, growth, employment, and revenue as a result of the proposed SSB tax as 'speculation' and 'scare-mongering'. It has also said it wants 'evidence-based comments and inputs, rather than speculation'.¹³⁰

This is ironic, for the 'mathematical model' on which the Treasury rests its claim that the SSB tax will reduce obesity has little evidence to back it up – and relies primarily on speculation and assumption to support its predictions.

Particularly pertinent too is the 2014 McKinsey study into the complex causes of obesity – and its emphasis on the need for a multi-faceted approach to counter a condition stemming from more than 100 different factors. Especially significant is McKinsey's conclusion that sugar taxes are among the *least* effective measures in the fight against obesity. Sugar taxes nevertheless get the most media attention, as the McKinsey study also shows,¹³¹ even though they have no real impact on obesity.

The interventions against obesity most likely to succeed include portion control, reformulation, parental education, introducing healthy meals in schools and workplaces, and changing the school curriculum to include more physical exercise.

In putting so much emphasis on the proposed SSB tax, the policy paper seems to be following the media's lead. It also ignores relevant scientific data and overlooks the McKinsey study's careful assessment of the relative strengths of different interventions.

To quote from the McKinsey study once again, the interventions against obesity most likely to succeed include portion control, reformulation, parental education, introducing healthy meals in schools and workplaces, and changing the school curriculum to include more physical exercise. Also worth considering are workplace wellness programmes, which have also been shown to have an impact on weight levels.¹³² However, even if all these interventions are successfully implemented, this is unlikely to have much impact on obesity unless further steps are also taken to 'shift cultural norms around eating and physical activity habits'.¹³³

As international experience confirms, the proposed SSB tax will not be effective in countering obesity. Serious consideration should thus instead be given to the public-private partnership for which the Beverage Association of South Africa (BevSA) has called.

BevSA has urged that the public and private sectors work together in helping to counter obesity. Says BevSA chief executive Mapula Ncanywa: 'The tax will not address the underlying issues causing the health problems. Calories consumed from soft drinks alone represent a small percentage of the consumer's total food basket. We believe that a public-private partnership between industry and government, to provide consumers with the information and education needed to balance their calories, is the right way to go.'¹³⁴

BevSA has also acted voluntarily to reduce sugar intake through reformulation and smaller portions. In these ways, it has already achieved a greater reduction in calorie consumption than the SSB tax is likely to generate. According to BevSA, 'reformulation and smaller pack-sizes' have already brought about a reduction of '53kJ per litre since 2010'.¹³⁵ By contrast, the proposed SSB tax will make only a marginal difference to overall daily kiloJoule consumption.

The economic impact of the tax is difficult to predict, but BevSA's concerns that it will negatively affect investment, growth, employment, and tax revenues should not simply be brushed aside as mere speculation. Demand for SSBs is likely to prove more inelastic than the Manyema article estimates, but if the article is correct in its assumptions – as the Treasury seems more than willing to accept – then the economic consequences are likely to be very much as Oxford Economics has projected.

On this basis, the industry's contribution to GVA could well be reduced by R13bn, while some 60 000 direct, indirect, induced, and retail jobs might indeed be lost. Moreover, the industry's current R17bn contribution to tax revenues could be reduced by R3bn, which would negate much of the expected yield from the new tax. The tax contribution from sugar growers, bottlers, transporters, retailers and other entities in the overall value chain could also be reduced – and without any compensating gain in revenue from the SSB tax, which will not apply to them.



The government has time to weigh different options and concentrate on finding those with the best chances of success. The proposed SSB tax does not rank among these and should be abandoned, rather than pursued.

Any negative economic impact from the SSB tax is likely to fall hardest on small retailers, who rely significantly on soft-drink sales for their livelihoods. The impact on low-income households of this regressive tax could also be considerable – and is unlikely to be offset by any compensating health gains.

Further research into the ramifications of the proposed tax is required, as part of the socio-economic impact assessment system (SEIAS) that now applies to all new policies and laws. KPMG, an audit firm and management consultancy, recommends that a full SEIAS investigation be carried out. This, it says, should examine ‘the impact of the sugar tax in terms of potential unintended consequences’, which could include ‘job losses’, an unnecessary burden on consumers, and a negative impact on government endeavours to alleviate poverty and reduce inequality.¹³⁶

Adds KPMG: ‘As part of the broader [SEIAS] assessment, an analysis of the effects of the sugar tax on the entire economy in terms of economic growth, household expenditure, investment, tax revenue and employment levels’ is needed. In addition, the SEIAS assessment should investigate ‘alternative options for achieving the desired policy outcomes’.¹³⁷

In weighing how best to proceed, the first imperative must be to do no harm. People who consume sugar in moderate amounts are unlikely to suffer adverse health effects from their sugar intake – and this is precisely what some 80% of South Africans already do. In addition, only one in four people is obese or suffers from diabetes, while disability-adjusted (that is, healthy) life years (DALYs) lost to these conditions stands at 2.9% and 1.6% respectively. By contrast, as Mr Vegter notes, ‘unsafe sex, interpersonal violence, alcohol harm, and tobacco smoking together account for more than half of all healthy life years lost’.¹³⁸

This is not to discount the problem of obesity or to suggest that effective action against it is not needed. However, what this comparison underscores is that the damage from obesity is limited, compared to that from unsafe sex and high levels of violence, among other things. This in turn means that the government has time to weigh different options and concentrate on finding those with the best chances of success. The proposed SSB tax does not rank among these and should be abandoned, rather than pursued.

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