

# *Are Soda Taxes Good Policy for Combatting Obesity and Malnutrition?*

Jack BOBO\*, Taylor C WALLACE\*\* and Sweta CHAKRABORTY\*\*\*

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Obesity fuels malnutrition, and both have reached epidemic levels worldwide,<sup>1</sup> increasing the risk of non-communicable diseases such as heart disease, type-2 diabetes and cancer. Today more than 1.9 billion adults and five million children under the age of five years old are considered overweight or obese. Effective food policies have never been more critical to ensuring the health and wellbeing of both consumers and health systems worldwide. Although traditionally considered a problem in high-income countries, obesity and related non-communicable diseases are increasing in low-income countries. More than 85% of non-communicable disease deaths before age 70 occur in low- and middle-income countries. Over-consumption of sugar – particularly in the form of sugar-sweetened beverages – is a major contributor to the obesity epidemic.

Globally, soda taxes imposed on drinks with added sugars are gaining momentum as interventions to discourage sugar consumption and thereby reduce the growing burden of obesity and non-communicable diseases. This comes at a time when major health organisations such as World Health Organization have recommend reducing added sugars to less than 10% of daily energy intake.<sup>2</sup> The premises of these so-called “soda taxes” are based on simple economic supply and demand principles. Price increases discourage purchases in favour of non-taxed options, and incentivise reformulation. Those in support of soda taxes avow the prior success of this strategy to effectively reducing tobacco use across the population.

The standard economic argument for a soda tax is clear. However, the extent to which raising the cost of products reduces consumption depends largely on the elasticity of demand, which is a measure of how easily consumers switch from one product to another. If elasticity is high, then consumers will theoretically be more willing to switch products.

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\* CEO, Futurity.

\*\* Principle Consultant and CEO, Think Healthy Group; Professor, Department of Nutrition and Food Studies, George Mason University.

\*\*\* Founder and Principal, Adapt to Thrive.

<sup>1</sup> A Gulland, “Malnutrition and obesity coexist in many countries, report finds” (2016) *BMJ* 353:i3351.

<sup>2</sup> WHO calls on countries to reduce sugars intake among adults and children (World Health Organization, 2015), available at [www.who.int/mediacentre/news/releases/2015/sugar-guideline/en/](http://www.who.int/mediacentre/news/releases/2015/sugar-guideline/en/).

When it comes to cigarette alternatives for those considering giving up the habit, the options are limited. On the other hand, there are many alternatives to sugar-sweetened beverages that consumers might switch to if they decided to discontinue or limit consumption of products like soda. Will consumers switch to non-caloric products such as water or unsweetened tea/coffee, or micronutrient-dense beverages, such as 100% fruit juice or low/non-fat dairy drinks? US consumption of 100% fruit juice currently falls within recommendations of the 2015 Dietary Guidelines for Americans, however dairy intake continues to be far below the recommended levels.

While the goal may be to move consumers to low-calorie and/or micronutrient-dense beverages, research is necessary to determine whether consumption does, in fact, decrease and to which products consumers turn. Sales of soda, the largest sweetened beverage category, fell 55% in Philadelphia approximately six months after the implementation of the city's soda tax, while bottled water sales increased by 9% according to a study from market research firm, Catalina. However, this hasn't completely halted consumption of soda. The same study reported that sales of soda outside of Philadelphia rose 38% during the same time period. Catalina's study analysed 109 million transactions at grocery, mass and drug stores, which only account for less than half of beverage sales in Philadelphia.<sup>3</sup> Theoretically the biggest "wins" in the war to decrease sugar-sweetened beverage intake among Philadelphians may be in restaurants and those establishments that serve the on-the-go consumer. One thing is certain: food policies made in silo are likely to have a diminished effect.

### ARE SODA TAXES GOOD POLICY?

Defining good public policy is no easy task; however, there are a couple elements that most people would probably agree are hallmarks of good policy. First, does the policy improve the health and/or wellbeing of the public? Second, do the members of the public most directly impacted by the policy like and support the policy?

The first element seems axiomatic. A policy that makes most people's lives worse is unlikely to meet anyone's definition of good policy. On the other hand, it also does not seem to be sufficient, in and of itself, to define good policy. The best policies would seem to be those that work and that the public supports or likes.

While it is generally easier to pass laws and implement policies that the public, as well as those most directly impacted by the policy, supports, one can imagine a policy that delivers much public good, but that the impacted members of the public dislike. The tobacco tax probably falls into this category. Neither tobacco companies nor smokers are likely to be big proponents of tobacco taxes, but the health benefits to those who stop or reduce their smoking and to those exposed to second-hand smoke, as well as the reductions in public health expenditures, can be seen to offset the lack of support from the stakeholders most directly impacted by the policy.

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<sup>3</sup> A Menayang, "Tax beverage sales drop in Philadelphia, rise in its suburbs. Is it going as planned?" (23 August 2017), available at [www.foodnavigator-usa.com/Article/2017/08/22/Catalina-data-Post-levy-soda-sales-in-Philadelphia-suburbs-increase](http://www.foodnavigator-usa.com/Article/2017/08/22/Catalina-data-Post-levy-soda-sales-in-Philadelphia-suburbs-increase).

As a general rule good policies are those that are both effective and supported by the public. However, in situations in which the benefits of the policy are clear and strong, a policy may yet qualify as good policy in the absence of support from the impacted public and industry.

With these two concepts in mind, we can ask the question: are soda taxes good policy?

Let's start with the second element of good policy: do the people most directly impacted by the policy like it?

With respect to sugar-sweetened beverage manufacturers the answer is somewhat clear. Many companies strongly oppose such taxes and have invested large amounts of financial resources in fighting the trend.<sup>4</sup> This is hardly surprising, as the purpose of the tax is to make their products more expensive and thereby reduce consumption. At the same time, many companies have diversified product portfolios and increased the marketing of lower-calorie alternatives to consumers.

The second group of key stakeholders impacted by the taxes is consumers. For this analysis, the relevant consumer is not the nutritionist, doctor or soda tax advocate, but rather the consumer purchasing products. In other words, do consumers want to be taxed as a way of influencing their purchasing behaviour?

As a general rule, people do not like to pay higher taxes or have their choices reduced. New York City's effort to limit the size of sodas was opposed by a majority of New Yorkers, who prefer to make their own choices.<sup>5</sup> The New York example is particularly interesting as the majority of people opposing the ban on large serving sizes probably would not have been directly impacted. They just did not like the idea of government limiting choice.

By contrast, the soda tax ballot measure in Philadelphia was overwhelmingly supported by consumers. Why the difference in support for a soda tax in New York compared to Philadelphia? The answer may lie in how the ballot measures were framed during the public debates. In New York the tax was squarely aimed at reducing obesity by limiting consumer access to large serving sizes. The tax was seen to be both coercive and paternalistic, a failure in otherwise successful findings in redesigning the choice landscape for consumers.<sup>6</sup> On the other hand, the Philadelphia tax was promoted as a way to raise money for community projects, including improved education for children. As a result, there was broad public support for the measure. The Philadelphia example demonstrates that proponents of soda taxes can build support for such measures if they can focus public attention on the use of the funds rather than the underlying purpose of the measure (to curb consumption). The effectiveness of using revenue to enable governments to adopt additional, complementary policies and programs to promote nutritious diets (eg subsidies for healthier food and beverage options) is yet to be determined.

To the extent that governments can convince the public that they want a soda tax, the next question is whether they should? The answer should be based on whether such taxes

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<sup>4</sup> J Jou and W Techakehakij, "International application of sugar-sweetened beverage (SSB) taxation in obesity reduction: factors that may influence policy effectiveness in country-specific contexts" (2012) 107(1) *Health Policy* 83.

<sup>5</sup> M Grynbaum, "New York's Ban on Big Sodas Is Rejected by Final Court" (*New York Times*, 26 June 2014), available at [www.nytimes.com/2014/06/27/nyregion/city-loses-final-appeal-on-limiting-sales-of-large-sodas.html](http://www.nytimes.com/2014/06/27/nyregion/city-loses-final-appeal-on-limiting-sales-of-large-sodas.html).

<sup>6</sup> B Galle, "Tax, Command—or Nudge? Evaluating the New Regulation" (2014) 92 *Texas Law Review* 837.

generally improve health. A growing list of countries, including Barbados, Belgium, Chile, Dominica, France, Hungary, Kiribati, Mauritius, Mexico, Tonga and the UK, as well as eight jurisdictions within the US, have enacted soda taxes.

Studies of taxes on sodas have focused primarily on whether and how much taxes reduce consumption. Berkley, California, the first jurisdiction in the US to implement a penny-per-ounce soda tax, saw a 21% decrease in consumption of sugary drinks within the city's low-income neighborhoods. Introduction of Mexico's one-peso-per-litre soda tax resulted in a 5.5% reduction in consumption during the first year and 9.7% in the second year, with the largest declines also among low-income populations. Soda taxes are likely to continue decreasing intake among lower-income groups, who also tend to be at greater risk of obesity and associated non-communicable diseases.

It is easy to believe that soda consumption is at the heart of the global obesity epidemic as we continue to watch the size of soda containers grow. A "Super Big Gulp" holds 40 ounces of soda and a "Double Gulp" holds 50 ounces. But the data tell a more nuanced story. It would come as a surprise to many that, according to the US Department of Agriculture, soda consumption in America is at a 30-year low.<sup>7</sup> Consumption of sugar in the US has been on the decline since 1999 when consumption peaked at 422 calories per day. Sugar consumption is down 15% from that peak.<sup>8</sup> Continued monitoring is needed to fully understand long-term purchases, potential substitutions, and health implications of soda taxes. A potential adverse outcome of soda taxes is decreased fluid intake, particularly in areas with limited access to safe drinking water.

Systematic reviews of the peer-reviewed scientific literature have failed to illustrate compelling evidence on the effectiveness of economic interventions to promote dietary and physical activity behaviour change.<sup>9</sup> As a result, it is still too soon to be able to say with any degree of certainty that a soda tax delivers on the first element of good policy, namely that it makes people's lives better.

So what does this all mean for the policy of soda taxes? At the moment there does not appear to be clear evidence that soda taxes achieve their policy goal of improving overall public health. It is also possible that even if some consumers benefit from the taxes, some consumers will be worse off. For example, consumers on fixed food budgets who maintain their consumption patterns in the face of a high soda tax might reduce spending on more nutritious food to compensate for the extra cost of soda. A tax that results in burden shifting or increasing the nutritional health of one person at the cost of decreasing the nutritional health of another is fraught with ethical considerations.

The lack of clear long-term health benefits, coupled with stakeholder opposition, suggests that this is not yet a policy ready for broad implementation. Further studies of communities where such taxes have been implemented would provide valuable information that is critical to any decision to extend the taxes to new communities.

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<sup>7</sup> Unites States Dept of Agriculture, "Manufacturing" (2018), available at [www.ers.usda.gov/topics/food-markets-prices/processing-marketing/manufacturing.aspx](http://www.ers.usda.gov/topics/food-markets-prices/processing-marketing/manufacturing.aspx).

<sup>8</sup> M Rourke, "Just how much sugar do Americans consume?" (20 September 2016), Associated Press, available at [www.statnews.com/2016/09/20/sugar-consumption-americans/](http://www.statnews.com/2016/09/20/sugar-consumption-americans/).

<sup>9</sup> I Shemilt et al, "Economic instruments for population diet and physical activity behaviour change: a systematic scoring review" (2013) 8(9) *PLoS One* 1.

While the public may not generally support soda taxes, public relations campaigns by the soda industry to fight these taxes may ultimately undermine the brands of the companies involved. Recently published evidence demonstrating the sugar industry's history of promoting research that denies or casts doubt on the link between sugar and obesity further erodes public trust in the food industry. Although the UK, the most recent country to implement a soda tax, does not mandate reformulation, the government has taken a number of steps to encourage this response. The graduated tax structure offers a degree of flexibility for manufacturers, encouraging reductions in added sugars without requiring elimination. The UK also provided ample time between announcing the tax and beginning collection, allowing manufacturers the opportunity to plan and execute new reformulation strategies.

Rather than fight such taxes, beverage manufacturers should consider engaging with proponents of the taxes and governments interested in such taxes, in order to design studies that can answer the questions about the societal and human health costs and benefits of the taxes. Offering tax incentives to manufacturers who voluntarily reformulate products to have lower amounts of added sugar, saturated fat and sodium in all food and beverage products may offer additional public health benefits and prevent the consumer from substituting one unhealthy habit for another. This may also help "even the playing field" for manufacturers. For instance, cranberry juice often contains varying amounts of added sugars, depending on the time of the year cranberries are harvested, for the purpose of standardising taste.

Whether or not soda taxes make for good policy, the challenge remains to find ways of reducing the rates of obesity around the world. The best policies are those that work and engender public support, particularly among the most impacted communities and industries.

Economic policy is a blunt instrument with which to promote healthier lifestyles. The inelasticity of demand for sodas suggests that human nature fights such approaches. Rather than fight human nature, it might be better to harness human behaviour and psychology with the goal of designing more effective policy interventions that deliver long-term health benefits with broader support from impacted communities. Let's explore some options.

How do we get people to consume less in a way that makes them happier, or at least less unhappy, and is more acceptable to industry?

Much has been written about the psychology of food consumption and the factors that subtly and invisibly influence our consumption patterns. One approach that has potential to achieve these goals relies on simple nudges to human behaviour. The field of behavioural economics brings together insights from psychology and economics and uses these insights to identify ways in which individuals are not behaving in their own best interests. Lessons from behavioural economics and food psychology can be used to shape environments that steer people toward wiser decisions and healthier lives.

Ray Kroc, the man who launched McDonalds, knew many things about business but, apparently not about human nature. When his marketing executive David Wallerstein suggested that he offer the option of a large size packet of fries, Ray naively stated that if people wanted more fries they would go back for a second bag. Decades of research have shown just how wrong Ray was.

David Wallerstein started his career working for a chain of movie theaters back in the 1960s. Wallerstein tried everything to get people buy more soda and popcorn, high margin products that contributed significantly to the profitability of the theatres. They tried two-for-one deals and matinee specials, but they could not induce customers to buy a second soda or bag of popcorn. Eventually they hit on the big idea that people would pay more for a bigger size soda or bag of popcorn for just a little extra cash, thus setting society on the path to super-sized portions of popcorn, sodas, and, yes, even French fries.

Many writers have described this phenomenon, but fail to grasp the powerful and invisible psychology at work.<sup>10</sup> In a 2003 New York Times book review, Michael Pollan suggested that the reason we don't go back for a second bag of fries is that we don't want to look like pigs. But science tell us that it is not guilt that keeps us from going for the second bag. When we finish our first bag of fries, it signals to the brain that we have finished eating. We don't go back for another bag because we aren't hungry. However, when we order a large bag of fries we unconsciously continue eating beyond the point of the small bag for a number of reasons. French fries taste great and stimulate an increase in the amount of endorphins our body releases. Humans didn't evolve to eat the recommended six small meals throughout the day. We evolved to store energy in times of excess to be used in times of famine. A continuous supply of calories is a modern-day occurrence. The fact that we almost always finish the large bag of French fries or what's on our plate and in our cup reflects this evolution of mankind.

Research has shown that we can consume as much as 20% more food than normal without even noticing that we are overeating. Supersizing our meals hits that sweet spot of how we have evolved because it delivers more calories than we need, or even want, without making us feel like we have overindulged. The offering of a middle option sets a higher default standard for the human brain looking for ease of decision-making in choosing their portion size, contributing to the ever-increasing caloric intake.

So how do we take these insights from marketing and psychology research and put them to work to reduce consumption, just as they were put into practice to increase it? The answer is to reshape our environment so that we choose to consume less without noticing that we are doing so.

This science-based insight into human nature can be harnessed to reverse the super-size trend. Let's take a moment and explore fast food restaurants offer free soda refills in their franchises. Consumers have the option of small, medium and large cups that all come with an unlimited supply of soda. There is hardly a need to go back for a refill if you have just consumed a 32 ounce soft drink and yet many people do.

Could this river of calories be slowed and possibly reversed? What would it take to reduce soda consumption? What policy shifts and/or incentives would encourage restaurants and manufacturers to make the changes?

What if policies harnessed behavioural insights to reduce soda consumption, instead of increasing consumption? What might that look like?

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<sup>10</sup> M Pollan, *The New York Times Book Review* (2003), available at [michaelpollan.com/articles-archive/you-want-fries-with-that/](http://michaelpollan.com/articles-archive/you-want-fries-with-that/).

It all starts with the cup. We know that consumers buy large sizes because of perceived value for money spent. The first 12-ounces cost the most, while the savings keep coming as the cup size increases. But the numbers are perceived differently when refills are free. What if the default cup size for customers dining in was 12-ounces? Research shows that customers given smaller cups consume substantially less soda than those given a larger cup. A significant body of evidence shows that, despite the size of our cup, most of us only refill once. Imagine governments working with industry to create healthy food environments prone to overcoming human evolutionary programming; an environment where healthy options are profitable for restaurants and manufacturers. It seems like a win-win situation.

Our environment, evolutionary development and current food policies have certainly played a significant role in contributing to the epidemic of obesity and non-communicable diseases in America. We can either continue to be for the most part stagnant, pointing the finger at the food and beverage industry, making them the sole villains in this story, or we can enlist them as partners in the fight to improve global health. This isn't to say soda taxes aren't part of the answer, but rather that the problem is much larger than just one simple solution can solve. Food policies must be developed based on rigorous scientific evidence that ensures the health and wellbeing of both the consumer and the free industry. Perhaps the same body of evidence in human behaviour and decision-making that prompted the soda tax can help to reframe tax proposals and inform additional policies to combat the double burden of malnutrition and obesity.