

Knowledge Brief

Health, Nutrition and Population Global Practice

LEARNING FROM THE MEXICAN EXPERIENCE WITH TAXES ON SUGAR-SWEETENED BEVERAGES AND ENERGY-DENSE FOODS OF LOW NUTRITION

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KEY MESSAGES:

- Faced with a large and increasing obesity epidemic, in 2013 Mexico enacted taxes on sugar-sweetened beverages (SSBs) and calorie-dense foods of low nutritional value.
- The decision to implement this fiscal policy was the result of a long advocacy process in which civil society organizations and government agencies participated.
- The taxes were designed to avoid, as much as possible, the substitution of consumption of the taxed goods for other unhealthy foods and beverages not subject to taxation.
- The taxes have been successful in increasing both the fiscal revenues and the price of the products taxed. There is evidence that they have reduced consumption, particularly of SSBs.
- A debate remains on the size of the impact of the taxes, particularly on health outcomes. Thus it is important to continue monitoring the impact of the taxes through the development of price and volume indicators, based on publicly available data, as well as health outcomes indicators.

Introduction

Mexico faces a major health and economic burden due to the large and increasing number of adults and children suffering from overweight and obesity. More than two-thirds of adults are suffering from overweight or obesity and a third from obesity. The country has the second largest adult obesity rate among OECD countries.

Obesity is one of the main risk factors for the development of some noncommunicable diseases, especially diabetes and cardiovascular diseases, which are the main causes of healthy life years lost in Mexico. Since these conditions require extended and continuous contact with the health

sector and generate large productivity losses, due to premature deaths and workers absenteeism, they also negatively impact the economy of the country.

Faced with a large and increasing obesity epidemic, the Mexican Government in the last years has increased efforts in the prevention and control of obesity. Among these efforts, in October 2013, Mexico's Congress passed legislation imposing taxes on SSBs and calorie-dense foods of low nutritional value. The law went into effect on January 1, 2014, and includes a one-peso-per-liter tax, equivalent to a 10 percent price increase on drinks containing added sugar. It also includes an ad valorem tax

equivalent to 8 percent of the value of high-calorie foods of low nutritional value, defined as foods containing 275 kcal or more per 100 grams.

These taxes were not enacted in isolation, but were part of a comprehensive strategy to prevent and control obesity, overweight and diabetes. In addition to fiscal policy and regulation, this strategy included other health promotion and prevention interventions as well as measures to ensure better access to effective health care services.

These taxes were not only part of the strategy to prevent obesity, but were also part of a comprehensive fiscal reform aimed at increasing tax revenue and reducing the over reliance on oil in government revenues.

Policy Making Process

The process that resulted in the enactment of these taxes was a long and challenging one. The discussions to develop taxes on SSBs and low nutritional value foods started years before 2013 as part of an overall discussion in the country of what was needed to stop, and if possible revert, the increasing trend of adults and children overweight and obese. The success of this effort was not due to a single stakeholder within the executive or legislative branch of Government. It was the collective and persistent efforts of several civil society organizations that for a long time lobbied for the inclusion of these taxes and implemented a strong communication campaign. This effort would also not have been possible without the academic grounding and evidence generated by the National Institute of Public Health and others such as the National Institute of Medical Sciences. The actors favoring this policy had to counteract much opposition from strong stakeholders, including food and beverage industry, bottling companies, and others. The latter also implemented a large media campaign opposing these taxes. Even after the enactment of the taxes, this opposition has continued and it almost resulted in a partial reversal of the policy in 2015.

Design of the Taxes

The design of the taxes on SSBs and foods of low nutritional value is complex. Not only do policymakers have to ensure that the taxes are passed to the prices of the goods under consideration, but also ensure that this increase in prices results in a decrease in consumption of the foods and beverages taxed and does not increase consumption of other unhealthy foods and beverages that are not subject to taxation. In Mexico, several of these issues were taken into account in the design of the fiscal policy. For instance, the tax to SSBs included all beverages with added sugar; this would include not just sodas but also juices and concentrates with added sugar. It also included a broad definition of sugar to include, among others, table sugar as well as high-fructose corn syrup. In addition, to avoid substitution of sugary-drinks

with sugary-foods, there were taxes not just to SSBs, but also to foods of low nutritional value, which include foods with added sugar.

Impact of the Taxes

These taxes have been successful in increasing both the fiscal revenues and the price of the products taxed. There is also evidence that they produced a decrease in consumption, particularly of SSBs. However, there is still a debate about how large this impact was and whether there is an impact on health outcomes.

A review of the studies conducted so far on the impact of the reform on prices, including our analysis, highlight the following: (i) the prices of soda drinks tended to increase by the amount of the tax or more; (ii) prices of smaller packages of the taxed products increased more than 1 peso per liter and larger packages increased around 1 peso; (iii) other SSBs (flavored waters and industrialized juices) increased by less than 1 peso; (iv) it is not clear whether diet soda prices were affected by the tax; and (v) there were regional differences on price setting.

When comparing the prices of SSBs in Mexico after the tax reform with comparison countries like Argentina and Brazil, the prices in Mexico remain relatively low, which make these goods more affordable in Mexico than in Argentina or Brazil. This suggests there may be additional room to increase prices and possibly achieve a larger impact on reducing consumption.

The price structure of SSBs in Mexico before and after the tax shows that the price differences between competing brands (that is, among cola soft-drinks) and types of sodas (between cola and flavored sodas) were high before the fiscal policy was enacted, and that the tax increase was not large enough to move the entire price structure up. It was reasonable to expect that consumers could purchase cheaper versions of the taxed product at almost pre-tax levels.

In terms of volumes purchased, existing studies, for instance Colchero et al. (2016) found that the post-tax purchases of SSBs during the first year were 6 percent lower on average than the pre-tax trend. They also found that purchases of untaxed beverages (mainly bottled water) were 4 percent higher. They found that the reduction in purchases of non-carbonated taxed beverages was larger than the reduction in carbonated taxed beverages. This could be due to higher prices and high price elasticities of non-carbonated beverages; and consumers shifting to lower priced versions of taxed carbonated beverages given the large variation in prices. They also found that the largest impact on consumption was among households of low socioeconomic level.

Another study published by ITAM (Aguilar et al., 2016) found that the tax appeared to have incentivized moderate

reductions in consumption of SSBs. The effect of the tax on SSBs, contrary to what was found by the previous study, appears to have had a greater effect among households in the higher income level. As per the taxes on high-calorie foods, in order to control for potential product substitution resulting from the taxes, the researchers studied the total calories consumed (taxed and untaxed foods). They found a weekly decrease in calorie consumption of 1 percent. In their measures of BMI (Body Mass Index), the researchers found no discernible difference across the years under examination, which is in line with the small impact seen for calories consumed.

There are several limitations in using the National Household Income and Expenditure surveys to study the impact of these taxes. However, these surveys can be used to observe the behavior of consumption before and after the tax and can provide some insight on the possible direction of the changes and who could have been more affected by the tax.

The descriptive analysis of the data from these surveys shows a reduction in the percentage of households that purchased and consumed SSBs within the household between 2012 and 2014; this is particularly the case among households in the poorest income quintiles. It also showed a significant increase in the percentage of households that purchased bottled water and, among the poorest 20 percent of households, there was also a significant increase in the percentage of families that bought milk. The data also shows a significant decrease in the per capita consumption of SSBs and an increase in per capita consumption of bottled water, particularly among the three poorest quintiles of the income distribution.

Regarding the second tax, the percentage of households that purchased energy-dense foods of low nutritional value, such as cookies, jellies and candies slightly decreased from 2012 to 2014. The decrease in per capita consumption however was not statistically significant.

Regression analysis of the demand for foods and beverages subject to the taxes shows that the own-price elasticity of demand of SSBs is inelastic. This could be due to the imprecise definition for SSBs used in this analysis since it was not possible to distinguish sodas, juices and other flavored beverages with and without added sugars. However, when we look at the demand of sodas, which are more likely to have added sugar (the market for light or low calorie versions is small in Mexico), the own-price elasticity of demand becomes elastic. Across income quintiles, the own-price elasticity of demand of SSBs decreases with income quintile; while the own-price elasticity of demand of sodas is highest among people in the middle of the income distribution.

People in the poorest end of the income distribution seem to have had the largest changes in consumption. They have the largest price elasticity of demand of SSBs and thus any price increase would result in a larger decrease in consumption than among people in the highest end of the income distribution. The poorest also seem to have had the largest increase in water consumption. Similarly for the case of high-calorie dense foods, the poorest seem to have had the largest decrease in consumption. Thus in principle, they should also have the largest improvements in health outcomes, although this is something that would need to be confirmed. These results across income quintiles are similar to those found by a study from a team from the National Institute of Public Health but different from those of a study from ITAM (*Instituto Tecnológico Autónomo de México*) and another from Colmex (*Colegio de México*), although this latter one does not use individual data.

Conclusions

It is important to continuously monitor the reduction in consumption and consumption substitution (to healthy or unhealthy substitutes). Fiscal policy used for health promotion purposes is still a controversial issue. These reforms face major risks. They tend to affect a relatively small group of powerful and concentrated businesses with the capacity to fight back. In addition, if the tax is small and there is potential for consumption substitution within the taxed products (that is, cheaper brands, cheaper packages within the same brand, or through promotions) the impact of the tax on the consumption of the unhealthy good could be small. Policymakers should then be aware of the possible resistance and producers' and consumers' strategies that could reduce the expected impact of the tax. Thus the need to monitor on a continued basis the impact on prices and consumption, which is possible to do through the development of price and volume indicators based on publicly available data as was shown in this document. These indicators are important and easy-to-generate tools for the political debate about effectiveness of the reform design and implementation. Although to make these indicators more effective, there is also a need to improve the publicly available data that INEGI (*Instituto Nacional de Estadística y Geografía*) collects on prices and volumes of sales.

There are still several questions that have not been fully addressed related to the impact of these taxes. The first one is whether the tax has an impact on health outcomes; in other words, whether it will decrease BMI. A perceptible impact on BMI might take time to be achieved and it is not clear if the available data will allow this type of impact to be assessed. Related to this, there is also an issue of whether there is a different long term impact of these taxes. For

instance, the taxes could lead to a reformulation of the goods taxed or might change the norm of what is considered healthy. This could result in a higher impact of the taxes in the long term.

Finally, since the impact of this fiscal policy on health outcomes is the expected result from a public health stand point, it is key to also monitor the health impact of this and other policies included in the National Strategy for the Prevention and Control of Overweight, Obesity and Diabetes on a continuous basis. Thus the need to monitor closely not only prices and volumes of the goods subject to taxation, but also BMI across gender and age groups. However, there is no readily available country level data, beyond the data collected every six years in the ENSANUT (*Encuesta Nacional de Salud y Nutrición*) surveys, and thus there is a need to generate this information on a more continuous basis.

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This HNP Knowledge Note highlights the key findings from a study by the World Bank "Learning from the Mexican Experience with Taxes on Sugar-Sweetened Beverages and Energy-Dense Foods of low Nutritional Value" by María Eugenia Bonilla-Chacín, Roberto Iglesias, Agustina Suaya, Claudia Trezza and Claudia Macías (forthcoming).

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