AGRICULTURE POLICY NOTE

OECD
BETTER POLICIES FOR BETTER LIVES

ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT March 2017

The market implications of reduced sugar consumption

- In March 2015, the World Health Organization (WHO) published a recommendation that, in order to avoid negative health impacts, people should obtain no more than 10% of their daily calorie intake from free sugars.
- A majority of people exceed the 10% threshold in many countries, with exceptions in Asia and Sub-Saharan Africa.
- OECD simulations using the Aglink-Cosimo model show that the fall in demand from reducing consumption to below or equal to WHO recommended levels would lower world sugar prices by 25%.
- Overall trade would decline. However, sugar producing countries able to remain competitive would increase their share of the world market, while importing countries with a daily calorie intake of sugar below the 10% threshold would increase their sugar imports slightly.
- Nearly all countries where sugar consumption needs to be reduced to meet the 10% target would see a reduction of their total per capita calorie intake.

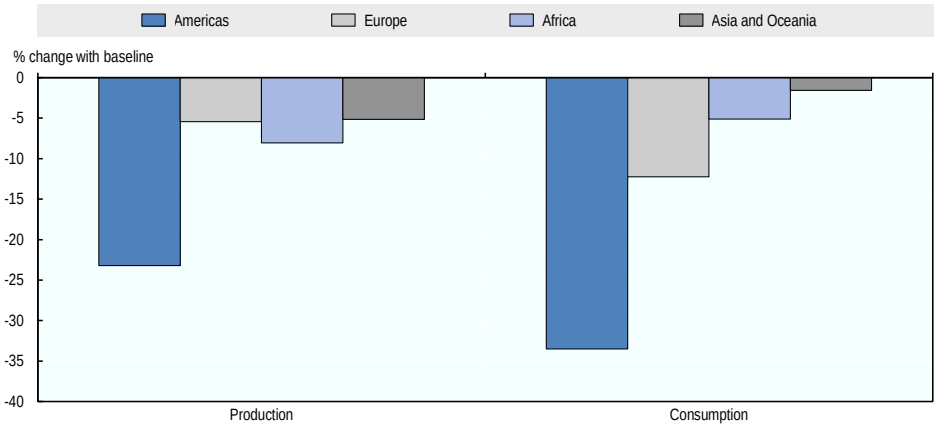
What is the issue?

In recent decades, diets have become more caloric with a higher intake of fat, sugar and salt from prepared food. Excessive sugar consumption affects all age groups and creates an excess of calories with no added nutrients. It has been identified as a cause of obesity, type II diabetes, and heart and dental diseases, which lead to higher health costs. From a nutritional view point, two types of sugar exist: healthy sugars that are naturally present in foods such as fruits and vegetables, and free sugars such as table sugar and high fructose corn syrup, which are defined by the WHO as "all monosaccharides and disaccharides added to foods by the manufacturer, cook or consumer, plus sugars naturally present in honey, syrups and fruit juices". In March 2015 the WHO issued a recommendation that calls for adults and children to reduce their daily intake of free sugar to less than 10% of their total energy intake.

Three different profiles of per capita sugar consumption emerge from the OECD-FAO Agricultural Outlook dataset. First, there are countries with a high per capita calorie intake and a level of per capita sugar consumption exceeding the WHO threshold of 10% for daily free sugar intake. This group includes most developed countries, but also some emerging economies such as Brazil, Mexico and Thailand. Second, there are countries with a comparatively low per capita calorie intake but a relatively high share of sugar in total calories. This group includes a number of Southeast Asian and Middle Eastern countries. The third group includes countries for which per capita sugar consumption does not exceed the threshold of 10%. This group includes poorer African and Asian countries, and the world's two most populous countries, the People's Republic of China (hereafter "China") and India.

A scenario performed using the Aglink-Cosimo model examines the market consequences of limiting the calorie intake of free sugar to a maximum of 10% of total calorie intake over a five-year period, assuming all other things remain equal. Countries exceeding the 10% threshold are referred to here as "constrained" countries; those below it are "non-constrained". Among constrained countries, Brazil would see the greatest reduction in its sugar consumption (7.8Mt after five years), followed by the United States (5.3Mt), the European Union (3.2Mt), Mexico (2.1Mt), and Thailand (1.4Mt). Non-constrained countries would benefit from the lower prices and would slightly increase their sugar consumption (2.3Mt) as consumer habits would not change rapidly. Globally, after five years, the increase in sugar consumption would reach 11.6Mt instead of the 20Mt foreseen in the baseline; in other words, world sugar demand would be lower by 12%. As a result of the demand contraction, world prices would fall by 25%.

Figure 1. Effects of limiting sugar intake to 10% of all calories on production and consumption, in 2019



The Americas will see the largest decreases in production, followed by Europe. At the end of a ten-year simulation period, world sugar surpluses will have caused sugar prices to fall by 18%. As a consequence, development of the sugar sector in Africa would be less profitable. Asia and Oceania will face the smallest negative impacts.

The country-level effects of lower demand on trade in sugar are diverse and depend on whether the country is a profitable sugar producer, whether or not it needs to reduce sugar consumption to meet the WHO recommendation, and the opportunities for other agricultural production. Among exporters, some countries would export more and gain market share (the European Union, Thailand, Mexico, Argentina and some smaller South American countries), while others would see exports contract and their market share fall (notably Australia, which would switch to other products, and Brazil, which would convert part of its sugar production to ethanol). In some importing countries, where demand is constrained (e.g. Malaysia and the Russian Federation), imports will decrease, while in others (notably the United States), imports would increase as a result of a fall in less profitable sugar production outpacing the decrease in demand. Finally, in non-constrained countries (China, India and Indonesia), lower sugar prices would lead to a slight increase in imports, with consumer demand changing little over the projection period.

From the health perspective, nearly all constrained countries would see a reduction of total calorie intake, with little substitution in favour of other commodities included in the model.

What are the implications for agricultural markets?

According to the scenario analysis, a restriction of daily calorie intake of sugar to 10% of total calories would lead to prices being 25% lower after five years, amplifying the decline already projected in the 2015 OECD-FAO Agricultural Outlook baseline. Lower production costs or favourable exchange rates could allow some competitive countries to continue to export sugar. Countries with investment plans in the sugar sector which require higher prices in order to be profitable would face difficulties.

The decline in sugar prices would not have significant effects on other agricultural markets. Substitution would occur in some producing countries in favour of more profitable end products, such as bioethanol from sugarcane in Brazil, or more profitable crops, such as oilseeds in Brazil and China.

This evaluation, conducted using the Aglink-Cosimo partial equilibrium model, assumes that demand-side policies can be put in place to achieve the recommendation. This model covers 40 agricultural products but exclude fruits and vegetables, for which there could be important market impacts.

Further reading

The OECD-FAO Agricultural Outlook provides an annual assessment of prospects for the coming decade for national, regional and global agricultural commodity markets. The annual baseline projection is used to examine hypothetical scenarios that help in understanding how agricultural markets operate, and the links between government policies and market outcomes.

» OECD/FAO (2016), *OECD-FAO Agricultural Outlook 2016-2025* http://dx.doi.org/10.1787/agr_outlook-2016-en