



# Recapping the Effects of the US Sugar Program

By John C. Beghin

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## Key Points

- The US sugar program relies on import quotas and limits on domestic production to ensure domestic prices for raw and refined sugar are, on average, about 100 percent higher than world prices.
- A recent short article focuses on misleading claims by the American Sugar Alliance (ASA) about the sugar program that have been consistently debunked by a wide range of peer-reviewed studies.
- In contrast to long-standing assertions by industry groups such as the ASA, the US sugar program has been shown to cost consumers \$2.4–\$4 billion a year and induce losses of 17,000 to 20,000 jobs in the food processing and confectionery industries.
- The costs the program imposes on the US economy as a whole substantially exceed any benefits that accrue to the 4,000 or so farms that raise sugar beet and sugarcane, many of which also plant most of their cropland to other heavily subsidized commodities such as corn and soybeans.

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A recent short article by the American Sugar Alliance (ASA), the main lobby group of US sugar producers, repeats old arguments used to justify current US sugar policy, all of which have been consistently debunked by peer-reviewed empirical studies published in leading scholarly journals.<sup>1</sup> The ASA article also added a new claim that the US sugar program does not hurt food processing firms that use sugar. Interestingly, this claim is based on a recent report commissioned by the ASA.<sup>2</sup>

Given the ASA's claims and the new report, it is worth recapping what the evidence tells us about the sugar program's impacts and then revisiting the arguments advanced by the ASA and the report it commissioned.

## The US Sugar Program

To provide some contemporary context, recent US Department of Agriculture (USDA) Economic Research Service data show that in 2021, the US raw sugar price averaged 33.55 cents per pound, while the corresponding world raw sugar price averaged 17.85 cents per pound.<sup>3</sup> The difference between the US and world refined cane sugar prices is just as staggering. The refined sugar price was 47.58 cents per pound for US wholesale refined cane sugar, and the corresponding world refined cane sugar price was 21.40 cents per pound. Thus, in 2021, domestic sugar prices have been hovering at around twice the level of world prices.

As illustrated by these prices and confirmed by numerous analyses published in peer-reviewed journals, the US sugar program, which relies on import quotas and domestic production controls, clearly is a protectionist scheme. The program transfers income to sugar growers and refineries by imposing higher costs on all food processors that use sugar and over 300 million US consumers of chocolate and other processed foods, most of whom are taxpayers.<sup>4</sup>

The program's fundamental features have changed little over time. The sugar program reduces the flow of sugar imports to the United States from neighbors and competitive exporters such as Australia, Brazil, Thailand, and other countries to keep domestic prices higher than the corresponding world prices. A series of bilateral tariff-rate quotas (TRQs) dictate how much sugar can be imported from specific exporters at a low or zero border duty. Any imports exceeding an exporting country's TRQs face high tariffs (around 15 to 16 cents per pound), making such imports prohibitively expensive. Domestic production is also managed to limit potential production surpluses induced by the high domestic prices the supply control scheme induces. The USDA also manages the timing of imports and the production limits to keep US prices above the so-called loan rates, the prices at which sugar beet and cane producers can borrow against their crops at the federal government's expense.

The United States is one of the largest sugar producers in the world, along with Brazil, China, the European Union, India, and Thailand. US sugar producers and refineries, most of which are owned by cooperatives whose members are farmers raising sugar beets or sugarcane, benefit from government support in the form of price support loans (creating a price floor at which farmers can forfeit their sugar to the government), preset levels of production (domestic marketing allotments), and TRQs, which limit imports of sugar into the domestic market. Because of commitments made on market access in the Uruguay Round Agreement on Agriculture, a country's sugar TRQs cannot be reduced, though neither do they have to be increased.

The sugar program is part of the US farm bill and is administered by the USDA, mostly at no budgetary cost to the federal government. It avoids loan forfeitures (producers leaving sugar in the

hands of the federal government) but uses implicit taxes on all 330 million US consumers through inflated prices for raw and refined sugar. Through the sugar program, a small number of farmers' sugar processors and refineries have enjoyed domestic raw and refined sugar prices well above world levels, as illustrated above.

The provisions of the 1992 North American Free Trade Agreement (NAFTA) and, subsequently, the recent US-Mexico-Canada Agreement (USMCA) threatened the existence of the sugar program. Under NAFTA, tariffs and the TRQ faced by Mexico were to be gradually removed over a 15-year phase-in period ending in 2009. The result of the bilateral liberalization in sugar trade between Mexico and the US was a substantial increase in imports from Mexico, which could potentially reduce US sugar prices dramatically unless imports from other sources or US production were to be reduced. However, a recent bilateral US-Mexico agreement removed this threat, and sugar trade between the two USMCA partners is now totally managed by limiting the volume imported from Mexico but guaranteeing a higher price to Mexican exporters.<sup>5</sup> This policy is reminiscent of the voluntary export restraints used to protect the US car industry when Japan and European exports surged in the US market.

The US sugar lobby has effectively blocked any meaningful reform and removed threats from preferential agreements with other sugar-producing nations through the strategic use of campaign contributions and sustained lobbying efforts. (In 2020, according to OpenSecrets, members of Congress in 48 states received contributions from sugar interests.) This has been the case with the free trade agreement with Australia that allows only a trickle of Australian sugar exports to come to the US market. Similarly, the Dominican Republic–Central America Free Trade Agreement does not allow for significantly larger sugar imports for Central American trade partners.

Sugar program benefits are highly concentrated on a small number of about 4,000 sugar beet and sugarcane growers and a few privately held sugar refining companies, while the costs are imposed on almost all US food processors (there might be one or two such companies that never use raw or refined sugar in their operations) and the millions of families that purchase their food from grocery and other stores.

Consumers' losses are widespread and, at the individual level, small (about \$10 per person). Yet for the country as a whole, the total costs to consumers and food processors (especially confectioners) are large and estimated to be about \$2.4–\$4 billion (in 2009 dollars), depending on the period and approach used in the analysis. US sugar producer gains, in terms of increased revenues net of any costs, are estimated to range from \$0.437 to \$2.565 billion (in 2009 dollars).<sup>6</sup>

The US sugar program also slightly depresses world prices by 1 to 2 cents per pound, because of its restrictions on imports. It induces moderate job losses (in the range of 17,000 to 20,000 jobs) in US food processing sectors that are sugar intensive because these processors import more intermediate products containing sugar to mitigate the impact of the domestic sugar program.

## **The Recent ASA Article and Commissioned Report**

The short ASA article repeats many arguments included in the new report commissioned by the ASA itself on effects on food company profits. The focus here is on the key contentions and non sequiturs advanced in both pieces as a critique of the pro-sugar program.

First, the ASA has resurrected an old assertion that the international sugar price is a “dump world sugar price.” The claim is that because of distortions and subsidies in sugar markets around the world, the world sugar price is so depressed that the US sugar program just offsets the effects of these foreign distortions. As shown by Amani Eloheid and John Beghin's analysis of a multilateral removal of sugar distortions (the findings of which are misused in the ASA commissioned report), the impact of these distortions is about 6 cents per pound for raw sugar prices. This is much lower and smaller than the persistent impacts of the US protectionist policy on US domestic sugar prices, as described above (in the order of 15 cents per pound for raw sugar and 26 cents per pound for refined cane sugar). One can hardly justify keeping the US sugar program because of distortions elsewhere in sugar markets.

The second claim is that profits of sugar-using processors producing sugar-containing products

(SCPs) are not affected by domestic sugar prices, based on a price analysis using retail SCP prices and wholesale sugar price data for a sample of retail products from 10 large food processors. By their own admission, the ASA report's authors state that the selected firms exhibit a cost structure in SCPs in which sugar is about 2.56 percent of retail value on average, including some soft drink products. This is exactly what you would expect from basic microeconomic foundations.

The percentage change in the output price of a product is the sum of percentage changes in input prices (in percentage) times their cost share. The small cost shares used in the report dramatically mitigate the impact of a sugar input price change on the SCP price. To illustrate, the quarterly variation (quarter to quarter) in US wholesale sugar prices in 2021 was between 4 and 10 percent. Hence, one would expect 0.11 to 0.25 percent variation in retail prices of SCP, on average, during these quarters, assuming that output and input prices can be exactly matched in time.

In reality, sugar input inventory and product inventories and production are not simply matched over time and are typically uncorrelated (not linked) within any given quarter or the previous quarter. Hence, the positive relationship between the price of sugar and the price of SCPs is expected to be noisy in such a simple framework. In addition, the authors find that the sugar content of the SCP product has a positive significant effect on the retail prices they examined, exactly what one would expect when the share of total costs accounted for by sugar expenses increases.

The cost share is the value of an input divided by the value of the output it is used to make. The authors could have used cost shares in their regressions, but perhaps that would have compromised the intended result. In addition, and more technically, there is a potential endogeneity issue in the econometric approach by the ASA report authors. Sugar content is jointly determined by the price of sugar and the price of the output. Thus, sugar content cannot be used to explain output prices without resolving the fact that the two are jointly determined.

The commissioned report focuses on profitable and large firms (e.g., Conagra and Unilever), which do much more than produce candies and other SCPs. These firms are not representative of food

processors using sugar (as there are thousands of such firms of various sizes). This does not prevent the ASA report from claiming that high sugar prices do not hurt the financial performance of food manufacturers, even though they do not examine the program's impacts on companies that specialize in baked and other confectionery products.

In a non sequitur, the ASA report also claims that the no-correlation result found between quarterly SCP prices and sugar prices means that removing the sugar program would not benefit consumers or food processors. This is also patently false as shown by repeated analyses, including two by the nonpartisan US Government Accountability Office.<sup>7</sup>

Finally, another questionable claim made in the short ASA article—and long asserted by the ASA—is that removing the sugar program will hurt American workers. This is patently incorrect and unrelated to the commissioned report. The US sugar program has been shown to have negative employment effects in food processing by increasing the

imports of sugar-containing intermediate goods, hurting domestic US competitors. These effects are moderate, as mentioned at the beginning of this report, but they certainly cannot be characterized as beneficial to US workers.

Removing the sugar program will indeed penalize a small number of farmers. However, the benefits of the sugar program are also notoriously concentrated on a few families controlling cane production and vertically integrated cooperatives owned by about 3,400 farms that not only raise sugar beets but also plant most of their land to other crops such as corn, alfalfa, and malt barley.

In summary, the claims made in the recent ASA commissioned report and by ASA representatives in no way match with the findings of an extensive body of previous research on the impacts of the US sugar program. Nor do those findings accord the current evidence on the stunning disparity between US and international raw and refined sugar prices.

## About the Author

**John C. Beghin** is a professor and the Michael Yanney Chair in International Trade and Finance in the Department of Agricultural Economics and the Clayton Yeutter Institute of International Trade and Finance at the University of Nebraska–Lincoln. His research interests and expertise are in the economics of international agriculture and food markets.

## Notes

1. See, for example, Gwo-Jiun M. Leu, Andrew Schmitz, and Ronald D. Knutson, "Gains and Losses of Sugar Program Policy Options," *American Journal of Agricultural Economics* 69, no. 3 (1987): 591–602; John C. Beghin and Amani Elobeid, "The Impact of the US Sugar Program Redux," *Applied Economic Perspectives and Policy* 37, no. 1 (2015): 1–33; John C. Beghin et al., "The Cost of the US Sugar Program Revisited," *Contemporary Economic Policy* 21, no. 1 (2003): 106–16; Remy Jurenas, "Sugar Program: The Basics," Congressional Research Service, December 14, 2014, [https://digital.library.unt.edu/ark:/67531/metadc463504/m1/1/high\\_res\\_d/R42535\\_2012Dec14.pdf](https://digital.library.unt.edu/ark:/67531/metadc463504/m1/1/high_res_d/R42535_2012Dec14.pdf); Rachel Dardis and Carol Young, "The Welfare Loss from the New Sugar Program," *Journal of Consumer Affairs* 19, no. 1 (1985): 163–76; David Abler et al., "Changing the US Sugar Program into a Standard Crop Program: Consequences Under the North American Free Trade Agreement and Doha," *Applied Economic Perspectives and Policy* 30, no. 1 (2008): 82–102; Michael K. Wohlgenant, "Effects of Trade Liberalization on the World Sugar Market," Food and Agriculture Organization of the United Nations, 1999, <https://www.fao.org/publications/card/en/c/c7ef99e7-144c-558f-ae6d-f67b0949243d/>; Donald O. Mitchell, "Sugar Policies: An Opportunity for Change," in *Global Agricultural Trade and Developing Countries*, ed. Ataman Aksoy and John C. Beghin (Washington, DC: World Bank Publications, 2004): 141–60; and Amani Elobeid and John C. Beghin, "Multilateral Trade and Agricultural Policy Reforms in Sugar Markets," *Journal of Agricultural Economics* 57, no. 1 (2006): 23–48.

2. American Sugar Alliance, "Study Rejects Candy Lobby's Long-Held Accusations," *Sugar Producer*, October 29, 2021, <https://www.sugarproducer.com/2021/10/study-rejects-candy-lobbys-longheld>; and Karen L. DeLong and Carlos Trejo-Pech, "Analyzing Determinants of Sugar-Containing-Product Prices," American Sugar Alliance, October 27, 2021, <https://sugaralliance.org/wp-content/uploads/2021/10/DeLong-Sugar-Report-October-2021.pdf>.

3. Intercontinental Exchange, "Table 4—U.S. Raw Sugar Price, Duty Fee Paid, New York, Monthly, Quarterly, and by Calendar and Fiscal Year, Since 1960," US Department of Agriculture, Economic Research Service, January 3, 2022, <https://www.ers.usda.gov/webdocs/DataFiles/53304/Table04.xls?v=0>.

4. For decades, the American Sugar Alliance and other sugar producer and processor lobbies have claimed that the sugar program places no costs on taxpayers. That assertion could be only genuinely truthful and not an intentional obfuscation if all US consumers of food products paid no taxes, which is obviously an absurd idea. A much more accurate statement would be that, instead of providing explicit subsidy payments from the government, at the behest of sugar farmers and processors, the sugar program imposes hidden taxes on US families and food processors by limiting supplies to raise market prices.

5. See Gary W. Brester, “20 Years in, NAFTA Finally Sours the US Sugar Program,” American Enterprise Institute, September 4, 2014, <https://www.aei.org/research-products/report/20-years-in-nafta-finally-sours-the-us-sugar-program/>; Colin A. Carter, Tina L. Saitone, and K. Aleks Schaefer, “Managed Trade: The US-Mexico Sugar Suspension Agreements,” *Canadian Journal of Economics* 52, no. 3 (2019): 1195–222; Troy G. Schmitz and Karen E. Lewis, “Impact of NAFTA on US and Mexican Sugar Markets,” *Journal of Agricultural and Resource Economics* (2015): 387–404; Troy G. Schmitz, “Impact of the 2014 Suspension Agreement on Sugar Between the United States and Mexico,” *Agricultural Economics* 49, no. 1 (2018): 55–69; and Jarrett Whistance, Andrick Payen, and Wyatt Thompson, *Suspension Agreements and Antidumping/Countervailing Duties: US-Mexico Sugar Markets and the Effects of Alternative Trade Policies* (paper presented at 2015 Agricultural & Applied Economics Association and Western Agricultural Economics Association Annual Meeting, San Francisco, July 26–28, 2015).

6. See John C. Beghin and Amani Elobeid, *Analysis of the US Sugar Program*, American Enterprise Institute, November 6, 2017, <https://www.aei.org/research-products/report/analysis-of-the-us-sugar-program/>; Beghin and Elobeid, “The Impact of the U.S. Sugar Program Redux”; US Government Accountability Office, “Sugar Program: Supporting Sugar Prices Has Increased Users’ Cost While Benefiting Producers,” June 9, 2000, <http://www.gao.gov/products/RCED-00-126>; Beghin et al., “The Cost of the U.S. Sugar Program Revisited”; Leu, Schmitz, and Knutson, “Gains and Losses of Sugar Program Policy Options”; and Michael K. Wohlgenant, *Sweets for the Sweet: The Costly Benefits of the US Sugar Program*, American Enterprise Institute, July 12, 2011, <https://www.aei.org/research-products/report/sweets-for-the-sweet-the-costly-benefits-of-the-us-sugar-program/>.

7. See US Government Accountability Office, “Sugar Program: Supporting Sugar Prices Has Increased Users’ Costs While Benefiting Producers”; and US Government Accountability Office, “Sugar Program: Changing Domestic and International Conditions Require Program Changes,” April 16, 1993, <https://www.gao.gov/products/rced-93-84>. See also endnote 1.

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