



BRIEFING

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U.S. and World Sugar Prices

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Introduction

U.S. sugar prices have varied considerably over the past eight years. After increasing substantially between 2007 and 2009, and reaching record highs between 2010 and 2012, domestic sugar prices declined to near record lows in 2013. World sugar prices have experienced similar behavior primarily because of fluctuations in world sugar production. Changes in global use of sugar for ethanol production (especially in Brazil), however, may also have played a role. This briefing paper examines trends in world and U.S. sugar prices, as well as global and U.S. sugar production, imports, and consumption.

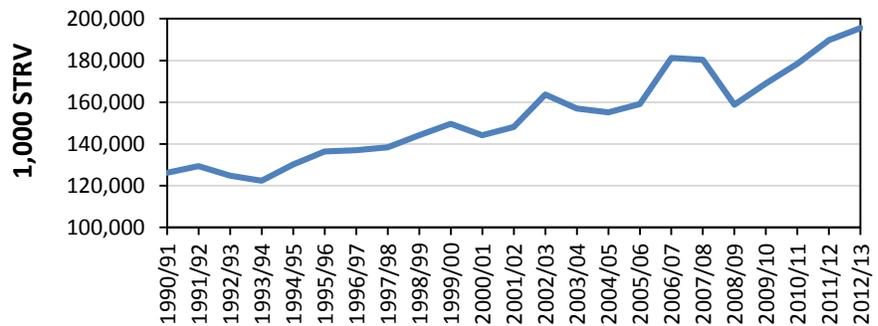
World Sugar Production

Sugar is produced in many countries around the world. In general, regions with temperate climates, such as the northern United States, Europe,

Ukraine, and Russia, produce sugar from sugar beets. Alternatively, most of the world's sugar is produced from sugarcane grown in tropical climates. Sugar beet refineries convert sugar beets directly into refined sugar. In contrast, sugarcane refineries produce raw sugar which is usually further processed into refined sugar in separate facilities. Sugar beets and sugarcane are bulky commodities with limited post-harvest shelf life. Consequently, sugar refineries are located close to sugar beet or sugarcane production areas.

Globally, over 195 million tons of sugar was produced in fiscal year 2012/13.^{1,2} World production has been trending upward for several decades (figure 1). Brazil, India, China, Thailand, and the United States are the largest producers (figure 2). However, their combined output is only 56 percent of total world production.

Figure 1. World Sugar Production



Source: USDA/FAS Production, Supply, and Distribution Online

¹ Unless otherwise noted, all quantities in this paper are in short tons, raw value (STRV). A short ton is a U.S. measurement representing 2,000 pounds. One short ton equals 0.907 metric tons or, conversely, one metric ton equals 1.102 short tons. Raw value refers to the weight of raw sugar. Sugarcane is processed into a raw component (brown crystals) before being refined into white sugar. Typically, raw sugar weight is 107 percent of refined sugar weight.

² The fiscal year reference includes the months October to September. For example, the fiscal year beginning October 2009 and ending in September 2010 is referred to as FY 2009/10. Single-year designations represent calendar years which include the months January to December.

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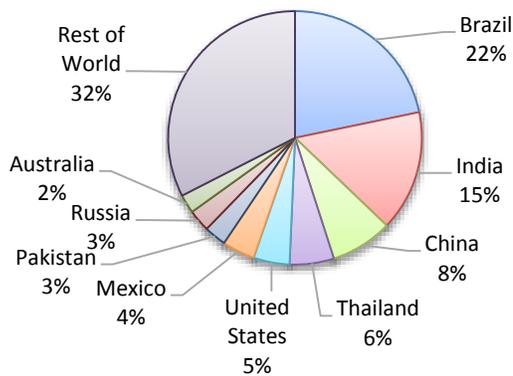
Objective

Analysis For

Informed

Decision Making

Figure 2. World Sugar Producers, FY 2012/13

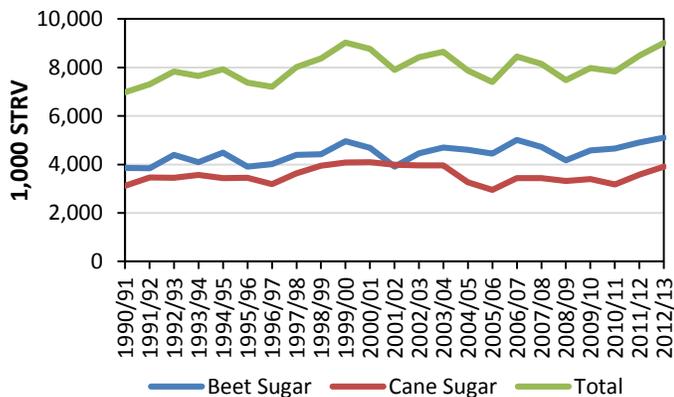


Source: USDA/ERS Sugar and Sweeteners Yearbook

U.S. Sugar Production

U.S. sugar production averaged about 8 million tons over the past 25 years. In FY 2012/13, however, U.S. sugar production totaled almost 9 million tons primarily because of good growing conditions. Sugar obtained from sugar beets typically comprises about 55 percent of U.S. sugar production with sugarcane (produced in Louisiana, Florida, Texas, and Hawaii) providing the balance. In FY 2012/13, beet sugar production was just over 5 million tons and cane sugar production was almost 4 million tons (figure 3).

Figure 3. U.S. Sugar Production



Source: USDA/ERS Sugar and Sweeteners Yearbook

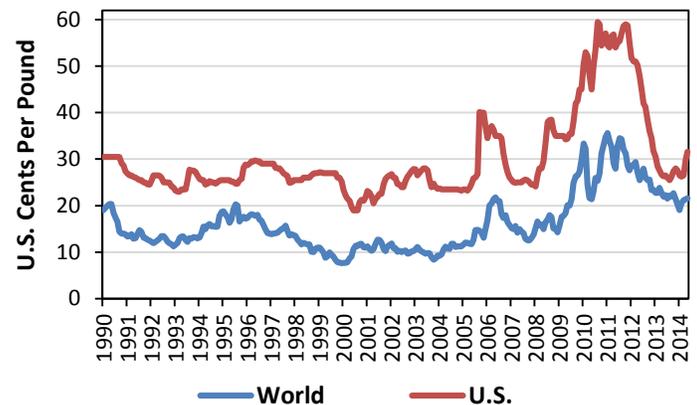
World and U.S. Sugar Prices

In the 2008/09 and 2009/10 marketing years, adverse weather conditions caused world sugar production to decline substantially. In response, world sugar prices increased. Globally, refined sugar prices reached a record high of 34.5 cents per pound in 2011 and averaged 29 cents per pound between the 2010 and 2012 calendar years (figure 4). This

³ Dry basis is used in this context so that quantities of sugar can be compared to quantities of high fructose corn syrup and other liquid sweeteners.

level was far in excess of average prices (15 cents per pound) that occurred over the previous decade. World sugar prices also caused U.S. wholesale refined sugar prices to reach a record of 59.5 cents per pound in August of 2010 and average 50.94 cents per pound between 2011 and 2012, far in excess of the average U.S. domestic support price of 24.09 cents per pound. World and U.S. sugar production recovered in 2013, and both world and U.S. sugar prices declined to their pre-2010 levels.

Figure 4. World and U.S. Monthly Wholesale Refined Sugar Price

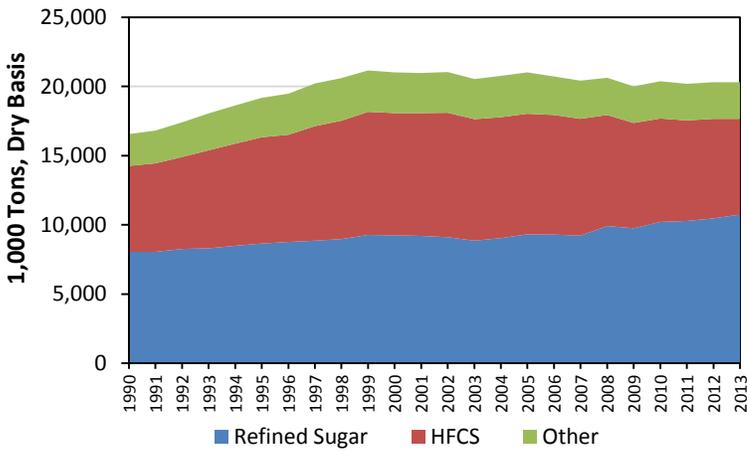


Source: USDA/ERS Sugar and Sweeteners Yearbook
World Contract No. 407 London Daily Price
U.S.: Wholesale Refined Beet Sugar Midwest

U.S. Sugar Consumption

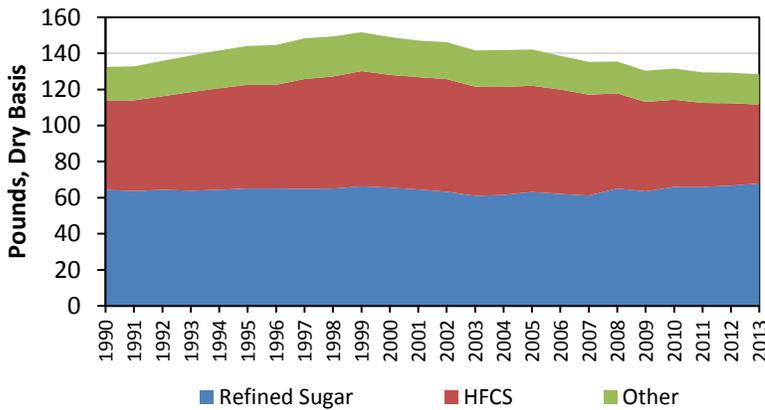
Total U.S. sweetener consumption has been relatively stable at around 20 million tons (dry basis) for over a decade (figure 5).³ Sugar represents 10.75 million tons of the total, while high fructose corn syrup (HFCS) accounts for almost 7 million tons. Several other sweeteners (e.g., honey, glucose, dextrose, syrups, etc.) provide the remaining 2 million tons. U.S. total per capita sweetener consumption is about 130 pounds (dry basis) with sugar consumption representing 68 pounds (figure 6).

Figure 5. Total U.S. Sweetener Consumption



Source: USDA/ERS Sugar and Sweeteners Yearbook

Figure 6. U.S. Per Capita Sweetener Consumption

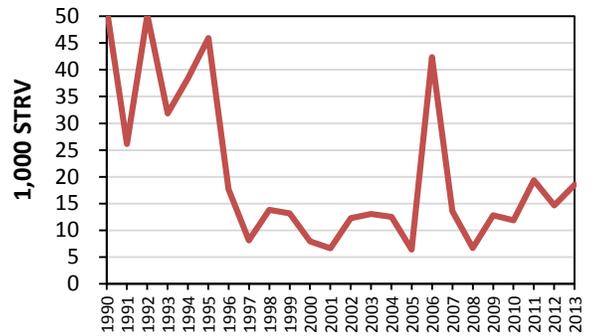


Source: USDA/ERS Sugar and Sweeteners Yearbook

U.S. Sugar Exports

U.S. domestic sugar prices are higher than world sugar prices because of the U.S. sugar program that includes the use of Tariff Rate Quotas (TRQs), a price support program (nonrecourse marketing loans), domestic supply controls, and occasional government purchases of sugar that are subsequently sold at a discount to the ethanol industry (figure 4). Consequently, U.S. sugar exports are relatively small -- only 269,000 tons in 2013 (figure 7). These exports are primarily the result of a re-export program in which raw sugar is imported by U.S. raw sugar refiners, processed into refined sugar, and then exported.

Figure 7. U.S. Sugar Exports

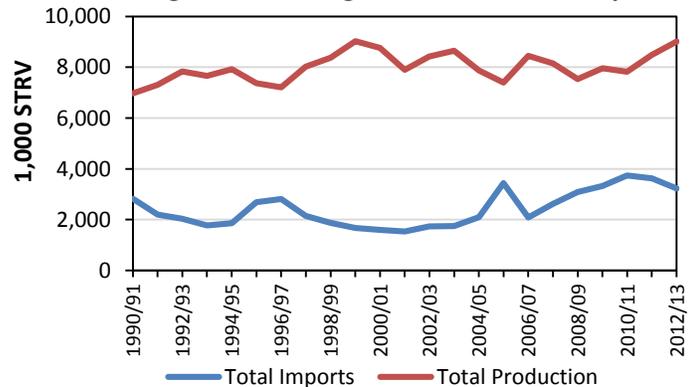


Source: USDA/ERS Sugar and Sweeteners Yearbook

U.S. Sugar Imports

Total U.S. sugar imports averaged about 2 million tons between FY 1990/91 and FY 2004/05 but increased substantially in 2005/06 to 3.4 million tons (figure 8). After a decline to 2 million tons in 2006/07 as some countries increased inventories following two low production years, imports steadily increased to 3.7 million tons in 2010/11. By 2012/13, imports declined by 0.5 million tons to 3.2 million tons (a 13.3 percent reduction from 2010/11). In 2012/13, imports represented 26 percent of total U.S. sugar supplies.

Figure 8. U.S. Sugar Production and Imports

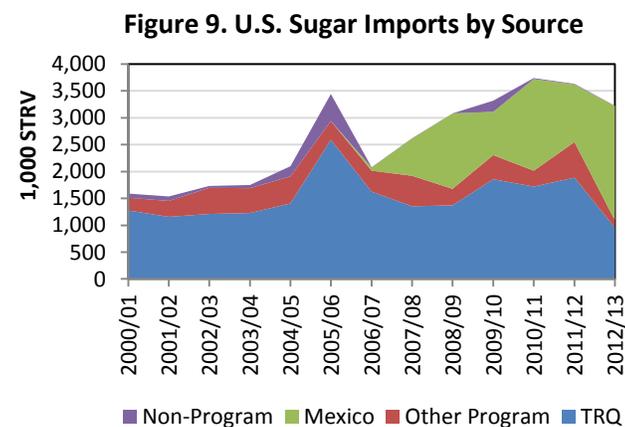


Source: USDA/ERS Sugar and Sweeteners Yearbook

Many countries protect their domestic sugar industries from global price movements, including the United States. The United States uses Tariff-Rate Quotas (TRQs) to restrict sugar imports and support domestic sugar prices. TRQs establish a relatively low in-quota tariff of 0.625 cents per pound of raw sugar for amounts that do not exceed an individual country's import allotment. However, sugar that is imported in excess of the predetermined quota is charged an over-quota tariff of 15.36 cents per pound. Raw sugar prices in the United States have averaged 23 cents per pound since 1990. Thus, for countries with TRQ's, the over-quota tariff is an effective disincentive to export sugar to the United States in excess of TRQ allotments.

The United States has an obligation under its World Trade Organization (WTO) commitments to import 1.231 million tons of raw sugar and 25,954 tons of refined sugar from TRQ countries annually. The United States receives TRQ-restricted imports from 40 countries and unrestricted imports from several others. TRQ imports have averaged 1.51 million tons since FY 2000/01 (figure 9). Each year, initial annual TRQ raw sugar allotments are set near the minimum quota required by U.S. trade commitments.⁴ However, TRQ allocations can be increased during a year in response to changing supply and demand conditions (figure 10).⁵

Brazil, the Dominican Republic, and the Philippines are the top three TRQ sugar exporters to the United States followed by Australia, Guatemala, and Argentina (figure 11). U.S. sugar imports from Brazil averaged 243,350 tons annually from FY 2009/10 to FY 2012/13.⁶ Imports from the Dominican Republic and the Philippines averaged 212,762 tons and 177,904 tons, respectively, over the same period.

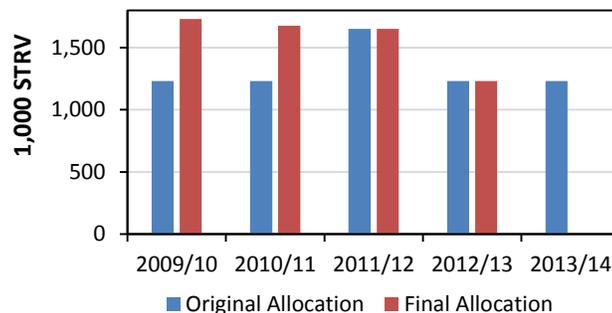


⁴ The allotments are announced for raw cane sugar, but an additional 25,954 tons of refined sugar is also required.

⁵ The final allocation for FY 2013/14 has not yet been determined. The initial allocation was 1.231 million tons of raw sugar.

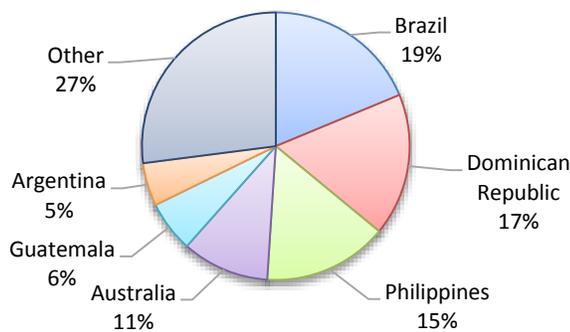
⁶ FY 2103/14 is not included in this average because the marketing year has not ended.

Figure 10. Initial and Final TRQ Raw Cane Sugar Allotments



Source: USDA/ERS Sugar and Sweeteners Yearbook

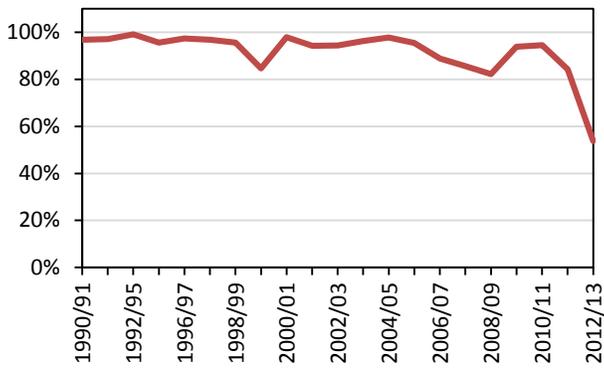
Figure 11. U.S. TRQ Sugar Imports By Country, FY 2012/13



Source: USDA/ERS Sugar and Sweeteners Yearbook

Typically, U.S. domestic sugar prices have been much higher than world prices such that, even after considering additional marketing costs such as shipping and TRQ tariffs, foreign countries have generally filled (an average of 90 percent) their U.S. TRQ allocations. However, between 2010 and 2012 when world sugar prices exceeded the U.S. refined beet sugar average loan rate of 24.09 cents per pound, some countries did not fill their TRQs. Over this time, the difference between U.S. and world prices was not large enough to offset transportation costs and in-quota TRQ tariffs. Thus, only 54 percent of total TRQ allocations (a record low) were filled in 2012/13 (figure 12).

Figure 12. U.S. TRQ Fill Percentages

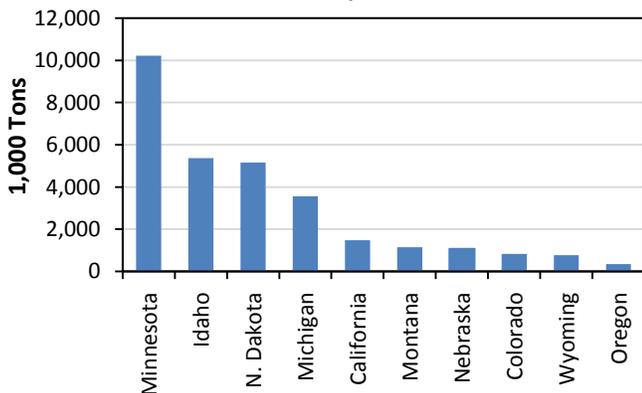


Source: USDA/ERS Sugar and Sweeteners Yearbook

Sugar Beet Production in Montana

Sugar beets have been produced in Montana for over 100 years. Montana is the sixth largest sugar beet producer in the United States (figure 13). At one time, nine sugar beet plants operated in Montana. Today, two sugar beet refineries operate in Montana and two others in Northern Wyoming. Sugar beet producers have made substantial investments in the farmer-owned Western Sugar Cooperative, which operates several plants across four states, including one in Billings, MT and another in Lovell, WY. Sidney Sugars, Inc. (an LLC owned by the American Crystal Sugar Company cooperative) operates a plant in Sidney, MT that processes sugar beets produced in Eastern Montana and Western North Dakota. All 21 sugar beet processing plants in the United States operate within some form of a farmer-owned cooperative.

Figure 13. Average Sugar Beet Production by State, 2001-2013



Source: USDA/ERS Sugar and Sweeteners Yearbook

Sugar beets are planted in April of each year. This root crop is primarily harvested in October and stored in large piles. These storage piles are processed beginning with the harvest each fall and continuing through late winter. The

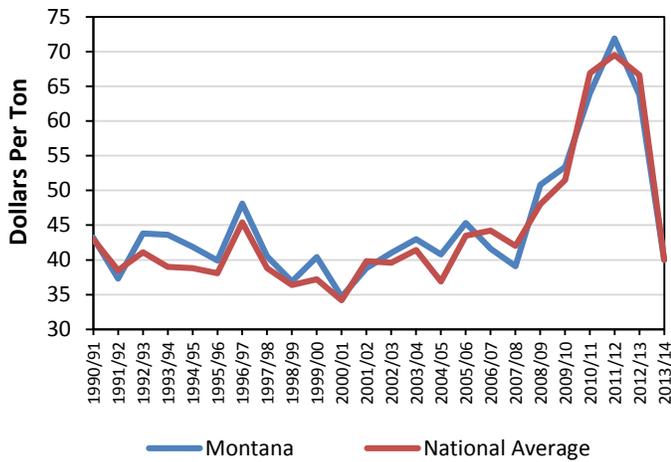
sugar produced from sugar beets harvested each fall is marketed over the following 12 months with some allowances for inventory stocks. Hence, data related to sugar production and prices are often reported based on a marketing year that begins in October and ends the following September. Several sugar beet payments are received by producers over a 12-month period. Each payment is based on a percentage of the expected final total value of sugar produced from that crop. The first payment occurs soon after harvest. Three or four additional payments are then scheduled at various times over the next 12 months. Consequently, final prices of sugar beets produced in a particular growing season are not known until the end of the sugar marketing year. In addition, sugar beet prices vary across producers and are determined by a combination of the total revenue obtained from sugar and sugar by-product sales, the amount of sugar obtained from each producer's beets, and various transportation, spoilage, and marketing costs.

Sugar beets provided 2.5 percent of Montana agricultural cash receipts between 2010 and 2012 and totaled \$80 million in 2011 and \$92 million in 2012. Montana sugar beet producers harvested almost 1.3 million tons of beets in 2012, which was 3.7 percent of total U.S. sugar beet production (USDA, 2013).

The South Central region of Montana produced just over 50 percent of all Montana sugar beets in both 2011 and 2012, the majority of which was produced in Big Horn, Carbon, and Yellowstone counties. The remainder is primarily produced in Dawson, Richland, and Roosevelt counties.

U.S. sugar beet prices are highly influenced by wholesale refined sugar prices. The U.S. annual average sugar beet price and the U.S. wholesale refined sugar price have a correlation coefficient of 0.77 from 1990 to the present. Both sugar beet and sugar prices were relatively flat between 1998/99 and 2008/09. After that year, sugar beet prices increased substantially through 2012/13 (figure 14). Although the final values will not be known until late summer of 2014, sugar beet prices for the 2013/2014 marketing year (the crop produced in the fall of 2013) are expected to be below \$40 per ton. This level is expected to persist into the foreseeable future.

Figure 14. National and Montana Average Sugar Beet Prices



Source: USDA/ERS Sugar and Sweeteners Yearbook

Summary

U.S. sugar prices are highly influenced by domestic agricultural policies and, in recent years, by world sugar prices. World sugar prices are primarily a function of weather. However, Brazil frequently responds to world sugar and ethanol prices by altering production between these two commodities within their sugar cane processing plants. Current low U.S. sugar prices are primarily the result of strong world and U.S. production. Sugar prices directly influence U.S. sugar beet prices and subsequent profitability.

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