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2012 Outlook of the U.S. and World Sugar Markets, 2011-2021

Won W. Koo
Richard D. Taylor



Center for Agricultural Policy and Trade Studies
Department of Agribusiness and Applied Economics
North Dakota State University
Fargo, North Dakota 58108-6050

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ABSTRACT

This report evaluates the U.S. and world sugar markets for 2011-2021 using the Global Sugar Policy Simulation Model. This analysis is based on assumptions about general economic conditions, agricultural policies, population growth, weather conditions, and technological changes.

Both the U.S. and world sugar economies are predicted to remain stable over the next ten years. Sugar prices increased from 18.7 cents/lb in 2009, 27 cents/lb in 2010 and 32 cent/lb in 2011. World sugar production increased in 2010 along with consumption. World demand for sugar is expected to grow at a similar rate to world supply, resulting in Caribbean sugar prices remaining near the 23.0 -28.0 cents/lb range throughout the forecast period. The U.S. wholesale price of sugar is projected to remain in the 38 to 45 cents/lb range throughout the forecast period. It is projected that Mexican exports to the United States will decrease to 488 thousand metric tons of sugar by 2021. World trade volumes of sugar are expected to increase throughout the forecast period.

Keywords: sugar, production, exports, consumption, ending stocks

HIGHLIGHTS

Total world sugar trade is projected to increase by 6.0% from 39.9 million metric tons to 42.2 million metric tons between 2011 and 2021. Brazil's exports are projected to increase from 23.8 million metric tons in 2011 to 26.1 million metric tons in 2021 even though Brazil uses a substantial amount of sugar cane for ethanol production. World sugar prices are projected to decrease from \$0.32/lb in 2011 to \$0.24/lb in 2021. U.S. wholesale sugar price is projected to decrease from \$0.47/lb in 2011 to \$0.39/lb in 2021. It is worth a note that the world sugar industry is influenced by the recent surge in oil price which resulted in increased ethanol production from sugar cane in Brazil. Thus, Brazil decreased supply of sugar to the world market. In addition, high demand for corn from corn-based ethanol production has increased the price of corn which prevents the use of high fructose corn syrup from beverage production in Mexico, resulted in continuous use of sugar for beverage production in the country.

U.S. sugar imports are predicted to decrease by 21.4% over the 2011-2021 period compared to the recent average import. U.S. sugar production is projected to increase by 13.1% between 2011 and 2021. U.S. sugar consumption is projected to increase by 14.8% and ending stocks are predicted to remain constant. However, the U.S. sugar industry could face some uncertainty, mainly because of potential increases in sugar imports from Mexico.

Brazil's production is expected to increase by 7.1% from the 2009-2011 average of 36.8 million metric tons to 39.4 million metric tons in 2021. Exports could increase by 6.1% to 26.1 million metric ton in 2021, while consumption increases by 13.2%.

Canada's production is predicted to increase slightly between 2011 and 2021. Canada's imports are expected to increase by 11.1%. Consumption is predicted to increase 12.2% and ending stocks are predicted to increase by 14.6%.

Mexico's production is expected to increase by 11.5%, and exports are expected to decrease slightly from the 2009-2011 average due to decreases in its exports to the United States.

The European Union (EU) is expected to remain an importer due to the EU-27 sugar policy reform. Their production is predicted to increase by 2.4%, while consumption will increase by 3.6%.

Exporting countries, such as Australia, Thailand, South Africa and Brazil are predicted to increase their production and exports during the forecasting period, while Cuba and Mexico are expected to reduce exports during the same period.

Most importing countries, except for Japan and the FSU are predicted to increase their imports for the 2011-2021 period.

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INTRODUCTION

Sugar is produced in over 100 countries worldwide. In most years, over 70% of world sugar production is consumed domestically and the remaining is traded in the world. However, a significant share of this trade volume takes place under bilateral long-term agreements or on preferential terms. Since only a small proportion of world production is traded freely, small changes in production and government policies tend to have large effects on world sugar markets. As a result, sugar prices have been unstable in the world market.

During late 2005 and the first quarter of 2006, world sugar price increased from about \$0.12/lb to over \$0.18/lb because of increased use of sugarcane for ethanol production in Brazil. World sugar price fell to \$0.12/lb in late 2006 and \$0.11/lb by early 2007 due to increased production in other exporting nations. The yearly average price was \$0.187/lb in 2009 and increased to \$0.27/lb in 2010 and increased further to \$0.32 in 2011. The stocks to use ratio has varied between 34% in 1968 and 17% in 2010. Recently the ratio has varied between 31% in 2000 and 17% in 2010. The Caribbean price follows an opposite relationship with the stocks to use ratio, ie, when the stocks to use ratio is high (low), prices are low (high). The recent decrease in the stocks to use ratio, increased sugar price from \$0.08/ lb in 2000 to \$0.27/lb in 2010. Similar price increases occurred in 1974-1975 and 1980-1981. The current stocks to use ratio is lower than any time in the past 45 years, this indicates that the recent sugar price increase is justified.

This report evaluates the U.S. and world sugar industry for 2011-2021 using the Global Sugar Policy Simulation Model developed by Benirschka et al. (1996). This model was run utilizing the 2011 data. The outlook projection is based on an assumption that farm and trade policies adopted by sugar exporting and importing countries remain unchanged for the 2011-2021 time period.

Sugarcane is a perennial grass that is produced in tropical and subtropical climate zones. It matures in 12 to 16 months. Once the cane is harvested, the sucrose starts breaking down. Thus, sugarcane mills are located close to the cane fields to minimize transport costs and sucrose losses. Mills convert sugarcane into raw sugar which is shipped to refineries for further processing. In contrast to raw sugar producing mills, refineries are unconstrained by seasonal production patterns and operate throughout the year. Unlike sugarcane, sugarbeets are an annual crop of temperate climate zones. Because of disease problems, sugarbeets are always grown in crop rotations. Since sugarbeets are bulky and costly to transport, beet processing facilities are located close to production. In contrast to sugarcane, sugarbeets are directly processed into refined sugar. Raw sugar is produced only from sugarcane.

Raw sugar and refined sugar are two different products. They are both traded internationally. Beet sugar producing countries export refined sugar, while cane sugar producing countries export either raw or refined sugar. In recent years, the share of raw sugar in total sugar exports has been about 50%.

OVERVIEW OF THE WORLD SUGAR INDUSTRY AND SUGAR POLICIES

For the 2007-2011 period, annual global sugar production was approximately 157 million metric tons with about 33% of production exported from its country of origin. The largest sugar producing region is Brazil, followed by the India and the EU (Table 1).

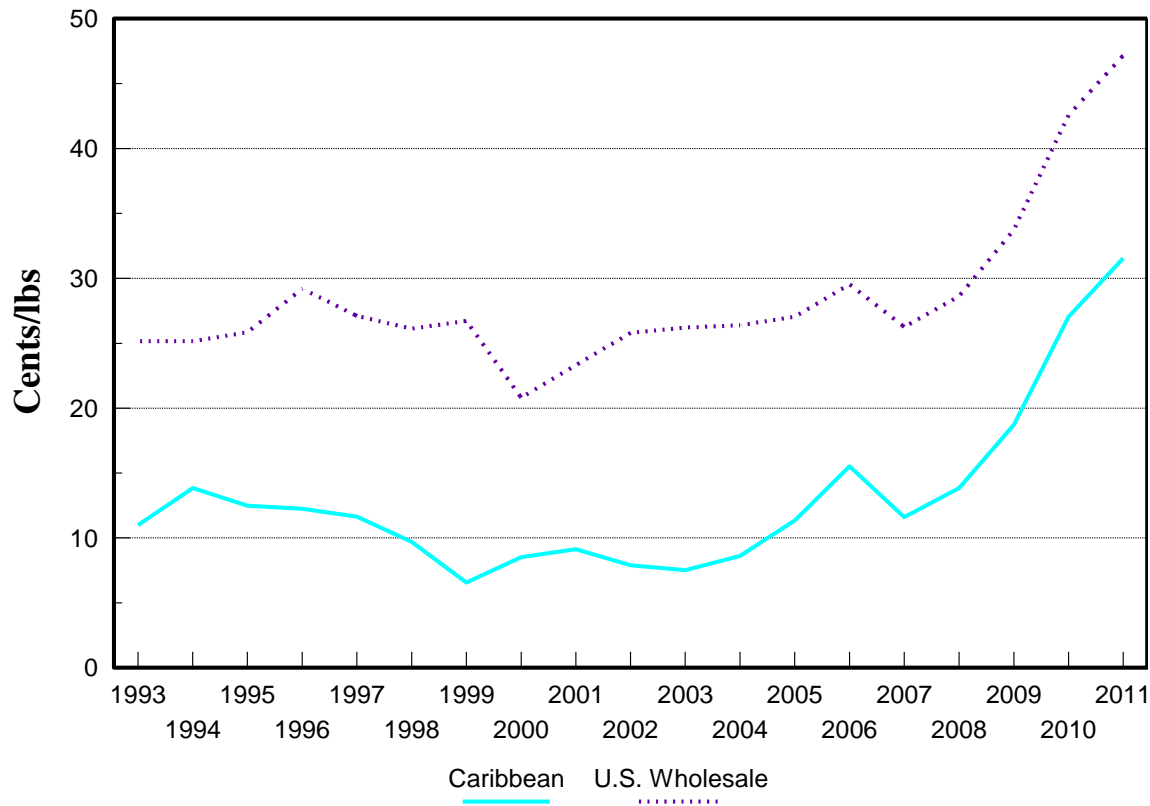
Table 1. World Sugar Supply and Utilization, 2007 to 2011 Average

Country/ Region	Beet/ Cane	Consumption	Production	Net Exports	Ending Stocks	Per Capita Consumption
-----1,000 metric tons, raw value-----						Kg
Algeria	B	1,285	6	(1,273)	215	34
Australia	C	1,250	4,461	3,213	340	60
Brazil	C	11,670	34,790	22,990	(375)	56
Canada	B	1,379	88	(1,299)	113	43
China	B/C	14,270	12,737	(1,508)	2,597	7
Cuba	C	677	1,272	685	81	61
European Union	B	17,151	15,629	(1,357)	2,101	48
Egypt	B/C	2,743	1,760	(974)	445	34
Former Soviet Union	B/C	10,462	6,328	(4,022)	1,603	37
India	C	23,730	24,033	1,262	6,957	17
Indonesia	C	4,760	1,964	(2,764)	522	16
Japan	B/C	2,304	828	(1,460)	326	18
Korea	-	1,259	0	(1,343)	482	27
Mexico	C	5,098	5,474	752	1,063	50
South Africa	C	1,603	2,192	639	144	36
Thailand	C	2,184	8,357	6,244	2,252	30
United States	B/C	10,186	7,139	(2,492)	1,232	32
Rest of World	B/C	42,146	30,395	(15,688)	13,798	19
World	B/C	154,167	157,452	51,473	33,894	21

Source: USDA-FAS, PS&D website.

Per capita sugar consumption was highest in the Cuba followed by Australia, and Brazil, although a substantial portion of Brazil sugar is converted into ethanol for transportation fuel. Per capita sugar consumption in the United States was 32 kg, which was above world average per capita consumption (21 kg). Per capita sugar consumption was lowest in China at 7 kg per capita, but that may increase substantially as per capita income increases. Annual global sugar consumption for the 2007-2011 period was 154 million metric tons.

The major sugar exporting countries were Brazil, Australia, Thailand, and South Africa. These countries accounted for 59% of global exports from 2006 to 2010. A relatively few number of countries dominate world sugar exports, but imports are less concentrated. Major importing countries were the Former Soviet Union (FSU), the United States, Indonesia, Korea, Canada, Algeria, China, the EU, and Japan. Imports by these countries accounted for about 34% of all sugar imports from 2007 to 2011. Under the Lome Convention, the EU was required to import sugar under preferential terms from certain African, Caribbean, and Pacific countries.



Source:USDA

Figure 1. U.S. and World Sugar Prices

The Caribbean raw sugar price is usually considered to be the world market price for sugar. Except for years with high world market prices, there was a substantial wedge between the U.S. wholesale price of raw sugar and the world market price. Over the last decade, U.S. wholesale prices fluctuated between \$0.22 and \$0.47/lb. World market prices ranged between \$0.06/lb. and \$0.32/lb (Figure 1). Both real Caribbean raw sugar prices and U.S. raw sugar import prices had long-term downward trends but are increasing for the past 9 years. Figure 1 shows the dramatic price increase in Caribbean sugar price in late 2005 and 2006. In 2003, the price averaged \$0.07/lb, but it had risen to \$0.12/lb in 2005 and it was \$0.18/lb in June 2006 before falling to \$0.11/lb in 2007. Caribbean sugar price increased to \$0.19 in 2009, \$0.27 in 2010 and \$0.32 in 2011. The high Caribbean sugar price also increased the U.S. wholesale price to \$0.30/lb in 2006, falling to \$0.26/lb in 2007, before increasing to \$0.28/lb in 2008, \$0.34 in 2009 and \$0.43 in 2010.

Figure 2 shows the relationship between world stocks to use ratio and the Caribbean raw sugar price. The correlation between the two series is -0.52 indicating that there is a strong negative correlation between them. The stocks to use ratio has fallen from 31% in 2000 to 17% in 2010. That decrease has increased price from \$0.075/lb in 2000 to \$0.24/lb in 2010 before increasing to \$0.33/lb in 2011. The current stocks to use ratio is lower than any time in the past 45 years, indicating that the recent surge in sugar price is justified.

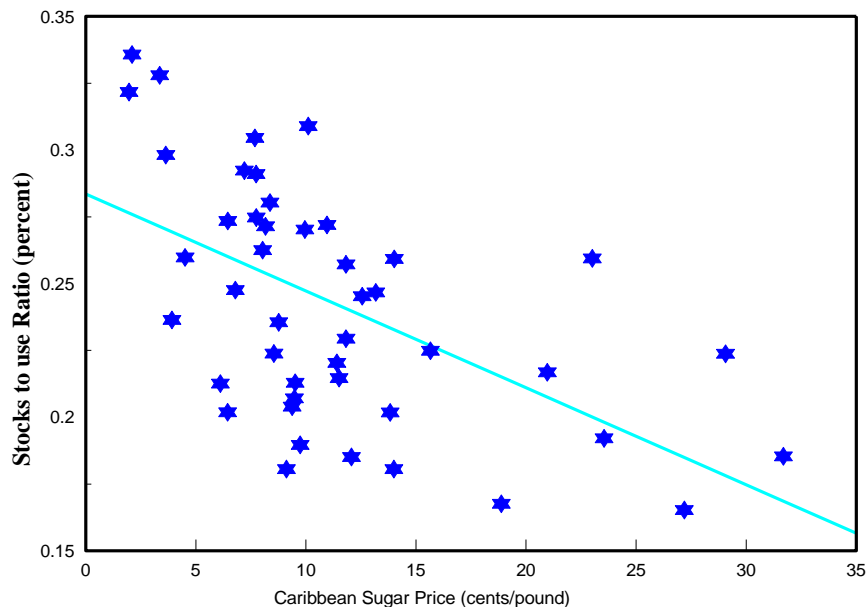
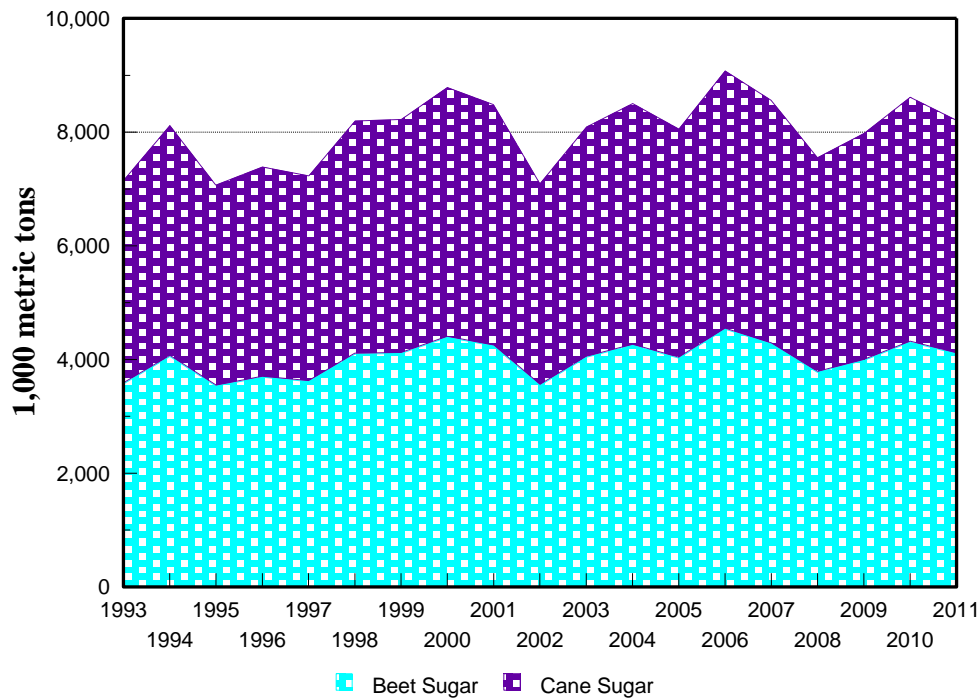


Figure 2. World Stocks to Use Ratio and Caribbean Raw Sugar Price, 1967-2011

The volatility of world sugar prices could be due to the nature of supply response to price changes stemming from high fixed costs of sugar production. An increase in sugar production in response to rising sugar prices requires significant investments in processing facilities, and it takes some time until new production capacity becomes available. Once the facilities are in place, they tend to be used at full capacity to spread the fixed costs. Thus, when prices fall, production remains at full capacity. Sugar production is relatively unresponsive to price in the short run, however sugar price does respond to changes in consumption. The increase in the Caribbean price of sugar in 2005 and 2006 is mainly because Brazil increased the production of ethanol from sugar cane. However, the price dropped in 2007 because of increased production of sugar from sugarcane in response to higher sugar prices in 2005 and 2006.

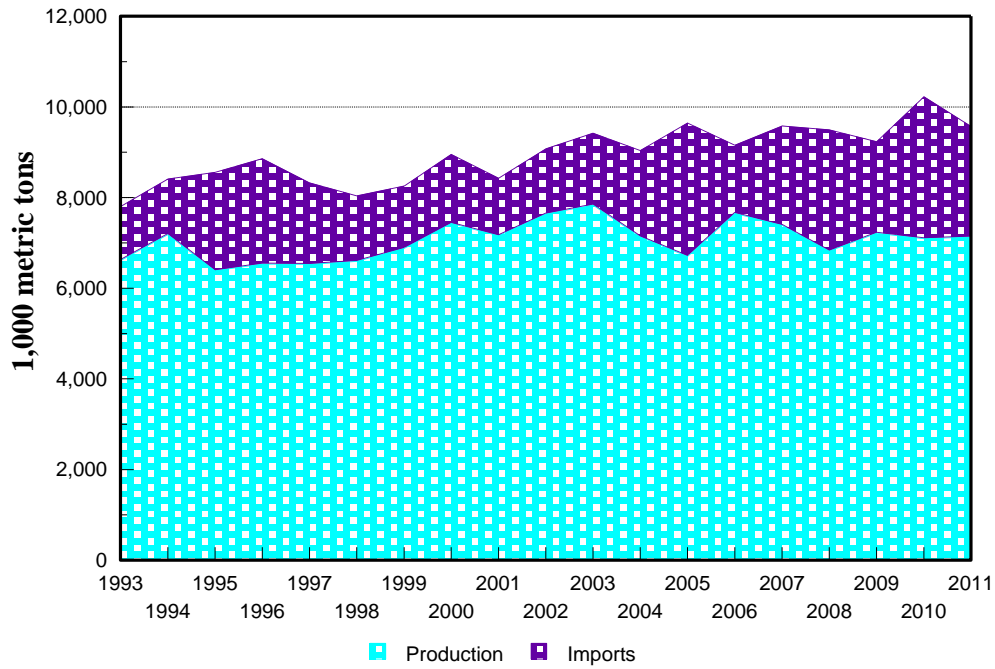
The United States produces both beet and cane sugar. Cane sugar is produced mainly in Florida, Louisiana, and Texas. Beet sugar is produced largely in the Great Lakes region, Upper Midwest, Great Plains, and far western states. Beet sugar production increased by 10% from 1993 to 2011, while cane sugar production increased slightly (Figure 3). U.S. total sugar production increased about 14% from 7.2 million metric tons in 1993 to 8.2 million metric tons in 2011 (Figure 4).

U.S. consumption of sugar increased by 29.6% from about 8.1 million metric tons in 1993 to 10.5 million metric tons in 2011 (Figure 5). The balance was imported from more than 40 countries. U.S. sugar imports decreased 71% from 4.5 million metric tons in 1974 to 1.3 million metric tons in 1987 and then increased to an average of 1.9 million metric tons during the 1993 to 2011 period. Under the North American Free Trade Agreement (NAFTA), Mexico currently is allowed to export excess sugar to the United States. Mexico exported 732 thousand metric tons of sugar into the United States in 2009 and 1,228 thousand metric tons of sugar into the United States in 2010 and 937 thousand metric tons in 2011. The U.S.-Central American Free Trade Agreement (CAFTA), which is a free trade agreement (FTA) currently with six Central American countries, provides additional sugar imports of 107,000 metric tons, with additional increases of 3,000 metric tons per year.



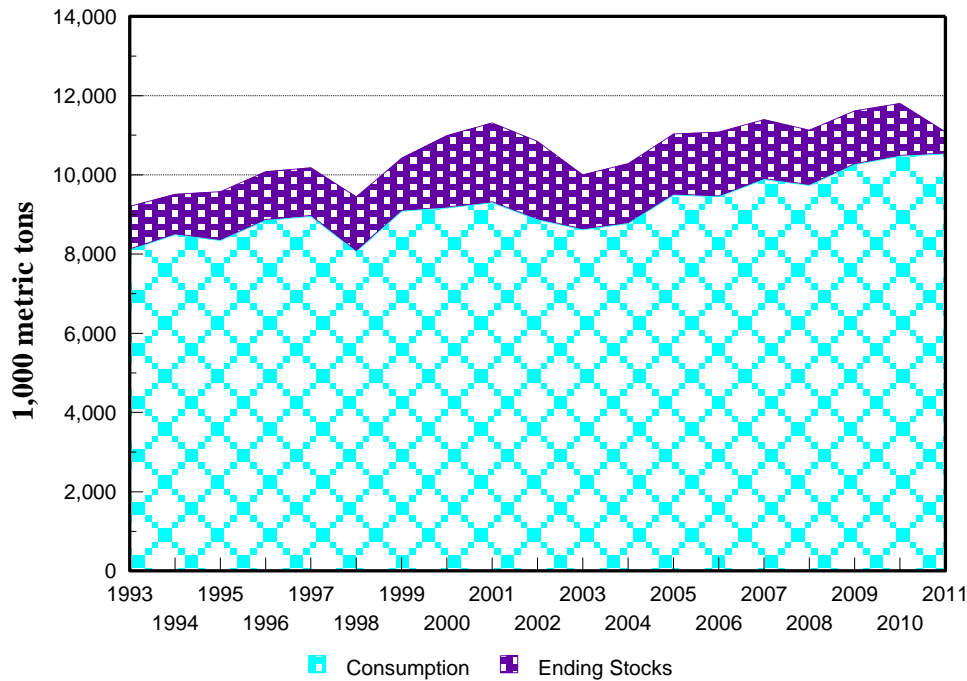
Source: USDA

Figure 3. U.S. Beet and Cane Sugar Production



Source: USDA

Figure 4. U.S. Sugar Production and Imports



Source:USDA

Figure 5. U.S. Sugar Consumption and Ending Stocks

U.S. Sugar Programs and Policies

The U.S. sugar program was established by the Food and Agricultural Act of 1981. Several modifications were made by the Food Security Act of 1985; the Food, Agriculture, Conservation, and Trade Act of 1990; the Federal Agriculture Improvement and Reform Act of 1996; the Farm Security and Rural Investment (FSRI) Act of 2002; and the Food, Conservation, and Energy Act of 2008.

The core policy tools in the program are the loan program, import restrictions, and production allotments. The main purpose of the loan program is to maintain a minimum market price for U.S. producers. Processors use sugar as collateral for loans from the U.S. Department of Agriculture (USDA). The program permits processors to store the sugar rather than sell it for lower than desired prices. Loans can be taken for up to nine months. Processors pay growers for delivered beets and cane, typically about 60% of the loan. Final payments are made and the loan is repaid after the sugar has been sold.

Under the FSRI Act, the sugar loan rate was set at \$0.18/lb for raw cane sugar and \$0.229/lb for refined beet sugar. However, loan rates are increased under the 2008 Farm Bill to \$0.1875/lb for cane sugar and \$0.2409/lb for beet sugar. Loans under the 2008 Farm Bill become recourse loans if the tariff rate quota (TRQ) is at 1.5 million metric tons or below, regardless of the price. When the TRQ is set above 1.5 million metric tons, the loans are nonrecourse. Under the nonrecourse loan, a processor can forfeit collateral (sugar) to the Commodity Credit Corporation (CCC) instead of loan repayment if market prices fall below the loan rates. Processors who obtain a nonrecourse loan must pay farmers an amount for their sugarbeets and sugarcane that is proportional to the loan value of sugar. This is the same as under previous legislation.

The Uruguay Round Agreement (URA) on agriculture made minor adjustments for sugar trade. U.S. import quotas on sugar were converted into TRQs, implying that a specified amount of sugar can be imported at the lower of two alternative duty rates. The amount of cane sugar subject to the lower duty rate increased from 1,117,195 metric tons in a fiscal year to 1,231,497 metric tons for 2005 due to production losses due to Hurricane Katrina. The minimum low-duty import of refined sugar is 22,000 metric tons. The minimum low-duty imports for raw and refined sugar add up to 1.256 million metric short tons raw value of sugar per year. The high duty (about \$0.15/lb) is imposed on the amount of sugar imported over the import quota. The first-tier duty ranges from zero to 0.625 cents/lb.

The second tier-duty for raw cane sugar was reduced from \$0.1762/lb in 1995 to \$0.1582/lb in 2000 under the URA. The duty for refined sugar was reduced from \$0.186/lb in 1995 to \$0.1621/lb in 2000. The duties have remained constant since 2000. The sugar quota has been allocated among more than 40 quota-holding countries, allowing imports of specific quantities of sugar at first-tier duty rates. The quota allocation is based on historical exports to the United States for the 1975 to 1981 period.

NAFTA allowed a rapid reduction in the second-tier duty for Mexican sugar over the past several years. This implies that Mexico is in a unique position to increase its exports of sugar to the United States above the allocated quota. If Mexico starts to use High Fructose Corn Sweetener (HFCS) for beverages, more of its sugar could be exported to the United States. However, the price of HFCS has increased substantially as a result of increased corn price. If the price of HFCS remains near the current levels, Mexico may not use HFCS for beverages. Currently there are transportation and use taxes on HFCS in Mexico.

The United States signed a free trade agreement in 2005 with the Central American countries of El Salvador, Guatemala, Honduras, Nicaragua, Costa Rica and the Dominican Republic. CAFTA allows 107,000 metric tons of additional sugar to be imported into the United States in the first year of implementation of the agreement, with additional increases of about 3,000 metric tons per year. This increase, however, does not have a significant impact on the price of U.S. sugar or world trade flows. Recent trade negotiations with Australia do not include increased sugar imports.

Domestic and Export Subsidies in the EU, South Africa, and Mexico

The basic tools of the EU's sugar policies are (1) import restrictions with limited free access for certain suppliers; (2) internal support prices that ensure returns to producers for fixed quantities of production and permit the maintenance of refining capacity; and (3) export subsidies for a quantity of domestically produced sugar.

Since marketing year 1995, EU-subsidized exports of sugar to third-world countries have been limited, in volume and value, under the URA commitments of the EU. However, the EU did not make an export subsidy commitment on its subsidized exports of a quantity of sugar equal to its preferential imports under the Lome Convention. The EU has proposed to limit sugar production to about 14.9 million metric tons per year. In 2008, the EU produced 15.2 million metric tons of sugar compared to 21 million metric tons of sugar in 2004 and 2005. Also in 2008 the EU reduced the intervention price by 36% which will discourage sugar imports from preferential countries. In 2009, the EU reduced export subsidies and lowered tariffs on non-

preferential countries. The EU has imported sugar each year since 2006 except for 2009. In 2011 the EU imported 940 thousand metric tons of sugar.

South Africa has both internal price supports and export subsidies. South Africa reduced its subsidized exports by 200 thousand metric tons to 702 thousand metric tons although net exports for 2011 were only 330 thousand metric tons. Mexico also has subsidized exports and is subsidizing raw sugar storage.

Brazilian Production and Exports

Brazil is the largest sugar producing country in the world. The production of sugar has increased 352% since 1990. About 34% of Brazilian sugar consumed domestically is converted into ethanol for fuel. Exports have risen from 1.2 million metric tons in 1990 to 26.9 million metric tons in 2011. Sugar that is converted into ethanol is subsidized at prices higher than the world price. Recent increases in the world oil price has increased the price of ethanol which in turn increased Brazil's conversion of sugar into ethanol, reducing potential sugar exports from Brazil. That reduction in the growth of sugar exports could be one of the main forces for world sugar price increases. Brazil decreased its exports by 7.8% in 2011 which provided strength for sugar prices in 2011.

Sugar Exports in Australia, China, and India

Australian sugar exports were handling by the Queensland Sugar Corporation (QSC) until 2008 when it was dissolved and replaced by a public corporation, the Queensland Sugar Limited (QSL), established under the Sugar Industry Act 2008. The QSL is responsible for the domestic marketing and exports of 90% of the raw sugar produced in the state of Queensland, which produces 95% of the sugar produced in Australia. State trading enterprises (STEs) were not addressed in the URA. Other countries, including China and India, handle their sugar trade through STEs similar to the QSC.

OUTLOOK FOR THE WORLD SUGAR INDUSTRY

Total world sugar trade is projected to increase by 6.0%, from 39.9 to 42.2 million metric tons over the 2011-2021 period. Most exporting countries will increase their sugar exports for the same period. Exports will increase 9.7% for Brazil, and 31.0% for Australia. However, exports are expected to decrease for Cuba, Mexico, and Thailand during the same time period. World sugar price, referred to as the Caribbean price of sugar, is projected to decrease from \$0.32/lb in 2011 to \$0.24/lb in 2021 (Figure 6).

The world sugar industry seems to be highly correlated to prices of oil and corn. The recent surge in oil price encouraged Brazil to produce ethanol from its sugarcane and corn price above \$5.00/bu discouraged Mexico from replacing sugar with high fructose corn syrup in beverage production.

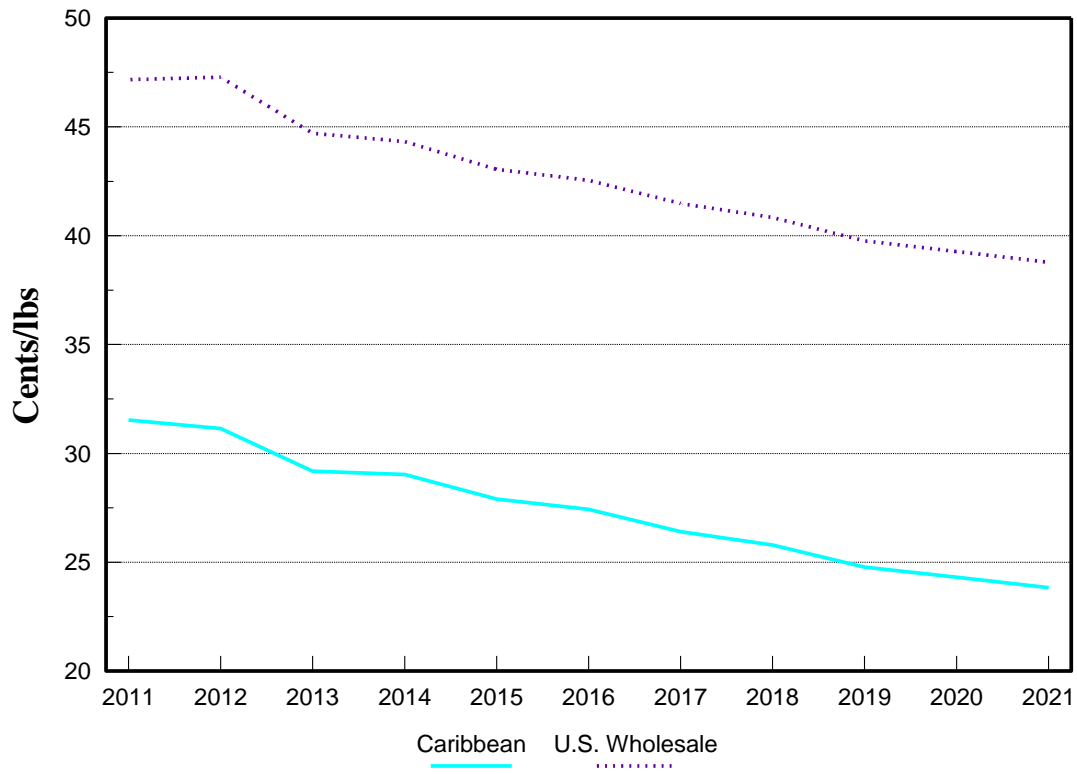


Figure 6. Estimated U.S. and World Prices

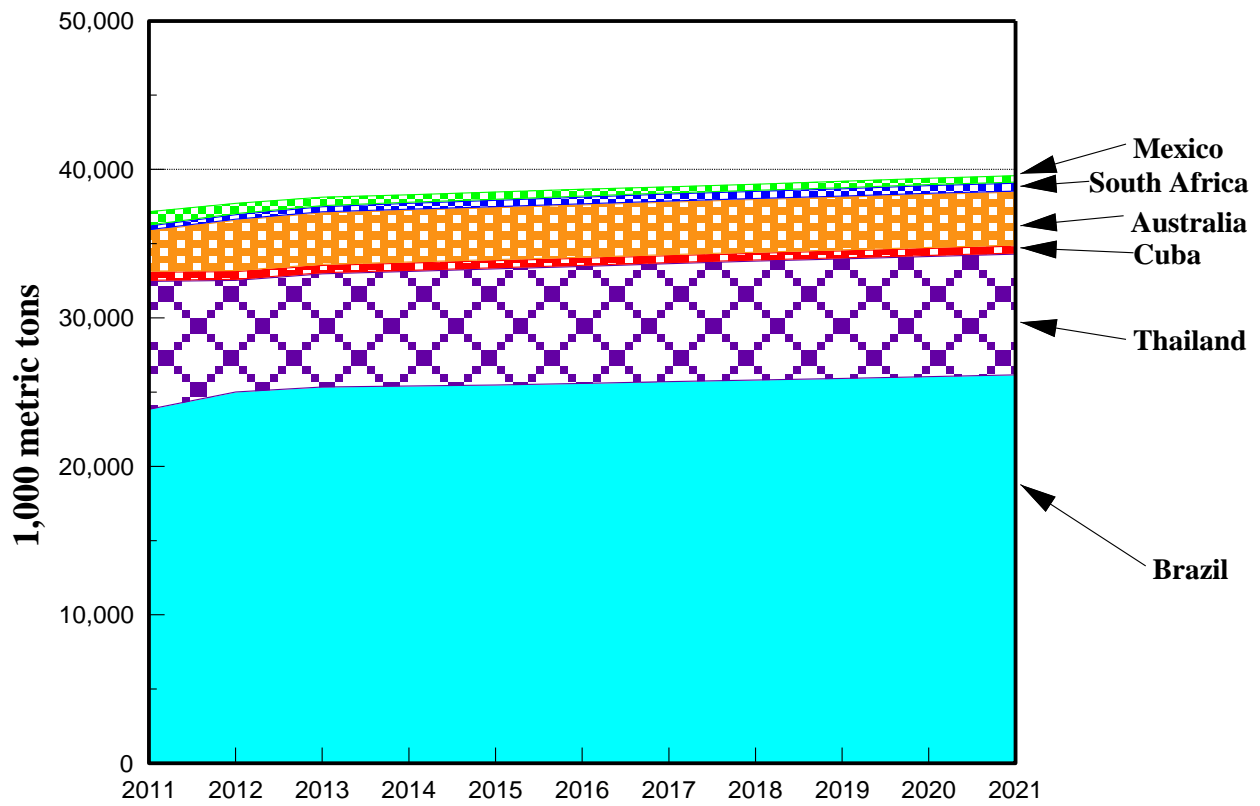


Figure 7. Projected World Sugar Exports by Country

United States

Table 2 shows production, consumption, imports, and ending stocks of sugar for the United States. U.S. sugar production is predicted to increase to 8.1 million metric tons in 2021. The increase in sugar production is due mainly to an increase in both U.S. sugarbeet and sugar cane production. U.S. sugar consumption is predicted to increase by 14.8% from 10.4 million metric tons (the 2009-2011 average) to 12.0 million metric tons in 2021. Ending stocks are also predicted to fall by 13.2% by 2021 (Table 2). Imports are predicted to decrease 21.4% from the 2009-2011 average. However, the imports depend upon Mexico's sugar production and consumption and the conversion of Mexico's soft drink industry to HFCS..

Table 2. U.S. Sugar Production, Consumption, Imports, and Carry-over Stock, 2011-2021 Average

	Average (2009-2011)	2011	2021	% Change (2009-11) to 2021
	-----1,000 metric tons-----			
Production	7,132	7,142	8,063	13.1
Beet	4,137	4,108	4,592	11.0
Cane	2,995	3,035	3,471	15.9
Net Imports	2,531	2,443	1,989	-21.4
Consumption	10,429	10,537	11,974	14.8
Carry-over Stocks	1,089	562	943	-13.2
Per capita Consumption (kg)	32	32	31	-3.1

Exporters

Figure 7 shows the projected sugar exports for the major exporting countries. Brazil is the largest sugar exporter followed by Thailand and Australia. Brazil's production is predicted to increase by 7.1% from 36.8 million metric tons in 2009-2011 to 39.4 million metric tons in 2021 (Table 3). Brazil's exports are predicted to increase from 24.6 million metric tons in 2009-2011 to 26.1 million metric tons in 2021. Its domestic consumption is predicted to increase by 13.2% from 11.8 million metric tons in 2009-2011 to 13.3 million metric tons in 2021. Much of the increase in consumption is due to ethanol production.

Thailand's exports are predicted to increase by 17.3% from the 2009-2011 average of 7.0 million metric tons for the 2009-2011 average to 8.2 million metric tons in 2021 (Table 3). Consumption increases from 2.3 million metric tons for the 2009-2011 average to 2.5 million metric tons in 2021. Sugar production in the country also is predicted to increase by 20.6% from 8.9 million metric tons to 10.8 million metric tons in 2021.

Australia's exports are predicted to increase by 22.8% from the 2009-2011 average to 3.6 million metric tons in 2021 (Table 3). The reason for the large increase in exports is that in 2009 and 2010, Australia had small sugar cane crops which lowered exports. Between 2006 and 2009 Australia exported an average of 3.6 million metric tons of sugar per year. Production is predicted to increase by 21.8% from 4.2 million metric tons to 5.1 million metric tons in 2021. Sugar consumption is expected to increase by 14.4% from 1.2 million metric tons to 1.4 million metric tons in 2021.

Cuba's exports are predicted to decrease by 5.0% from the 2009-2011 level to 2021 (Table 3). It is predicted that Cuba will increase its sugar production by 9.0%, while consumption is predicted to increase by 14.8%. These projections are based on the assumption that the political

situation remains the same between the United States and Cuba.

Mexico's production is predicted to increase by 11.5% from 5.4 million metric tons in 2009-2011 to 6.0 million metric tons in 2021. Mexico is expected to export 488 thousand metric tons by 2021, mainly to the United States under NAFTA. Sugar consumption is predicted to increase by 19.3% from 5.0 million metric tons in 2009-2011 to 5.9 million metric tons in 2021 under the assumption that Mexico does not convert to HFCS in their soft drink industry. Ending stocks are predicted to decrease by 25.6%. If Mexico replaces the sugar that is used in soft drinks with HFCS, the excess sugar will likely be exported to the United States under NAFTA.

South African sugar production is expected to return to normal levels after several years of smaller than normal crops. South Africa's production is predicted to increase by 8.6% to 2.3 million metric tons in 2021. South Africa's exports are predicted to increase 51.7% by 2021. Sugar consumption is predicted to increase by 1.8% and ending stocks are predicted to increase by 42.0%.

Importers

Figures 8 through 10 show sugar imports by the major sugar importing countries. Sugar imports of selected Asian and African countries are expected to increase by 5.4% and 42.0%, respectively, for the 2011-2021 period. Major Asian importers are Indonesia and China and major African importers are Algeria and Egypt.

Canada's production is predicted to increase above the 2009-2011 average of 87 thousand metric tons to 102 thousand tons by the year 2021, and consumption is predicted to increase from 1.4 million metric tons to 1.5 million metric tons in 2021 (Table 4). As a result, Canada's imports are predicted to increase by 11.1% from 1.3 million metric tons to 1.5 million metric tons in 2021.

The EU has changed the internal sugar policy by restricting support. This has reduced production. Because of that change, the EU has become a net importer of sugar. EU imports are predicted to increase from 1.2 million metric tons in 2011 to 1.6 million metric tons in 2021 (Figure 8). Sugar production in the EU is predicted to increase 2.4% and consumption is predicted to increase from 17.5 million metric tons for the 2009-2011 average to 18.1 million tons in 2020 (Table 4). Most of the increase in consumption is due to an increase in income for the Eastern European countries recently included in the EU.

Table 3. Sugar Production, Consumption, Exports, and Carry-over Stocks in Exporting Countries

	Average (2009-2011)	2011	2021	% change (2009-11) to 2021
-----1,000 metric tons-----				
Brazil				
Production	36,833	35,750	39,440	7.1
Net Exports	24,633	23,800	26,125	6.1
Consumption	11,767	11,500	13,316	13.2
Carry-over	(318)	165	362	NA
Thailand				
Production	8,921	10,170	10,761	20.6
Net Exports	7,010	8,700	8,217	17.3
Consumption	2,307	2,400	2,531	9.7
Carry-over	2,017	1,389	1,927	-4.5
Australia				
Production	4,183	4,150	5,077	21.3
Net Exports	2,965	2,785	3,641	22.8
Consumption	1,249	1,250	1,429	14.4
Carry-over	271	308	286	5.4
Cuba				
Production	1,200	1,250	1,308	9.0
Net Exports	560	615	532	-5.0
Consumption	675	675	775	14.8
Carry-over	75	75	92	22.7
Mexico				
Production	5,420	5,650	6,043	11.5
Net Exports	700	967	488	-30.3
Consumption	4,981	5,650	5,943	19.3
Carry-over	905	936	673	-25.6
South Africa				
Production	2,083	2,000	2,263	8.6
Net Exports	397	330	601	51.7
Consumption	1,632	1,675	1,661	1.8
Carry-over	155	195	220	42.0

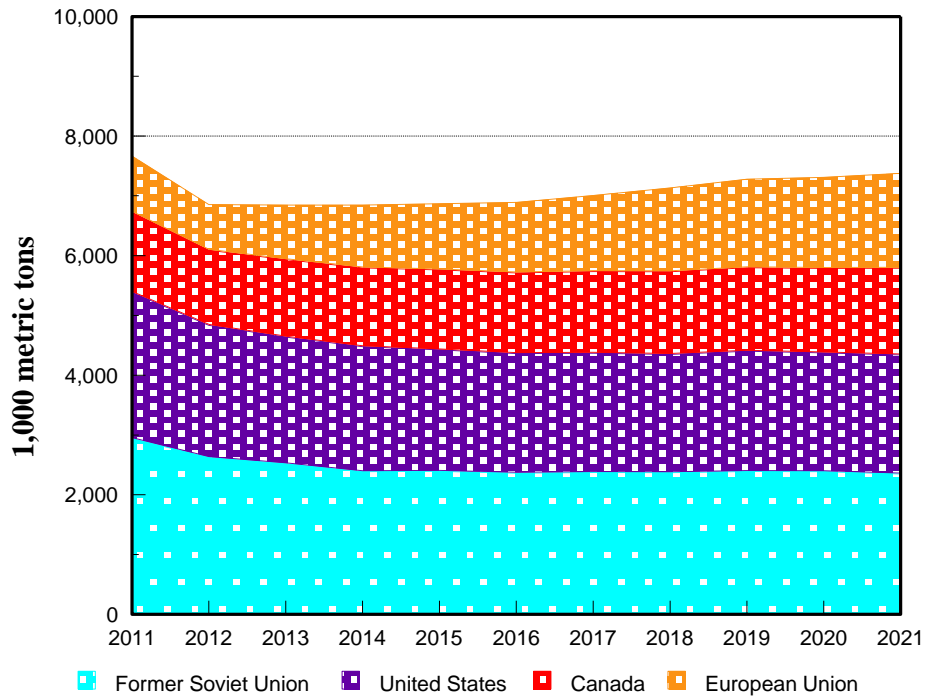


Figure 8. Projected World Sugar Imports by Countries, Major Importers

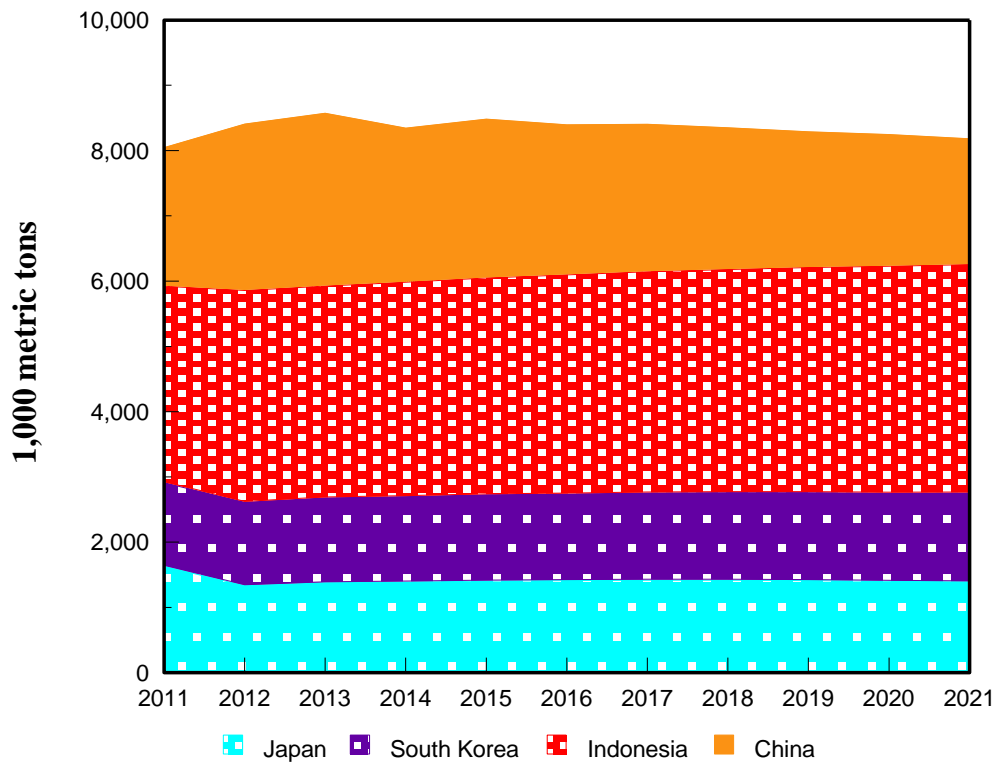


Figure 9. Projected World Sugar Imports by Countries, Asian Countries

The FSU's production is predicted to increase by 29.9% from the 2009-2011 average of 6.4 million metric tons to 8.3 million metric tons in 2021, and consumption is predicted to increase by 1.9% from 10.5 million metric tons to 10.7 million metric tons for the same period. Imports are predicted to decrease by 41.7% from the 2009-2011 average (Table 4). Most of the decrease in imports is due to smaller crops in 2009 and 2010 which required large imports.

China is expected to increase its imports by about 21.7% between 2009-2011 and 2021 (Table 4). China's production is predicted to increase by 4.7% from 11.5 million metric tons for the 2009-2011 average to 14.0 million metric tons in 2021, and consumption is predicted to increase by 11.7% from 14.2 million metric tons to 15.9 million metric tons for the period.

India's production is predicted to increase by 22.8% from 21.2 million metric tons in 2009-2011 to 30.9 million metric tons in 2021. India is expected to remain a sugar exporter throughout to forecast period.

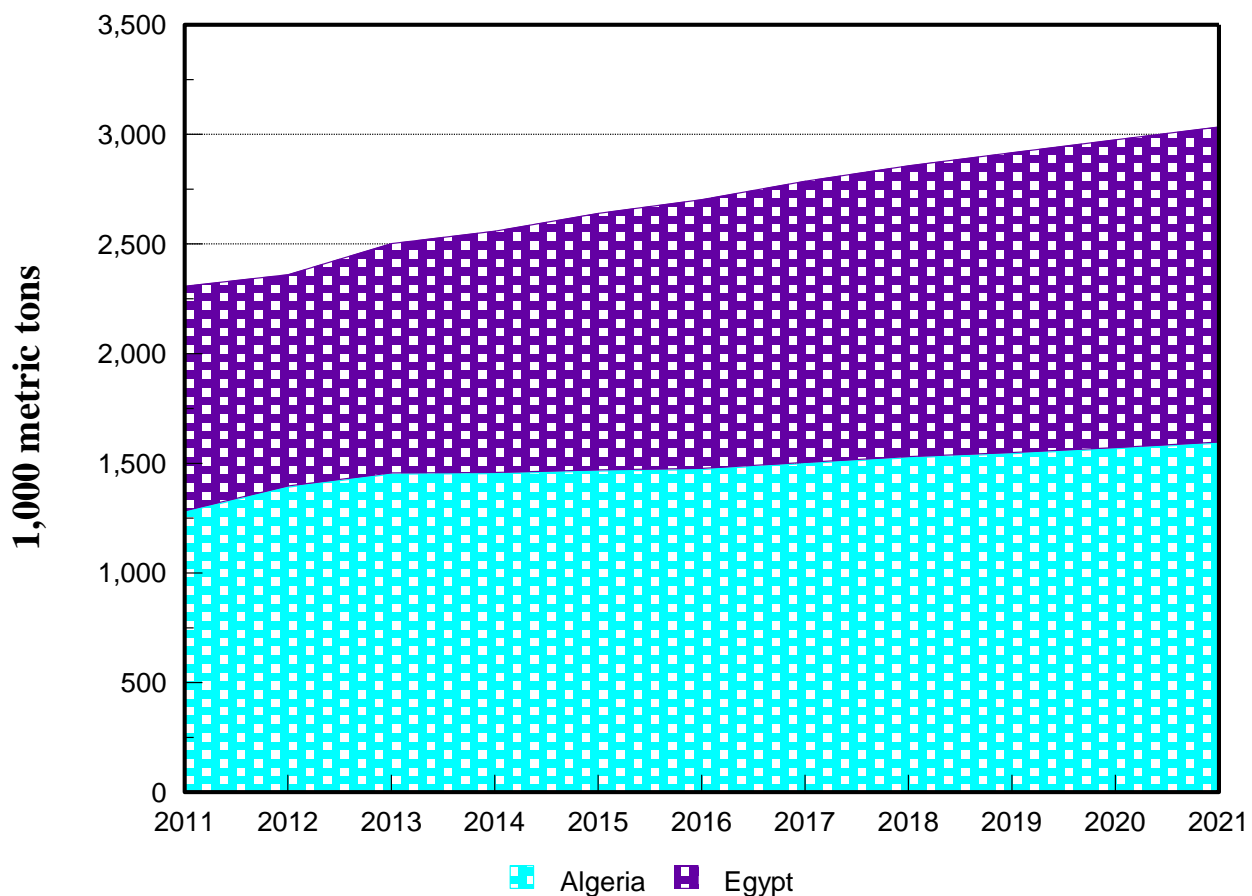


Figure 10. Projected World Sugar Imports by Country, African Countries

Table 4. Sugar Production, Consumption, Imports, and Carry-over in Importing Countries

	Average (2009-11)	2011	2021	% change (2009-11) to 2021
-----1,000 metric tons-----				
Algeria				
Production	4	0	0	NA
Net Imports	1,389	1,280	1,594	14.7
Consumption	1,350	1,400	1,593	18.0
Carry-over	268	213	287	7.1
Canada				
Production	87	95	102	16.8
Net Imports	1,307	1,340	1,452	11.1
Consumption	1,380	1,385	1,549	12.2
Carry-over	89	136	102	14.6
China				
Production	11,489	11,840	13,986	21.7
Net Imports	1,874	2,126	1,930	3.0
Consumption	14,200	14,300	15,862	11.7
Carry-over	1,745	1,273	2,064	18.3
Egypt				
Production	1,892	2,025	2,070	9.4
Net Imports	749	1,030	1,442	92.4
Consumption	2,760	2,850	3,506	27.0
Carry-over	331	334	385	16.4
European Union				
Production	16,172	16,740	16,560	2.4
Net Imports	1,215	940	1,585	30.6
Consumption	17,500	17,600	18,139	3.6
Carry-over	1,714	1,894	1,982	15.7
Former Soviet Union				
Production	6,401	7,914	8,312	29.9
Net Imports	4,045	2,950	2,357	-41.7
Consumption	10,452	10,759	10,658	1.9
Carry-over	1,442	1,516	1,713	9.6
India				
Production	21,196	28,300	30,932	22.8
Net Imports	-1,030	-2,500	-2,624	NA
Consumption	23,667	25,000	28,252	19.4
Carry-over	6,041	6,859	7,710	18.7
Indonesia				
Production	1,923	2,088	2,126	10.6
Net Imports	3,068	3,010	3,499	14.0
Consumption	4,967	5,200	5,626	13.2
Carry-over	559	413	467	-16.5
Japan				
Production	790	770	824	4.3
Net Imports	1,513	1,638	1,397	-7.6
Consumption	2,265	2,270	2,217	-2.1
Carry-over	295	365	357	20.1
Korea				
Production	0	0	0	NA
Net Imports	1,278	1,280	1,326	6.5
Consumption	1,268	1,280	1,349	6.4
Carry-over	516	526	618	20.0

Japan's imports are predicted to decrease by 7.6% from the 2009-2011 average of 1.5 million metric tons to 1.4 million metric tons in 2021, due to a slight decrease in domestic consumption (Table 4).

In South Korea, consumption is predicted to increase by 6.4% for the time period and its imports are predicted to increase by 6.5% for the period. There is no domestic production of either sugar cane or sugar beets in South Korea.

In Algeria, consumption is predicted to increase by 18.0% from 1.4 million metric tons in 2009-2011 to 1.6 million metric tons in 2021. The increase in consumption results in increasing imports from 1.4 million metric tons for the 2009-2011 average to 1.6 million metric tons in 2021.

Egypt's imports are predicted to increase by 92.42% from 0.7 million metric tons in 2009-2011 to 1.4 million metric tons in 2021, due mainly to increased consumption and larger than normal sugar crops in 2009 and 2011 which lowered imports for those years. Egypt historically imported about 1.0 million metric tons of sugar per year. Consumption is predicted to increase by 27.0% from 2.8 million metric tons to 3.5 million metric tons in 2021.

Indonesia's imports are predicted to increase by 14.0% from 3.1 million metric tons in 2009-2011 to 3.5 million metric tons in 2021. Consumption is predicted to increase from 5.0 million metric tons for the 2009-2011 average to 5.6 million metric tons in 2021.

CONCLUDING REMARKS

This report provides an overview of the U.S. and world sugar markets for 2011-2021 using the Global Sugar Policy Simulation Model. The baseline projections are based on a series of assumptions about general economic conditions, agricultural policies, weather conditions, and technological change.

Total world sugar trade is projected to increase by 6.0% from 39.9 million metric tons in 2011 to 42.2 million metric tons in 2021. The price of Caribbean sugar is expected to decrease from \$0.315/lb in 2011 to \$0.238/lb in 2021. The high sugar price is due mainly to low estimates of carry-over stocks for 2011 and 2012 and high energy prices. World sugar production increased 4.2% while consumption increased 2.1% in 2011. It is worth a note that the world sugar industry is influenced by the recent surge in oil price which resulted in increased ethanol production from sugar cane in Brazil. Thus, Brazil decreased supply of sugar to the world market. In addition, high demand for corn from corn-based ethanol production has increased the price of corn which prevents the use of high fructose corn syrup from beverage production in Mexico, resulted in continuous use of sugar for beverage production in the country.

Brazil, Australia and Thailand could increase their sugar exports with production increases, responding to higher world sugar price.

Imports by most importing countries are predicted to increase from the 2009-11 average to 2021 although China's and Japan's imports are predicted to decrease. Imports by Egypt and Algeria are predicted to increase by 92.4% and 14.7%, respectively. Egypt's imports are expected to return to normal levels after being reduced in recent years.

U.S. sugar consumption is predicted to increase by 14.8% for the forecasting period. Production also is expected to increase by 11.0% for beet sugar and by 15.9% for cane sugar. Increases in beet sugar production may be limited due mainly to high prices for other commodities such as corn, soybeans, and wheat which compete for acres. Imports are predicted to decrease by 21.4% for the period. Mexico could have an impact on the U.S. sugar industry if the country uses HFCS in its soft drink industry. Otherwise Mexico's sugar exports to the United States could be relatively small, even though NAFTA allows unlimited exports of sugar beginning in 2008.

The recent price increase in the world price of sugar that occurred in late 2009, 2010 and 2011 will not be maintained. In late 2010, Caribbean sugar price increased to 36 cents/lb from a low of \$0.20/lb in early 2010. The price in early 2011 is about \$0.35/lb. The yearly average price for sugar in 2011 was \$0.315/lb. It is doubtful that the sugar prices will remain at that level in the near future.

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Appendix

World Sugar Policy Simulation Model

2012 Baseline Solution

United States - Nominal Sugar Beet and Sugarcane Farm Prices (dollars/short ton)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	61.84	61.97	59.02	58.59	57.13	56.55	55.33	54.59	53.37	52.82	52.24
Sugarcane	51.02	51.16	48.11	47.67	46.16	45.56	44.30	43.54	42.28	41.71	41.12

United States - Nominal Sugar Prices (U.S. cents/pound)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Caribbean Price	31.53	31.14	29.18	29.02	27.90	27.42	26.40	25.79	24.77	24.31	23.83
TRQ Status	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota
Implicit Tariff	6.00	6.50	6.00	5.80	5.70	5.70	5.70	5.70	5.70	5.70	5.70
Import Price	37.53	37.64	35.18	34.82	33.60	33.12	32.10	31.49	30.47	30.01	29.53
Wholesale Price	47.16	47.28	44.70	44.32	43.04	42.54	41.47	40.83	39.76	39.27	38.77
Retail Price	71.92	72.08	68.58	68.07	66.33	65.64	64.19	63.32	61.87	61.22	60.53

United States - Area Harvested (1000 acres)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	1213	1216	1215	1216	1213	1212	1210	1210	1209	1211	1215
Sugarcane	873	880	876	873	868	865	860	858	854	852	852
Total Area	2086	2096	2090	2089	2081	2077	2071	2068	2063	2064	2068

United States - Yields (short tons/acre)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	23.70	25.04	25.47	25.73	25.85	25.92	25.98	26.14	26.22	26.29	26.44
Sugarcane	32.40	33.34	33.93	34.33	34.62	34.85	35.05	35.22	35.39	35.56	35.72

United States - Sugar Beet and Sugarcane Production (1000 short tons)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	28750	30458	30940	31285	31346	31423	31445	31635	31712	31843	32142
Sugarcane	28285	29341	29713	29971	30047	30131	30154	30206	30227	30311	30437

United States - Sugar Extraction Rates (percent)

Variable	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.75	15.75
Sugarcane	12.57	12.57	12.57	12.57	12.57	12.57	12.57	12.57	12.57	12.57	12.57

United States - Sugar Production (1000 short tons)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Beet Sugar	4528	4797	4873	4927	4937	4949	4953	4983	4995	5015	5062
Cane Sugar	3345	3688	3735	3767	3777	3788	3790	3797	3800	3810	3826
All Sugar	7873	8485	8608	8695	8714	8737	8743	8779	8794	8825	8888

Variable	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Tariff Rate Quota	1505	1555	1595	1641	1598	1579	1594	1601	1602	1595	1594
Below Quota Tariff	0	0	0	0	0	0	0	0	0	0	0
Above Quota Tariff	15.36	15.36	15.36	15.36	15.36	15.36	15.36	15.36	15.36	15.36	15.36

United States - Implicit Tariff (U.S. cents/pound) and Sugar Trade (1000 short tons)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
TRQ Status	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota
Implicit Tariff	6.00	6.50	6.00	5.80	5.70	5.70	5.70	5.70	5.70	5.70	5.70
Total Imports	2893	2640	2534	2515	2451	2411	2407	2390	2426	2396	2399
Quota-sugar Imports	1505	1562	1603	1643	1601	1583	1598	1606	1606	1599	1598
Other Sugar Imports	1545	1383	1079	930	872	850	828	809	784	820	797
Total Exports	200	200	199	212	212	204	205	206	208	207	206
Net Imports	2693	2441	2335	2304	2240	2206	2202	2183	2218	2188	2193

United States - Sugar Supply and Utilization (1000 short tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	1472	620	766	850	891	926	949	972	992	1011	1025
Production	7870	8485	8608	8695	8714	8737	8743	8779	8794	8825	8888
Net Imports	2693	2441	2335	2304	2240	2206	2202	2183	2218	2188	2193
Consumption	11615	11669	12010	12106	12373	12505	12700	12855	12983	13074	13199
Carry-out Stocks	620	766	850	891	926	949	972	992	1011	1025	1039

United States - Per Capita Sugar Consumption (pounds) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Per Capita Consumption	75.99	75.69	77.23	77.19	78.23	78.41	78.98	79.30	79.44	79.36	79.48
Stocks/Consumption	5.34	6.57	7.08	7.36	7.48	7.59	7.66	7.72	7.78	7.84	7.87

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Area Harvested	19	20	20	19	19	19	19	19	18	18	18
Yield	45.00	46.49	46.68	47.16	47.58	48.00	48.43	48.86	49.28	49.71	50.14
Production	855	917	920	917	917	914	913	911	910	907	906

Canada - Sugar Beet Exogenous Variables

Variable	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Extraction Rate (%)	11.30	11.30	11.30	11.30	11.30	11.30	11.30	11.30	11.30	11.30	11.30

Canada - Sugar Supply and Utilization (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	86	136	100	88	85	85	87	89	92	94	97
Production	95	104	104	104	104	103	103	103	103	102	102
Net Imports	1340	1254	1293	1316	1334	1349	1367	1381	1397	1413	1452
Imports	1400	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Exports	60	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1385	1393	1409	1423	1437	1450	1468	1482	1497	1513	1549
Carry-out Stocks	136	100	88	85	85	87	89	92	94	97	102

Canada - Per Capita Sugar Consumption (kilograms) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Per Capita Consumption	40.11	40.03	40.16	40.25	40.34	40.42	40.61	40.69	40.84	40.98	41.68
Stocks/Consumption	9.82	7.19	6.26	5.98	5.95	6.00	6.09	6.20	6.30	6.41	6.57

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Area Harvested	629	629	628	629	630	632	633	635	637	639	642
Yield	74.10	74.51	74.89	75.26	75.63	75.99	76.36	76.72	77.09	77.45	77.82
Production	46609	46845	47060	47345	47652	47999	48355	48733	49117	49521	49942

Mexico - Sugar Extraction Rates (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugarcane	11.90	11.90	11.90	11.90	12.00	12.00	12.00	12.00	12.10	12.10	12.10

Mexico - Sugar Supply and Utilization (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	806	936	767	683	643	627	625	630	639	649	661
Production	5650	5575	5600	5634	5718	5760	5803	5848	5943	5992	6043
Net Imports	-967	-765	-639	-563	-558	-518	-494	-472	-511	-487	-488
Exports	1443	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	476	400	400	400	400	400	400	400	400	400	400
Consumption	5650	5379	5446	5511	5576	5644	5704	5767	5822	5893	5943
Carry-out Stocks	936	767	683	643	627	625	630	639	649	661	673

Mexico - Per Capita Sugar Consumption (kilograms) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Per Capita Consumption	47.82	45.03	45.10	45.16	45.22	45.31	45.33	45.39	45.38	45.51	45.47
Stocks/Consumption	16.57	14.27	12.54	11.66	11.25	11.07	11.04	11.07	11.15	11.22	11.32

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Area Harvested	4	0	0	0	0	0	0	0	0	0	0
Yield	20	0	0	0	0	0	0	0	0	0	0
Production	75	0	0	0	0	0	0	0	0	0	0

Algeria - Sugar Extraction Rates (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugarbeet	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41	7.41

Algeria - Sugar Supply and Utilization (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	333	213	213	244	261	271	277	280	283	285	286
Production	0	0	0	0	0	0	0	0	0	0	0
Net Imports	1280	1393	1453	1455	1467	1474	1501	1528	1546	1568	1594

Exports	40	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1320	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1400	1393	1422	1438	1457	1468	1497	1525	1545	1567	1593
Carry-out Stocks	213	213	244	261	271	277	280	283	285	286	287

Algeria - Per Capita Sugar Consumption (kilograms) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Per Capita Consumption	36.93	36.32	36.64	36.63	36.70	36.58	36.91	37.20	37.30	37.48	37.74
Stocks/Consumption	15.21	15.30	17.16	18.16	18.60	18.85	18.73	18.55	18.43	18.26	18.03

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Area Harvested	410	416	419	420	421	421	422	422	423	423	424
Yield	77	85	86	87	87	88	88	89	89	90	90
Production	31570	35204	36178	36538	36802	37023	37250	37469	37698	37926	38170

Australia - Sugar Extraction Rate (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugarcane	13.30	13.30	13.30	13.30	13.30	13.30	13.30	13.30	13.30	13.30	13.30

Australia - Sugar Supply and Utilization (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	193	308	254	257	260	263	266	270	273	276	279
Production	4150	4682	4812	4859	4895	4924	4954	4983	5014	5044	5077
Net Exports	2785	3468	3523	3556	3577	3589	3602	3612	3629	3645	3641
Exports	2950	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	165	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1250	1268	1286	1300	1315	1332	1348	1367	1382	1396	1429
Carry-out Stocks	308	254	257	260	263	266	270	273	276	279	286

Australia - Per Capita Sugar Consumption (kilograms) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Per Capita Consumption	59.24	59.34	59.48	59.50	59.53	59.66	59.79	60.01	60.04	60.06	60.89
Stocks/Consumption	24.64	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00

Brazil - Sugar Supply and Utilization (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	-285	165	411	360	370	366	366	365	364	364	363
Production	35750	37392	37546	37787	38023	38259	38496	38732	38968	39204	39440
Net Exports	23800	24968	25298	25369	25444	25549	25660	25773	25888	26005	26125
Exports	23800	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	11500	12179	12299	12408	12583	12711	12837	12960	13081	13199	13316
Carry-out Stocks	165	411	360	370	366	366	365	364	364	363	362

Brazil - Per Capita Sugar Consumption (kilograms) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
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Per Capita Consumption	57.18	59.88	59.82	59.72	59.94	59.95	59.95	59.96	59.97	59.98	59.99
Stocks/Consumption	1.43	3.37	2.93	2.98	2.91	2.88	2.84	2.81	2.78	2.75	2.72

China - Area Harvested (1000 hectares)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	255	299	258	277	264	265	262	259	258	255	265
Sugarcane	1730	1802	1827	1835	1842	1847	1853	1859	1866	1872	1880
Total Area	1985	2101	2085	2112	2106	2112	2115	2118	2124	2127	2145

China - Yields (metric tons/hectare)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	38.20	38.39	38.59	38.80	39.01	39.33	39.64	39.94	40.23	40.52	40.79
Sugarcane	68.50	69.84	70.90	71.75	72.45	73.03	73.51	73.93	74.30	74.63	74.92

China - Production (1000 metric tons)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	9741 11850	11488	9951	10758	10307	10416	10374	10339	10378	10326	10831
Sugarcane	5	125828	129538	131632	133437	134870	136233	137434	138616	139705	140836

China - Sugar Extraction Rates (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugarbeets	10.15	10.15	10.15	10.15	10.15	10.15	10.15	10.15	10.15	10.15	10.15
Sugarcane	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15	9.15

China - Sugar Supply and Utilization (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	1607	1273	1314	1493	1546	1678	1757	1841	1899	1969	2010
Production	11840	12679	12863	13136	13256	13398	13518	13625	13737	13831	13986
Beet Sugar	990	1166	1010	1092	1046	1057	1053	1049	1053	1048	1099
Cane Sugar	10850	11513	11853	12044	12210	12341	12465	12575	12683	12783	12887
Net Imports	2126	2551	2646	2363	2433	2298	2258	2171	2080	2017	1930
Exports	74	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	2200	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	14300	15188	15331	15446	15556	15618	15691	15738	15746	15807	15862
Carry-out Stocks	1273	1314	1493	1546	1678	1757	1841	1899	1969	2010	2064

China - Per Capita Sugar Consumption (kilograms) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Per Capita Consumption	10.52	11.12	11.18	11.21	11.24	11.24	11.25	11.25	11.22	11.23	11.25
Stocks/Consumption	8.90	8.65	9.74	10.01	10.78	11.25	11.74	12.07	12.51	12.72	13.01

Cuba - Sugarcane Area Harvested (1000 hectares), Yield (metric tons/hectare), and Production (1000 metric tons)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Area Harvested	380	385	385	382	383	381	381	380	380	379	379
Yield	32	32	32	32	32	32	33	33	33	33	33
Production	12084	12236	12294	12233	12329	12353	12431	12466	12535	12569	12651

Cuba - Sugar Extraction Rate (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugarcane	10.34	10.34	10.34	10.34	10.34	10.34	10.34	10.34	10.34	10.34	10.34

Cuba - Sugar Supply and Utilization (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	75	75	75	80	81	83	85	87	88	89	90
Production	1250	1265	1271	1265	1275	1277	1285	1289	1296	1300	1308
Net Exports	615	599	573	563	554	549	539	537	533	531	532
Consumption	675	667	693	701	718	727	744	751	762	767	775
Carry-out Stocks	75	75	80	81	83	85	87	88	89	90	92

Cuba - Per Capita Sugar Consumption (kilograms) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Per Capita Consumption	57.75	57.12	59.43	60.15	61.72	62.61	64.19	64.91	65.99	66.57	67.36
Stocks/Consumption	11.11	11.19	11.50	11.52	11.62	11.68	11.71	11.75	11.72	11.79	11.86

Egypt - Area Harvested (1000 hectares)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	98	99	98	99	99	99	100	100	100	101	101
Sugarcane	125	125	125	126	126	127	128	130	131	133	134
Total Area	223	223	223	224	225	227	228	230	231	233	235

Egypt - Yields (metric tons/hectare)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	63.00	62.87	63.31	63.58	63.90	64.21	64.52	64.83	65.14	65.45	65.76
Sugarcane	101.40	101.65	101.96	102.32	102.73	103.18	103.66	104.17	104.70	105.25	105.82

Egypt - Production (1000 metric tons)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	7400	6202	6223	6271	6323	6373	6427	6480	6534	6587	6642
Sugarcane	12645	12689	12762	12861	12988	13140	13315	13513	13731	13969	14225

Egypt - Sugar Extraction Rates (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	12.75	12.75	12.75	12.75	12.75	12.75	12.75	12.75	12.75	12.75	12.75
Sugarcane	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60	8.60

Egypt - Sugar Supply and Utilization (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	129	334	337	342	347	352	358	364	369	375	380
Production	2025	1882	1891	1906	1923	1943	1965	1988	2014	2041	2070
Beet Sugar	945	791	793	800	806	813	819	826	833	840	847
Cane Sugar	1080	1091	1097	1106	1117	1130	1145	1162	1181	1201	1223
Net Imports	1030	969	1051	1105	1175	1230	1288	1331	1373	1409	1442
Exports	400	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1430	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	2850	2848	2937	3006	3092	3167	3247	3313	3382	3444	3506
Carry-out Stocks	334	337	342	347	352	358	364	369	375	380	385

Egypt - Per Capita Sugar Consumption (kilograms) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Per Capita Consumption	35.16	34.45	34.87	35.03	35.39	35.60	35.88	36.00	36.15	36.23	36.31
Stocks/Consumption	11.72	11.85	11.65	11.54	11.40	11.30	11.20	11.14	11.08	11.04	10.99

European Union - Sugar Quota (1000 metric tons, white sugar equivalent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
A-Quota	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
B-Quota	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
A plus B Quota	13669	13669	13669	13669	13669	13669	13669	13669	13669	13669	13669
Raw Sugar Equivalent	14626	14626	14626	14626	14626	14626	14626	14626	14626	14626	14626

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Area Harvested	1930	1932	1928	1917	1911	1902	1896	1889	1883	1876	1872
Yield	56.70	56.56	56.62	56.73	56.88	57.02	57.18	57.33	57.48	57.64	57.79
Production	109431	109271	109151	108737	108670	108473	108411	108288	108245	108151	108180

European Union - Sugar Extraction Rates (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	15.04	15.04	15.04	15.04	15.04	15.04	15.04	15.04	15.04	15.04	15.04

European Union - Sugar Supply and Utilization (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	1814	1894	1899	1915	1924	1933	1939	1949	1961	1970	1975
Production	16740	16724	16706	16644	16634	16604	16595	16577	16570	16556	16560
Net Exports	-940	-766	-914	-1052	-1108	-1180	-1272	-1404	-1480	-1522	-1587
Exports	2210	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	3150	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	17600	17485	17604	17687	17733	17778	17857	17969	18041	18073	18139
Carry-out Stocks	1894	1899	1915	1924	1933	1939	1949	1961	1970	1975	1982

European Union - Per Capita Sugar Consumption (kilograms) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Per Capita Consumption	48.57	48.15	48.38	48.50	48.54	48.56	48.69	48.92	49.05	49.08	49.21
Stocks/Consumption	10.76	10.86	10.88	10.88	10.90	10.91	10.92	10.91	10.92	10.93	10.93

India - Sugar Supply and Utilization (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	6059	6859	6581	6596	6652	6741	6823	6908	6980	7052	7113
Production	28300	28078	28334	28658	28908	29224	29573	29847	30178	30545	30932
Net Exports	2500	3016	2640	2591	2477	2474	2497	2463	2477	2543	2624
Exports	2500	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	25000	25341	25678	26011	26341	26667	26991	27312	27629	27942	28252
Carry-out Stocks	6859	6581	6596	6652	6741	6823	6908	6980	7052	7113	7170

India - Per Capita Sugar Consumption (kilograms) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Per Capita Consumption	19.72	19.73	19.73	19.74	19.74	19.75	19.75	19.76	19.76	19.77	19.77
Stocks/Consumption	27.44	25.97	25.69	25.57	25.59	25.59	25.59	25.56	25.52	25.46	25.38

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Area Harvested	387	386	384	383	383	383	383	384	385	386	388
Yield	67.00	64.02	64.52	65.02	65.52	66.02	66.52	67.02	67.52	68.02	68.52
Production	25929	24700	24792	24914	25090	25284	25511	25751	26012	26284	26578

Indonesia - Sugar Extraction Rate

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugarcane	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00

Indonesia - Sugar Supply and Utilization (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	515	413	464	467	467	468	468	468	468	468	467
Production	2088	1976	1983	1993	2007	2023	2041	2060	2081	2103	2126
Net Imports	3010	3246	3245	3285	3324	3359	3392	3422	3450	3476	3499
Exports	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	3010	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	5200	5171	5225	5278	5331	5382	5432	5482	5531	5579	5626
Carry-out Stocks	413	464	467	467	468	468	468	468	468	467	467

Indonesia - Per Capita Sugar Consumption (kilograms) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Per Capita Consumption	21.43	21.09	21.09	21.09	21.10	21.10	21.10	21.10	21.11	21.11	21.11
Stocks/Consumption	7.94	8.98	8.93	8.85	8.77	8.69	8.61	8.53	8.46	8.38	8.30

Japan - Area Harvested (1000 hectares)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	76	74	73	72	71	70	68	67	66	65	64
Sugarcane	22	22	22	22	22	22	22	22	21	21	21
Total Area	98	96	95	94	93	92	90	88	87	86	85

Japan - Yields (metric tons/hectare)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	53.00	52.67	52.71	52.93	53.23	53.57	53.93	54.30	54.67	55.05	55.42
Sugarcane	62.00	60.50	60.67	60.70	60.75	60.79	60.83	60.88	60.92	60.96	61.01

Japan - Production (1000 metric tons)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	4028	3909	3839	3796	3764	3728	3681	3620	3604	3575	3538
Sugarcane	1364	1336	1345	1351	1355	1353	1344	1329	1309	1288	1267

Japan - Sugar Extraction Rates (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	18.94	18.94	18.94	18.94	18.94	18.94	18.94	18.94	18.94	18.94	18.94
Sugarcane	12.13	12.13	12.13	12.13	12.13	12.13	12.13	12.13	12.13	12.13	12.13

Japan - Sugar Supply and Utilization (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	267	365	345	337	333	333	335	338	342	346	350
Production	770	902	890	883	877	870	860	847	841	833	824
Beet Sugar	600	740	727	719	713	706	697	686	683	677	670
Cane Sugar	170	162	163	164	164	164	163	161	159	156	154
Net Imports	1638	1339	1384	1395	1409	1419	1424	1424	1415	1405	1397
Exports	2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1640	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	2270	2262	2282	2281	2286	2288	2280	2267	2252	2235	2217
Carry-out Stocks	365	345	337	333	333	335	338	342	346	350	354

Japan - Per Capita Sugar Consumption (kilograms) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Per Capita Consumption	17.94	17.89	18.07	18.09	18.15	18.19	18.17	18.11	18.03	17.94	17.85
Stocks/Consumption	16.08	15.25	14.75	14.60	14.57	14.64	14.83	15.08	15.37	15.66	15.95

Korea - Sugar Supply and Utilization (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	526	526	521	531	538	546	556	568	580	594	606
Net Imports	1280	1277	1302	1307	1322	1326	1337	1340	1349	1352	1362
Exports	340	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1620	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1280	1282	1291	1301	1313	1316	1325	1328	1335	1340	1349
Carry-out Stocks	526	521	531	538	546	556	568	580	594	606	619

Korea - Per Capita Sugar Consumption (kilograms) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Per Capita Consumption	25.77	25.76	25.89	26.04	26.25	26.28	26.42	26.45	26.56	26.64	26.82
Stocks/Consumption	41.09	40.62	41.15	41.33	41.58	42.20	42.83	43.66	44.49	45.23	45.84

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Area Harvested	268	273	278	282	286	289	291	291	292	294	297
Yield	67.50	67.61	67.76	67.91	68.06	68.21	68.36	68.51	68.56	68.71	68.86
Production	18090	18482	18835	19156	19463	19693	19879	19969	20042	20221	20446

South Africa - Sugar Extraction Rates (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugarcane	11.07	11.07	11.07	11.07	11.07	11.07	11.07	11.07	11.07	11.07	11.07

South Africa - Sugar Supply and Utilization (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	200	195	210	212	216	217	218	219	221	222	218
Production	2000	2046	2085	2121	2155	2180	2201	2211	2219	2238	2263
Net Exports	330	367	423	462	501	527	546	553	560	583	601
Exports	480	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	150	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1675	1664	1661	1655	1653	1652	1654	1656	1657	1659	1661
Carry-out Stocks	195	210	212	216	217	218	219	221	222	218	220

South Africa - Per Capita Sugar Consumption (kilograms) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Per Capita Consumption	37.18	37.08	37.16	37.21	37.23	37.18	37.17	37.19	37.18	37.19	37.21
Stocks/Consumption	11.64	12.65	12.77	13.08	13.14	13.19	13.27	13.34	13.41	13.16	13.21

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Area Harvested	2750	2812	2856	2880	2899	2909	2917	2920	2921	2919	2919
Yield	24.90	23.48	23.81	23.92	24.02	24.11	24.19	24.28	24.37	24.45	24.64
Production	68475	66028	68021	68893	69627	70134	70573	70889	71175	71383	71906

Former Soviet Union - Sugar Extraction Rates (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Sugar Beets	11.56	11.56	11.56	11.56	11.56	11.56	11.56	11.56	11.56	11.56	11.56

Former Soviet Union - Sugar Supply and Utilization (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	1426	1516	1528	1580	1575	1600	1617	1642	1661	1686	1702
Production	7914	7633	7863	7964	8049	8107	8158	8195	8228	8252	8312
Net Imports	2950	2628	2527	2396	2400	2369	2378	2375	2397	2394	2357
Exports	1119	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	4069	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	10759	10250	10338	10365	10423	10459	10512	10550	10600	10630	10658
Carry-out Stocks	1516	1528	1580	1575	1600	1617	1642	1661	1686	1702	1713

Former Soviet Union - Per Capita Sugar Consumption (kilograms) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Per Capita Consumption	36.75	35.03	35.36	35.47	35.70	35.86	36.07	36.24	36.46	36.61	36.77
Stocks/Consumption	14.09	14.90	15.28	15.20	15.35	15.46	15.62	15.74	15.91	16.01	16.07

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Area Harvested	1540	1546	1549	1549	1549	1548	1546	1544	1542	1541	1539
Yield	60.00	59.57	59.77	60.18	60.64	61.12	61.61	62.10	62.58	63.07	63.56
Production	92400	92102	92561	93244	93931	94613	95262	95904	96531	97171	97823

Thailand - Sugar Extraction Rates (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
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Sugarcane	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00
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Thailand - Sugar Supply and Utilization (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Carry-in Stocks	2319	1389	1608	1729	1796	1836	1861	1879	1892	1904	1915
Production	10170	10131	10182	10257	10332	10407	10479	10549	10618	10689	10761
Net Exports	8700	7576	7697	7801	7886	7959	8021	8079	8125	8180	8217
Exports	8700	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	2400	2336	2364	2388	2407	2424	2441	2457	2481	2498	2531
Carry-out Stocks	1389	1608	1729	1796	1836	1861	1879	1892	1904	1915	1927

Thailand - Per Capita Sugar Consumption (kilograms) and Stocks to Use Ratio (percent)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Per Capita Consumption	34.71	33.60	33.82	34.00	34.09	34.18	34.27	34.35	34.55	34.66	34.99
Stocks/Consumption	57.88	68.84	73.13	75.21	76.30	76.78	76.96	76.99	76.75	76.64	76.14

Rest of the World - Sugar Net Exports (1000 metric tons, raw value)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	
Net Exports	-	21619	-22900	-22638	-22934	-22787	-22952	-22935	-22927	-23014	-23227	-23419

World - Sugar Prices (U.S. cents/pound)

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
0	31.53	31.14	29.18	29.02	27.90	27.42	26.40	25.79	24.77	24.31	23.83
\$/ton	695.1	686.51	643.30	639.77	615.08	604.50	582.01	568.57	546.08	535.94	525.36
World Exp	58816.1	60641.962	60790.947	61248.926	61306.618	61641.893	61796.314	61953.021	62259.821	62659.451	63024.378