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**2010 Outlook of the U.S. and World Sugar Markets, 2009-2019**

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**ABSTRACT**

This report evaluates the U.S. and world sugar markets for 2009-2019 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 in spite of the 2007-08 increase in world oil prices. That increase in oil price caused an increase in the conversion of sugar into ethanol in Brazil, while other exporting countries increased their production of sugar in response to higher sugar prices. Sugar prices remained strong in 2009 as the world's economies recover slowly from the recession. World demand for sugar is expected to grow at a similar rate to world supply, resulting in Caribbean sugar prices remaining near the 16.0-19.0 cents/lb range throughout the forecast period. The U.S. wholesale price of sugar is projected to increase from 33.72 cents/lb in 2009 to 36.19 cents/lb in 2019, if Brazil continues to convert sugar into ethanol. It is projected that Mexico would be able to export 483 thousand metric tons of sugar to the United States by 2019. 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 9.9% from 34.5 million metric tons to 37.9 million metric tons between 2009 and 2019. Brazil's exports are projected to increase from 21.6 million metric tons in 2009 to 25.6 million metric tons in 2019 even though Brazil uses a substantial amount of sugar cane for ethanol production. World sugar prices also are projected to increase from 18.72 cents/lb in 2009 to 19.10 cents/lb in 2019. U.S. wholesale sugar price is projected to increase from 33.72 cents/lb in 2009 to 36.19 cents/lb in 2019 if there is no significant change in domestic consumption of sugar.

U.S. sugar imports are predicted to increase by 18.4% over the 2009-2019 period compared to the recent average imports. U.S. sugar production is projected to increase 8.0% between 2009 and 2019. U.S. sugar consumption is projected to increase 7.8% and ending stocks are predicted to decrease 27.5%. However, the U.S. sugar industry could face some uncertainty, mainly because of potential increases in sugar imports from Mexico.

Canada's production is predicted to increase slightly between 2009 and 2019. Canada's imports are expected to increase by 12.6%. Consumption is predicted to increase 14.1%, and ending stocks are predicted to increase by 32.1%.

Mexico's production is expected to increase by 7.3%, and exports are expected to decrease slightly from the 2007-2009 average but increase from the 2009 level due to increases in exports to the United States under the North American Free Trade Agreement (NAFTA).

The European Union (EU) is expected to remain as an importer due to the EU-25 sugar policy reform. Their production is predicted to increase by 0.5%, while consumption will increase by 3.4%.

Production in India is predicted to increase by 3.1%, while consumption is predicted to increase 12.6% for the 2009-2019 period. India could import about 5.5 million metric tons of sugar by 2019.

Exporting countries, such as Australia, South Africa, and Brazil are predicted to increase their production and exports during the forecasting period.

Most importing countries, including Algeria and Egypt, are predicted to increase their imports for the 2009-2019 period.



## **2010 Outlook of the U.S. and World Sugar Markets, 2009-2019**

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Won W. Koo

### **INTRODUCTION**

Sugar is produced in over 100 countries worldwide. In most years, over 70% of world sugar production is consumed domestically which allowed the development of a large export market. However, a significant share of this trade 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 for 2009 was \$0.187/lb.

This report evaluates the U.S. and world sugar industry for 2009-2019 using the Global Sugar Policy Simulation Model developed by Benirschka et al. (1996). This model was run utilizing 2009 data. The outlook projection is based on an assumption that farm and trade policies adopted by sugar exporting and importing countries remain unchanged.

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**

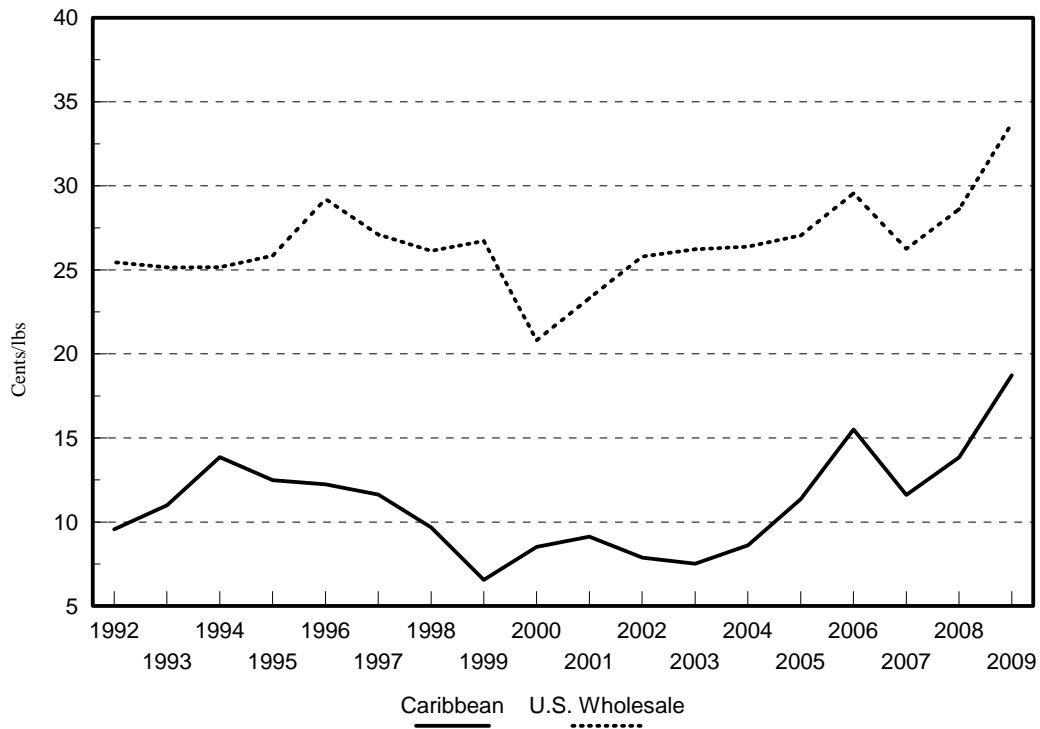
For the 2005-2009 period, annual global sugar production was approximately 154 million metric tons with about 30% of production exported from its country of origin. The largest sugar producing region is Brazil, followed by the India and the EU (Table 1).

**Table 1. World Sugar Supply and Utilization, 2005 to 2009 Average**

Country/ Region	Beet/ Cane	Consumption	Production	Net Exports	Ending Stocks	Per Capita Consumption
		-----1,000 metric tons, raw value-----				Kg
Algeria	B	1,200	10	(1,152)	223	32
Australia	C	1,230	5,032	3,794	915	62
Brazil	C	11,250	31,500	20,568	(555)	59
Canada	B	1,381	115	(1,271)	109	42
China	B/C	13,897	13,146	(1,019)	2,316	10
Cuba	C	707	1,272	571	112	59
European Union	B	17,256	16,539	(194)	3,077	40
Egypt	B/C	2,634	1,625	(952)	620	35
Former Soviet Union	B/C	10,291	5,996	(4,215)	1,593	35
India	C	22,699	22,796	274	6,069	19
Indonesia	C	4,270	2,308	(1,818)	594	19
Japan	B/C	2,254	910	(1,362)	388	18
Korea	-	1,113	0	(1,259)	141	23
Mexico	C	5,046	5,550	360	1,277	45
South Africa	C	1,607	2,400	941	342	37
Thailand	C	2,036	6,855	4,632	2,132	30
United States	B/C	9,470	7,112	(2,266)	1,383	32
Rest of World	B/C	42,817	30,769	(14,094)	11,302	20
World	B/C	151,159	153,939	50,400	32,039	22

Per capita sugar consumption was highest in the Australia followed by Cuba, and Brazil. Per capita sugar consumption in the United States was 32 kg, which was above world average per capita consumption (22 kg). Per capita sugar consumption was lowest in China at 10 kg per capita, but that may increase substantially as per capita income increases. Annual global sugar consumption for the 2005-2009 period was 151 million metric tons.

The major sugar exporting countries were Brazil, Australia, Thailand, and South Africa. These countries accounted for 59% of global exports from 2005 to 2009. A relatively few number of countries dominate world sugar exports, but imports are less concentrated. Major importing countries were the Former Soviet Union (FSU), United States, Indonesia, Korea, Canada, Algeria, China, and Japan. Imports by these countries accounted for about 28% of all sugar imports from 2005 to 2009. Under the Lome Convention, the EU was required to import sugar under preferential terms from certain African, Caribbean, and Pacific countries.



**Figure 1. U.S. and World Sugar Prices**

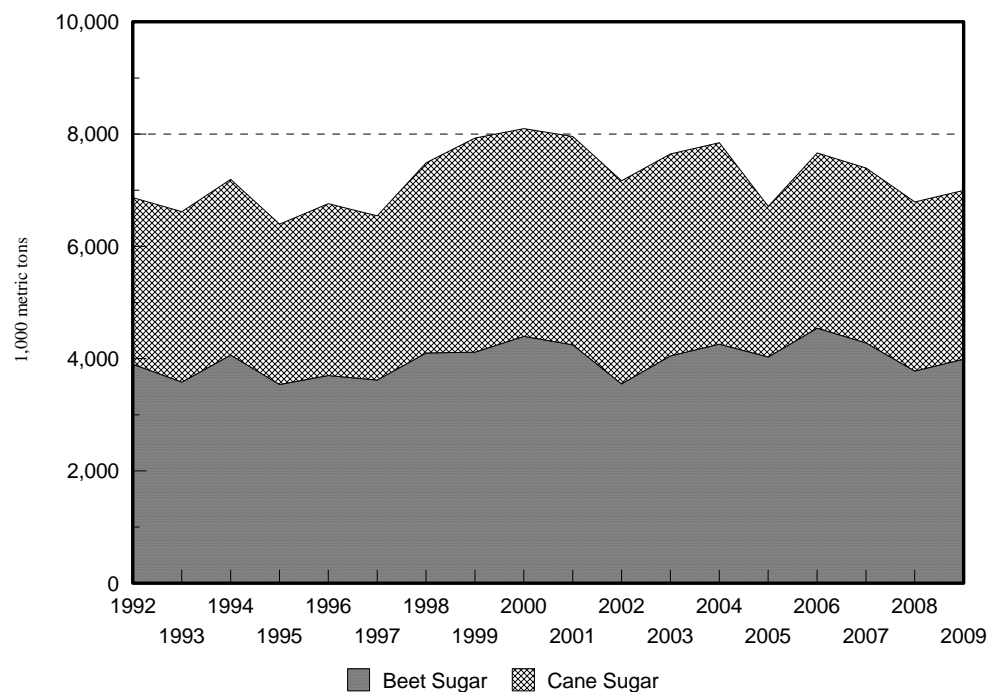
The Caribbean raw sugar price is usually considered to be the world market price for sugar. Except for years with high world market prices, there was a substantial wedge between the U.S. wholesale price of raw sugar and the world market price. Over the last decade, U.S. wholesale prices fluctuated between \$0.22 and \$0.34/lb. World market prices ranged between \$0.06/lb. and \$0.19/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 10 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. The Caribbean price increased to \$0.14/lb in 2008 and \$0.19/lb in 2009. The high Caribbean sugar price also increased the U.S. wholesale price to over \$0.30/lb in 2006, falling to \$0.26/lb in 2007, before increasing to \$0.28/lb in 2008, and \$0.34 in 2009.

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

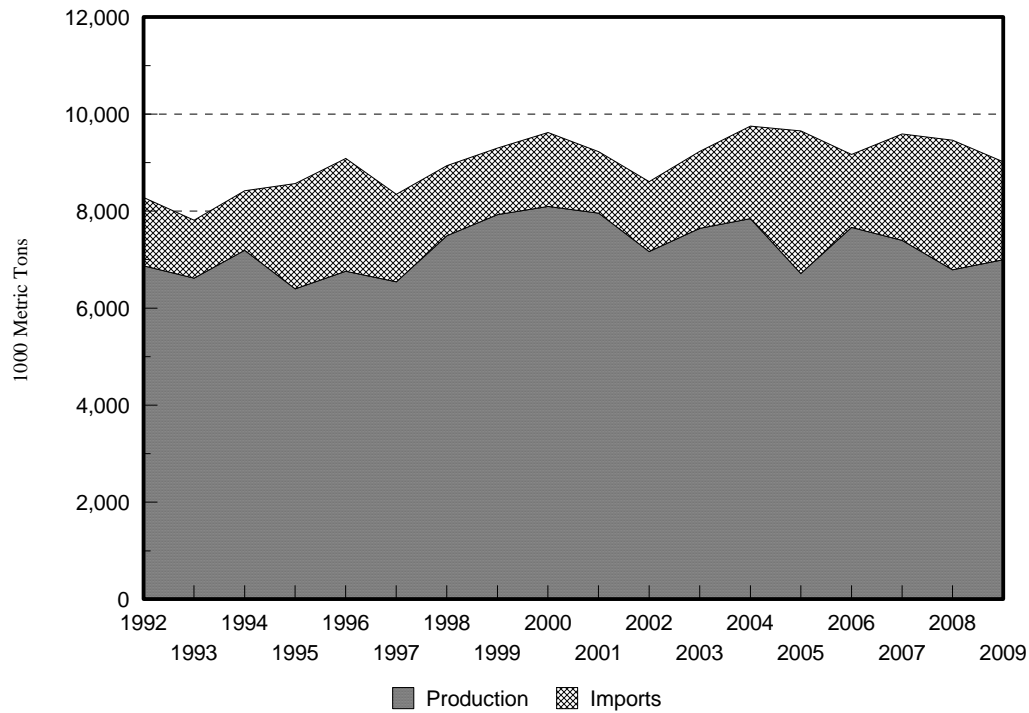
sugar from sugarcane in response to the higher sugar prices in 2005 and 2006. The price increases in 2008 and 2009 were due to smaller sugar production in India, China, and the EU. India's 2008 sugar crop was 44% smaller in 2007, and China's sugar crop was 16% smaller. Production for 2009 recovered in the EU but not for India and China.

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 19% from 1992 to 2009, while cane sugar production remained the same (Figure 2). U.S. total sugar production increased about 13% from 6.8 million metric tons in 1992 to 7.7 million metric tons in 2009 (Figure 3).

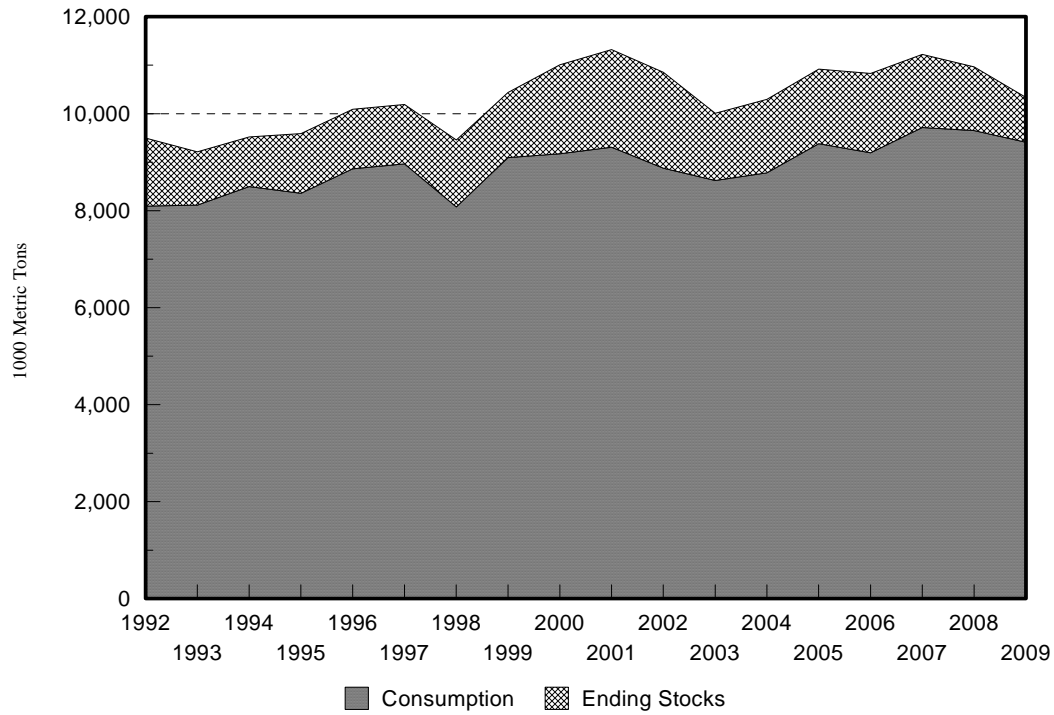
U.S. consumption of sugar increased by 20.4% from about 8.0 million metric tons in 1992 to 9.4 million metric tons in 2009 (Figure 4). The balance was imported from more than 40 countries. U.S. sugar imports decreased 71% from 4.5 million metric tons in 1974 to 1.3 million metric tons in 1987 and then increased to an average of 1.9 million metric tons during the 1991 to 2009 period. Under the North American Free Trade Agreement (NAFTA), Mexico currently is allowed to export excess sugar to the United States. Currently, Mexico has exported less than 100,000 metric tons of sugar into the United States for the last few years, due to production shortages. 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.



**Figure 2. U.S. Beet and Cane Sugar Production**



**Figure 3. U.S. Sugar Production and Imports**



**Figure 4. 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 18 cents/lb for raw cane sugar and 22.9 cents/lb for refined beet sugar. However, loan rates are increased under the 2008 Farm Bill to 18.75 cents/lb for cane sugar and 24.09 cents/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 raw cane sugar subject to the lower duty rate must be no less than 1,117,195 metric tons in a fiscal year which was increased 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 15 cents/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 17.62 cents/lb in 1995 to 15 cents/lb in 2000 under the URA. The duty for refined sugar was reduced from 18.6 cents/lb in 1995 to 16.21 cents/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. The second-tier duty for Mexican sugar was reduced from 16.11 cents/lb in 1995 to zero in 2008. Duties beyond the import quota for most countries will remain at 15.82/lb for raw cane sugar and 16.21 cents/lb for refined sugar. This implies that Mexico is in a unique position to increase its exports of sugar to the United States above the allocated quota. Mexico produced 6.0 million metric tons of sugar in 2005 and consumed 5.4 million metric tons in the same year. Its net exports were 243 thousand metric tons for the year. If Mexico starts to use High Fructose Corn Sweetener (HFCS) for beverages, more of its sugar could be exported to the United States. Furthermore, 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. Mexico has been declared an excess sugar producer which will allow additional exports into the United States.

The United States signed a 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 agreement and 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 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. If the EU limits sugar production to the stated level, the EU will become an importer.

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 2009 were 700 thousand metric tons. Mexico also has subsidized exports and is subsidizing raw sugar storage.

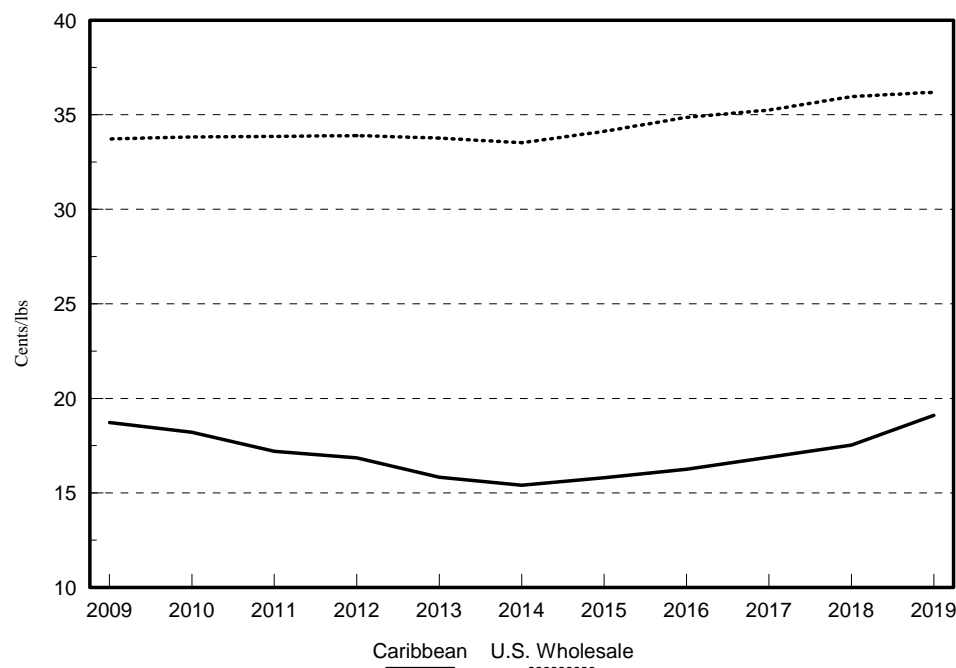
### **Brazilian Production and Exports**

Brazil is the largest sugar producing country in the world. The production of sugar has increased 352% since 1990. About 50% of Brazilian sugar consumed domestically is converted into ethanol for fuel. Exports have risen from 1.2 million metric tons in 1990 to 23.9 million

metric tons in 2009. 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 exports has increased world sugar prices. However, since the world oil price is highly volatile, this relationship may not hold in the future.

**State Trading Enterprises in Australia, China, and India**

Australia's sugar exports are handled by the Queensland Sugar Corporation (QSC), a statutory authority established under the Sugar Industry Act 1991. The QSC is responsible for the domestic marketing and export of 100% of the raw sugar produced in the state of Queensland, which produces 95% of the sugar produced in Australia. The QSC supports domestic producers through buyer-seller arrangements, marketing quotas, dual pricing arrangements, and other quasi-government mechanisms that isolate domestic producers from foreign competition. 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.



**Figure 5. Estimated U.S. and World Sugar Prices**

**OUTLOOK FOR THE WORLD SUGAR INDUSTRY**

Total world sugar trade is projected to increase 9.9%, from 34.5 to 37.9 million metric tons over the 2009-2019 period. Exports of sugar in most countries will increase for 2009-2019. Exports will increase 7.4% for Brazil, and 11.7% for Australia.

World sugar price, referred to as the Caribbean price of sugar, is projected to increase 2% from 18.72 cents/lb in 2009 to 19.1 cents/lb in 2019 (Figure 5) because slow world income growth will limit growth in oil consumption which will limit growth in ethanol production from sugar cane.



## United States

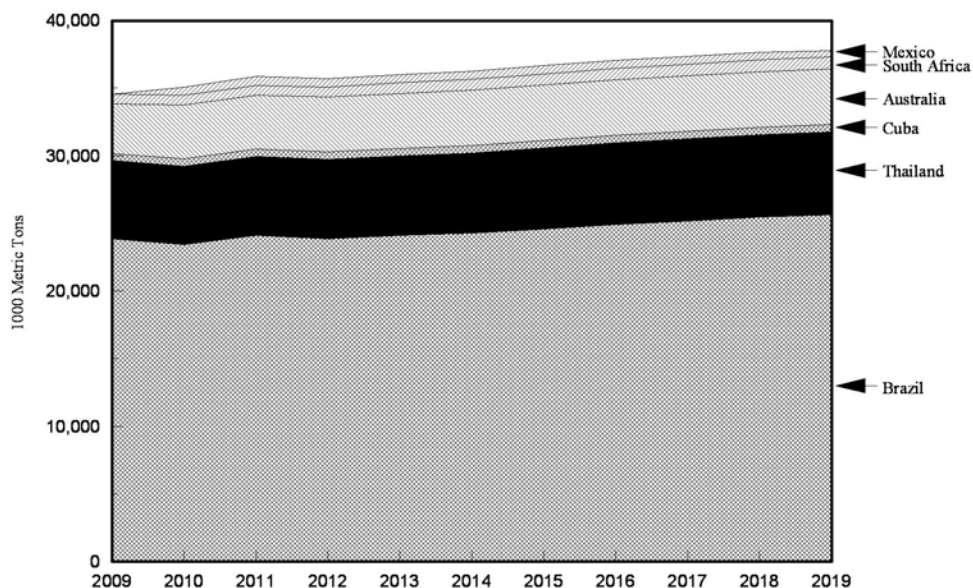
Table 2 shows production, consumption, imports, and ending stocks of sugar for the United States. U.S. sugar production is predicted to increase to 7.6 million metric tons in 2019. The increase in sugar production is due mainly to an increase in U.S. sugarbeet production. U.S. sugar consumption is predicted to increase 7.8% from 9.6 million metric tons (the 2007-2009 average) to 10.3 million metric tons in 2019. Ending stocks are also predicted to decrease 27.3% (Table 2). Imports are predicted to increase 18.4% from the 2007-2009 average. However, the imports depend upon Mexico's sugar production and consumption.

**Table 2. U.S. Sugar Production, Consumption, Imports, and Carry-over Stock, 2009-2019**

	Average (2007-2009)	2009	2019	% Change (2007-09) to 2019
	-----1,000 metric tons-----			
Production	7,061	6,998	7,626	8.0
Beet	4,018	3,992	4,433	10.3
Cane	3,043	3,006	3,192	4.9
Net Imports	2,295	2,020	2,718	18.4
Per capita Consumption	32	32	34	9.4
Consumption	9,592	9,412	10,342	7.8
Carry-over Stocks	1,248	932	907	-27.3

## Exporters

Figure 6 shows the projected sugar exports for the largest exporting countries. Brazil is the largest sugar exporter followed by Thailand and Australia. Brazil's production is predicted to increase by 18.3% from 33.1 million metric tons in 2007-2009 to 39.1 million metric tons in 2019 (Table 3). Brazil's exports are predicted to increase from 21.6 million metric tons in 2007-2009 to 25.6 million metric tons in 2019. Its domestic consumption is predicted to increase by 16.4% from 11.6 million metric tons in 2007-2009 to 13.5 million metric tons in 2019. Much of the increase in consumption is due to ethanol production.



**Figure 6. World Sugar Exports by Country**

Thailand's exports are predicted to decrease by 8.8% from the 2007-2009 average of 2.2 million metric tons for the 2007-2009 average to 2.1 million metric tons in 2019 (Table 3). Consumption increases from 2.0 million metric tons for the 2007-2009 average to 2.4 million metric tons in 2019. Sugar production in the country also is predicted to increase by 12.3% from 7.6 million metric tons to 8.5 million metric tons in 2019.

Australia's exports are predicted to increase by 13.6% from 3.6 million metric tons for the 2007-2009 average to 4.1 million metric tons in 2019 (Table 3), due mainly to increased sugar production, which is predicted to increase by 14.0% from 4.9 million metric tons to 5.6 million metric tons in 2019. Sugar consumption is expected to increase by 14.2% from 1.3 million metric tons to 1.4 million metric tons in 2019.

Cuba's exports are predicted to decrease by 6.0% from the 2007-2009 level to 2019 (Table 3). It is predicted that Cuba will increase its sugar production by 3.0%, while consumption is predicted to increase by 13.0%. 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 7.3% from 5.5 million metric tons in 2007-2009 to 5.9 million metric tons in 2019. Mexico is expected to export 483 thousand metric tons by 2019, mainly to the United States under NAFTA. Sugar consumption is predicted to increase by 10.5% from 4.9 million metric tons in 2007-2009 to 5.4 million metric tons in 2019 under the assumption that Mexico does not convert to HFCS in their soft drink industry. Ending stocks are predicted to decrease by 26.5%. 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 Africa's production is predicted to increase by 8.8% from 2.4 million metric tons in 2007-2009 to 2.6 million metric tons in 2019. South Africa's exports are predicted to increase 5.0% by 2019. Sugar consumption is predicted to increase by 3.1% and ending stocks are predicted to decrease by 21.4%.

## **Importers**

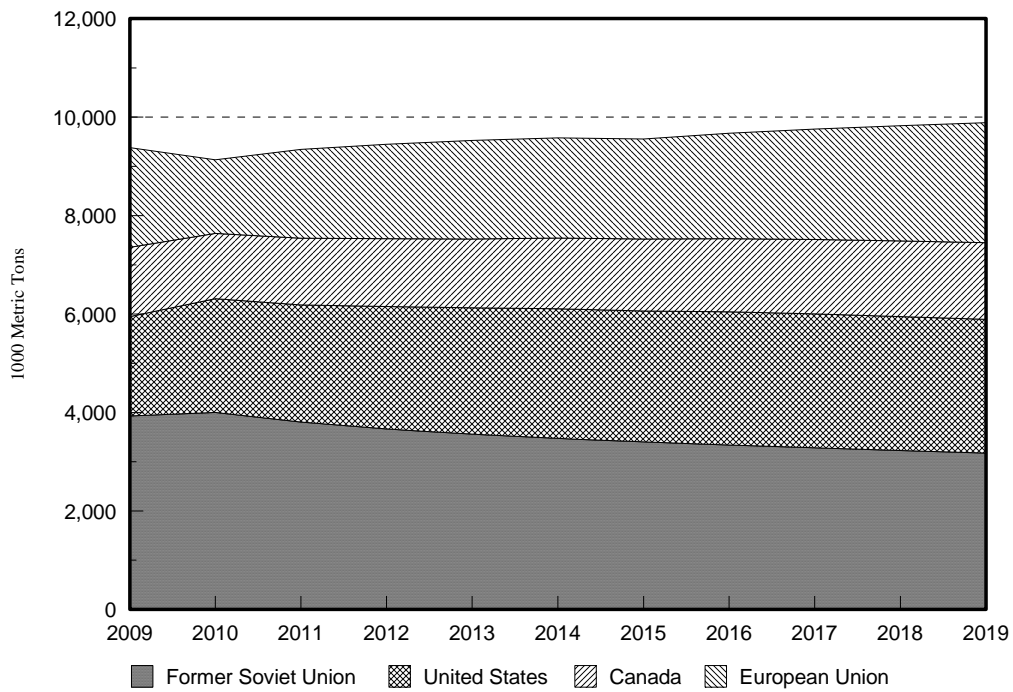
Figures 7 through 9 show sugar imports by the major sugar importing countries. Sugar imports of selected Asian and African countries are expected to increase by 82.5% and 42.6%, respectively, for the 2009-2019 period. The main reason the Asian countries increased is that India began to import sugar.

Canada's production is predicted to increase above the 2007-2009 average of 104 thousand metric tons to 122 thousand tons by the year 2019, and consumption is predicted to increase from 1.5 million metric tons to 1.7 million metric tons in 2019 (Table 4). As a result, Canada's imports are predicted to increase 12.6% from 1.4 million metric tons to 1.6 million metric tons in 2019.

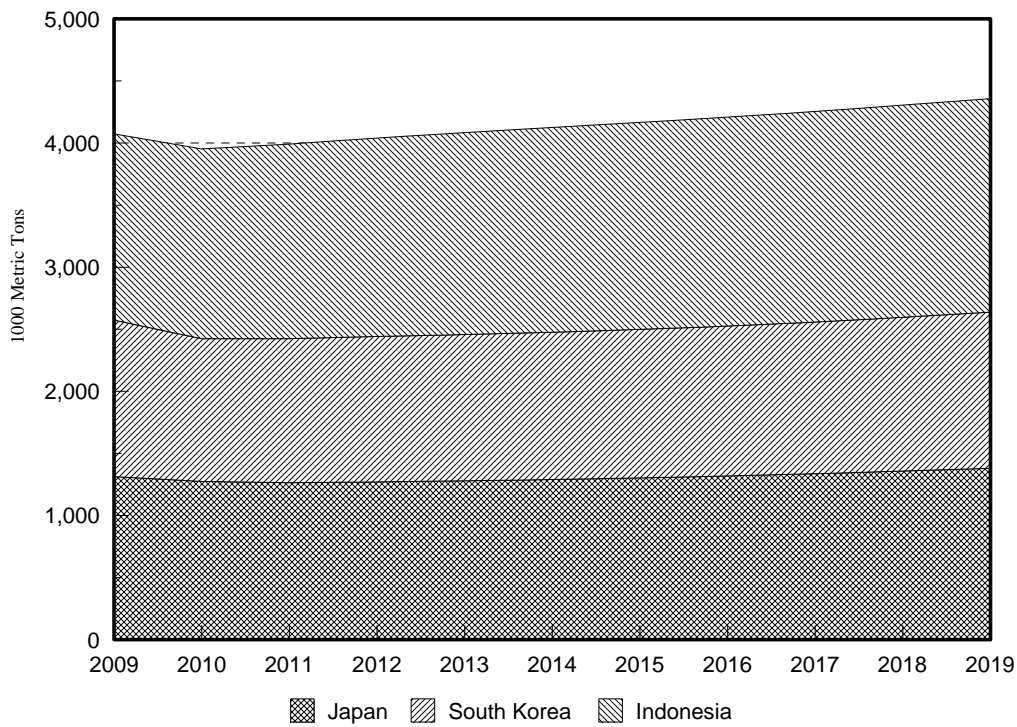
The EU has changed the internal sugar policy by restricting support. This has reduced production. Because of that change, the EU has become a net importer of sugar. EU imports are predicted to increase from 1.8 million metric tons in 2009 to 2.4 million metric tons in 2019 (Figure 7). Sugar production in the EU is predicted to increase 0.5% and consumption is predicted to increase from 16.6 million metric tons for the 2007-2009 average to 17.1 million tons in 2019 (Table 4). Most of the increase in consumption is due to the income increases in the countries now included in the EU.

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

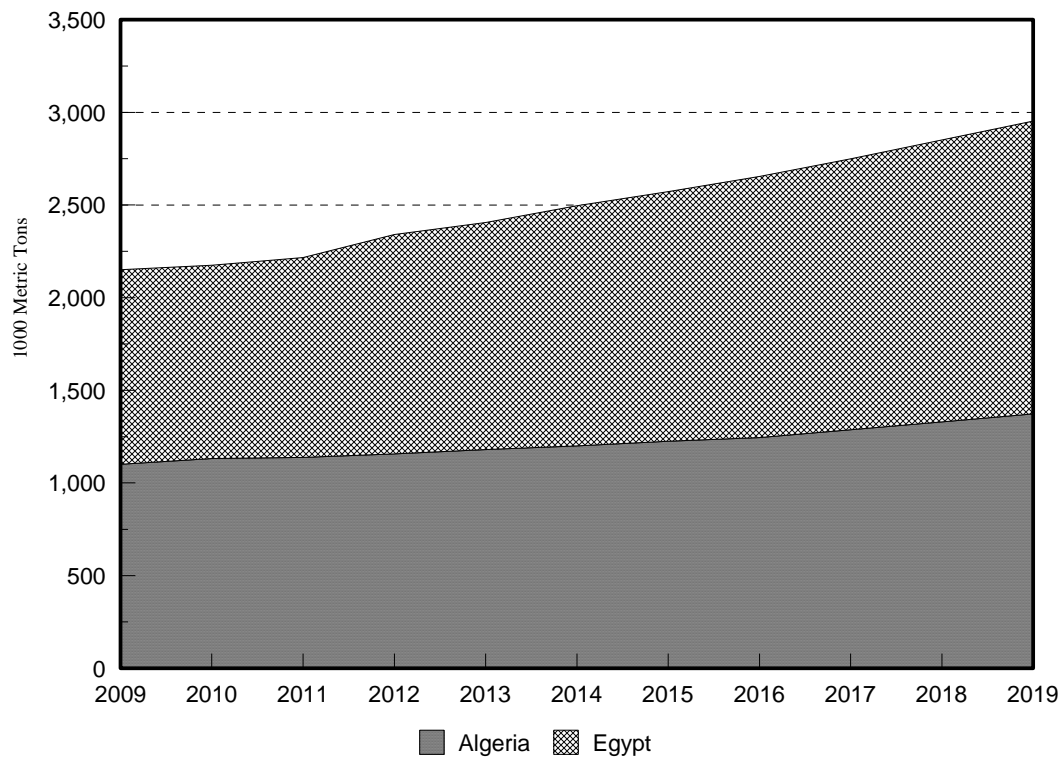
	Average (2007-2009)	2009	2019	% change (2007-09) to 2019
-----1,000 metric tons-----				
<b>Brazil</b>				
Production	33,067	35,750	39,122	18.3
Net Exports	21,633	23,850	25,608	18.4
Consumption	11,617	11,800	13,515	16.4
Carry-over	(668)	(1,035)	202	NA
<b>Thailand</b>				
Production	7,573	7,700	8,505	12.3
Net Exports	2,249	2,351	2,050	-8.8
Consumption	2,033	2,100	2,356	15.9
Carry-over	2,384	2,151	2,063	-13.5
<b>Australia</b>				
Production	4,884	4,900	5,568	14.0
Net Exports	3,637	3,696	4,130	13.6
Consumption	1,250	1,250	1,428	14.2
Carry-over	420	410	428	1.8
<b>Cuba</b>				
Production	1,307	1,250	1,346	3.0
Net Exports	585	510	550	-6.0
Consumption	710	710	802	13.0
Carry-over	62	85	49	-20.5
<b>Mexico</b>				
Production	5,504	5,400	5,908	7.3
Net Exports	495	20	483	-2.5
Consumption	4,898	4,900	5,412	10.5
Carry-over	1,125	760	827	-26.5
<b>South Africa</b>				
Production	2,363	2,380	2,571	8.8
Net Exports	838	700	880	5.0
Consumption	1,638	1,680	1,689	3.1
Carry-over	139	92	109	-21.4



**Figure 7. World Sugar Imports by Country, Major Importers**



**Figure 8. World Sugar Imports by Country, Asian Countries**



**Figure 9. World Sugar Imports by Country, African Countries**

The FSU's production is predicted to increase by 18.9% from the 2007-2009 average of 6.0 million metric tons to 7.1 million metric tons in 2019, and consumption is predicted to decrease 0.9% from 10.4 million metric tons to 10.3 million metric tons for the same period. Imports are predicted to decrease 23.7% from the 2007-2009 average (Table 4).

China is expected to increase its imports by about 57.6% from 0.92 million metric tons in 2007-2009 to 1.5 million metric tons in 2019 (Table 4). China's production is predicted to increase by 5.9% from 14.1 million metric tons for the 2007-2009 average to 15.0 million metric tons in 2019, and consumption is predicted to increase by 17% from 14.8 million metric tons to 17.3 million metric tons for the period.

India's production is predicted to increase by 3.1% from 20.7 million metric tons in 2007-2009 to 21.3 million metric tons in 2019. Japan's imports are predicted to increase by 0.3% from the 2007-2009 average to 1.4 million metric tons in 2019, due to a slight decrease in domestic consumption (Table 4).

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

	Average (2007-09)	2009	2019	% change (2007-09) to 2019
-----1,000 metric tons-----				
Algeria				
Production	10	11	11	6.5
Net Imports	1,079	1,100	1,372	27.1
Consumption	1,192	1,115	1,382	16.0
Carry-over	88	60	84	-4.9
Canada				
Production	104	100	122	16.9
Net Imports	1,384	1,408	1,559	12.6
Consumption	1,473	1,454	1,681	14.1
Carry-over	120	154	159	32.1
China				
Production	14,125	13,161	14,954	5.9
Net Imports	917	835	1,445	57.6
Consumption	14,828	15,413	17,346	17.0
Carry-over	3,159	2,047	2,673	-15.4
Egypt				
Production	1,624	1,750	1,844	13.5
Net Imports	991	1,050	1,581	59.5
Consumption	2,710	2,720	3,419	26.2
Carry-over	742	936	984	32.6
European Union				
Production	14,623	15,200	14,696	0.5
Net Imports	1,821	2,045	2,435	33.7
Consumption	16,555	16,500	17,120	3.4
Carry-over	2,830	3,185	3,209	13.4
Former Soviet Union				
Production	5,955	5,828	7,083	18.9
Net Imports	4,159	3,928	3,175	-23.7
Consumption	10,353	10,100	10,255	-0.9
Carry-over	1,550	1,235	1,281	-17.4
India				
Production	20,687	17,300	21,325	3.1
Net Imports	923	5,990	5,447	490.1
Consumption	23,733	23,500	36,719	12.6
Carry-over	5,440	3,480	3,840	-29.4
Indonesia				
Production	2,513	2,960	3,156	25.6
Net Imports	1,830	1,500	1,720	-6.0
Consumption	4,400	4,400	4,876	10.8
Carry-over	410	400	394	-3.9
Japan				
Production	930	939	880	-5.4
Net Imports	1,337	1,313	1,381	0.3
Consumption	2,276	2,220	2,260	-0.7
Carry-over	399	446	443	11.0
Korea				
Production	0	0	0	NA
Net Imports	1,284	1,260	1,258	-2.0
Consumption	1,121	1,155	1,251	11.6
Carry-over	160	164	241	50.0

In South Korea, consumption is predicted to increase by 11.6% for the time period and its imports are predicted to decrease 2.0% 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 16.0% from 1.2 million metric tons in 2007-2009 to 1.4 million metric tons in 2019. The increase in consumption results in increasing imports from 1.1 million metric tons for the 2007-2009 average to 1.4 million metric tons in 2019.

Egypt's imports are predicted to increase by 59.5% from 1.0 million metric tons in 2007-2009 to 1.6 million metric tons in 2019, due mainly to increased consumption. Consumption is predicted to increase 26.2% from 2.7 million metric tons to 3.4 million metric tons in 2019.

Indonesia's imports are predicted to decrease by 6.0% from 1.8 million metric tons in 2007-2009 to 1.7 million metric tons in 2019. Consumption is predicted to increase from 4.4 million metric tons for the 2007-2009 average to 4.9 million metric tons in 2019.

### **CONCLUDING REMARKS**

This report provides an overview of the U.S. and world sugar markets for 2009-2019 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 9.9% from 34.5 million metric tons in 2009 to 37.9 million metric tons in 2019. The price of Caribbean sugar is expected to increase about 2% from 18.72 cents/lb in 2009 to 19.10 cents/lb in 2019. With lower oil prices, the conversion of sugar into ethanol would limit demand increases thereby limiting price increases.

Exports are predicted to increase for Brazil, Australia, and South Africa due to production increases in those countries.

Imports by most importing countries are predicted to increase from the 2007-09 average to 2019. China's imports are predicted to increase by 57.6%, while Japan's imports are predicted to increase by only 0.5%. Imports by Egypt and Algeria are predicted to increase by 59.5% and 27.1%, respectively.

U.S. sugar consumption is predicted to increase by 7.8% for the forecasting period, while production is expected to increase by 10.3% for beet sugar and by 4.9% for cane sugar. Increases in beet sugar production may be limited due to high prices for other commodities as corn, soybeans, and wheat compete for acres. If the prices of corn, soybeans, and wheat remain higher than the prices projected by FAPRI and USDA, the U.S. domestic production of sugar could be smaller and imports could be higher. Imports are predicted to increase by 18.4% for the period. Mexico could have an impact on the U.S. sugar industry if the country uses HFCS in its soft drink industry. However, the recent high prices of HFCS could prevent conversion from sugar to HFCS by the 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 large price increase in world sugar that occurred in late 2005 and 2006 would not be maintained. In the first half of 2007, Caribbean sugar price fell to 11 cents/lb from a high of 15.5 cents/lb in late 2006. The increased ethanol production in Brazil in 2005 and 2006 caused increases in the world price of sugar, which resulted in a production increase in other sugar exporting countries. Those production increases will continue to offset Brazil's demand for sugar cane for ethanol production. Higher priced in 2008 and 2009 were caused in part by lower production levels in China, India and the EU

One important variable to be considered is the possible substitution of sugar for HFCS in the U.S. soft drink industry, mainly because of the narrowing gap in the prices of the two products. If the substitution is realized, domestic demand for sugar may increase. The increased demand could positively affect the price of sugar, however, the effect could be limited due mainly to close substitute between HFCS and sugar in the U.S. soft-drink industry.



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## Appendix

### World Sugar Policy Simulation Model

#### 2010 Baseline Solution

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sugar Beets	46.47	46.58	46.52	47.07	46.49	46.23	46.12	46.11	46.13	46.11	46.12
Sugarcane	35.16	35.27	35.21	35.78	35.18	34.91	34.80	34.79	34.81	34.79	34.80

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Caribbean Price	18.72	18.71	18.76	18.72	18.74	18.72	18.73	18.72	18.74	18.72	18.73
TRQ Status	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota
Implicit Tariff	6.00	6.10	6.00	6.50	6.00	5.80	5.70	5.70	5.70	5.70	5.70
Import Price	24.72	24.81	24.76	25.22	24.74	24.52	24.43	24.42	24.44	24.42	24.43
Wholesale Price	33.72	33.82	33.76	34.25	33.74	33.51	33.42	33.41	33.43	33.41	33.42
Retail Price	53.68	53.81	53.74	54.40	53.71	53.40	53.27	53.26	53.28	53.26	53.27

##### United States - Area Harvested (1000 acres)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sugar Beets	1173	1172	1171	1172	1175	1179	1186	1196	1207	1219	1231
Sugarcane	853	852	851	852	852	854	857	860	865	870	876
Total Area	2026	2024	2022	2024	2027	2033	2043	2056	2072	2089	2107

##### United States - Yields (short tons/acre)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sugar Beets	25.60	25.56	25.60	25.71	25.79	25.96	26.16	26.37	26.58	26.79	27.00
Sugarcane	34.20	34.20	34.27	34.37	34.50	34.64	34.79	34.94	35.10	35.25	35.41

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sugar Beets	30026	29961	29968	30135	30293	30618	31039	31530	32072	32643	33242
Sugarcane	29162	29137	29159	29278	29411	29583	29802	30064	30360	30674	31006

##### United States - Sugar Extraction Rates (percent)

Variable	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sugar Beets	14.70	14.70	14.70	14.70	14.70	14.70	14.70	14.70	14.70	14.70	14.70
Sugarcane	11.35	11.35	11.35	11.35	11.35	11.35	11.35	11.35	11.35	11.35	11.35

##### United States - Sugar Production (1000 short tons)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Beet Sugar	4400	4404	4405	4430	4453	4501	4563	4635	4715	4799	4887
Cane Sugar	3314	3307	3310	3323	3338	3358	3383	3412	3446	3481	3519
All Sugar	7714	7711	7715	7753	7791	7859	7945	8047	8160	8280	8406

Variable	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Tariff Rate Quota	1256	1256	1256	1256	1256	1256	1256	1256	1256	1256	1256
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)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
TRQ Status	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota
Implicit Tariff	6.00	6.10	6.00	6.50	6.00	5.80	5.70	5.70	5.70	5.70	5.70
Total Imports	2427	2666	2741	2856	2951	3021	3051	3101	3121	3118	3116
Quota-sugar Imports	1257	1586	1591	1591	1591	1591	1591	1591	1591	1591	1591
Other Sugar Imports	3114	1930	1080	1150	1265	1360	1430	1460	1510	1530	1527
Total Exports	200	120	120	120	120	120	120	120	120	120	120
Net Imports	2227	2546	2621	2736	2831	2901	2931	2981	3001	2998	2996

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	1451	1016	1014	950	930	930	939	950	962	975	988
Production	7713	7711	7715	7753	7791	7859	7945	8047	8160	8280	8406
Net Imports	2227	2546	2621	2736	2831	2901	2931	2981	3001	2998	2996
Consumption	10375	10268	10408	10521	10632	10766	10889	11023	11156	11278	11400
Carry-out Stocks	1016	1014	950	930	930	939	950	962	975	988	1000

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita Consumption	68.98	67.60	67.87	67.95	68.01	68.20	68.32	68.50	68.67	68.76	68.85
Stocks/Consumption	9.79	9.87	9.12	8.84	8.75	8.72	8.72	8.73	8.74	8.76	8.78

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Area Harvested	20	22	23	23	23	23	22	22	22	22	22
Yield	45.00	45.45	45.87	46.30	46.72	47.15	47.58	48.00	48.43	48.86	49.28
Production	900	1021	1050	1057	1061	1065	1068	1072	1075	1079	1082

Canada - Sugar Beet Exogenous Variables

Variable	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	100	154	148	148	151	154	156	156	156	158	159
Production	100	115	119	119	120	120	121	121	122	122	122
Net Imports	1408	1326	1355	1380	1398	1436	1463	1486	1510	1536	1559
Imports	1450	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Exports	42	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1454	1447	1473	1497	1515	1554	1584	1607	1630	1657	1681
Carry-out Stocks	154	148	148	151	154	156	156	156	158	159	159

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita Consumption	42.79	42.25	42.66	43.01	43.20	43.97	44.48	44.79	45.10	45.52	45.84
Stocks/Consumption	10.59	10.21	10.06	10.08	10.15	10.04	9.85	9.73	9.69	9.56	9.47

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Area Harvested	630	631	632	633	635	636	637	639	640	642	643
Yield	73.00	74.36	74.91	75.26	75.54	75.82	76.09	76.36	76.63	76.90	77.17
Production	45990	46924	47358	47660	47934	48207	48487	48772	49060	49351	49646

Mexico - Sugar Extraction Rates (percent)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sugarcane	11.80	11.80	11.90	11.90	11.90	11.90	11.90	11.90	11.90	11.90	11.90

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	640	760	754	755	760	767	774	781	790	801	814
Production	5400	5537	5636	5672	5704	5737	5770	5804	5838	5873	5908
Net Imports	20	-605	-656	-645	-634	-633	-631	-599	-564	-525	-483
Exports	690	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	710	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	4900	4938	4979	5022	5064	5096	5132	5196	5263	5335	5412
Carry-out Stocks	760	754	755	760	767	774	781	790	801	814	827

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita Consumption	42.41	42.26	42.14	42.04	41.94	41.76	41.62	41.71	41.83	41.99	42.18
Stocks/Consumption	15.51	15.28	15.17	15.14	15.14	15.18	15.21	15.21	15.23	15.25	15.28

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Area Harvested	7	7	7	7	7	7	7	7	7	7	7
Yield	20	20	20	20	20	21	21	21	21	21	21
Production	140	146	149	151	152	152	153	154	154	155	155

Algeria - Sugar Extraction Rates (percent)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	75	60	68	72	75	77	78	79	80	81	82
Production	11	11	11	11	11	11	11	11	11	11	11
Net Imports	1100	1132	1138	1157	1180	1200	1224	1245	1287	1329	1372
Exports	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1100	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1115	1135	1145	1165	1189	1210	1235	1256	1297	1339	1382
Carry-out Stocks	60	68	72	75	77	78	79	80	81	82	84

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita Consumption	30.11	30.29	30.20	30.38	30.65	30.82	31.10	31.28	31.97	32.68	33.39
Stocks/Consumption	5.38	5.95	6.28	6.41	6.45	6.46	6.43	6.40	6.27	6.15	6.04

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Area Harvested	424	433	437	439	440	441	441	442	443	444	445
Yield	87	90	91	91	92	92	92	93	93	94	94
Production	36845	38834	39578	39965	40251	40516	40778	41043	41313	41587	41863

#### Australia - Sugar Extraction Rate (percent)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	451	410	371	377	382	387	392	396	404	412	418
Production	4900	5165	5264	5315	5353	5389	5423	5459	5495	5531	5568
Net Exports	3696	3969	4000	4036	4057	4079	4099	4106	4113	4130	4130
Exports	3700	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	4	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1250	1236	1257	1274	1291	1305	1320	1345	1373	1395	1428
Carry-out Stocks	410	371	377	382	387	392	396	404	412	418	428

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita Consumption	60.55	59.15	59.49	59.61	59.73	59.74	59.76	60.28	60.90	61.22	62.04
Stocks/Consumption	32.80	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00	30.00

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	-1135	-1035	464	157	218	205	207	205	204	204	203
Production	35750	35912	36213	36505	36798	37091	37584	38065	38447	38835	39122
Net Exports	23850	23430	24092	23859	24102	24266	24584	24932	25185	25445	25608
Exports	23850	#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	11800	12283	12429	12585	12710	12823	13001	13133	13263	13390	13515
Carry-out Stocks	-1035	464	157	218	205	207	205	204	204	203	202

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita Consumption	60.06	61.78	61.80	61.88	61.82	61.71	61.93	61.94	61.94	61.95	61.96
Stocks/Consumption	-8.77	3.78	1.26	1.74	1.61	1.61	1.58	1.56	1.54	1.52	1.50

#### China - Area Harvested (1000 hectares)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sugar Beets	185	193	192	188	188	188	188	189	190	191	192
Sugarcane	1900	1970	2000	2013	2021	2030	2038	2048	2057	2066	2076
Total Area	2085	2164	2192	2201	2209	2218	2227	2237	2246	2257	2268

China - Yields (metric tons/hectare)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sugar Beets	36.00	36.36	36.71	37.04	37.36	37.66	37.96	38.35	38.71	39.06	39.39
Sugarcane	71.00	71.63	72.16	72.60	72.99	73.34	73.65	73.93	74.20	74.45	74.69

China - Production (1000 metric tons)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sugar Beets	6660	7036	7047	6967	7017	7073	7145	7252	7340	7450	7548
Sugarcane	134900	141137	144325	146142	147551	148864	150132	151389	152620	153845	155060

China - Sugar Extraction Rates (percent)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	3464	2047	2012	2104	2203	2284	2356	2421	2490	2556	2620
Production	13161	13628	13921	14079	14213	14339	14462	14588	14710	14833	14954
Beet Sugar	674	714	715	707	712	718	725	736	745	756	766
Cane Sugar	12487	12914	13206	13372	13501	13621	13737	13852	13965	14077	14188
Net Imports	835	1908	1853	1898	1958	2043	2108	2174	2275	2466	2445
Exports	65	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	900	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	15413	15571	15683	15878	16091	16310	16505	16692	16919	17235	17346
Carry-out Stocks	2047	2012	2104	2203	2284	2356	2421	2490	2556	2620	2673

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita Consumption	11.43	11.47	11.47	11.53	11.61	11.69	11.75	11.82	11.91	12.07	12.09
Stocks/Consumption	13.28	12.92	13.41	13.88	14.19	14.44	14.67	14.92	15.11	15.20	15.41

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Area Harvested	390	395	395	395	395	395	395	395	395	395	395
Yield	31	31	31	32	32	32	32	32	33	33	33
Production	12168	12353	12417	12490	12560	12637	12712	12790	12866	12945	13021

Cuba - Sugar Extraction Rate (percent)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	55	85	94	95	92	86	80	74	68	61	55
Production	1250	1277	1284	1291	1299	1307	1314	1322	1330	1339	1346
Net Exports	510	559	564	564	562	560	558	556	553	551	550
Consumption	710	709	720	731	742	752	763	772	784	793	802
Carry-out Stocks	85	94	95	92	86	80	74	68	61	55	49

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita Consumption	60.62	60.43	61.18	62.02	62.80	63.62	64.41	65.12	66.00	66.72	67.41
Stocks/Consumption	11.97	13.31	13.17	12.52	11.64	10.68	9.70	8.80	7.80	6.93	6.12

Egypt - Area Harvested (1000 hectares)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sugar Beets	79	80	80	80	79	80	80	81	81	81	82
Sugarcane	126	126	126	126	127	127	127	128	128	129	130
Total Area	205	206	206	206	206	207	208	208	209	210	212

Egypt - Yields (metric tons/hectare)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sugar Beets	58.00	58.52	58.77	59.10	59.40	59.72	60.03	60.34	60.65	60.96	61.27
Sugarcane	104.00	104.04	104.19	104.44	104.77	105.17	105.64	106.15	106.71	107.30	107.92

Egypt - Production (1000 metric tons)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sugar Beets	4582	4667	4676	4699	4719	4770	4814	4860	4908	4955	5002
Sugarcane	13104	13107	13135	13186	13257	13347	13454	13576	13712	13861	14021

Egypt - Sugar Extraction Rates (percent)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	746	936	940	943	948	952	957	962	968	973	978
Production	1750	1722	1726	1733	1742	1756	1771	1787	1805	1824	1844
Beet Sugar	600	595	596	599	602	608	614	620	626	632	638
Cane Sugar	1150	1127	1130	1134	1140	1148	1157	1168	1179	1192	1206
Net Imports	1050	1043	1078	1183	1225	1296	1348	1410	1462	1522	1581
Exports	250	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1410	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	2720	2762	2801	2911	2962	3047	3114	3192	3262	3341	3419
Carry-out Stocks	936	940	943	948	952	957	962	968	973	978	984

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita Consumption	34.92	34.75	34.55	35.22	35.17	35.51	35.63	35.88	36.04	36.30	36.55
Stocks/Consumption	34.41	34.02	33.68	32.56	32.15	31.42	30.91	30.32	29.83	29.28	28.77

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Area Harvested	1770	1716	1702	1695	1692	1690	1688	1686	1684	1682	1680
Yield	56.00	55.82	55.86	55.97	56.11	56.26	56.41	56.56	56.72	56.87	57.02
Production	99120	95764	95058	94878	94952	95077	95214	95354	95493	95641	95785

European Union - Sugar Extraction Rates (percent)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	2175	3185	3126	3139	3148	3157	3163	3165	3176	3187	3198
Production	15200	14693	14587	14560	14571	14590	14610	14631	14652	14674	14696
Net Exports	-2025	-1490	-1801	-1919	-2002	-2036	-2030	-2142	-2242	-2339	-2435
Exports	1475	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	3500	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	16500	16242	16374	16469	16563	16620	16638	16761	16883	17003	17120
Carry-out Stocks	3185	3126	3139	3148	3157	3163	3165	3176	3187	3198	3209

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita Consumption	45.85	45.09	45.41	45.64	45.87	46.01	46.04	46.37	46.70	47.03	47.37
Stocks/Consumption	19.30	19.25	19.17	19.11	19.06	19.03	19.02	18.95	18.88	18.81	18.74

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	3690	3480	3347	3386	3457	3507	3558	3614	3673	3731	3787
Production	17300	17790	18132	18497	18887	19289	19693	20099	20506	20915	21325
Net Exports	-5990	-5919	-6081	-6079	-5993	-5916	-5835	-5748	-5653	-5553	-5447
Exports	10	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	6000	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	23500	23842	24175	24504	24831	25153	25472	25788	26101	26412	26719
Carry-out Stocks	3480	3347	3386	3457	3507	3558	3614	3673	3731	3787	3840

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita Consumption	19.05	19.06	19.07	19.07	19.08	19.08	19.09	19.09	19.10	19.10	19.11
Stocks/Consumption	14.81	14.04	14.01	14.11	14.12	14.15	14.19	14.24	14.29	14.34	14.37

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Area Harvested	530	530	529	529	528	529	530	531	533	535	537
Yield	69.00	69.02	69.52	70.02	70.52	71.02	71.52	72.02	72.52	73.02	73.52
Production	36570	36596	36810	37035	37258	37565	37906	38271	38653	39047	39450

Indonesia - Sugar Extraction Rate

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	340	400	395	396	397	397	396	396	395	395	395
Production	2960	2928	2945	2963	2981	3005	3032	3062	3092	3124	3156
Net Imports	1500	1530	1568	1599	1627	1649	1668	1683	1697	1709	1720
Exports	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1500	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	4400	4463	4512	4561	4608	4655	4700	4745	4790	4833	4876
Carry-out Stocks	400	395	396	397	397	396	396	395	395	395	394

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita											
Consumption	18.54	18.59	18.60	18.60	18.60	18.60	18.60	18.61	18.61	18.61	18.61
Stocks/Consumption	9.09	8.86	8.78	8.71	8.61	8.51	8.42	8.33	8.25	8.16	8.08

Japan - Area Harvested (1000 hectares)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sugar Beets	83	82	81	80	79	79	78	77	75	74	73
Sugarcane	18	17	17	17	17	17	16	16	16	16	15
Total Area	101	99	98	97	96	95	94	93	91	90	88

Japan - Yields (metric tons/hectare)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sugar Beets	52.00	52.20	52.49	52.83	53.19	53.55	53.92	54.30	54.67	55.05	55.42
Sugarcane	59.00	60.65	60.56	60.62	60.66	60.70	60.75	60.79	60.83	60.88	60.92

Japan - Production (1000 metric tons)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sugar Beets	4316	4275	4252	4240	4224	4204	4183	4156	4123	4084	4040
Sugarcane	1062	1012	1011	1013	1010	1004	996	986	974	959	943

Japan - Sugar Extraction Rates (percent)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	414	446	441	439	439	439	440	441	441	442	443
Production	939	932	928	926	922	918	913	907	899	890	880
Beet Sugar	819	810	805	803	800	796	792	787	781	774	765
Cane Sugar	120	123	123	123	122	122	121	120	118	116	114
Net Imports	1313	1274	1264	1271	1280	1289	1302	1318	1336	1358	1381
Exports	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1313	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	2220	2211	2194	2197	2202	2207	2214	2224	2235	2247	2260
Carry-out Stocks	446	441	439	439	439	440	441	441	442	443	443

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita Consumption	17.52	17.48	17.39	17.47	17.57	17.67	17.80	17.96	18.13	18.32	18.53
Stocks/Consumption	20.09	19.96	20.03	19.98	19.96	19.94	19.90	19.85	19.78	19.70	19.61

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	184	164	166	174	182	191	200	209	217	225	233
Net Imports	1260	1149	1159	1171	1177	1186	1196	1208	1222	1239	1258
Exports	340	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1600	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1155	1147	1152	1163	1169	1177	1187	1199	1214	1231	1251
Carry-out Stocks	164	166	174	182	191	200	209	217	225	233	241

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita Consumption	23.38	23.15	23.19	23.37	23.43	23.55	23.72	23.94	24.21	24.53	24.90
Stocks/Consumption	14.20	14.50	15.10	15.67	16.35	17.00	17.60	18.13	18.56	18.94	19.24

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Area Harvested	301	302	304	306	309	312	315	317	319	319	320
Yield	71.30	71.31	71.46	71.61	71.76	71.91	72.06	72.21	72.36	72.51	72.56
Production	21461	21538	21691	21900	22144	22408	22685	22900	23077	23160	23229

South Africa - Sugar Extraction Rates (percent)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	97	92	93	94	96	98	100	101	104	105	107
Production	2380	2384	2401	2424	2451	2481	2511	2535	2555	2564	2571
Net Exports	700	696	715	739	768	797	828	848	871	876	880
Exports	900	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	200	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1680	1687	1685	1683	1682	1682	1682	1684	1683	1686	1689
Carry-out Stocks	92	93	94	96	98	100	101	104	105	107	109

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita Consumption	37.25	37.38	37.40	37.51	37.65	37.82	37.88	37.90	37.82	37.85	37.90
Stocks/Consumption	5.48	5.52	5.60	5.71	5.81	5.92	6.02	6.15	6.22	6.34	6.46

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Area Harvested	2400	2482	2543	2591	2627	2656	2680	2700	2718	2733	2748
Yield	21.00	21.32	21.52	21.66	21.78	21.87	21.96	22.05	22.13	22.22	22.30
Production	50400	52916	54738	56121	57206	58101	58864	59540	60155	60731	61276

Former Soviet Union - Sugar Extraction Rates (percent)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
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)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	1579	1235	1238	1240	1246	1251	1256	1261	1267	1272	1276
Production	5828	6117	6328	6488	6613	6716	6805	6883	6954	7020	7083
Net Imports	3928	4001	3806	3668	3559	3474	3401	3339	3280	3228	3175
Exports	1093	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	5021	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	10100	10115	10131	10150	10167	10185	10200	10216	10230	10243	10255
Carry-out Stocks	1235	1238	1240	1246	1251	1256	1261	1267	1272	1276	1281

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita Consumption	34.46	34.55	34.65	34.75	34.85	34.95	35.05	35.15	35.25	35.35	35.45
Stocks/Consumption	12.23	12.23	12.24	12.27	12.30	12.33	12.37	12.40	12.43	12.46	12.49

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Area Harvested	1155	1158	1159	1160	1161	1162	1162	1161	1161	1160	1159
Yield	60.70	61.44	62.06	62.65	63.23	63.81	64.39	64.96	65.54	66.11	66.69
Production	70109	71119	71946	72686	73421	74118	74786	75434	76069	76694	77316

Thailand - Sugar Extraction Rates (percent)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Sugarcane	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00	11.00

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Carry-in Stocks	2351	2151	2060	2018	2003	2001	2006	2014	2025	2037	2050
Production	7700	7823	7914	7995	8076	8153	8227	8298	8368	8436	8505
Net Exports	5800	5814	5832	5860	5899	5942	5983	6024	6062	6100	6136
Exports	5800	#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	2100	2101	2124	2151	2179	2207	2235	2263	2293	2324	2356
Carry-out Stocks	2151	2060	2018	2003	2001	2006	2014	2025	2037	2050	2063

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Per Capita Consumption	30.76	30.58	30.74	30.96	31.20	31.43	31.67	31.94	32.21	32.51	32.82
Stocks/Consumption	102.43	98.05	95.03	93.14	91.81	90.90	90.15	89.47	88.83	88.20	87.57

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Net Exports	-11900	-11755	-12133	-11640	-11791	-11850	-12177	-12332	-12382	-12350	-12416

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

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
0	18.72	18.71	18.76	18.72	18.74	18.72	18.73	18.72	18.74	18.72	18.73
\$/ton	412.70	412.48	413.58	412.70	413.14	412.70	412.92	412.70	413.14	412.70	412.92