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2011 Outlook of the U.S. and World Sugar Markets, 2010-2020

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ABSTRACT

This report evaluates the U.S. and world sugar markets for 2010-2020 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 were increased from 18.7 cents/ lb in 2009 to 27 cents/lb in 2010. World sugar production increased in 2010 along with consumption. Ending stocks did tighten in 2010. Ending stock projections by various organizations for 2011 were lower than previously estimated. 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 remain in the 32 to 34 cents/lb range throughout the forecast period. It is projected that Mexico will be able to export 586 thousand metric tons of sugar to the United States by 2020. 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 19.9% from 34.5 million metric tons to 37.9 million metric tons between 2010 and 2020. Brazil's exports are projected to increase from 21.6 million metric tons in 2010 to 25.6 million metric tons in 2020 even though Brazil uses a substantial amount of sugar cane for ethanol production. World sugar prices are projected to decrease from 27.3 cents/lb in 2010 to 18.4 cents/lb in 2020. U.S. wholesale sugar price is projected to decrease from 42.55 cents/lb in 2010 to 33.1 cents/lb in 2020.

U.S. sugar imports are predicted to decrease by 17.7% over the 2010-2020 period compared to the recent average import. U.S. sugar production is projected to increase 11.5% between 2010 and 2020. U.S. sugar consumption is projected to increase by 10.0% 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 9.3% from the 2008-2010 average of 35.88 million metric tons to 39.2 million metric tons in 2020. Exports could increase by 6.4% to 25.8 million metric ton in 2020, while consumption increases by 13.6%.

Canada's production is predicted to increase slightly between 2010 and 2020. Canada's imports are expected to increase by 8.6%. Consumption is predicted to increase 10.3% and ending stocks are predicted to decrease by 5.8%.

Mexico's production is expected to increase by 10.6%, and exports are expected to decrease slightly from the 2008-2010 average due to decreases in exports to the United States under the North American Free Trade Agreement (NAFTA).

The European Union (EU) is expected to remain an importer due to the EU-25 sugar policy reform. Their production is predicted to increase by 2.6%, while consumption will increase by 4.6%.

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

Most importing countries, including Algeria and Egypt are predicted to increase their imports for the 2010-2020 period.

2011 Outlook of the U.S. and World Sugar Markets, 2010-2020

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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 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 which increased to $0.27/lb in 2010. The stocks to use ratio has varied between 34% in 1968 and 17% in 2010. Recently it 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 has increased price from $0.75/ 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 and anytime 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 2010-2020 using the Global Sugar Policy Simulation Model developed by Benirschka et al. (1996). This model was run utilizing the 2010 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 2006-2010 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).

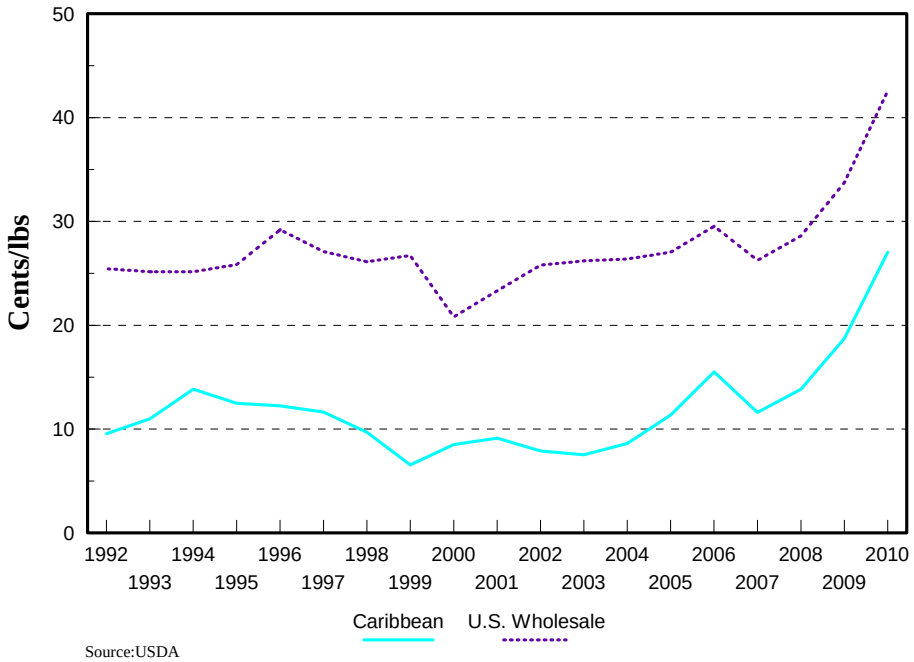
Table 1. World Sugar Supply and Utilization, 2006 to 2010 Average

Country/ Region	Beet/ Cane	Consumption	Production	Net Exports	Ending Stocks	Per Capita Consumption
		----------1,000 metric tons, raw value----------				Kg
Algeria	B	1,237	11	(1,184)	167	34
Australia	C	1,250	4,873	3,644	359	60
Brazil	C	11,530	34,140	22,610	(505)	56
Canada	B	1,352	111	(1,269)	336	43
China	B/C	14,428	13,248	(1,282)	2,453	7
Cuba	C	705	1,232	580	234	61
European Union	B	17,376	15,803	(1,312)	2,549	48
Egypt	B/C	2,693	1,672	(1,081)	697	34
Former Soviet Union	B/C	10,455	5,958	(4,453)	1,429	37
India	C	23,725	24,320	163	6,699	17
Indonesia	C	4,500	1,955	(2,385)	464	16
Japan	B/C	2,299	909	(1,384)	417	18
Korea	-	1,105	0	(1,245)	139	27
Mexico	C	5,054	5,462	394	1,253	50
South Africa	C	1,582	2,286	866	162	36
Thailand	C	2,066	7,108	5,103	1,979	30
United States	B/C	9,907	7,295	(2,196)	1,435	34
Rest of World	B/C	43,186	30,933	(17,739)	10,607	19
World	B/C	154,451	157,315	51,097	30,874	21

Source: USDA-FAS, PS&D website.

Per capita sugar consumption was highest in the Cuba followed by Australia, and Mexico. Per capita sugar consumption in the United States was 34 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 2006-2010 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, and Japan. Imports by these countries accounted for about 28% of all sugar imports from 2006 to 2010. Under the Lome Convention, the EU was required to import sugar under preferential terms from certain African, Caribbean, and Pacific countries.

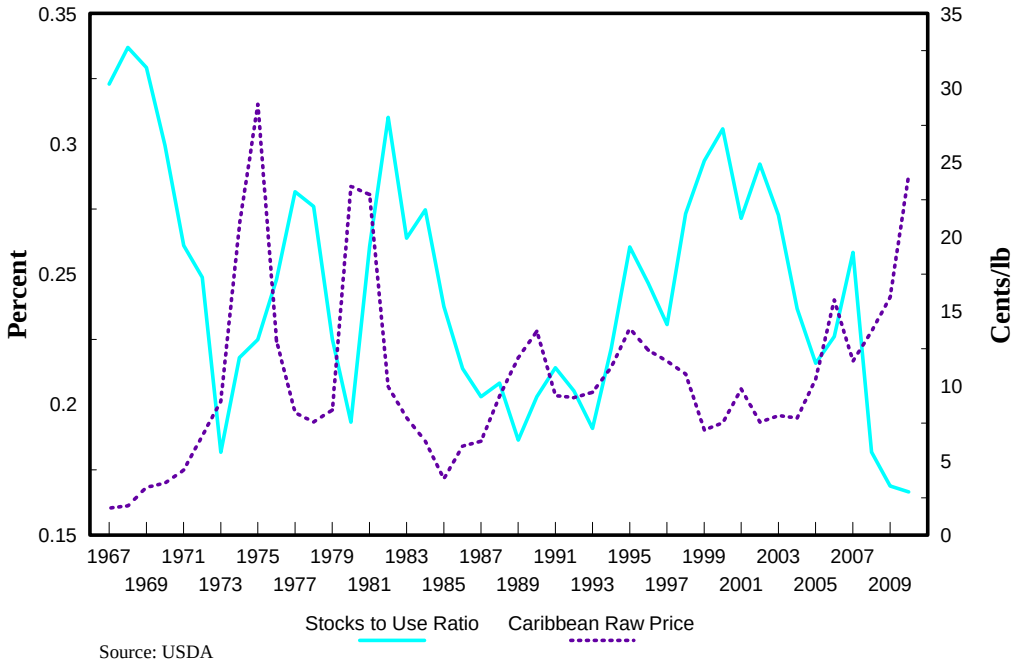


Source:USDA

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 $0.44/lb. World market prices ranged between $0.06/lb. and $0.27/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 and $0.27 in 2010. 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, $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 7.53 cents per lb in 2000 to 24.12 cents per lb in 2010. From figure 2 it can be seen that a similar price increases occurred in 1974-1975 and 1980-1981. The stocks to use ratio also fell from the low 30% range to about 18% in those time periods. The current stocks to use ratio is lower and anytime in the past 45 years, this indicates that the recent sugar price increase is justified.



Source: USDA

Figure 2. World Stocks to Use Ratio and Caribbean Raw Sugar Price, 1967-2010

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 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 20% from 1992 to 2010, while cane sugar production remained about the same (Figure 3). U.S. total sugar production increased about 17% from 6.2 million metric tons in 1991 to 7.3 million metric tons in 2010 (Figure 4).

U.S. consumption of sugar increased by 23.8% from about 8.0 million metric tons in 1991 to 9.9 million metric tons in 2010 (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 1991 to 2010 period. Under the North American Free Trade Agreement (NAFTA), Mexico currently is allowed to export excess sugar to the United States. Mexico exported 700 thousand metric tons of

sugar into the United States in 2009 and 900 thousand metric tons of sugar into the United States in 2010. 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.

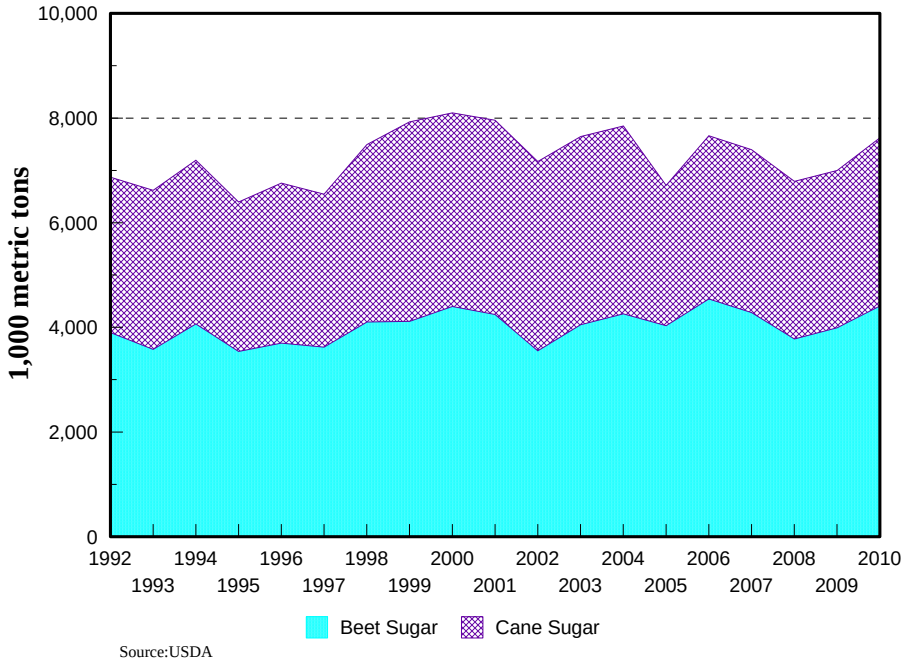


Figure 3. U.S. Beet and Cane Sugar Production

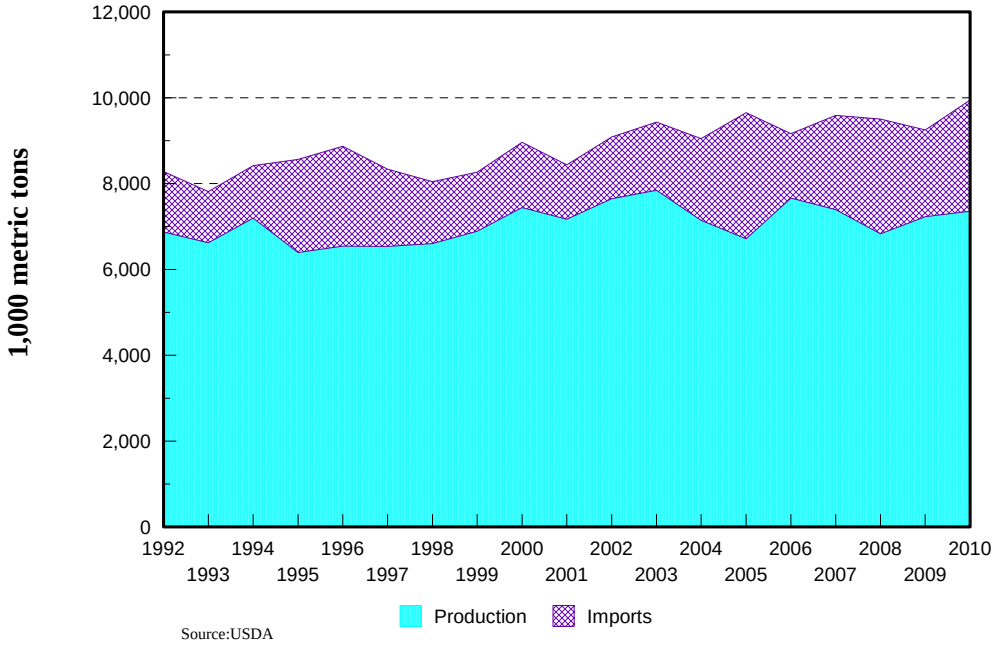


Figure 4. U.S. Sugar Production and Imports

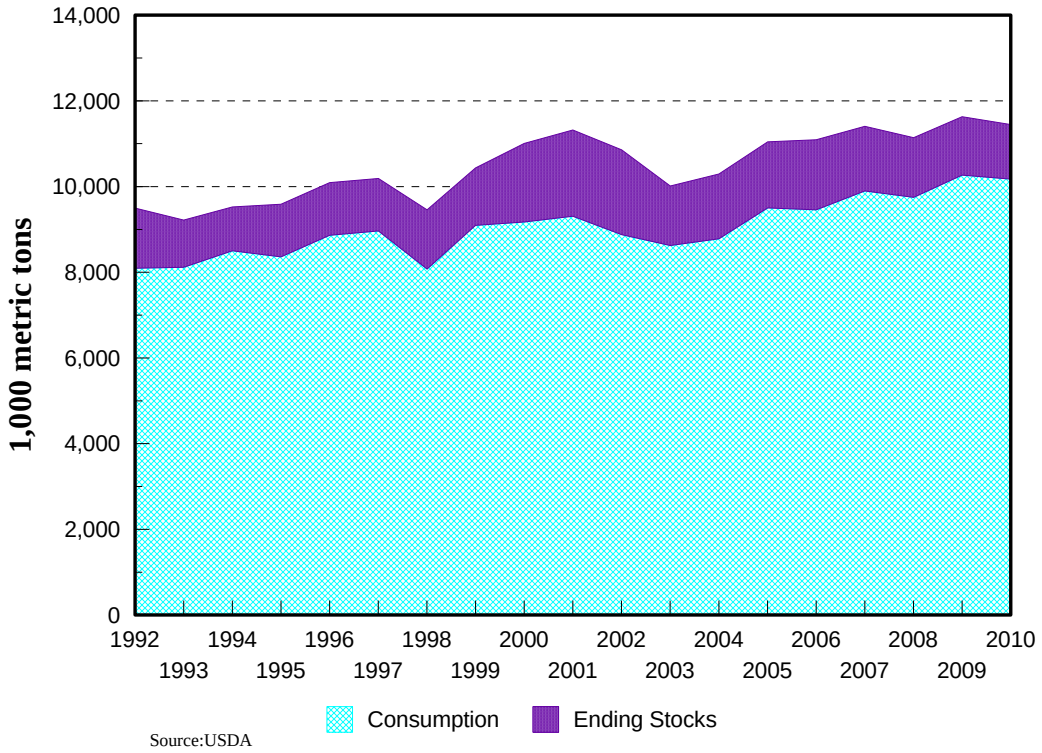


Figure 5. U.S. Sugar Consumption and Ending Stocks

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 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 15.82 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 15.82 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. 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. 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 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. If the EU limits sugar production to the stated level, the EU will become an importer. 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.

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 2010 were 866 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 2010. 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, because of high sugar prices in 2010, Brazil increases its exports by 10.5% in 2010.

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.

OUTLOOK FOR THE WORLD SUGAR INDUSTRY

Total world sugar trade is projected to increase 19.9%, from 34.5 to 37.9 million metric tons over the 2010-2020 period. Exports of sugar in most countries will increase for 2010-2020. Exports will increase 6.4% for Brazil, and 1.6% for Australia. Exports are expected to decrease for Cuba, Mexico, South Africa and Thailand during the same time period.

World sugar price, referred to as the Caribbean price of sugar, is projected to decrease from 27.3 cents/lb in 2010 to 18.4 cents/lb in 2020 (Figure 6). The historically high prices will not be maintained into the future.

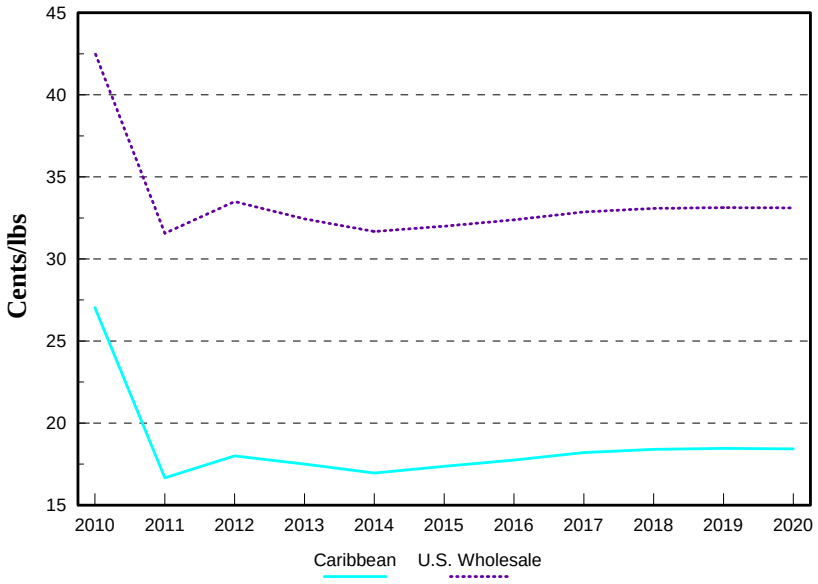


Figure 6. Estimated U.S. and World Prices

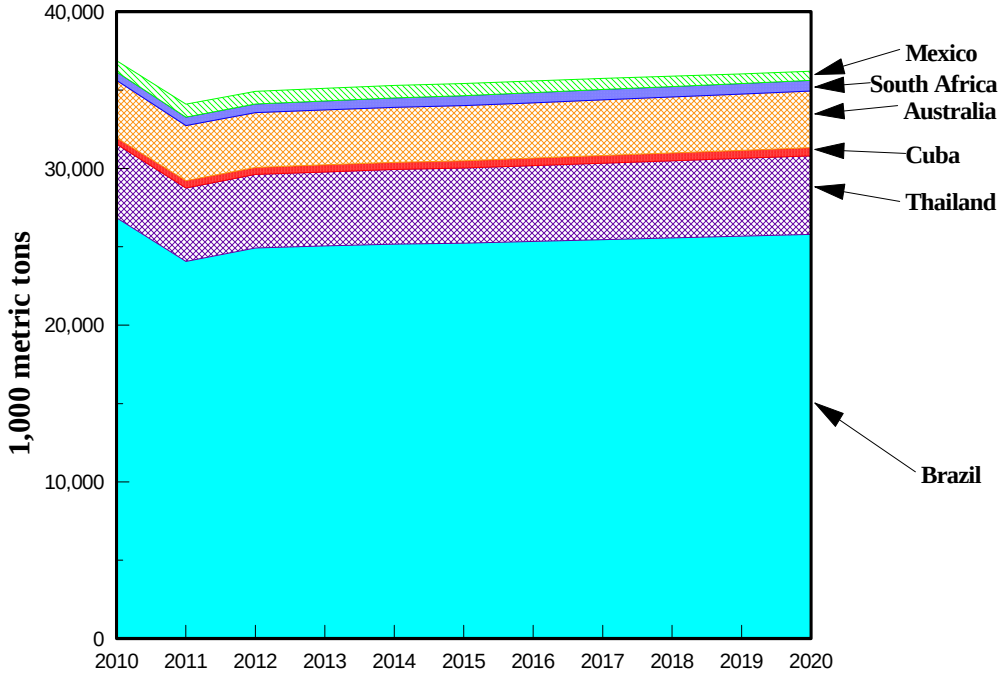


Figure 7. World Sugar Exports by Country

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 8.0 million metric tons in 2020. The increase in sugar production is due to an increase in both U.S. sugarbeet and sugar cane production. U.S. sugar consumption is predicted to increase 10.0% from 10.1 million metric tons (the 2008-2010 average) to 11.1 million metric tons in 2020. Ending stocks are also predicted to remain about the same (Table 2). Imports are predicted to decrease 19.5% from the 2008-2010 average. However, the imports depend upon Mexico's sugar production and consumption.

Table 2. U.S. Sugar Production, Consumption, Imports, and Carry-over Stock, 2010-2020 Average

	Average (2008-2010)	2010	2020	% Change (2008-10) to 2020
	----------1,000 metric tons----------			
Production	7,137	7,622	7,960	11.5
Beet	4,060	4,408	4,470	10.1
Cane	3,077	3,214	3,490	13.4
Net Imports	2,478	2,591	1,996	-19.5
Per capita Consumption	32	32	31	-3.1
Consumption	10,061	10,170	11,068	10.0
Carry-over Stocks	1,344	1,278	1,342	-0.0

Exporters

Figure 7 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 9.3% from 35.8 million metric tons in 2008-2010 to 39.2 million metric tons in 2020 (Table 3). Brazil's exports are predicted to increase from 24.2 million metric tons in 2008-2010 to 25.8 million metric tons in 2020. Its domestic consumption is predicted to increase by 13.6% from 11.8 million metric tons in 2008-2010 to 13.4 million metric tons in 2020. Much of the increase in consumption is due to ethanol production.

Thailand's exports are predicted to decrease by 5.3% from the 2008-2010 average of 5.3 million metric tons for the 2008-2010 average to 5.0 million metric tons in 2020 (Table 3). Consumption increases from 2.1 million metric tons for the 2008-2010 average to 2.4 million metric tons in 2020. Sugar production in the country also is predicted to increase by 5.6% from 7.0 million metric tons to 7.4 million metric tons in 2020.

Australia's exports are predicted to increase by 1.6% from the 2008-2010 average to 3.6 million metric tons in 2020 (Table 3). Production is predicted to increase by 5.8% from 4.7 million metric tons to 5.0 million metric tons in 2020. Sugar consumption is expected to increase by 11.8% from 1.3 million metric tons to 1.4 million metric tons in 2020.

Cuba's exports are predicted to decrease by 4.4% from the 2008-2010 level to 2020 (Table 3). It is predicted that Cuba will increase its sugar production by 5.0%, while consumption is predicted to increase by 3.8%. 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 10.6% from 5.3 million metric tons in 2008-2010 to 5.8 million metric tons in 2020. Mexico is expected to export 586 thousand metric tons by 2020, mainly to the United States under NAFTA. Sugar consumption is predicted to increase by 4.7% from 5.0 million metric tons in 2008-2010 to 5.2 million metric tons in 2020 under the assumption that Mexico does not convert to HFCS in their soft drink industry. Ending stocks are predicted to increase by 19.1%. 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 2.7% to 2.3 million metric tons in 2020. South Africa's exports are predicted to decrease 6.7% by 2020. Sugar consumption is predicted to increase by 2.9% and ending stocks are predicted to increase by 31.1%.

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 6.7% and 16.8%, respectively, for the 2010-2020 period. Major Asian importers are China and Indonesia and major African importers are Egypt and Algeria.

Canada's production is predicted to increase above the 2008-2010 average of 100 thousand metric tons to 127 thousand tons by the year 2020, and consumption is predicted to increase from 1.3 million metric tons to 1.5 million metric tons in 2020 (Table 4). As a result, Canada's imports are predicted to increase 8.6% from 1.3 million metric tons to 1.4 million metric tons in 2020.

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 1.4 million metric tons in 2010 to 2.0 million metric tons in 2020 (Figure 8). Sugar production in the EU is predicted to increase 2.6% and consumption is predicted to increase from 16.9 million metric tons for the 2008-2010 average to 17.6 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 (2008-2010)	2010	2020	% change (2008-10) to 2020
	----------1,000 metric tons--------			
Brazil				
Production	35,883	39,400	39,204	9.3
Net Exports	24,233	26,850	25,784	6.4
Consumption	11,817	12,000	13,421	13.6
Carry-over	(752)	(285)	361	NA
Thailand				
Production	7,000	6,870	7,389	5.6
Net Exports	5,298	4,700	5,020	-5.3
Consumption	2,100	2,200	2,361	12.4
Carry-over	1,833	1,456	1,519	-17.1
Australia				
Production	4,738	4,800	5,015	5.8
Net Exports	3,557	3,670	3,615	1.6
Consumption	1,250	1,250	1,397	11.8
Carry-over	331	331	279	-15.7
Cuba				
Production	1,180	1,100	1,239	5.0
Net Exports	538	390	514	-4.4
Consumption	703	700	730	3.8
Carry-over	211	150	115	-45.5
Mexico				
Production	5,275	5,450	5,832	10.6
Net Exports	611	713	586	-4.0
Consumption	4,998	4,735	5,233	4.7
Carry-over	857	975	1,021	19.1
South Africa				
Production	2,252	2,140	2,312	2.7
Net Exports	732	550	684	-6.7
Consumption	1,583	1,625	1,630	2.9
Carry-over	45	35	59	31.1

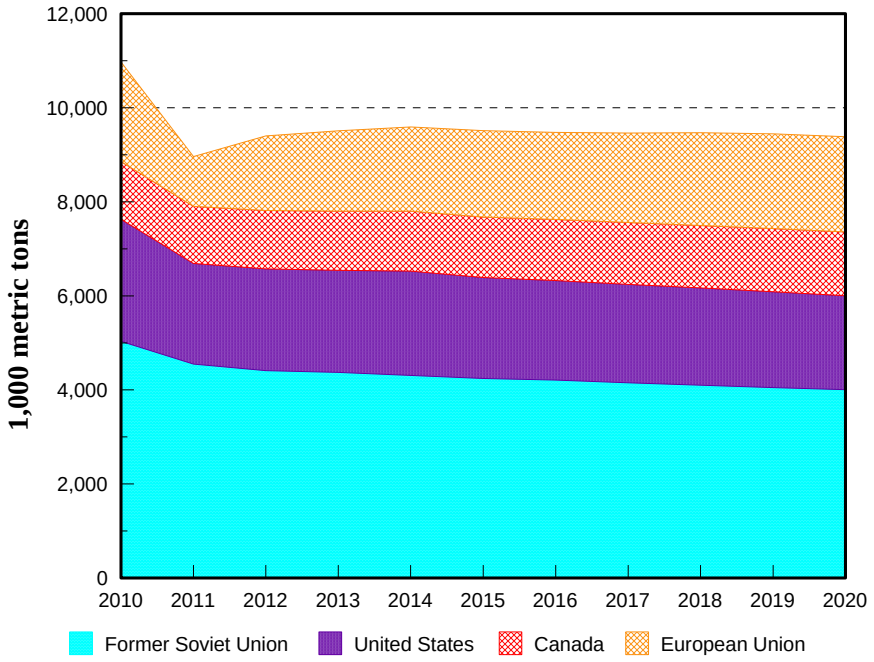


Figure 8. World Sugar Imports by Countries, Major Importers

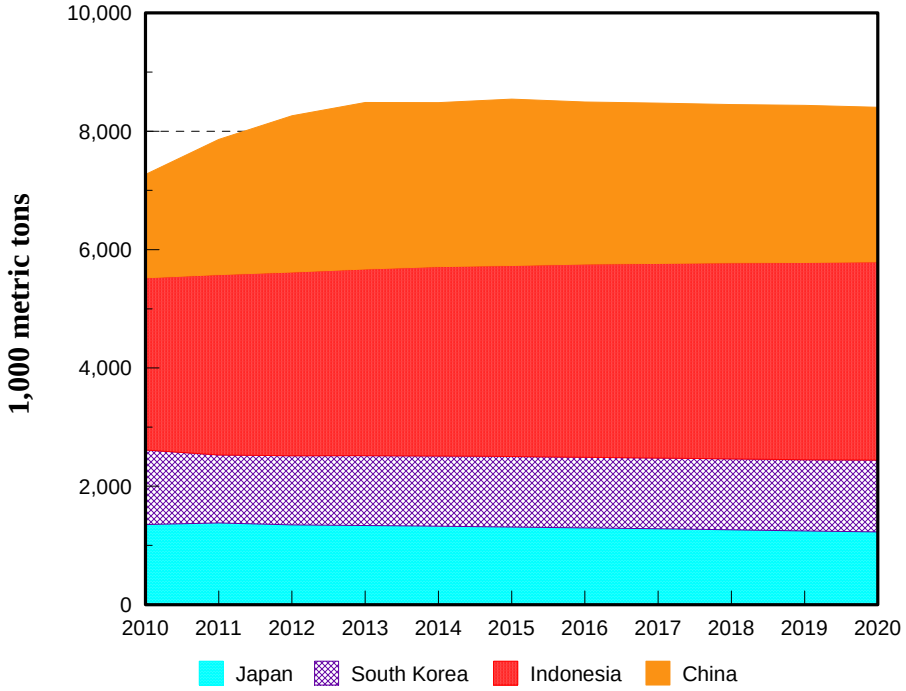


Figure 9. World Sugar Imports by Country, Asian Countries

The FSU's production is predicted to increase by 13.8% from the 2008-2010 average of 5.7 million metric tons to 6.5 million metric tons in 2020, and consumption is predicted to increase by 2.2% from 10.3 million metric tons to 10.5 million metric tons for the same period. Imports are predicted to decrease by 9.6% from the 2008-2010 average (Table 4).

China is expected to increase its imports by about 88.5% from 1.4 million metric tons in 2008-2010 to 2.6 million metric tons in 2020 (Table 4). China's production is predicted to

increase by 8.6% from 12.5 million metric tons for the 2008-2010 average to 13.6 million metric tons in 2020, and consumption is predicted to increase by 9.2% from 14.8 million metric tons to 16.2 million metric tons for the period.

India's production is predicted to increase by 35.6% from 20.7 million metric tons in 2008-2010 to 28.1 million metric tons in 2020. India's normal sugar production is between 24 to 28 million metric tons. Its crop in 2008 was only 16.0 million metric tons which lowered the 2008-2010 average.

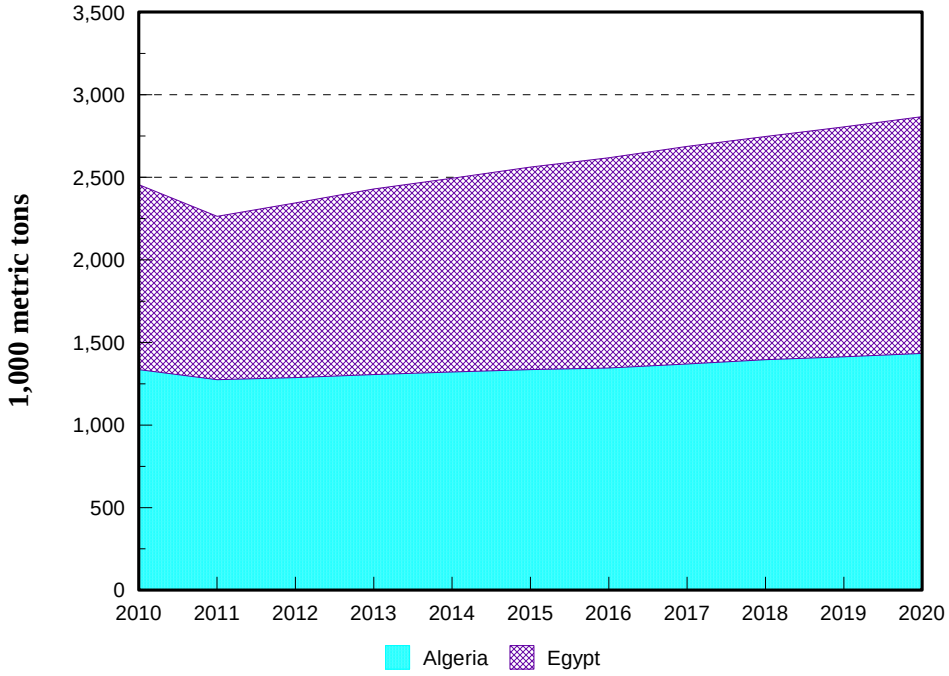


Figure 10. World Sugar Imports by Country, African Countries

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

	Average (2008-10)	2010	2020	% change (2008-10) to 2020
	----------1,000 metric tons----------			
Algeria				
Production	11	11	12	12.5
Net Imports	1,196	1,335	1,433	16.5
Consumption	1,267	1,300	1,444	14.0
Carry-over	88	65	66	-25.3
Canada				
Production	100	125	127	27.0
Net Imports	1,250	1,230	1,357	8.6
Consumption	1,343	1,350	1,482	10.3
Carry-over	361	366	340	-5.8
China				
Production	12,496	12,670	13,565	8.6
Net Imports	1,384	1,745	2,610	88.5
Consumption	14,797	15,100	16,151	9.2
Carry-over	2,300	1,215	1,463	-36.4
Egypt				
Production	1,754	1,830	1,997	13.9
Net Imports	1,193	1,120	1,434	20.2
Consumption	2,626	2,800	3,427	25.7
Carry-over	853	1,009	996	16.8
European Union				
Production	15,215	14,800	15,611	2.6
Net Imports	1,392	2,115	2,022	45.3
Consumption	16,857	17,000	17,630	4.6
Carry-over	2,299	2,290	2,353	2.3
Former Soviet Union				
Production	5,689	5,640	6,475	13.8
Net Imports	4,426	5,034	4,002	-9.6
Consumption	10,249	10,470	10,477	2.2
Carry-over	1,202	1,288	1,317	9.6
India				
Production	20,729	25,700	28,119	35.6
Net Imports	2,565	980	260	-89.9
Consumption	24,233	25,000	28,331	16.9
Carry-over	4,832	6,333	6,827	41.3
Indonesia				
Production	1,958	1,911	2,069	5.7
Net Imports	2,569	2,910	3,352	30.4
Consumption	4,600	4,900	5,422	17.8
Carry-over	387	371	370	-4.4
Japan				
Production	942	845	955	1.4
Net Imports	1,381	1,353	1,226	-11.2
Consumption	2,282	2,242	2,178	-4.6
Carry-over	444	461	447	0.8
Korea				
Production	0	0	0	NA
Net Imports	1,258	1,260	1,214	-3.5
Consumption	1,126	1,155	1,211	7.5
Carry-over	164	144	154	-6.1

Japan's imports are predicted to decrease by 11.2% from the 2008-2010 average of 1.4 million metric ton to 1.2 million metric tons in 2020, due to a slight decrease in domestic consumption (Table 4).

In South Korea, consumption is predicted to increase by 7.5% for the time period and its imports are predicted to decrease 3.5% 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 14.0% from 1.3 million metric tons in 2008-2010 to 1.4 million metric tons in 2020. The increase in consumption results in increasing imports from 1.2 million metric tons for the 2008-2010 average to 1.4 million metric tons in 2020.

Egypt's imports are predicted to increase by 20.2% from 1.2 million metric tons in 2008-2010 to 1.4 million metric tons in 2020, due mainly to increased consumption. Consumption is predicted to increase 25.7% from 2.6 million metric tons to 3.4 million metric tons in 2020.

Indonesia's imports are predicted to increase by 30.4% from 2.6 million metric tons in 2008-2010 to 3.4 million metric tons in 2020. Consumption is predicted to increase from 4.6 million metric tons for the 2008-2010 average to 5.4 million metric tons in 2020.

CONCLUDING REMARKS

This report provides an overview of the U.S. and world sugar markets for 2010-2020 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 19.9% from 34.5 million metric tons in 2010 to 37.9 million metric tons in 2020. The price of Caribbean sugar is expected to decrease from 27.3 cents/lb in 2010 to 18.4 cents/lb in 2020. The high sugar price is due mainly to low estimates of carry-over stocks for 2011 made in late 2010 and early 2011 and high energy prices. World sugar production increased 5.5% while consumption increased 2.6% in 2010.

Exports are predicted to increase in Brazil and Australia due mainly to production increases in those countries.

Imports by most importing countries are predicted to increase from the 2008-10 average to 2020. China's imports are predicted to increase by 88.5%, while Japan's imports are predicted to decrease by 11.2%. Imports by Egypt and Algeria are predicted to increase by 20.2% and 16.5%, respectively.

U.S. sugar consumption is predicted to increase by 10.0% for the forecasting period, while production is expected to increase by 10.1% for beet sugar and by 13.4% 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 17.7% 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 and 2010 will not be maintained. In late 2010, Caribbean sugar price increased to 36 cents/lb from a low of 20 cents/lb in early 2010. The price in early 2011 is about 35 cents/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

2011 Baseline Solution

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sugar Beets	56.56	44.00	46.21	45.01	44.12	44.49	44.93	45.49	45.73	45.79	45.76
Sugarcane	45.57	32.61	34.89	33.65	32.73	33.12	33.57	34.14	34.39	34.45	34.43

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Caribbean Price	27.03	16.66	18.00	17.50	16.96	17.37	17.74	18.20	18.40	18.45	18.43
TRQ Status	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota
Implicit Tariff	6.10	6.00	6.50	6.00	5.80	5.70	5.70	5.70	5.70	5.70	5.70
Import Price	33.13	22.66	24.50	23.50	22.76	23.07	23.44	23.90	24.10	24.15	24.13
Wholesale Price	42.55	31.56	33.49	32.44	31.67	31.99	32.38	32.86	33.07	33.12	33.10
Retail Price	65.66	50.75	53.37	51.95	50.89	51.33	51.86	52.52	52.80	52.87	52.84

United States - Area Harvested (1000 acres)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sugar Beets	1171	1157	1160	1160	1161	1168	1181	1197	1214	1231	1247
Sugarcane	881	871	873	872	871	874	880	888	896	904	912
Total Area	2053	2028	2033	2032	2031	2042	2060	2085	2110	2135	2159

United States - Yields (short tons/acre)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sugar Beets	27.60	25.37	25.52	25.61	25.77	25.86	25.92	25.98	26.14	26.22	26.29
Sugarcane	33.90	34.10	34.28	34.45	34.62	34.78	34.94	35.09	35.25	35.41	35.56

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sugar Beets	32331	29355	29608	29710	29907	30201	30603	31098	31734	32278	32782
Sugarcane	29873	29715	29926	30043	30140	30384	30731	31156	31593	32021	32436

United States - Sugar Extraction Rates (percent)

Variable	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sugar Beets	15.03	15.03	15.03	15.03	15.03	15.03	15.03	15.03	15.03	15.03	15.03
Sugarcane	11.86	11.86	11.86	11.86	11.86	11.86	11.86	11.86	11.86	11.86	11.86

United States - Sugar Production (1000 short tons)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Beet Sugar	4859	4412	4450	4465	4495	4539	4600	4674	4770	4851	4927
Cane Sugar	3543	3524	3549	3563	3575	3604	3645	3695	3747	3798	3847
All Sugar	8402	7936	7999	8028	8070	8143	8244	8369	8517	8649	8774

United States - Sugar Import Quotas (1000 short tons, raw value) and Tariffs (U.S. cents/pound, raw sugar, most countries)

Variable	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Tariff Rate Quota	1289	1383	1365	1392	1422	1370	1387	1387	1392	1392	1386
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)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
TRQ Status	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota
Implicit Tariff	6.10	6.00	6.50	6.00	5.80	5.70	5.70	5.70	5.70	5.70	5.70
Total Imports	3006	2582	2569	2577	2637	2552	2526	2492	2467	2435	2391
Quota-sugar Imports	1289	1383	1365	1392	1422	1370	1387	1387	1392	1392	1386
Other Sugar Imports	1255	1545	1199	1204	1184	1215	1182	1139	1104	1075	1043
Total Exports	150	224	185	181	190	186	193	187	188	189	189
Net Imports	2856	2358	2384	2395	2447	2366	2333	2305	2279	2246	2203

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	1503	1409	1408	1402	1411	1427	1437	1445	1451	1459	1469
Production	8110	7936	7999	8028	8070	8143	8244	8369	8517	8649	8774
Net Imports	2856	2358	2384	2395	2447	2366	2333	2305	2279	2246	2203
Consumption	11210	11362	11335	11492	11669	11745	11817	11883	11976	12084	12200
Carry-out Stocks	1409	1408	1402	1411	1427	1437	1445	1451	1459	1469	1479

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	73.99	74.34	73.52	73.90	74.40	74.26	74.10	73.90	73.87	73.94	74.05
Stocks/Consumption	12.57	12.39	12.36	12.28	12.23	12.24	12.23	12.21	12.19	12.15	12.13

Canada - Sugar Beet Area Harvested (1000 hectares), Yield (metric tons/hectare), and Production (1000 metric tons)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Area Harvested	23	24	23	23	22	22	22	22	22	22	22
Yield	47.60	47.40	47.96	48.36	48.79	49.22	49.64	50.07	50.49	50.92	51.35
Production	1109	1121	1090	1093	1095	1098	1105	1111	1116	1120	1123

Canada - Sugar Beet Exogenous Variables

Variable	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	361	366	352	348	348	347	343	342	342	340	339
Production	125	127	123	123	124	124	125	126	126	127	127
Net Imports	1230	1214	1243	1262	1275	1285	1298	1316	1326	1341	1357
Imports	1300	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Exports	70	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1350	1354	1370	1385	1400	1412	1425	1441	1454	1469	1482
Carry-out Stocks	366	352	348	348	347	343	342	342	340	339	340

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	39.41	39.23	39.37	39.49	39.60	39.66	39.72	39.88	39.94	40.05	40.15
Stocks/Consumption	27.11	25.97	25.39	25.13	24.77	24.32	23.97	23.70	23.38	23.07	22.93

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Area Harvested	625	626	627	628	630	631	633	635	637	639	641
Yield	74.00	74.12	74.35	74.61	74.88	75.15	75.42	75.69	75.96	76.23	76.50
Production	46250	46362	46623	46889	47148	47440	47747	48065	48384	48699	49012

Mexico - Sugar Extraction Rates (percent)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sugarcane	11.80	11.90	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)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	973	975	960	953	953	957	963	972	983	995	1008
Production	5450	5517	5548	5580	5611	5645	5682	5720	5758	5795	5832
Net Imports	-713	-827	-811	-801	-795	-780	-739	-696	-662	-623	-586
Exports	938	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	225	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	4735	4706	4743	4778	4812	4860	4934	5012	5083	5159	5233
Carry-out Stocks	975	960	953	953	957	963	972	983	995	1008	1021

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	40.52	39.83	39.71	39.57	39.43	39.41	39.60	39.83	40.00	40.21	40.41
Stocks/Consumption	20.59	20.40	20.10	19.95	19.89	19.81	19.70	19.61	19.57	19.54	19.51

Algeria - Sugar Beet Area Harvested (1000 hectares), Yield (metric tons/hectare), and Production (1000 metric tons)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Area Harvested	7	7	7	7	7	7	7	7	7	7	7
Yield	20	20	20	20	21	21	21	21	21	21	21
Production	146	151	152	152	153	153	153	154	154	155	155

Algeria - Sugar Extraction Rates (percent)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	30	65	63	62	62	63	63	64	64	65	65
Production	11	11	11	11	11	11	11	11	11	11	12
Net Imports	1335	1274	1286	1305	1321	1336	1345	1370	1396	1413	1433
Exports	40	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1375	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1300	1287	1298	1317	1332	1347	1355	1381	1407	1424	1444
Carry-out Stocks	65	63	62	62	63	63	64	64	65	65	66

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	34.69	33.94	33.84	33.93	33.93	33.93	33.77	34.05	34.32	34.38	34.54
Stocks/Consumption	5.00	4.91	4.79	4.73	4.71	4.69	4.69	4.64	4.60	4.59	4.56

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Area Harvested	422	423	418	416	416	416	417	418	419	420	421
Yield	86	86	86	87	87	87	88	88	89	89	90
Production	36081	36257	35995	36057	36199	36383	36621	36882	37157	37434	37708

Australia - Sugar Extraction Rate (percent)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	313	193	251	254	258	260	263	267	270	274	277
Production	4800	4822	4787	4796	4814	4839	4871	4905	4942	4979	5015
Net Exports	3670	3510	3513	3505	3509	3519	3534	3552	3569	3593	3615
Exports	3750	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	80	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1250	1254	1271	1288	1302	1317	1334	1350	1369	1383	1397
Carry-out Stocks	193	251	254	258	260	263	267	270	274	277	279

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	59.84	59.34	59.45	59.58	59.60	59.62	59.74	59.86	60.08	60.10	60.12
Stocks/Consumption	15.44	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)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	-835	-285	352	371	366	366	365	364	363	363	362
Production	39400	36929	37323	37550	37787	38023	38259	38496	38732	38968	39204
Net Exports	26850	24064	24922	25049	25170	25231	25336	25445	25555	25669	25784
Exports	26850	#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	12000	12228	12383	12506	12617	12794	12924	13052	13177	13300	13421
Carry-out Stocks	-285	352	371	366	366	365	364	363	363	362	361

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	60.36	60.80	60.88	60.82	60.72	60.94	60.95	60.96	60.97	60.98	60.98
Stocks/Consumption	-2.38	2.88	2.99	2.93	2.90	2.85	2.82	2.78	2.75	2.72	2.69

China - Area Harvested (1000 hectares)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sugar Beets	230	228	231	225	233	225	231	229	232	232	233
Sugarcane	1810	1817	1784	1782	1785	1791	1800	1810	1820	1830	1840
Total Area	2040	2045	2015	2007	2019	2015	2031	2039	2052	2062	2073

China - Yields (metric tons/hectare)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sugar Beets	38.00	38.18	38.38	38.58	38.79	39.00	39.33	39.63	39.93	40.23	40.51
Sugarcane	71.00	71.68	72.24	72.72	73.13	73.49	73.82	74.11	74.38	74.64	74.89

China - Production (1000 metric tons)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sugar Beets	9450	8698	8867	8666	9052	8776	9100	9091	9279	9320	9426
Sugarcane	128510	130272	128856	129589	130553	131590	132836	134107	135383	136608	137791

China - Sugar Extraction Rates (percent)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	1900	1215	1117	1105	1192	1240	1305	1346	1377	1403	1438
Production	12670	12803	12690	12737	12864	12931	13078	13193	13329	13446	13565
Beet Sugar	950	883	900	880	919	891	924	923	942	946	957
Cane Sugar	11720	11920	11790	11857	11946	12040	12155	12271	12388	12500	12608
Net Imports	1745	2288	2640	2816	2768	2811	2737	2711	2673	2655	2610
Exports	55	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1800	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	15100	15189	15342	15466	15584	15677	15774	15873	15977	16065	16151
Carry-out Stocks	1215	1117	1105	1192	1240	1305	1346	1377	1403	1438	1463

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	11.17	11.18	11.24	11.27	11.31	11.33	11.35	11.38	11.42	11.45	11.48
Stocks/Consumption	8.05	7.35	7.20	7.71	7.96	8.32	8.53	8.67	8.78	8.95	9.06

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Area Harvested	370	371	345	349	349	349	352	355	357	360	361
Yield	29	30	31	32	32	32	32	33	33	33	33
Production	10730	11248	10717	11006	11131	11226	11389	11548	11713	11856	11984

Cuba - Sugar Extraction Rate (percent)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	140	150	158	154	152	150	145	139	131	125	120
Production	1100	1163	1108	1138	1151	1161	1178	1194	1211	1226	1239
Net Exports	390	473	436	452	450	460	475	489	500	508	514
Consumption	700	682	676	689	703	706	709	713	717	723	730
Carry-out Stocks	150	158	154	152	150	145	139	131	125	120	115

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	59.63	57.96	57.33	58.35	59.40	59.60	59.74	60.00	60.30	60.72	61.31
Stocks/Consumption	21.43	23.18	22.81	21.99	21.29	20.48	19.57	18.43	17.45	16.60	15.77

Egypt - Area Harvested (1000 hectares)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sugar Beets	99	98	98	98	98	99	99	99	100	100	100
Sugarcane	125	125	125	125	125	126	127	128	129	131	132
Total Area	224	223	222	223	224	225	226	227	229	231	233

Egypt - Yields (metric tons/hectare)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sugar Beets	60.00	59.34	59.93	60.16	60.50	60.80	61.11	61.42	61.73	62.04	62.35
Sugarcane	101.50	101.63	101.84	102.13	102.46	102.85	103.28	103.75	104.24	104.76	105.31

Egypt - Production (1000 metric tons)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sugar Beets	5940	5831	5863	5890	5947	5996	6050	6104	6158	6211	6265
Sugarcane	12688	12673	12697	12756	12846	12965	13111	13282	13476	13692	13928

Egypt - Sugar Extraction Rates (percent)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	859	1009	1009	1000	994	991	989	989	990	991	994
Production	1830	1833	1839	1848	1863	1880	1899	1920	1944	1969	1997
Beet Sugar	755	743	748	751	758	765	771	778	785	792	799
Cane Sugar	1075	1090	1092	1097	1105	1115	1128	1142	1159	1178	1198
Net Imports	1120	989	1059	1125	1173	1226	1273	1317	1351	1393	1434
Exports	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1120	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	2800	2822	2908	2978	3040	3107	3172	3237	3294	3360	3427
Carry-out Stocks	1009	1009	1000	994	991	989	989	990	991	994	996

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	35.23	34.82	35.18	35.35	35.42	35.56	35.66	35.76	35.79	35.92	36.05
Stocks/Consumption	36.04	35.74	34.39	33.38	32.60	31.83	31.18	30.58	30.10	29.57	29.07

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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

European Union - Sugar Beet Area Harvested (1000 hectares), Yield (metric tons/hectare), and Production (1000 metric tons)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Area Harvested	1900	1850	1796	1791	1784	1778	1775	1774	1772	1770	1767
Yield	56.00	56.22	56.40	56.56	56.71	56.87	57.02	57.18	57.33	57.48	57.64
Production	106400	104018	101294	101273	101196	101089	101230	101406	101611	101759	101867

European Union - Sugar Extraction Rates (percent)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	2375	2290	2291	2297	2309	2319	2323	2327	2333	2343	2350
Production	14800	15934	15525	15522	15510	15494	15515	15542	15572	15595	15611
Net Exports	-2115	-1059	-1585	-1705	-1789	-1838	-1853	-1900	-1976	-2016	-2022
Exports	1460	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	3575	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	17000	16993	17103	17214	17289	17328	17365	17435	17539	17604	17630
Carry-out Stocks	2290	2291	2297	2309	2319	2323	2327	2333	2343	2350	2353

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	47.03	46.93	47.15	47.38	47.51	47.54	47.57	47.70	47.93	48.06	48.10
Stocks/Consumption	13.47	13.48	13.43	13.42	13.41	13.40	13.40	13.38	13.36	13.35	13.35

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	4653	6333	6407	6445	6497	6558	6603	6647	6689	6733	6780
Production	25700	25276	25252	25631	26022	26328	26688	27076	27379	27735	28119
Net Exports	-980	-146	-479	-457	-413	-425	-395	-332	-358	-325	-260
Exports	20	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1000	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	25000	25349	25694	26036	26374	26708	27039	27367	27692	28013	28331
Carry-out Stocks	6333	6407	6445	6497	6558	6603	6647	6689	6733	6780	6827

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	19.99	20.00	20.00	20.01	20.01	20.02	20.02	20.03	20.03	20.04	20.04
Stocks/Consumption	25.33	25.27	25.08	24.95	24.87	24.72	24.58	24.44	24.31	24.20	24.10

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Area Harvested	380	381	375	373	372	372	373	374	376	378	380
Yield	63.00	63.52	64.02	64.52	65.02	65.52	66.02	66.52	67.02	67.52	68.02
Production	23940	24188	24036	24059	24183	24364	24609	24892	25204	25531	25868

Indonesia - Sugar Extraction Rate

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	450	371	375	375	374	374	374	373	372	371	370
Production	1911	1935	1923	1925	1935	1949	1969	1991	2016	2043	2069
Net Imports	2910	3044	3105	3155	3197	3232	3262	3288	3311	3332	3352
Exports	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	2910	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A

Consumption	4900	4975	5028	5080	5132	5182	5231	5280	5328	5375	5422
Carry-out Stocks	371	375	375	374	374	374	373	372	371	370	370

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	20.41	20.50	20.50	20.51	20.51	20.51	20.51	20.51	20.51	20.51	20.51
Stocks/Consumption	7.57	7.54	7.45	7.37	7.30	7.21	7.13	7.04	6.97	6.89	6.82

Japan - Area Harvested (1000 hectares)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sugar Beets	76	77	78	78	79	80	80	80	80	79	78
Sugarcane	17	17	17	17	17	18	18	18	18	17	17
Total Area	93	94	95	96	97	97	98	98	97	97	95

Japan - Yields (metric tons/hectare)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sugar Beets	51.50	52.17	52.68	53.11	53.52	53.91	54.29	54.67	55.04	55.42	55.79
Sugarcane	58.00	60.78	60.60	60.66	60.70	60.75	60.79	60.83	60.88	60.92	60.96

Japan - Production (1000 metric tons)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Sugar Beets	3914	4008	4089	4168	4240	4303	4352	4382	4393	4390	4375
Sugarcane	957	1020	1033	1049	1062	1072	1077	1075	1067	1056	1042

Japan - Sugar Extraction Rates (percent)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	505	461	449	442	439	439	439	439	440	442	444
Production	845	883	900	917	932	945	955	960	962	960	955
Beet Sugar	735	759	775	789	803	815	824	830	832	831	829
Cane Sugar	110	124	125	127	129	130	131	130	129	128	126
Net Imports	1353	1378	1346	1333	1326	1312	1299	1281	1261	1243	1226
Exports	2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1355	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	2242	2272	2253	2252	2258	2257	2254	2240	2221	2201	2178
Carry-out Stocks	461	449	442	439	439	439	439	440	442	444	447

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	17.73	18.02	17.92	17.97	18.08	18.15	18.20	18.17	18.11	18.04	17.96
Stocks/Consumption	20.56	19.76	19.61	19.50	19.43	19.43	19.49	19.65	19.90	20.19	20.53

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	164	144	135	134	139	142	144	146	147	149	152

Net Imports	1260	1151	1168	1181	1190	1188	1194	1195	1203	1207	1214
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	1160	1170	1176	1186	1186	1192	1194	1202	1204	1211
Carry-out Stocks	144	135	134	139	142	144	146	147	149	152	154

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	23.31	23.36	23.51	23.59	23.74	23.71	23.80	23.81	23.93	23.96	24.09
Stocks/Consumption	12.47	11.66	11.44	11.78	12.00	12.17	12.25	12.34	12.41	12.61	12.74

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Area Harvested	280	280	281	283	286	288	291	292	293	293	295
Yield	69.00	69.46	69.61	69.76	69.91	70.06	70.21	70.36	70.51	70.56	70.71
Production	19320	19477	19572	19748	19964	20208	20401	20566	20643	20709	20886

South Africa - Sugar Extraction Rates (percent)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	70	35	34	43	45	49	50	52	55	58	61
Production	2140	2156	2167	2186	2210	2237	2258	2277	2285	2293	2312
Net Exports	550	534	542	574	604	638	653	664	667	666	684
Exports	800	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	250	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1625	1623	1616	1610	1601	1598	1603	1609	1615	1623	1630
Carry-out Stocks	35	34	43	45	49	50	52	55	58	61	59

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	35.99	36.02	36.02	36.04	36.01	36.01	36.07	36.18	36.27	36.41	36.54
Stocks/Consumption	2.15	2.13	2.67	2.78	3.09	3.12	3.25	3.41	3.57	3.76	3.63

Former Soviet Union - Sugar Beet Area Harvested (1000 hectares), Yield (metric tons/acre), and Production (1000 metric tons)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Area Harvested	2400	2534	2571	2609	2636	2656	2675	2694	2713	2732	2748
Yield	20.50	20.11	20.05	20.07	20.22	20.23	20.18	20.19	20.24	20.31	20.38
Production	49200	50951	51567	52359	53293	53724	53977	54403	54928	55474	56011

Former Soviet Union - Sugar Extraction Rates (percent)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	1082	1288	1320	1311	1320	1339	1343	1339	1329	1321	1317

Production	5640	5890	5961	6053	6161	6210	6240	6289	6350	6413	6475
Net Imports	5034	4549	4409	4369	4306	4243	4209	4152	4099	4050	4002
Exports	697	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	5731	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	10470	10406	10379	10413	10447	10449	10452	10451	10457	10466	10477
Carry-out Stocks	1288	1320	1311	1320	1339	1343	1339	1329	1321	1317	1317

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	35.76	35.59	35.53	35.69	35.85	35.90	35.96	36.01	36.09	36.18	36.28
Stocks/Consumption	12.30	12.69	12.64	12.68	12.82	12.85	12.81	12.72	12.63	12.59	12.57

Thailand - Sugar Cane Area Harvested (1000 hectares), Yield (metric tons/hectare), and Production (1000 metric tons)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Area Harvested	1114	1113	1113	1113	1113	1113	1113	1114	1115	1115	1116
Yield	56.00	56.01	56.35	56.80	57.27	57.76	58.24	58.73	59.22	59.71	60.20
Production	62384	62330	62715	63213	63724	64270	64836	65420	66006	66590	67174

Thailand - Sugar Extraction Rates (percent)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
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)

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Carry-in Stocks	1486	1456	1455	1458	1464	1473	1480	1488	1495	1503	1511
Production	6870	6856	6899	6953	7010	7070	7132	7196	7261	7325	7389
Net Exports	4700	4677	4691	4722	4753	4796	4840	4886	4933	4972	5020
Exports	4700	#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	2200	2181	2205	2225	2248	2266	2285	2303	2320	2344	2361
Carry-out Stocks	1456	1455	1458	1464	1473	1480	1488	1495	1503	1511	1519

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Per Capita Consumption	31.98	31.50	31.65	31.76	31.91	31.98	32.08	32.17	32.26	32.45	32.54
Stocks/Consumption	66.18	66.71	66.14	65.80	65.50	65.33	65.13	64.95	64.77	64.47	64.35

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Net Exports	-13535	-14638	-14211	-13998	-14068	-14157	-14373	-14559	-14644	-14815	-15085

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

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
0	27.03	16.66	18.00	17.50	16.96	17.37	17.74	18.20	18.40	18.45	18.43
$/ton	595.90	367.29	396.83	385.81	373.90	382.94	391.10	401.24	405.65	406.75	406.31

World Exp	50408	48722.2	49126.4	49101.3	49349.3	49580.3	49949.6	50291.1	50531.8	50845.7	51286.7
World Imp											