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2013 Outlook of the U.S. and World Sugar Markets, 2012-2022

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ABSTRACT

This report evaluates the U.S. and world sugar markets for 2012-2022 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 improve over the next ten years. Sugar prices increased from 18.7 cents/ lb in 2009 to 27 cents/lb in 2010 and 32 cent/lb in 2011 before falling to 18.3 cents/lb in early 2013. World sugar production remained the same in 2012 while consumption increased. World demand for sugar is expected to be strong during the next few years, resulting in world sugar prices recovering from the lows in 2013 and 2014. Sugar prices are expected to increase near the 25-26 cents/lb by 2022. The U.S. wholesale price of sugar is projected to increase from the low 33 cents/lb in 2013 to near 40 cents/lb by 2022. It is projected that Mexican exports to the United States will continue to be near the 1.2 million metric tons per year. 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 18.3% from 55.1 million metric tons to 65.2 million metric tons between 2012 and 2022. Brazil's exports are projected to increase from 25.1 million metric tons in 2012 to 33.4 million metric tons in 2022 even though Brazil uses a substantial amount of sugar cane for ethanol production. World sugar prices are projected to decrease from $0.23/lb in 2012 to $0.18/lb in 2013 before increasing slowly to $0.26/lb in 2022. U.S. wholesale sugar price is projected to decrease from $0.49/lb in 2012 to $0.39/lb in 2022. Recent world carryover stocks were as low as 19% of consumption in 2009, but increased by almost 24% in 2012. The increase in carry-over stocks have reduced world sugar prices.

U.S. sugar imports are predicted to decrease by 14.1% over the 2012-2022 period compared to the recent average import. U.S. sugar production is projected to increase by 13.8% between 2012 and 2022. U.S. sugar consumption is projected to increase by 11.0% and ending stocks are predicted to increase 14.2%. However, the U.S. sugar industry could face some uncertainty, mainly because of recent increases in sugar imports from Mexico.

Brazil's production is expected to increase by 25.3% from the 2010-2012 average of 37.3 million metric tons to 46.8 million metric tons in 2022. Exports could increase by 32.7% to 33.4 million metric ton in 2022, while consumption increases by 14.0%.

Canada's production is predicted to increase slightly between 2012 and 2022. Canada's imports are expected to increase by 6.6%. Consumption is predicted to increase 7.4% and ending stocks are predicted to increase by 8.6%.

Mexico's production is expected to increase by 16.8%, and exports are expected to increase slightly from the 2010-2012 average due to increases in its exports to the United States.

The European Union (EU) is expected to remain as an importer due to the EU-27 sugar policy reform. Their production is predicted to increase by 1.1%, while consumption will increase by 4.6%.

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

Most importing countries, except for Japan, China and the FSU are predicted to increase their imports for the 2012-2022 time period.

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INTRODUCTION

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

During late 2005 and the first quarter of 2006, world sugar price increased from about $0.12/lb to over $0.18/lb because of increased use of sugarcane for ethanol production in Brazil. World sugar price fell to $0.12/lb in late 2006 and $0.11/lb by early 2007 due to increased production in other exporting nations. The yearly average price was $0.187/lb in 2009 and increased to $0.27/lb in 2010 and increased further to $0.32 in 2011. The stocks to use ratio has varied between 34% in 1968 and 17% in 2010. The ICE (Intercontinental Exchange) No. 11 price follows an opposite relationship with the stocks to use ratio, ie, when the stocks to use ratio is high (low), prices are low (high). The recent decrease in the stocks to use ratio increased sugar price from $0.08/ lb in 2000 to $0.27/lb in 2010. Similar price increases occurred in 1974-1975 and 1980-1981. However the current stocks to use ratio of 23.4% which has increased substantially since 2009, lowered the price of sugar. In late 2012 and early 2013, ICE No. 11 sugar price dropped to $18.33/lb.

This report evaluates the U.S. and world sugar industry for 2012-2022 using the Global Sugar Policy Simulation Model developed by Benirschka et al. (1996). This model was run utilizing the 2012 data. The outlook projection is based on an assumption that farm and trade policies adopted by sugar exporting and importing countries remain unchanged for the 2012-2022 time period.

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

Raw sugar and refined sugar are two different products. They are both traded internationally. Beet sugar producing countries export refined sugar, while cane sugar producing countries export either raw or refined sugar. In recent years, the share of raw sugar in total sugar exports has been about 60%.

OVERVIEW OF THE WORLD SUGAR INDUSTRY AND SUGAR POLICIES

For the 2008-2012 period, annual global sugar production was approximately 161 million metric tons with about 33% of production exported from exporting countries. The largest sugar producing region is Brazil, followed by the India and the EU (Table 1).

Table 1. World Sugar Supply and Utilization, 2008 to 2012 Average

Country/ Region	Beet/ Cane	Consumption	Production	Net Exports	Ending Stocks	Per Capita Consumption
		----------1,000 metric tons, raw value----------				Kg
Algeria	B	1,301	4	(1,352)	53	35
Australia	C	1,311	4,283	3,037	246	63
Brazil	C	11,730	36,050	24,260	(405)	60
Canada	B	1,156	98	(1,127)	228	34
China	B/C	14,520	12,573	(2,122)	3,241	11
Cuba	C	676	1,312	638	104	58
European Union	B	17,592	16,208	(1,633)	2,731	49
Egypt	B/C	2,795	1,850	(868)	372	35
Former Soviet Union	B/C	10,272	6,835	(2,660)	1,617	35
India	C	23,800	23,518	757	6,443	19
Indonesia	C	4,870	1,921	(2,941)	530	20
Japan	B/C	2,044	808	(1,255)	530	16
Korea	-	1,269	0	(1,293)	462	26
Mexico	C	4,828	5,446	798	898	41
South Africa	C	1,643	2,148	466	169	37
Thailand	C	2,344	8,792	6,366	2,853	34
Columbia	C	1,654	2,294	601	384	37
Guatemala	C	749	2,329	1,683	258	35
Pakistan	C	4,245	4,006	(266)	1,100	23
United States	B/C	11,487	8,458	(2,589)	1,863	34
Rest of World	B/C	37,312	21,792	14,230	9,185	19
World	B/C	157,598	160,725	52,836	32,862	21

Source: USDA-FAS, PS&D website.

Per capita sugar consumption was highest in Australia followed by Brazil and Cuba. Brazil converts a substantial portion of sugar cane into ethanol. Per capita sugar consumption in the United States was 34 kg, which is above world average per capita consumption (21 kg). Per capita sugar consumption was lowest in China at 11 kg per capita, but that may increase substantially as per capita income increases. Annual global sugar consumption for the 2008-2012 period was 158 million metric tons.

The major sugar exporting countries were Brazil, Thailand, Australia, and Guatemala. These countries accounted for 67% of global exports from 2008 to 2012. A relatively few number of countries dominate world sugar exports, but imports are less concentrated. Major importing countries were the Former Soviet Union (FSU), the United States, Indonesia, Korea, Canada, Algeria, China, the EU, and Japan. Imports by these countries accounted for about 34% of all sugar imports from 2008 to 2012.

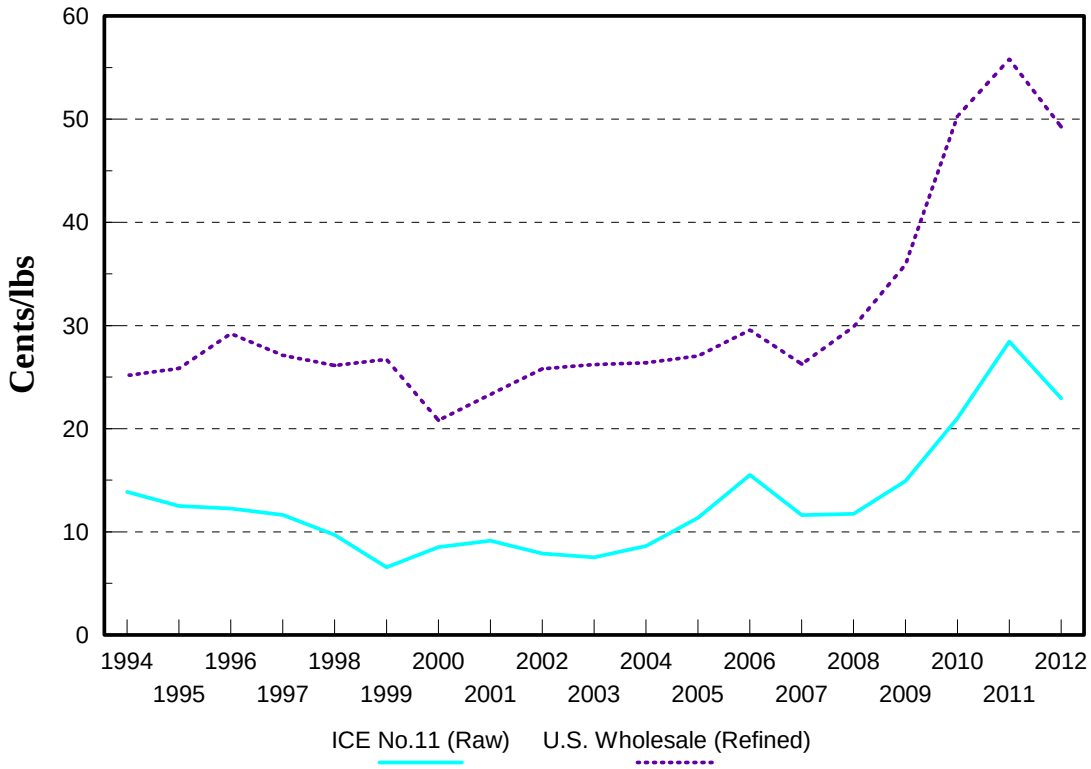


Figure 1. U.S. and World Sugar Prices

The ICE No.11 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 sugar and the world market price. Over the last decade, U.S. wholesale prices fluctuated between $0.22 and $0.47/lb. World market prices ranged between $0.06/lb. and $0.28/lb (Figure 1). Figure 1 shows the dramatic price increase in world sugar price in late 2008 and 2009. 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. World sugar price increased to $0.16 in 2009, $0.22 in 2010 and $0.32 in 2011. The high world sugar price also increased the U.S. wholesale price to $0.30/lb in 2006, falling to $0.26/lb in 2007, before increasing to $0.28/lb in 2008, $0.34 in 2009 and $.0.43 in 2010. U.S. wholesale prices peaked in 2011 at $0.56/lb before falling to $0.49/lb in 2012. However, in late 2012 and early 2013 U.S. wholesale prices for refined beet sugar fell to $0.276/lb.

Figure 2 shows the relationship between world stocks to use ratio and the world raw sugar price. The correlation between the two series is -0.52 indicating that there is a strong negative correlation between them. The stocks to use ratio has fallen from 31% in 2000 to 17% in 2010. That decrease has increased price from $0.075/lb in 2000 to $0.33/lb in 2011. However that ratio increased to 23% in 2012 which explains the current decrease in sugar prices. Predicted carry-over stocks for 2013 are higher than in 2012, which will continue to pressure prices in the near term.

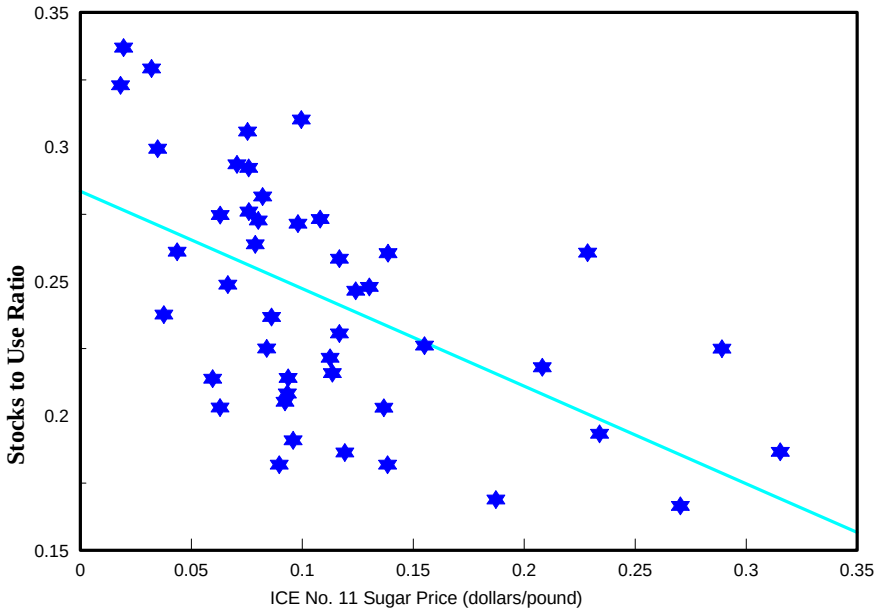


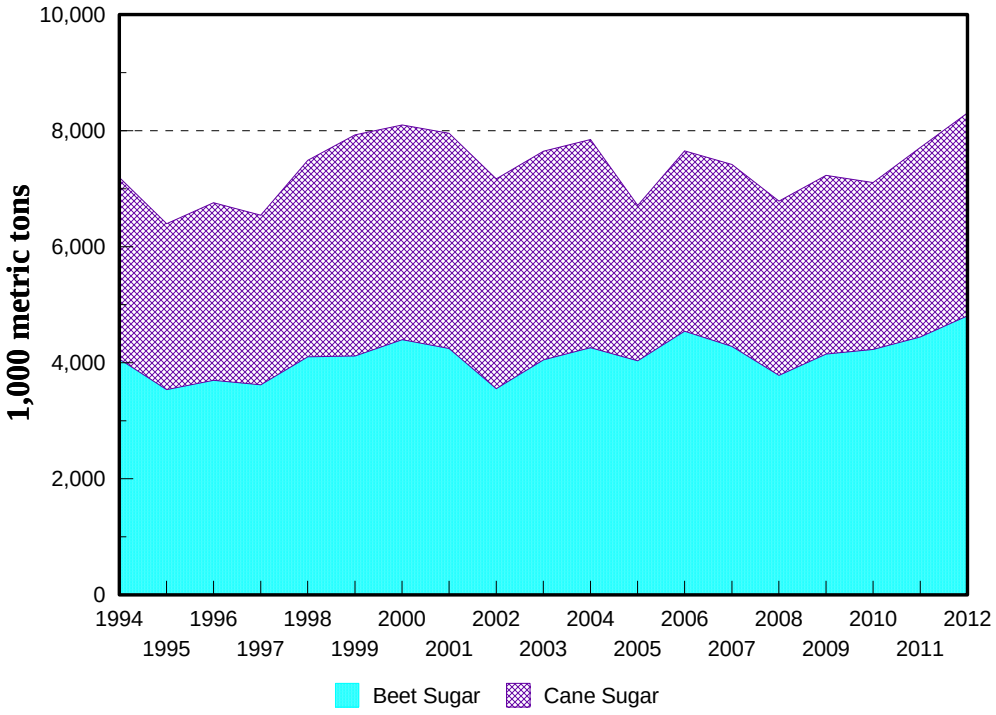
Figure 2. World Stocks to Use Ratio and ICE No. 11 Raw sugar Prices, 1967-2012

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 world price of sugar in 2005 and 2006 is mainly because Brazil increased the production of ethanol from sugar cane. However, the price dropped in 2007 because of increased production of sugar from sugarcane in response to higher sugar prices in 2005 and 2006.

The United States produces both beet and cane sugar. Cane sugar is produced mainly in Florida, Louisiana, and Texas. Beet sugar is produced largely in the Great Lakes region, Upper Midwest, Great Plains, and far western states. Beet sugar production increased by 15% from 1994 to 2012, while cane sugar production increased slightly (Figure 3). U.S. total sugar production increased about 13% from 7.2 million metric tons in 1994 to 8.3 million metric tons in 2012 (Figure 4).

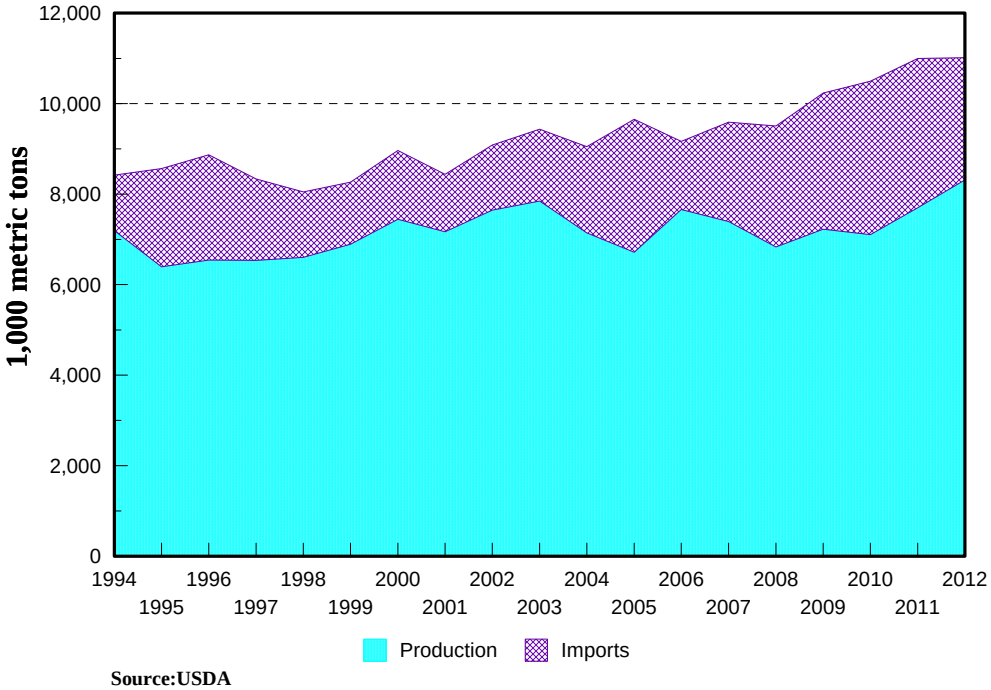
U.S. consumption of sugar increased by 20.6% from about 8.5 million metric tons in 1994 to 10.7 million metric tons in 2012 (Figure 5). The balance was imported from more than 40 countries. U.S. sugar imports decreased 71% from 4.5 million metric tons in 1974 to 1.3 million metric tons in 1987 and then increased to an average of 2.1 million metric tons during the 1994 to 2012 period. Under the North American Free Trade Agreement (NAFTA), Mexico currently is allowed to export unlimited quantities of sugar to the United States. Mexico exported 732 thousand metric tons of
sugar into the United States in 2009 and 1,549 thousand metric tons of sugar into the United States in 2010, 972 thousand metric tons in 2011 and 1,442 thousand metric tons in 2012. The U.S.-Central American Free Trade Agreement (CAFTA), which is a free trade agreement (FTA) currently with six Central American countries, provides additional sugar imports of 107,000

metric tons, with additional increases of 3,000 metric tons per year.



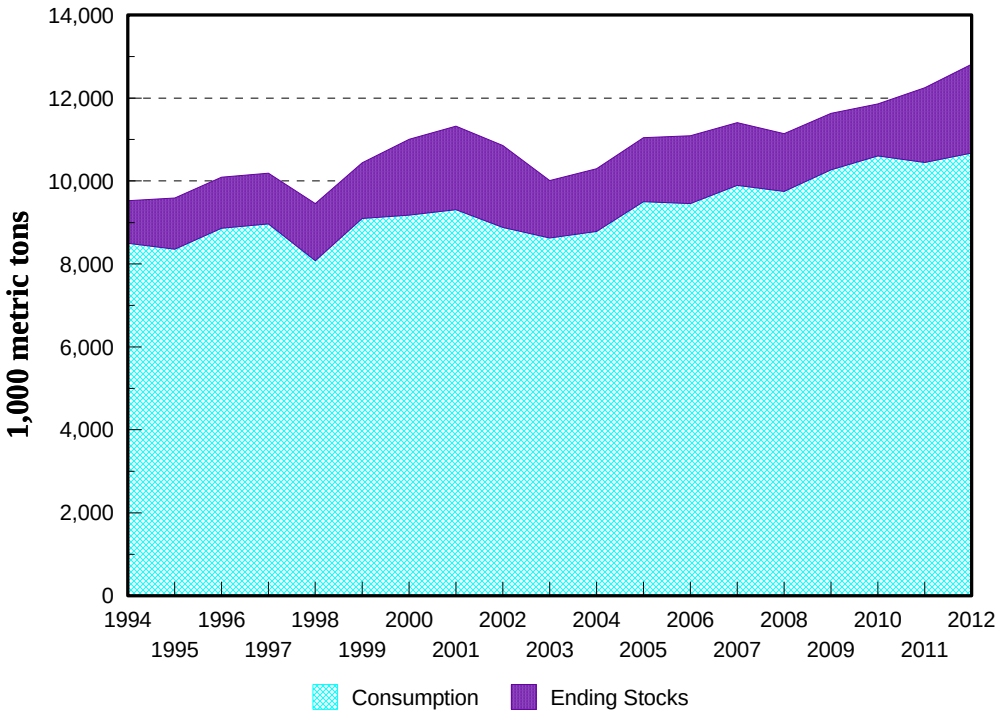
Source: USDA

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



Source:USDA

Figure 4. U.S. Sugar Production and Imports



Source:USDA

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

U.S. Sugar Programs and Policies

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

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

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

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

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

NAFTA allowed a rapid reduction in the second-tier duty for Mexican sugar over the past several years. This implies that Mexico is in a unique position to increase its exports of sugar to the United States above the allocated quota. Mexico is replacing sugar with High Fructose Corn Sweetener (HFCS) in their beverages. Mexico gained unlimited duty-free access to the U.S. sugar market on January 1, 2009. In 2009 before conversion, Mexico consumed 5.3 million metric tons of sugar. In 2012, that dropped to 4.4 million metric tons of sugar. HFCS consumption increased from 653 thousand tons in 2009 to 1.7 million metric tons in 2012.

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

Domestic and Export Subsidies in South Africa and Mexico

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

Brazilian Production and Exports

Brazil is the largest sugar producing country in the world. The production of sugar has increased 352% since 1990. About 54% of Brazilian sugar cane is converted into ethanol for fuel. The USDA does not record sugar cane that is converted into ethanol in the production and consumption data. The only source for that information is through the Global Agricultural

Information Network (GAIN) of the USDA. Exports have risen from 1.2 million metric tons in 1990 to 25.0 million metric tons in 2012. Sugar that is converted into ethanol is subsidized at prices higher than the world price. Recent increases in the world oil price has increased the price of ethanol which in turn increased Brazil's conversion of sugar into ethanol, reducing potential sugar exports from Brazil. That reduction in the growth of sugar exports could be one of the main forces for world sugar price increases. Brazil decreased its exports by 7.8% in 2011 which provided strength for sugar prices in 2011 but increased exports in 2012.

Sugar Exports in Australia, China, and India

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

OUTLOOK FOR THE WORLD SUGAR INDUSTRY

Total world sugar trade is projected to increase by 18.3%, from 55.1 to 65.2 million metric tons over the 2012-2022 period. Most exporting countries will increase their sugar exports for the same period. Exports will increase 33.0% for Brazil, and 13.0% for Australia. Exports are also expected to increase for Cuba (28%), Mexico (39%), and Thailand (11%) during the same time period. World sugar price, referred to as the ICE No. 11 price of sugar, is projected to decrease from $0.229/lb in 2012 to $0.185/lb in 2013 before slowly increasing to $0.258 in 2022 (Figure 6).

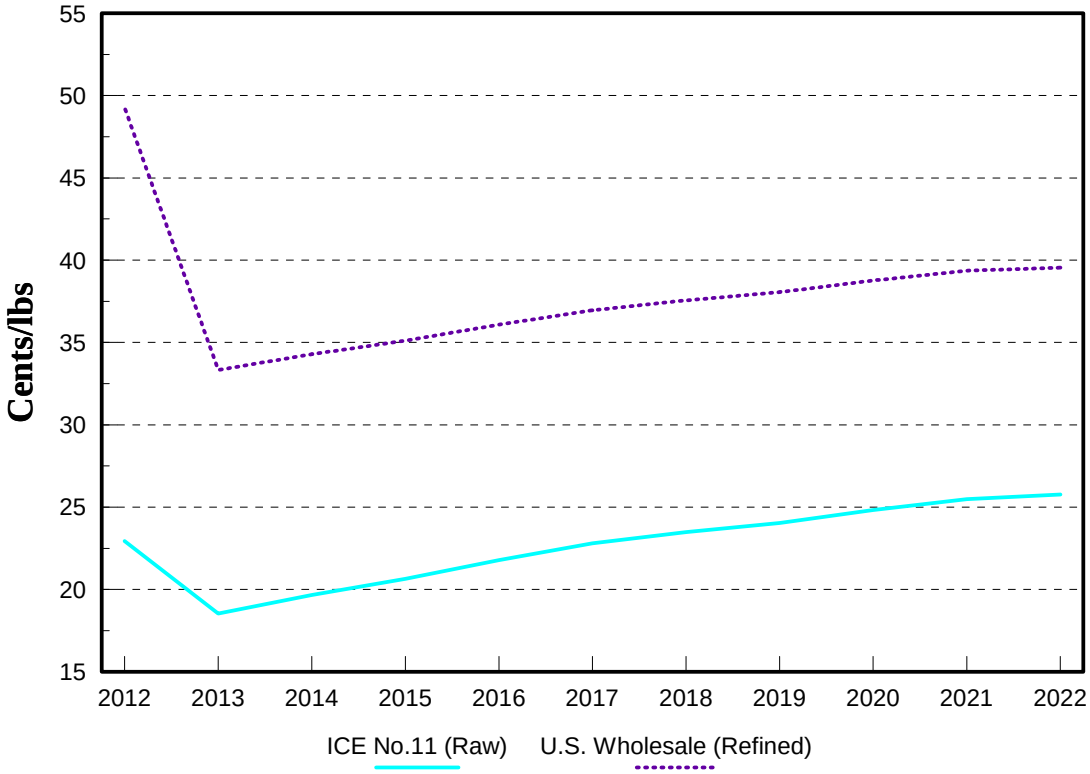


Figure 6. Estimated U.S. and World Sugar Prices

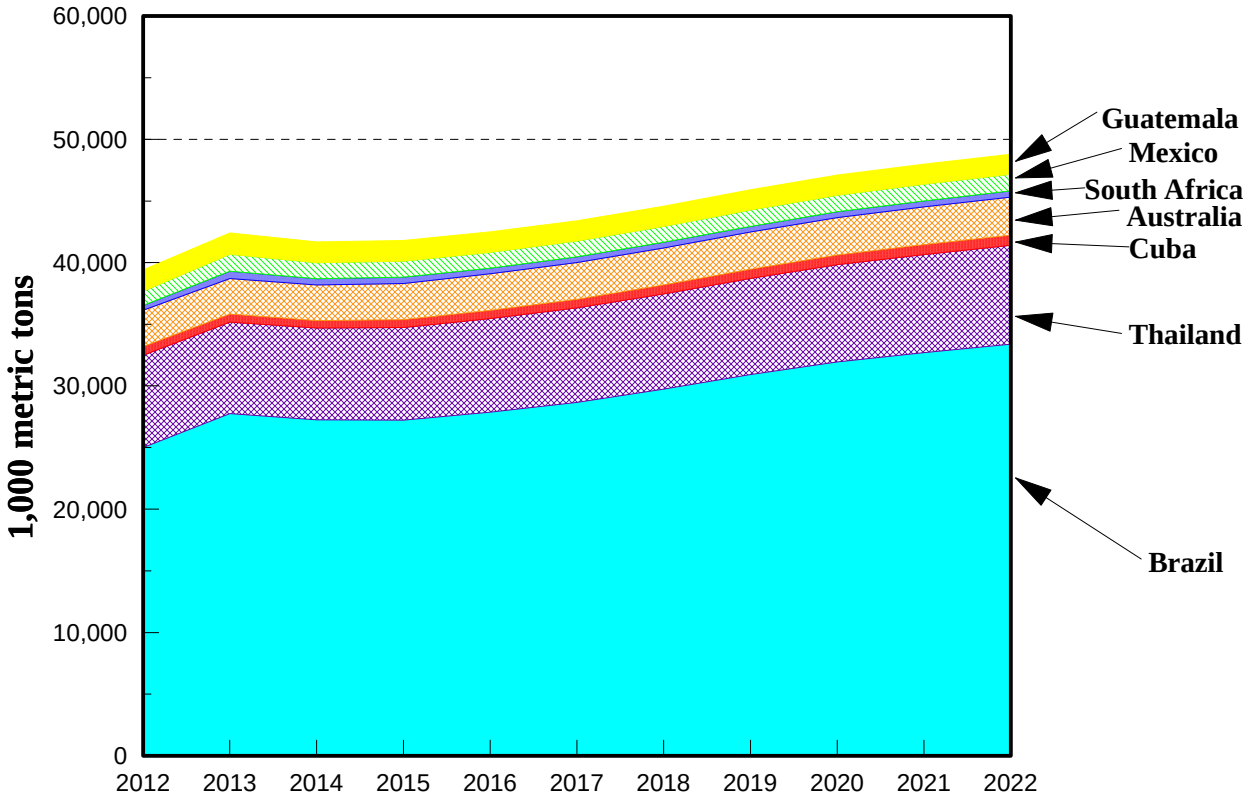


Figure 7. Projected World Sugar Exports by Country

United States

Table 2 shows production, consumption, imports, and ending stocks of sugar for the United States. U.S. sugar production is predicted to increase to 8.5 million metric tons in 2022. The increase in sugar production is due mainly to an increase in both U.S. sugarbeet and sugar cane production. U.S. sugar consumption is predicted to increase by 11.0% from 10.3 million metric tons (the 2010-2012 average) to 11.5 million metric tons in 2022. Ending stocks are also predicted to increase by 3.0% by 2022 (Table 2). Imports are predicted to decrease 14.1% from the 2010-2012 average. However, the imports depend upon Mexico's sugar production and consumption and the continued conversion of Mexico's soft drink industry from sugar to HFCS.

Table 2. U.S. Sugar Production, Consumption, Imports, and Carry-over Stock, 2012-2022 Average

	Average (2010-2012)	2012	2022	% Change (2010-12) to 2022
	----------1,000 metric tons----------			
Production	7,434	8,310	8,458	13.8
Beet	4,282	4,808	5,144	20.1
Cane	3,014	3,500	3,315	10.0
Net Imports	3,014	2,703	2,589	-14.1
Consumption	10,347	10,673	11,487	11.0
Carry-over Stocks	1,588	2,139	1,813	14.2
Per capita Consumption (kg)	33	35	34	3.0

Exporters

Figure 7 shows the projected sugar exports for the major exporting countries. Brazil is the largest sugar exporter followed by Thailand and Australia. Brazil's production is predicted to increase by 25.3% from 37.3 million metric tons in 2010-2012 to 46.8 million metric tons in 2022 (Table 3). Brazil's exports are predicted to increase from 25.1 million metric tons in 2010-2012 to 33.4 million metric tons in 2022. Its domestic consumption is predicted to increase by 14.0% from 11.7 million metric tons in 2010-2012 to 13.4 million metric tons in 2022.

Thailand's exports are predicted to increase by 11.2% from the 2010-2012 average of 7.2 million metric tons to 8.0 million metric tons in 2022 (Table 3). Consumption increases from 2.5 million metric tons for the 2010-2012 average to 2.7 million metric tons in 2022. Sugar production in the country also is predicted to increase by 8.7% from 9.9 million metric tons to 10.8 million metric tons in 2022.

Australia's exports are predicted to increase by 13.4% from the 2010-2012 average to 3.1 million metric tons in 2022 (Table 3). Production is predicted to increase by 17.1% from 4.0 million metric tons to 4.6 million metric tons in 2022. Sugar consumption is expected to increase by 14.1% from 1.4 million metric tons to 1.5 million metric tons in 2022.

Cuba's exports are predicted to increase by 28.4% from the 2010-2012 level to 2022 (Table 3). It is predicted that Cuba will increase its sugar production by 11.4%, while consumption is predicted to decrease slightly. 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 16.8% from 5.4 million metric tons in 2010-2012 to 6.3 million metric tons in 2022. Mexico is expected to export 1.3 million metric

tons by 2022, mainly to the United States under NAFTA. Sugar consumption is predicted to increase by 16.1% from 4.6 million metric tons in 2010-2012 to 5.4 million metric tons in 2022. Ending stocks are predicted to increase by 27.6%.

Colombian exports are predicted to decrease by 14.1% from the 2010-2012 average to 495 thousand metric tons in 2022 (Table 3). Production is predicted to increase by 8.8% from 2.3 million metric tons to 2.5 million metric tons in 2022, however sugar consumption is expected to increase by 15.4% from 1.7 million metric tons to 2.0 million metric tons in 2022.

Guatemala's exports are predicted to decrease by 1.8% from the 2010-2012 average of 1.6 million metric tons(Table 3). Consumption increases from 756 thousand metric tons for the 2010-2012 average to 914 thousand metric tons in 2022. Sugar production in the country also is predicted to increase by 9.9% from 2.3 million metric tons to 2.5 million metric tons in 2022.

South African sugar production is expected to return to the normal levels after several years of smaller than normal crops. South Africa's production is predicted to increase by 16.2% to 2.4 million metric tons in 2022. South Africa's exports are predicted to increase 14.5% by 2022. Sugar consumption is predicted to increase by 9.7% and ending stocks are predicted to increase by 26.2%.

India's production is predicted to increase by 15.8% from 27.0 million metric tons in 2010-2012 to 31.2 million metric tons in 2022. India's exports are predicted to increase 6.2% by 2022. Sugar consumption is predicted to increase by 17.4% and ending stocks are predicted to increase by 5.4%.

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 1.7% and 41.7%, respectively, for the 2012-2022 period. Major Asian importers are Indonesia, Japan, South Korea, and China and major African importers are Algeria and Egypt.

Canada's production is predicted to increase above the 2010-2012 average of 120 thousand metric tons to 121 thousand tons by the year 2022, and consumption is predicted to increase from 1.2 million metric tons to 1.3 million metric tons in 2022 (Table 4). As a result, Canada's imports are predicted to increase by 6.6% from 1.1 million metric tons to 1.2 million metric tons in 2022.

The EU has changed the internal sugar policy by reducing domestic sugar support. This has reduced production. Because of that change, the EU has become a net importer of sugar. EU imports are predicted to decrease slightly from 2.1 million metric tons in 2012 to 2.0 million metric tons in 2022 (Figure 8). Sugar production in the EU is predicted to increase by 1.1% and consumption is predicted to increase from 17.9 million metric tons for the 2010-2012 average to 18.7 million tons in 2022 (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 (2010-2012)	2012	2022	% change (2010-12) to 2022
	----------1,000 metric tons--------			
Brazil				
Production	37,333	35,750	46,761	25.3
Net Exports	25,150	25,000	33,385	32.7
Consumption	11,733	11,700	13,377	14.0
Carry-over	(18)	515	379	NA
Thailand				
Production	9,943	9,930	10,811	8.7
Net Exports	7,204	7,495	8,009	11.2
Consumption	2,500	2,600	2,739	9.6
Carry-over	3,088	3,058	3,132	1.4
Australia				
Production	3,967	4,300	4,646	17.1
Net Exports	2,730	2,935	3,097	13.4
Consumption	1,353	1,375	1,544	14.1
Carry-over	110	63	218	98.2
Cuba				
Production	1,326	1,420	1,477	11.4
Net Exports	633	700	813	28.4
Consumption	678	680	669	-1.3
Carry-over	94	109	137	45.7
Mexico				
Production	5,410	6,008	6,318	16.8
Net Exports	965	1,162	1,336	38.4
Consumption	4,624	4,812	5,370	16.1
Carry-over	964	1,060	1,230	27.6
Columbia				
Production	2,300	2,310	2,502	8.8
Net Exports	576	545	495	-14.1
Consumption	1,739	1,800	2,007	15.4
Carry-over	367	335	330	-10.1
Guatamala				
Production	2,308	2,474	2,537	9.9
Net Exports	1,648	1,725	1,619	-1.8
Consumption	756	750	914	20.9
Carry-over	105	94	113	7.6
India				
Production	27,001	25,630	31,276	15.8
Net Exports	2,867	1,700	3,045	6.2
Consumption	24,000	25,000	28,175	17.4
Carry-over	6,876	6,630	7,250	5.4
South Africa				
Production	2,042	2,255	2,373	16.2
Net Exports	208	385	509	144.7
Consumption	1,705	1,745	1,861	9.7
Carry-over	248	355	313	26.2

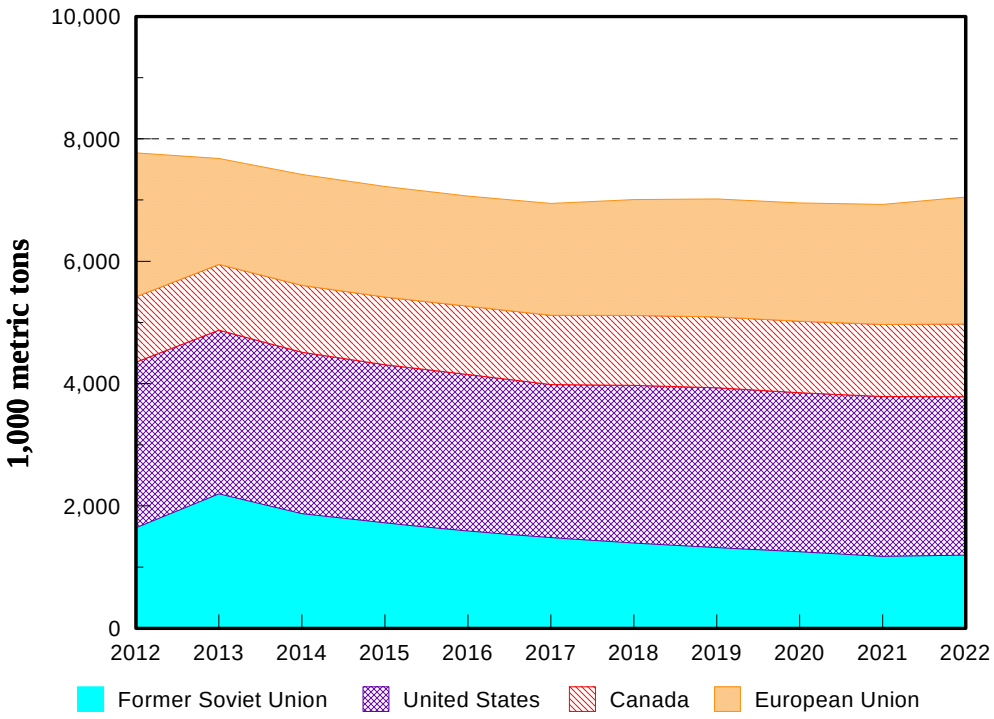


Figure 8. Projected World Sugar Imports by Countries, Major Importers

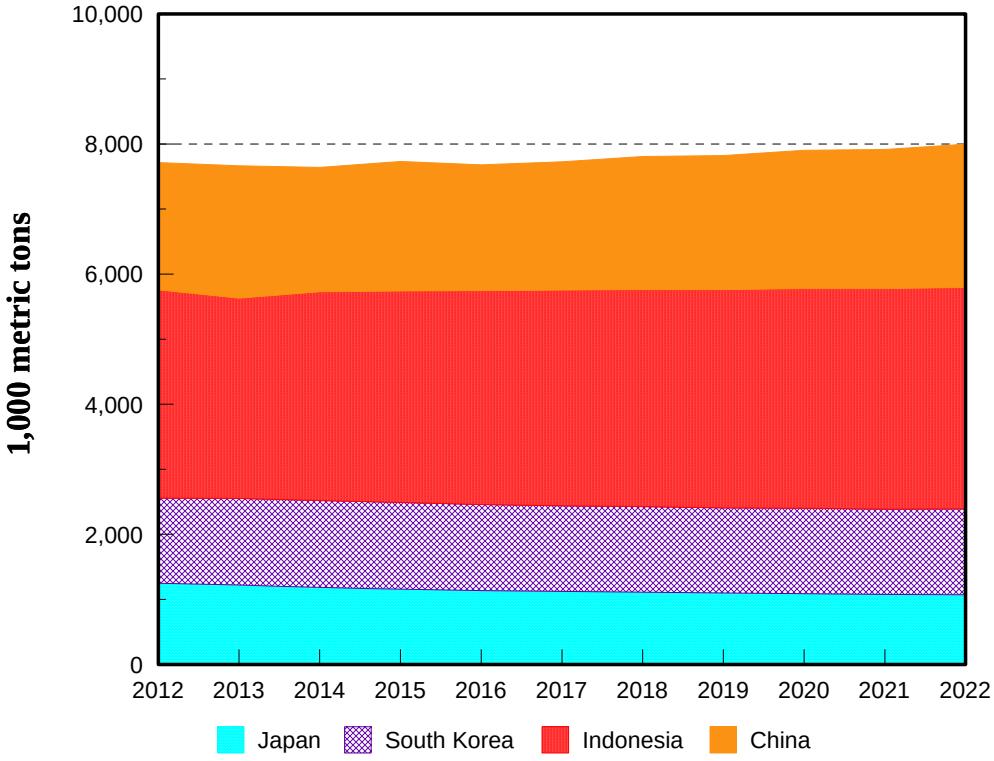


Figure 9. Projected World Sugar Imports by Countries, Asian Countries

The FSU's production is predicted to increase by 26.6% from the 2010-2012 average of 7.4 million metric tons to 9.4 million metric tons in 2022, and consumption is predicted to increase by 3.4% from 10.3 million metric tons to 10.6 million metric tons for the same period. Imports are predicted to decrease by 48.0% from the 2010-2012 average (Table 4). Most of the decrease in imports is due to smaller crop in 2010 which required large imports.

China is expected to decrease its imports by about 19.0% between 2010-2012 and 2022 (Table 4). China's production is predicted to increase by 9.9% from 12.7 million metric tons for the 2010-2012 average to 14.0 million metric tons in 2022, and consumption is predicted to increase by 10.5% from 14.6 million metric tons to 16.1 million metric tons for the period.

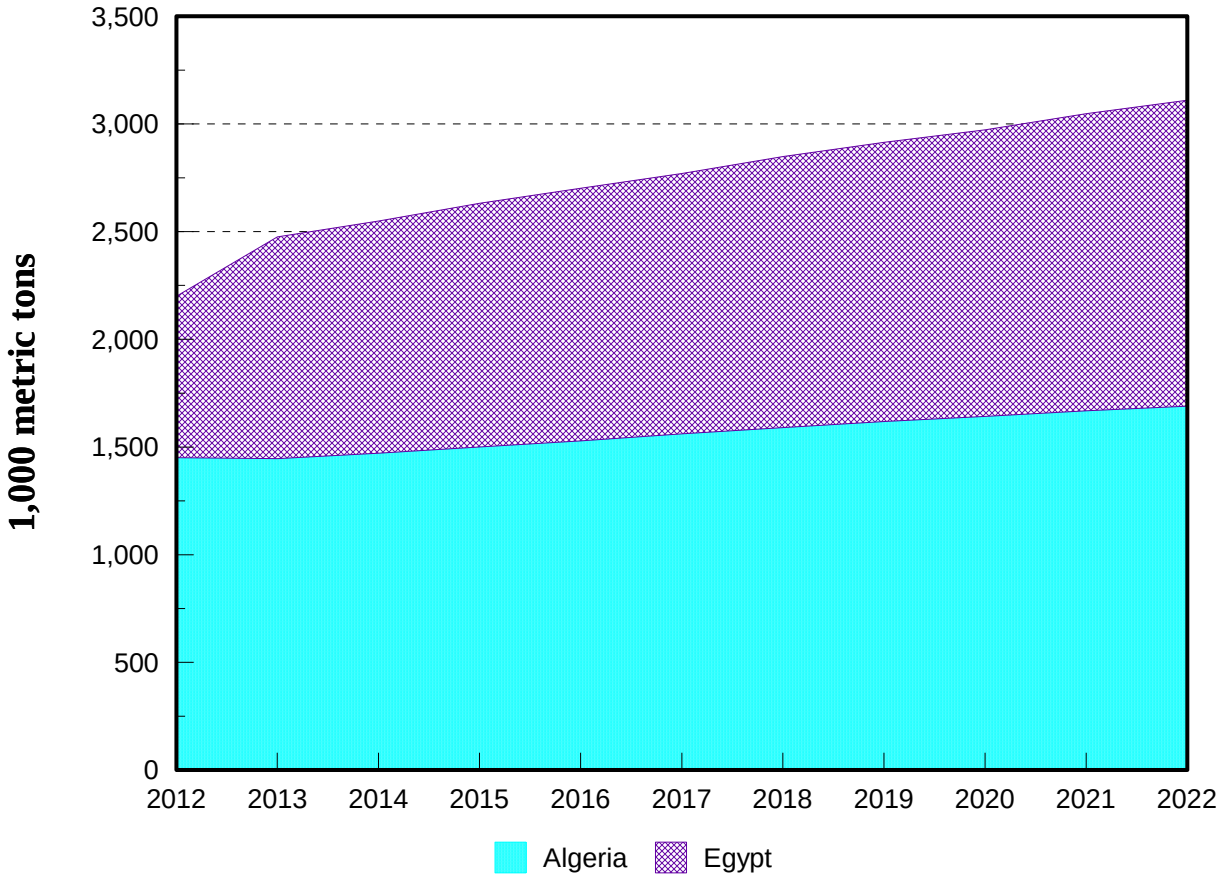


Figure 10. Projected World Sugar Imports by Country, African Countries

Japan's imports are predicted to decrease by 15.4% from the 2010-2012 average of 1.3 million metric ton to 1.1 million metric tons in 2022, due to a slight decrease in domestic consumption (Table 4).

In South Korea, consumption is predicted to increase by 4.6% for the time period and its imports are predicted to increase by 4.1% 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 27.1% from 1.3 million metric tons in 2010-2012 to 1.7 million metric tons in 2022. The increase in consumption results in increasing imports from 1.4 million metric tons for the 2010-2012 average to 1.7 million metric tons in 2022.

Egypt's imports are predicted to increase by 76.62% from 0.7 million metric tons in 2010-2012 to 1.4 million metric tons in 2022, due mainly to increased consumption and larger than normal sugar crops in 2011 which lowered imports for those years. Egypt historically imported about 1.0 million metric tons of sugar per year. Consumption is predicted to increase by 23.2% from 2.9 million metric tons to 3.5 million metric tons in 2022.

Indonesia's imports are predicted to increase by 9.60% from 3.1 million metric tons in 2010-2012 to 3.4 million metric tons in 2022. Consumption is predicted to increase from 5.1 million metric tons for the 2010-2012 average to 5.6 million metric tons in 2022.

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

	Average (2010-12)	2012	2022	% change (2010-12) to 2022
	----------1,000 metric tons----------			
Algeria				
Production	0	0	0	NA
Net Imports	1,391	1,450	1,690	21.5
Consumption	1,329	1,450	1,689	27.1
Carry-over	58	60	657	12.1
Canada				
Production	120	135	121	0.8
Net Imports	1,115	1,070	1,189	6.6
Consumption	1,218	1,210	1,308	7.4
Carry-over	245	248	266	8.6
China				
Production	12,707	14,580	13,966	9.9
Net Imports	2,722	1,956	2,205	-19.0
Consumption	14,600	15,300	16,132	10.5
Carry-over	3,356	4,841	5,336	59.0
Egypt				
Production	1,940	2,010	2,115	9.0
Net Imports	804	750	1,420	76.6
Consumption	2,867	2,950	3,531	23.2
Carry-over	213	160	205	-3.8
European Union				
Production	16,208	16,780	16,390	1.1
Net Imports	2,135	2,350	2,074	-2.9
Consumption	17,923	18,000	18,741	4.6
Carry-over	3,329	4,377	3,525	5.9
Former Soviet Union				
Production	7,448	8,178	9,428	26.6
Net Imports	2,302	1,644	1,197	-48.0
Consumption	10,301	10,344	10,649	3.4
Carry-over	1,728	1,902	2,122	22.8
Indonesia				
Production	1,880	2,040	2,159	14.8
Net Imports	3,103	3,200	3,402	9.6
Consumption	5,050	5,100	5,562	10.1
Carry-over	570	599	466	-18.2
Pakistan				
Production	4,370	4,670	4,768	9.1
Net Imports	107	-300	316	195.3
Consumption	4,317	4,400	5,088	17.9
Carry-over	1,373	1,310	1,467	6.8
Japan				
Production	737	770	895	21.4
Net Imports	1,268	1,249	1,073	-15.4
Consumption	2,011	2,012	1,967	-2.2
Carry-over	507	550	583	15.0
Korea				
Production	0	0	0	NA
Net Imports	1,268	1,310	1,320	4.1
Consumption	1,270	1,280	1,329	4.6
Carry-over	473	488	539	14.0

CONCLUDING REMARKS

This report provides an overview of the U.S. and world sugar markets for the 2012-2022 period 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 18.3% from 55.1 million metric tons in 2012 to 65.2 million metric tons in 2022. A recent price increase in the world price of sugar that occurred in late 2009, 2010 and 2011 will not be maintained. In late 2010, world sugar prices increased to $0.36/lb from a low of $0.20/lb in early 2010. The price in early 2011 is about $0.35/lb. The yearly average price for sugar in 2011 was $0.284/lb. The price of world raw sugar is expected to decrease from $0.229/lb in 2011 to $0.185/lb in 2013 before increasing slowly to $0.258/lb in 2022. World sugar production remained the same in 2012 while consumption increased 2.1% in 2012.

World ending stocks increased by 32.1% for the 2009-2012 period. In 2009 carryover stocks were at 29.0 million metric tons and at the end of 2012 stocks were 38.3 million metric tons.

Imports by most importing countries are predicted to increase from the 2010-12 average to 2022 although China's and Japan's imports are predicted to decrease. Imports by Egypt and Algeria are predicted to increase by 76.6% and 25.1%, respectively. Egypt's imports are expected to return to normal levels after being reduced in recent years.

U.S. sugar consumption is predicted to increase by 11.0% for the 2013-2022 period. Production is expected to increase by 20.1% for beet sugar and by 10.0% for cane sugar. Imports are predicted to decrease by 14.1% for the period.

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