Agribusiness & Applied Economics Report No. 536 June 2004

2004 Outlook of the U.S. and World Sugar Markets, 2003-2013

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ACKNOWLEDGMENTS

The authors extend appreciation to Mr. Andrew Swenson, Mr. Jeremy Mattson, and Mr. Dean Bangsund for their constructive comments and suggestions. Special thanks go to Ms. Beth Ambrosio and Ms. Carol Jensen, who helped to prepare the manuscript**.** The authors assume responsibility for any errors of omission, logic, or otherwise.

This research is funded under a grant by the General Service Administration.

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Abstract

This report evaluates the U.S. and world sugar markets for 2003-2013 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 10 years after the current over-supply is reduced. World demand for sugar is expected to grow faster than world supply, resulting in Carribean sugar prices gradually increasing from 7.57 cents/lb in 2003 to 8.75 cents/lb in 2013. The U.S. wholesale price of sugar is projected to increase from 25.35 cents/lb in 2003 to 27.0 cents/lb in 2013, if the United States maintains its sugar programs. The CAFTA agreement is expected to increase U.S. imports slightly, but with little impact on U.S. prices. 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 14.9% between 2003 and 2013 from 29.6 million metric tons to 34.0 million metric tons. Brazil's exports are projected to increase from 12.4 million metric tons in 2003 to 16.0 million metric tons in 2013. World sugar prices also are projected to increase from 7.57 cents/lb in 2003 to 8.75 cents/lb in 2013. The U.S. domestic wholesale price reached the lowest level in 2000 and should recover slowly for the 2003-2013 period. Sugar price is projected to be 25.35 cents/lb in 2003 and 27.0 cents/lb in 2013 if the U.S. sugar programs are maintained.

U.S. sugar imports are predicted to increase 56.4% for the 2003-2013 period due to increased sugar imports from Mexico. U.S. sugar consumption is projected to increase 8.8%. Ending stocks are predicted to decrease 5.1%.

Canada's production is predicted to increase 16.0% from 2003 to 2013. Canada's imports are expected to increase 23.3%. Consumption is predicted to increase 18.3%, and ending stocks are predicted to decrease 6.3%.

Mexico's production is expected to increase 17.1%, and exports are expected to increase to 0.7 million metric tons by 2013 due to increases in exports to the United States under the North American Free Trade Agreement (NAFTA).

The European Union's (EU) exports are predicted to increase 0.6% under the assumption that their sugar program does not change. Their production and consumption are predicted to increase slightly.

Production in India is predicted to increase 16.0%, while consumption is predicted to increase 14.8% for the 2003-2013 period. India should export about 0.8 million metric tons by 2013.

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

Most importing countries, including Algeria, China, Japan, and Korea, are predicted to increase their imports for the 2003-2013 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, implying that only a small portion of production is traded internationally. A significant share of this trade takes place under bilateral long-term agreements or on preferential terms such as the European Union's (EU) Lome Agreement. 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 very unstable in the world market.

This report evaluates the U.S. and world sugar industry for 2003-2013 using the Global Sugar Policy Simulation Model developed by Benirschka et al. (1996). 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 1999-2003 period, annual global sugar production was approximately 133 million metric tons with about 30% of production exported from its country of origin. The largest sugar producing region is Brazil, followed by India and the EU (Table 1).

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Table 1. World Sugar Supply and Utilization, 1999 to 2003 Average

Country	Crop[a]	Consumption	Production	Net Exports	Ending Stocks	Per Capita Consumption
		---------------------1,000 metric tons, raw value-----------------------				kg
Algeria	B	948	9	-933	93	29
Australia	C	1,028	4,904	3,778	645	56
Brazil	C	9,484	20,752	11,450	895	53
Canada	B	1,259	55	-1,212	162	40
China	B/C	8,898	8,340	-458	1,436	7
Cuba	C	708	3,132	2,496	202	63
Egypt	B/C	2,153	1,381	-798	348	32
European Union	B	14,381	18,060	3,748	3,185	40
Former Soviet Union	B	10,882	3,954	-7,333	3,695	37
India	C	19,430	20,015	931	9,861	17
Indonesia	C	3,340	1,748	-1,740	1,343	16
Japan	B/C	2,255	804	-1,473	349	18
Mexico	C	4,877	5,026	244	1239	47
South Africa	C	1,576	2,741	1,197	468	36
South Korea	-	1,165	0	-1,152	91	24
Thailand	C	1,806	6,167	4,380	708	28
United States	B/C	8,680	6,969	-1,358	1,612	33
Rest of World	B/C	39,142	31,015	-11,368	7,750	18
World Total	B/C	133,187	133,712		33,915	20

[a] B = Sugarbeet; C = Sugarcane.
Source: USDA, *PS&D View*, 2004

Per capita sugar consumption was highest in Cuba (63 kg), followed by Australia and Brazil. Per capita sugar consumption in the United States was 33 kg, which was above world average per capita consumption (20 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 1999-2003 period was 133 million metric tons.

The major sugar exporting countries were Brazil, Thailand, Australia, the EU and Cuba. These countries accounted for 73% of global exports from 1999 to 2003. Relatively few countries dominate world sugar exports, but imports are less concentrated. Major importing countries were the Former Soviet Union (FSU), Indonesia, the United States, Japan, Korea, and Canada. Imports by these countries accounted for about 46% of all sugar imports from 1999 to 2003. Under the Lome Convention, the EU was required to import sugar under preferential terms from certain African, Caribbean, and Pacific countries.

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 $0.29 per pound. World market prices ranged between $0.06 per pound and $0.13 per pound (Figure 1). Both real Caribbean raw sugar prices and U.S. raw sugar import prices have long-term downward trends.

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.

The United States produces both beet and cane sugar. Cane sugar is produced mainly in Florida, Louisiana, Texas, and Hawaii. Beet sugar is produced largely in the Great Lakes region, Upper Midwest, Great Plains, and far western states. Beet sugar production increased 14% for the 1991 to 2003 period, while cane sugar production increased 26% (Figure 2). U.S. total sugar production increased about 19% from 7.0 million metric tons in 1991 to 8.2 million metric tons in 2003 (Figure 3).

U.S. consumption of sugar also increased 8% from 8.6 million metric tons in 1991 to 9.2 million metric tons in 2003 (Figure 4). The balance was imported from more than 40 countries. U.S. sugar imports decreased 71% from 4.5 million metric tons in 1974 to 1.3 million metric tons in 1987 and then increased to an average of 1.4 million metric tons during the 1989 to 2003 period. Under the North American Free Trade Agreement (NAFTA), Mexico can export 260,000 metric tons of sugar to the United States as of October 2000, and its exports to the United States will be unlimited beginning in 2009 when implementation of NAFTA is completed. If the US-Central American Free Trade Agreement, which is an FTA currently with four Central American countries, is ratified by the U.S. Congress, additional sugar imports allowed would initially be 100,000 metric tons, increasing by about 3,000 metric tons per year.

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; and the Farm Security and Rural Investment (FSRI) Act of 2002.

The core policy tools in the program are the loan program and import restrictions. 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 is set at 18 cents per pound for raw cane sugar and 22.9 cents per pound for refined beet sugar. Loans under the FSRI Act 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. 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 per pound) is imposed on the amount of sugar imported over the import quota. The first-tier duty ranges from zero to 0.625 cents per pound.

The second tier-duty for raw cane sugar was reduced from 17.62 cents per pound in 1995 to 15.82 cents per pound in 2000 under the URA. The duty for refined sugar was reduced from 18.6 cents per pound in 1995 to 16.21 cents per pound in 2000. The quota was the same level throughout the 1995 to 2000 period.

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 1985 period.

NAFTA allows a rapid reduction in the second-tier duty for Mexican sugar over the next several years. The second-tier duty for Mexican sugar will be reduced from 16.11 cents per pound in 1995 to zero in 2008. Duties for most countries will remain at 15.36 cents per pound for raw cane sugar and 16.21 cents per pound for refined sugar. This implies that Mexico is in a unique position to increase its exports of sugar to the United States above the allocated quota. Mexico produced 5.2 million metric tons of sugar in 2003 and consumed 5.0 million metric tons in the same year. Its net exports were zero for the year. If Mexico starts to use High Fructose Corn Sweetener (HFCS) for beverages, more of its sugar could be exported to the United States.

The United States signed a trade agreement with the Central American countries of El Salvador, Guatemala, Honduras, and Nicaragua, and is in the process of integrating Costa Rica and the Dominican Repulic. The U.S.- Central American Free Trade Agreement (CAFTA) allows 100,000 metric tons of additional sugar to be imported into the United States, but at this time, the level allowed does not have a significant impact on the price of U.S. sugar or world trade flows.

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.

EU member states allocate an "A" quota and a "B" quota to each sugar producing operation, each isoglucose producing operation, and each inulin syrup producing operation established in their territory. Current quota levels have been in place since the accession of Austria, Sweden, and Finland to the EU and are currently legislated at these levels until 2003/04. The total EU sugar production quotas for A and B sugar are 11.98 million metric tons and 2.61 million metric tons, respectively. Any sugar that is produced by any member of the EU in excess of its yearly quota is considered "C-sugar." A and B sugar production is used for domestic consumption and for subsidized exports. C-sugar must be exported into the world market without subsidy or carried over into the next marketing year. In general, the EU's target price for white sugar is about 30 cents (Euro) per pound, and its intervention price is 28.72 cents (Euro) per pound. The EU's internal support is about 30% higher than that in the United States.

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.

South Africa has both internal price supports and export subsidies. South Africa reduced its subsidized exports by 200,000 tons to 702,208 tons by the year 2000 under the URA. Mexico also has subsidized exports and is subsidizing raw sugar storage.

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 included 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 14.9% from 29.6 to 34.0 million metric tons. Export of sugar in most countries will increase for 2003-2013. Brazil's exports are expected to increased from 12.4 million tons in 2003 to 16.0 million metric tons in 2013. Exports for Thailand and Australia will increase 21.1% and 19.4%, respectively.

World sugar prices, referred to as the Caribbean price of sugar, are projected to increase about 15.6% from 7.57cents/lb in 2003 to 8.75 cents/lb in 2013 (Figure 1) because of expected higher demand for sugar. The domestic wholesale price of U.S. sugar is projected to increase 6.8% from 25.35 cents/lb in 2003 to 27.1 cents/lb in 2013. U.S. sugar price increases at a slower rate than the world sugar price, mainly because of substantial increases in U.S. sugar imports from Mexico under NAFTA. The expected increases in U.S. sugar imports tend to reduce the gap between world and U.S. wholesale prices. If the CAFTA is implemented for 2005, the U.S. domestic sugar price would basically remain unchanged

United States

Table 2 shows production, consumption, imports, and ending stocks of sugar for the United States. U.S. sugar production is predicted to increase to 7.8 million metric tons in 2013. Imports are predicted to increase 56.4% from the 2001-03 average of 1.3 million metric tons to

2.0 million metric tons in 2013, under an assumption that Mexico increases its exports to the United States at NAFTA levels.

Table 2. U.S. Sugar Production, Consumption, Exports, and Carry-over Stocks, Various Years

	Average (2001-2003)	2003	2013	% Change (2001-03) to 2013
	----thousand metric tons------			
Production	7,513	7,610	7,792	3.7
Beet Sugar	3,792	3,816	3,889	2.6
Cane Sugar	3,721	3,795	3,903	4.9
Net Imports	1,256	1,202	1,965	56.4
Per Capita Consumption	71	72	72	1.4
Consumption	8,272	8,460	9,003	8.8
Carry-over Stocks	1,625	1,358	1,541	-5.1

The domestic wholesale price for U.S. sugar is projected to increase from 25.3 cents/lb in 2003 to 27.1 cents/lb in 2013 under the current TRQ system. If CAFTA is implemented, the domestic price of sugar would decrease slightly. The United States will increase imports to over 20% of its domestic sugar consumption. U.S. sugar consumption is predicted to increase 8.8% from 8.5 million metric tons (the 2001-2003 average) to 9.0 million metric tons in 2013. Ending stocks are also predicted to decrease 5.1% (Table 2).

Exporters

The EU's exports are predicted to remain constant at 3.2 million metric tons during the forecast period (Figure 5). Sugar production in the EU is predicted to increase slightly, and consumption is predicted to increase from 14.4 million metric tons for the 2001-2003 average to 14.7 million tons in 2013 (Table 3).

Brazil's production is predicted to increase 20.7% from 22.2 million metric tons in 2001-2003 to 26.8 million metric tons in 2013 (Table 3). Brazil's exports are predicted to increase from 12.8 million metric tons in 2001-2003 to 16.1 million metric tons in 2013. Consumption is predicted to increase 10.7% from 9.7 million metric tons in 2001-2003 to 10.7 million metric tons in 2013.

Thailand's exports are predicted to increase 14.9% from 4.8 million metric tons for the 2001-2003 average to 5.1 million metric tons in 2013 (Table 3). Consumption increases from 1.9 million metric tons for the 2001-2003 average to 2.6 million metric tons in 2013. Sugar production in the country also is predicted to increase 21.1% from 6.7 million metric tons to 8.1 million metric tons in 2013.

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

	Average (2001-2003)	2003	2013	% Change (2001-03) to 2013
	---------thousand metric tons------------			
European Union				
Production	17,427	17,437	17,811	2.8
Net Exports	3,206	3,253	3,226	0.6
Consumption	14,439	14,529	14,687	1.7
Carry-over Stocks	2,926	2,763	2,758	-5.7
Brazil				
Production	22,187	22,400	26,785	20.7
Net Exports	12,750	12,420	16,052	25.9
Consumption	9,690	9,980	10,729	10.7
Carry-over Stocks	137	100	217	58.8
Thailand				
Production	6,670	6,800	8,080	21.1
Net Exports	4,786	5,100	5,100	14.9
Consumption	1,877	1,900	2,563	36.5
Carry-over Stocks	788	592	865	9.8
Australia				
Production	4,971	4,800	5,934	19.4
Net Exports	3,907	3,920	4,614	18.1
Consumption	1,050	1,050	1,320	25.7
Carry-over Stocks	691	673	600	-13.2
Cuba				
Production	2,700	2,200	3,055	13.1
Net Exports	2,033	1,450	2,248	10.6
Consumption	703	700	812	15.5
Carry-over Stocks	111	128	123	10.5
Mexico				
Production	5,135	5,200	6,042	17.1
Net Exports	-112	11	653	
Consumption	5,197	5,283	5,679	9.3
Carry-over Stocks	1,110	986	580	-47.7
South Africa				
Production	2,709	2,655	3,109	14.8
Net Exports	1,137	1,160	1,451	27.9
Consumption	1,590	1,600	1,652	3.9
Carry-over Stocks	452	400	445	-1.5

Australia's exports are predicted to increase 18.1% from 3.9 million metric tons for the 2001-2003 average to 4.6 million metric tons in 2013 (Table 3), due mainly to increased sugar production, which is predicted to increase 19.4% from 5.0 million metric tons to 5.9 million metric tons in 2013. Sugar consumption is expected to increase 25.7% from 1.1 million metric tons to 1.3 million metric tons in 2013.

Cuba's exports are predicted to increase 10.6% from 2.0 million metric tons in 2001-2003 to 2.2 million metric tons in 2013 (Table 3). It is predicted that Cuba will increase its sugar production from 2.7 million metric tons for the 2001-2003 average to 3.1 million metric tons in 2013. Cuba's consumption is predicted to increase 15.5% from 0.7 million metric tons for the

2001-2003 average to 0.81 million metric tons in 2013. 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 17.1% from 5.1 million metric tons in 2001-2003 to 6.0 million metric tons in 2013. Mexico's exports are predicted to increase to 0.7 million metric tons in 2013, due mainly to its exports to the United States under NAFTA. Sugar consumption is predicted to increase 9.3% from 5.2 million metric tons in 2001-2003 to 5.7 million metric tons in 2013. Ending stocks are predicted to decrease 47.7%. 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 14.8% from 2.7 million metric tons in 2001-2003 to 3.1 million metric tons in 2013. South Africa's exports are predicted to increase 27.9% from 1.1 million metric tons in 2001-2003 to 1.5 million metric tons in 2013, due mainly to increased production. Sugar consumption is predicted to increase 3.9%. Ending stocks are predicted to decrease 1.5%.

Importers

Figures 6 through 8 show sugar imports by the major sugar importing countries. Sugar imports of selected Asian and African countries are expected to increase 37% and 29%, respectively, for the 2003-2013 period. The FSU is the largest importer, followed by Indonesia and Japan for the period.

Canada's production is predicted to increase 16.0% above the 2001-2003 average by the year 2013, and consumption is predicted to increase from 1.3 million metric tons in 2001-2003 to 1.5 million metric tons in 2013 (Table 4). As a result, Canada's imports are predicted to increase 23.3% from 1.2 million metric tons to 1.4 million metric tons in 2013.

The FSU's production is predicted to increase 19.0% from 4.0 million metric tons to 4.7 million metric tons in 2003-2013, and consumption is predicted to increase 4.6% from 11.4 million metric tons to 11.9 million metric tons for the same period. Imports are predicted to decrease slightly from 7.3 million metric tons in 2001-2003 to 7.2 million metric tons in 2013 (Table 4).

China is expected to increase its imports about 65.7% from 0.4 million metric tons in 2001-2003 to 0.6 million metric tons in 2013 (Table 4). China's production is predicted to increase 4.9% from 9.1 million metric tons for the 2001-2003 average to 9.6 million metric tons in 2013, and consumption is predicted to increase 11.1% from 9.1 million metric tons to 10.1 million metric tons for the period.

India's production is predicted to increase 16.0% from 19.8 million metric tons in 2001-2003 to 23.0 million metric tons in 2013. India is predicted to import 0.8 million metric tons of sugar by 2013.

Japan's imports are predicted to increase 9.6% from 1.4 million metric tons in 2001-2003 to 1.6 million metric tons in 2013, due mainly to increased domestic consumption. Consumption is predicted to increase 7.3% from 2.3 million metric tons to 2.5 million metric tons for the period (Table 4).

In South Korea, consumption is predicted to increase 10.0% for the time period. As a result, South Korea's imports are predicted to increase 10.5% for the period. There is no domestic production of either sugar cane or sugar beet in South Korea.

In Algeria, consumption is predicted to increase 20.8% from 1.0 million metric tons in 2001-2003 to 1.3 million metric tons in 2013. This increase in consumption results in imports increasing from 1.0 million metric tons for the 2001-2003 average to 1.1 million metric tons in 2013.

Egypt's imports are predicted to increase 37.2% from 1.0 million metric tons in 2001-2003 to 1.3 million metric tons in 2013, due mainly to increased consumption. Consumption is predicted to increase 21.4% from 2.3 million metric tons to 2.7 million metric tons in 2013.

Indonesia's imports are predicted to increase 24.9% from 1.7 million metric tons in 2001-2003 to 2.2 million metric tons in 2013. Consumption is predicted to increase 21.1% from 3.4 million metric tons for the 2001-2003 average to 4.1 million metric tons in 2013.

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

	Average (2001-2003)	2003	2013	% Change (2001-03) to 2013
	-------------thousand metric tons-----------------			
Canada				
Production	50	50	58	16.0
Net Imports	1,172	1,162	1,445	23.3
Consumption	1,267	1,246	1,499	18.3
Carry-over Stocks	159	130	149	-6.3
Former Soviet Union				
Production	3,983	4,251	4,741	19.0
Net Imports	7,342	7,702	7,157	-2.5
Consumption	11,368	11,475	11,886	4.6
Carry-over Stocks	3,707	3,628	3,777	1.9
China				
Production	9,108	9,532	9,556	4.9
Net Imports	361	170	598	65.7
Consumption	9,122	9,194	10,139	11.1
Carry-over Stocks	1,442	2,042	1,913	32.7
India				
Production	19,792	18,800	22,968	16.0
Net Imports	---------	--------	798	NA
Consumption	20,670	21,500	23,726	14.8
Carry-over Stocks	8,883	5,640	5,670	-36.9
Japan				
Production	834	800	894	7.2
Net Imports	1,415	1,392	1,551	9.6
Consumption	2,280	2,250	2,446	7.3
Carry-over Stocks	306	272	256	-16.5
South Korea				
Carry-in Stocks	91	100	87	-6.8
Net Imports	1,182	1,175	1,304	10.5
Consumption	1,185	1,156	1,304	10.0
Carry-over Stocks	93	89	87	-6.8
Algeria				
Production	10	10	11	10.0
Net Imports	950	846	1,139	19.9
Consumption	951	954	1,250	20.8
Carry-over Stocks	88	90	101	14.8
Egypt				
Production	1,371	1,365	1,427	4.1
Net Imports	967	750	1,326	37.2
Consumption	2,264	2,253	2,749	21.4
Carry-over Stocks	530	500	535	0.9
Indonesia				
Production	1,750	1,770	1,963	12.2
Net Imports	1,723	1,600	2,152	24.9
Consumption	3,400	3,450	4,117	21.1
Carry-over Stocks	1,328	1,260	1,341	1.0

CONCLUDING REMARKS

This report provides an overview of the U.S. and world sugar markets for 2003-2013 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 14.9% from 29.6 million metric tons in 2003 to 34.0 million metric tons in 2013. The price of Caribbean sugar is expected to increase about 15.6% from 7.57 cents/lb in 2003 to 8.75 cents/lb in 2013 because of faster growth in world consumption of sugar compared to world production. The wholesale price of U.S. sugar is projected to increase 6.8% from 25.35 cents/lb in 2003 to 27.0 cents/lb in 2013. If the CAFTA is implemented for 2005, the U.S. price of sugar would decrease slightly.

Exports are predicted to increase for Brazil, Australia, South Africa, Thailand, and Cuba, while exports are predicted to remain constant for the EU.

Imports from all importing countries except the FSU and India are predicted to increase over the forecasting period. China's imports are predicted to increase 65.7%, while Japan's imports are predicted to increase 9.6%. South Korea's imports are predicted to increase 10.5%, while Algeria's imports are predicted to increase 19.9%.

U.S. sugar consumption is predicted to increase 8.8% for the forecasting period, while production is expected to increase 3.7%. Imports are predicted to increase 56.4% for the period because of increased sugar from Mexico. However, the U.S. sugar industry could face greater uncertainty mainly because of upcoming free trade agreements with the Western Hemisphere countries and Thailand.

References

Benirschka, M., W.W. Koo, and J. Lou. *World Sugar Policy Simulation Model: Description and Computer Program Documentation*. Agricultural Economics Report No. 356. Department of Agricultural Economics, North Dakota State University, Fargo, 1996.

Food and Agricultural Policy Research Institute, FAPRI. *2004 World Agricultural Briefing Book*, Iowa State University and University of Missouri-Columbia. February 2004.

Henneberry, P.D., and S.L. Haley. "Implications of NAFTA Duty Reductions for the U.S. Sugar Market." *Sugar and Sweetener: Situation and Outlook Report*, U.S. Department of Agriculture, Economic Research Service, SSS-224, Washington, DC, 1998.

Koo, Won W., Richard Taylor and Jeremy W. Mattson. " Impacts of the U.S. Central American Free Trade Agreement on the U.S. Sugar Industry." Special Report 03-3. Center for Agricultural Policy and Trade Studies. North Dakota State University, Fargo, 2003.

McElroy, R.C., and M. Ali. "U.S. Sugarbeet and Sugar Cane Per-acre Costs of Production: Revisions of 1992 and New 1993 and 1994 Crop Estimates." *Sugar and Sweetener Situation and Outlook*, U.S. Department of Agriculture, Economic Research Service, Washington, DC, 1995.

Normile, M., and M. Simone. *Agriculture in the Uruguay Round*. U.S. Department of Agriculture, Economic Research Service, WTO Briefing Room, http://www.econ.ag.gov/briefing/wto/issues/uraa.htm, 1999.

U.S. Department of Agriculture, Economic Research Service, U.S. Agricultural Trade Update, Monthly Spreadsheet Files, http://usda.mannlib.cornell.edu/usda/usda.html, 2003.

————. *PS&D View*. (Computer Files). Washington, DC, 2004.

————. *Sugar and Sweetener: Situation and Outlook Report*. Washington, DC, various issues.

Figures

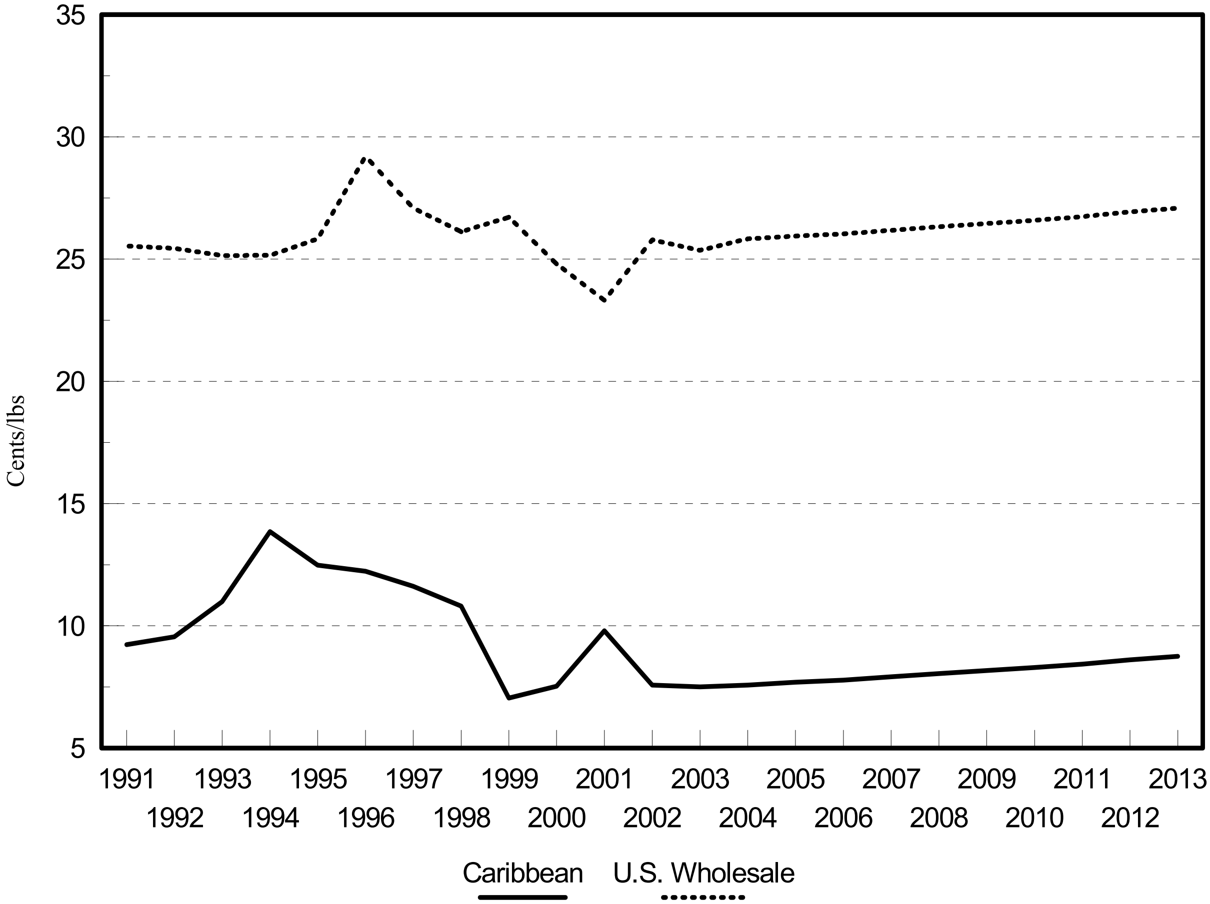

Figure 1. United States and World Sugar Price

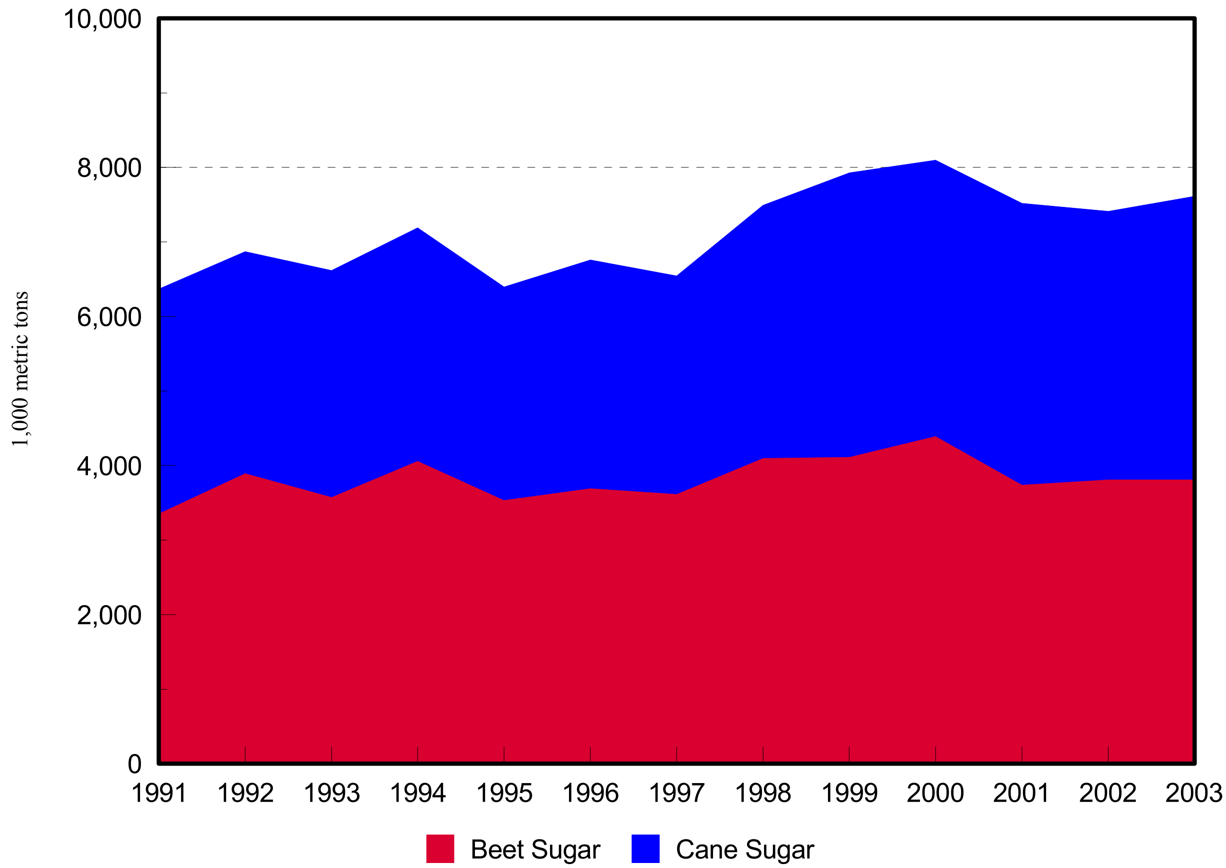

Figure 2. United States Beet and Cane Sugar Production

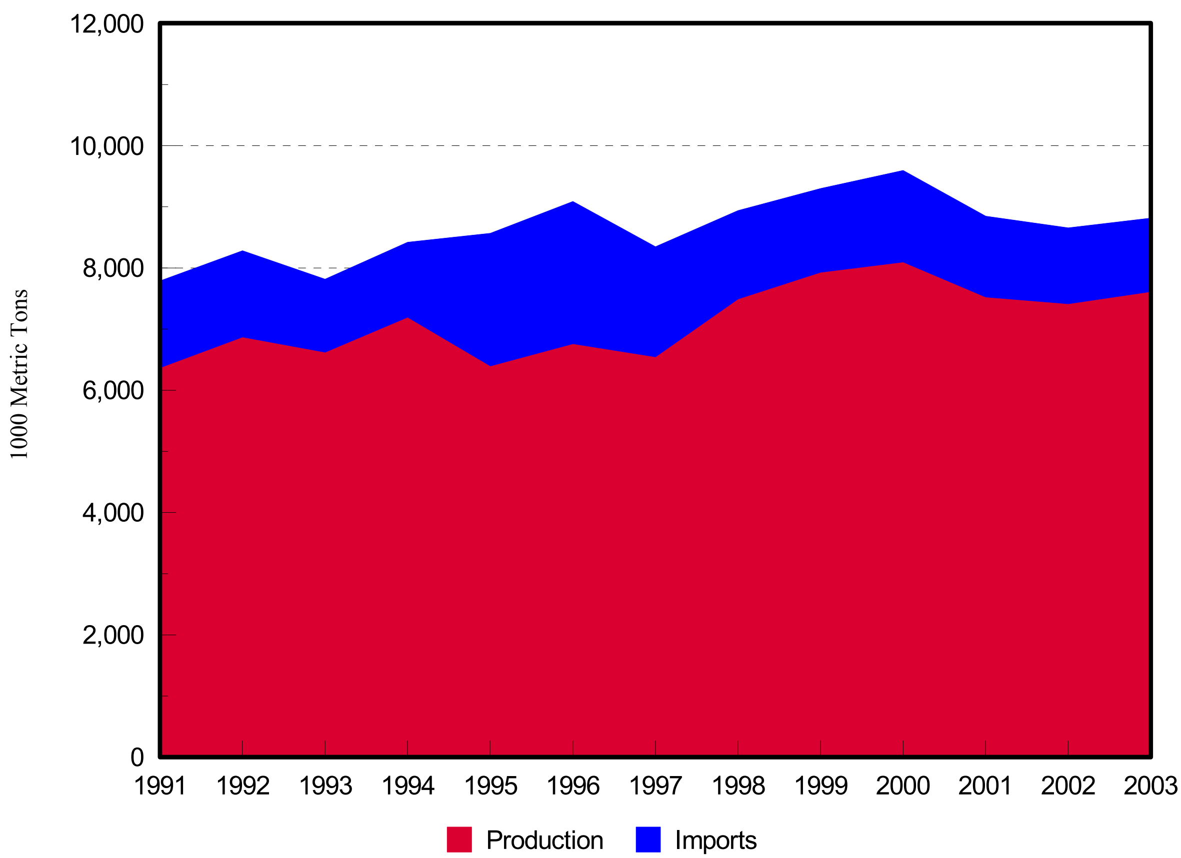

Figure 3. United States Sugar Production and Imports

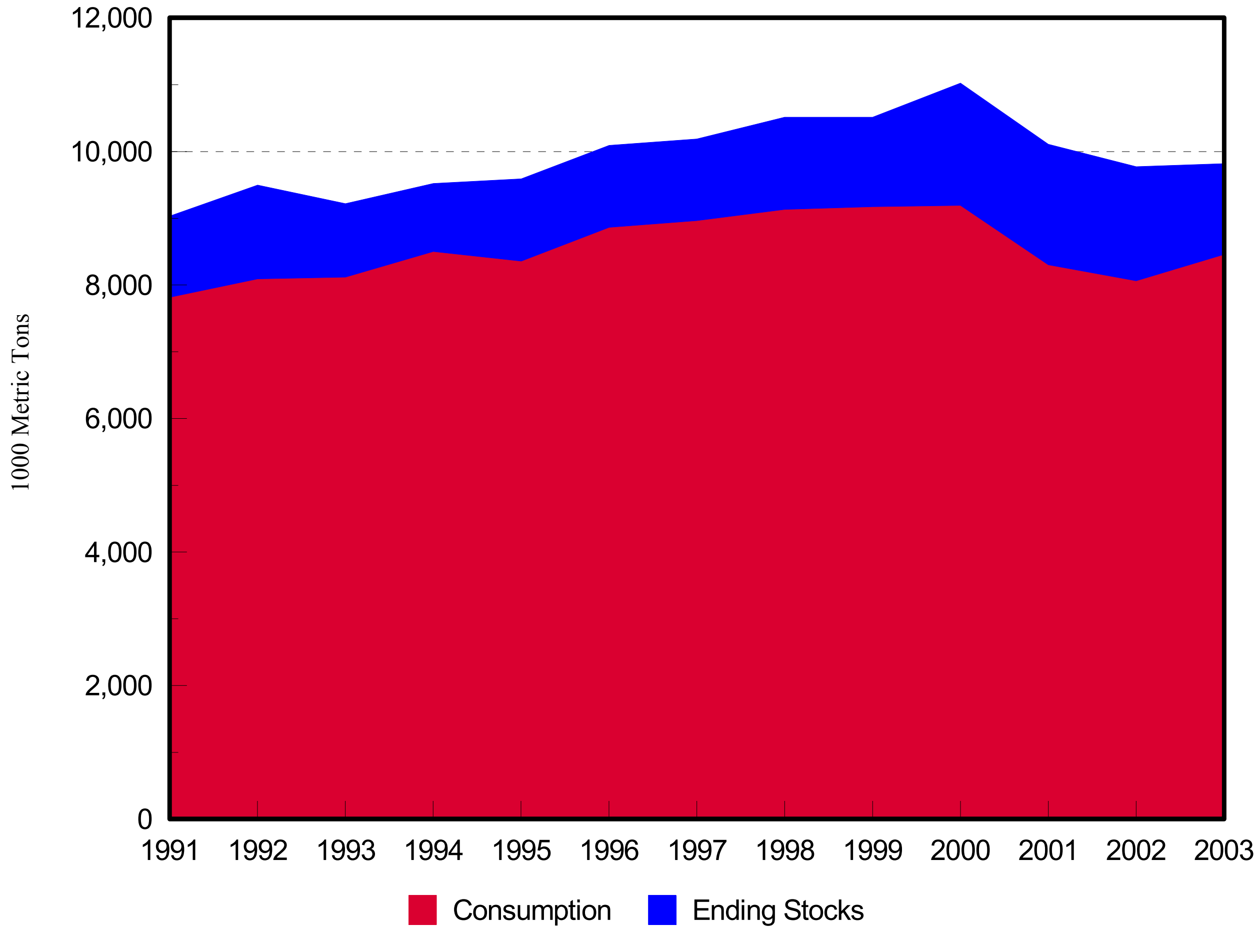

Figure 4. United States Consumption and Ending Stocks

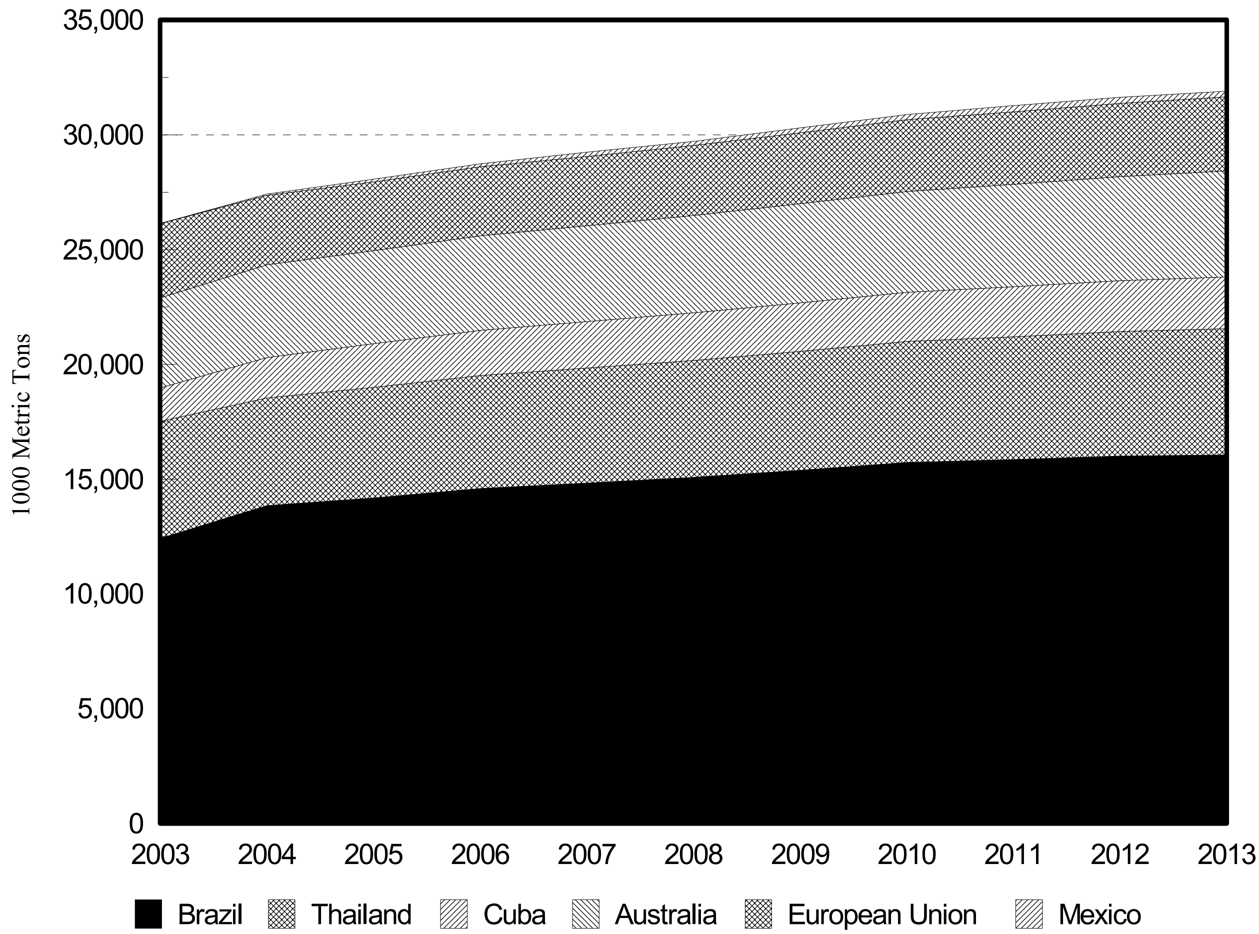

Figure 5. World Sugar Exports by Country

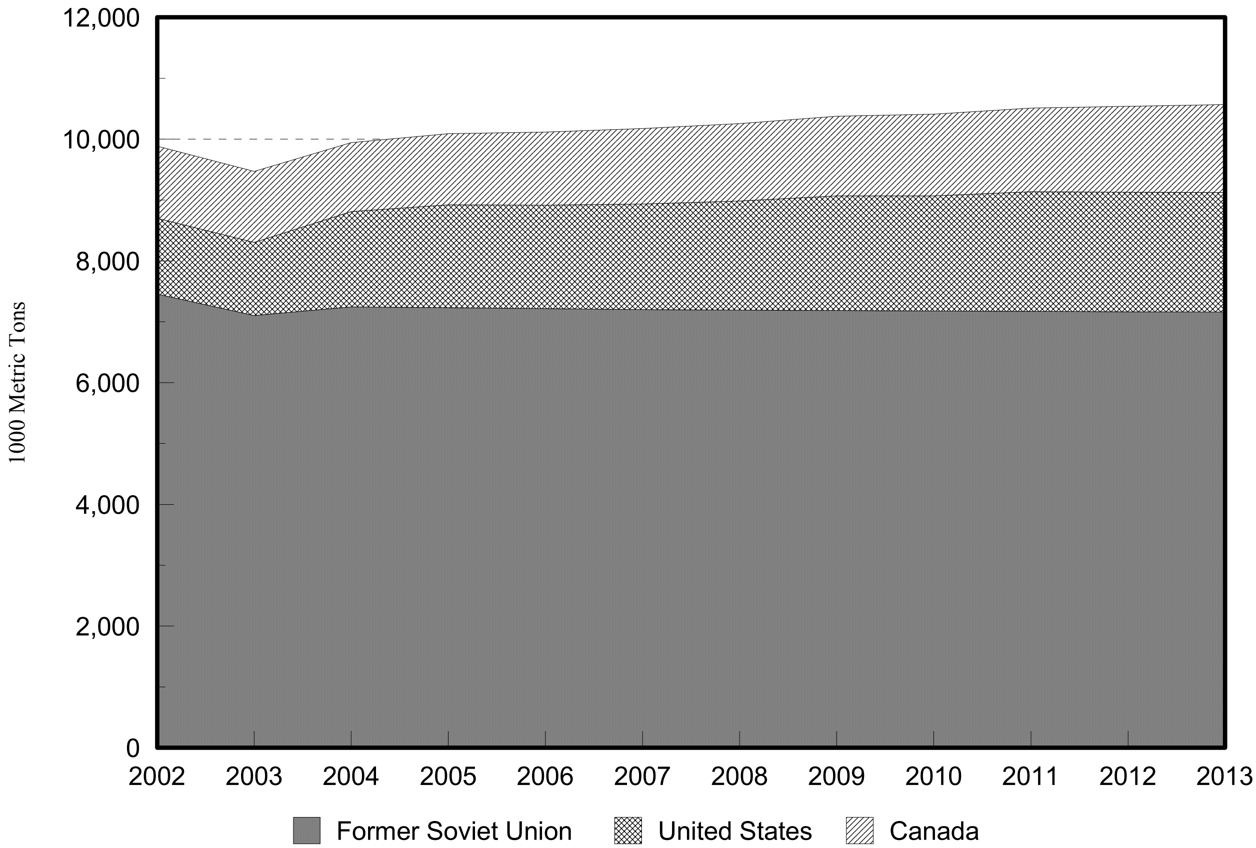

Figure 6. World Sugar Imports by Country, Major Importers

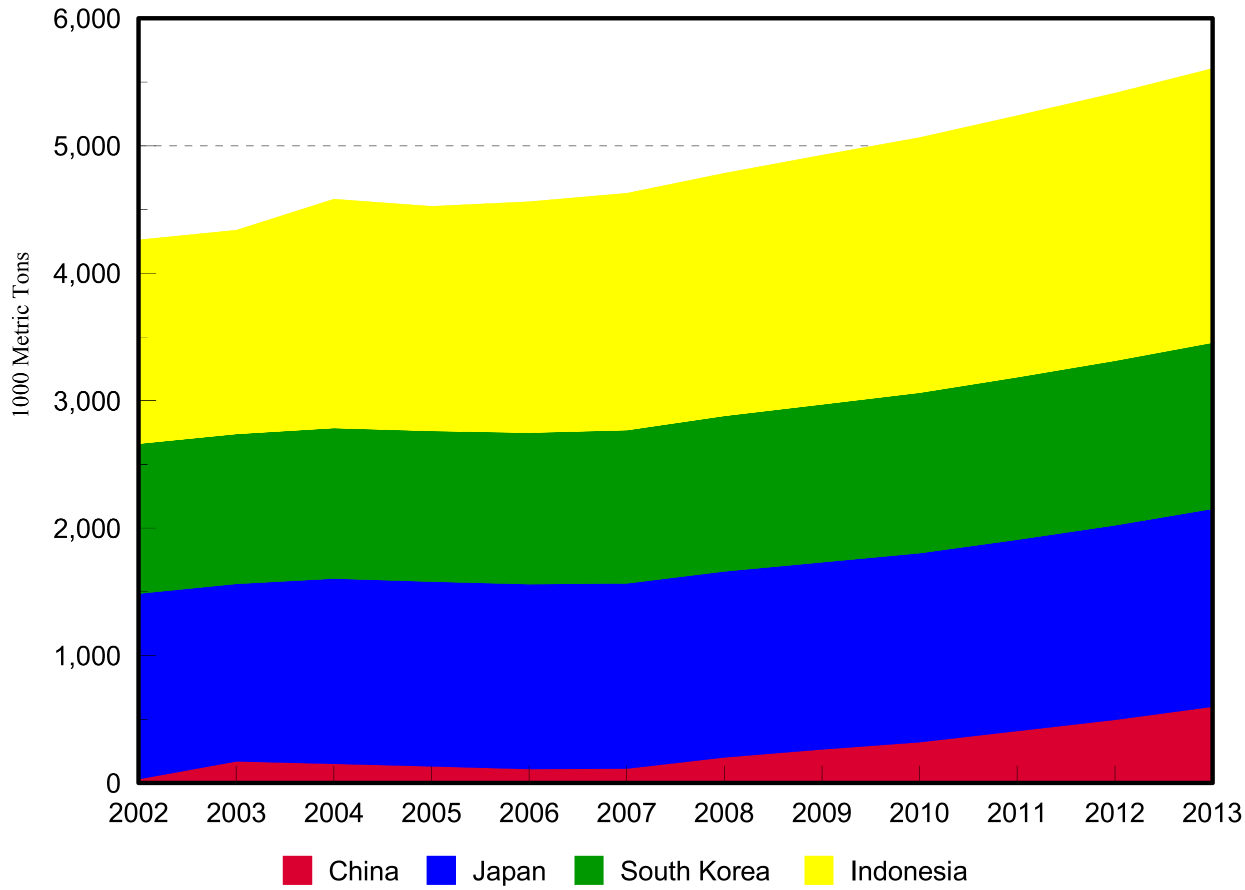

Figure 7. World Sugar Imports by Country, Asian Countries

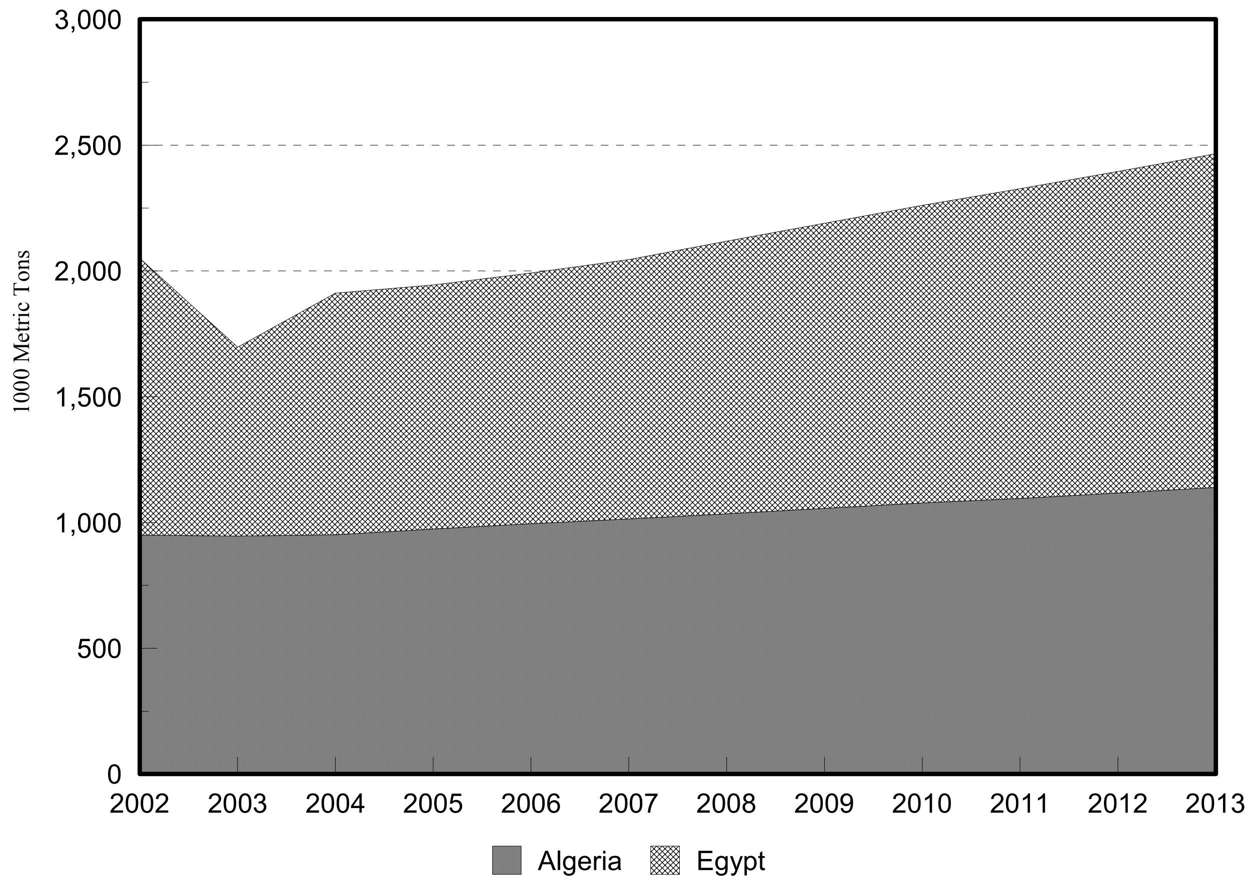

Figure 8. World Sugar Imports by Country, African Countries

Appendix

World Sugar Policy Simulation Model

2004 Baseline Solution

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugar Beets	41.37	41.47	41.63	41.76	41.95	42.14	42.31	42.48	42.68	42.93	43.13
Sugarcane	26.71	26.80	26.94	27.05	27.22	27.38	27.53	27.68	27.85	28.08	28.25

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Caribbean Price	7.51	7.58	7.69	7.78	7.92	8.05	8.17	8.29	8.43	8.61	8.75
TRQ Status	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota
Implicit Tariff	12.01	12.01	12.01	12.01	12.01	12.01	12.01	12.01	12.01	12.01	12.01
Import Price	19.52	19.59	19.70	19.79	19.93	20.06	20.18	20.30	20.44	20.62	20.76
Wholesale Price	25.35	25.82	25.94	26.03	26.18	26.32	26.45	26.58	26.74	26.93	27.08
Retail Price	33.27	33.37	33.53	33.66	33.86	34.04	34.21	34.38	34.58	34.84	35.04

United States - Area Harvested (1000 acres)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugar Beets	1420	1405	1390	1375	1363	1354	1349	1345	1341	1339	1334
Sugarcane	977	978	978	978	977	977	976	974	972	971	967
Total Area	2397	2383	2369	2353	2340	2331	2325	2319	2314	2309	2302

United States - Yields (short tons/acre)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugar Beets	20.96	21.31	21.54	21.74	21.92	22.01	22.06	22.21	22.38	22.56	22.74
Sugarcane	35.36	35.52	35.68	35.83	35.99	36.15	36.30	36.36	36.46	36.59	36.73

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugar Beets	29768	29944	29947	29896	29873	29806	29756	29859	30016	30196	30339
Sugarcane	34544	34737	34902	35045	35180	35307	35422	35424	35458	35509	35523

United States - Sugar Extraction Rates (percent)

Variable	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugar Beets	14.13	14.13	14.13	14.13	14.13	14.13	14.13	14.13	14.13	14.13	14.13
Sugarcane	12.11	12.11	12.11	12.11	12.11	12.11	12.11	12.11	12.11	12.11	12.11

United States - Sugar Production (1000 short tons)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Beet Sugar	4206	4231	4232	4224	4221	4212	4205	4219	4241	4267	4287
Cane Sugar	4183	4207	4227	4244	4260	4276	4290	4290	4294	4300	4302
All Sugar	8389	8438	8458	8468	8481	8487	8494	8509	8535	8567	8589

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

Variable	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Tariff Rate Quota	1256	1256	1256	1256	1256	1256	1256	1256	1256	1256	1256
Below Quota Tariff	0	0	0	0	0	0	0	0	0	0	0
Above Quota Tariff	15.36	15.36	15.36	15.36	15.36	15.36	15.36	15.36	15.36	15.36	15.36

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
TRQ Status	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota
Implicit Tariff	12.01	12.01	12.01	12.01	12.01	12.01	12.01	12.01	12.01	12.01	12.01
Total Imports	1610	2019	2172	2184	2230	2296	2408	2419	2508	2508	2508
Quota-sugar Imports	1400	1819	1972	1984	2030	2096	2208	2219	2308	2308	2308
Other Sugar Imports	210	210	200	200	200	200	200	200	200	200	200
Total Exports	150	120	120	120	120	120	120	120	120	120	120
Net Imports	1460	1899	2052	2064	2110	2176	2288	2299	2388	2388	2388

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	2079	1650	1736	1773	1791	1802	1810	1819	1830	1842	1856
Production	8389	8438	8458	8468	8481	8487	8494	8509	8535	8567	8589
Net Imports	1460	1899	2052	2064	2110	2176	2288	2299	2388	2388	2388
Consumption	10279	10011	10046	10094	10150	10221	10315	10433	10576	10741	10939
Carry-out Stocks	1650	1736	1773	1791	1802	1810	1819	1830	1842	1856	1873

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	72.30	69.77	69.38	69.07	68.84	68.71	68.74	68.92	69.27	69.75	70.43
Stocks/Consumption	16.05	17.34	17.65	17.74	17.75	17.71	17.64	17.54	17.42	17.28	17.12

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Area Harvested	10	12	12	12	12	12	12	11	11	11	11
Yield	42.00	41.79	42.34	42.72	43.14	43.56	43.97	44.38	44.80	45.21	45.62
Production	420	487	504	506	507	508	509	509	510	511	512

Canada - Sugar Beet Exogenous Variables

Variable	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
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)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	164	130	123	122	124	127	131	134	138	141	145
Production	50	55	57	57	57	57	57	58	58	58	58
Net Imports	1162	1131	1168	1203	1238	1273	1308	1342	1377	1411	1445
Imports	1175	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Exports	13	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1246	1193	1225	1258	1292	1327	1362	1396	1431	1465	1499
Carry-out Stocks	130	123	122	124	127	131	134	138	141	145	149

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	38.65	36.66	37.31	37.97	38.65	39.35	40.05	40.74	41.43	42.11	42.79
Stocks/Consumption	10.43	10.30	9.98	9.87	9.84	9.84	9.85	9.87	9.88	9.90	9.91

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Area Harvested	620	621	622	625	629	632	636	640	644	648	653
Yield	73.00	73.96	74.51	74.95	75.37	75.77	76.18	76.59	76.99	77.40	77.80
Production	45289	45894	46371	46858	47375	47915	48469	49034	49608	50190	50776

Mexico - Sugar Extraction Rates (percent)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugarcane	11.50	11.50	11.60	11.60	11.70	11.70	11.80	11.80	11.90	11.90	11.90

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	1058	986	913	873	852	842	841	844	850	859	868
Production	5200	5278	5379	5436	5543	5606	5719	5786	5903	5973	6042
Net Imports	11	-57	-115	-128	-183	-180	-228	-226	-272	-265	-253
Exports	40	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	51	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	5283	5293	5304	5329	5370	5427	5488	5553	5623	5698	5779
Carry-out Stocks	986	913	873	852	842	841	844	850	859	868	880

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	48.90	48.34	47.78	47.36	47.10	47.00	46.94	46.92	46.95	47.03	47.14
Stocks/Consumption	18.66	17.25	16.46	15.98	15.68	15.49	15.38	15.31	15.27	15.24	15.22

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Area Harvested	7	7	7	7	7	7	7	7	7	7	7
Yield	20	20	20	20	20	20	20	20	20	20	20
Production	137	141	144	146	147	148	149	149	150	151	151

Algeria - Sugar Extraction Rates (percent)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
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)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	87	90	93	95	97	97	98	99	99	100	100
Production	10	10	11	11	11	11	11	11	11	11	11
Net Imports	946	951	974	995	1014	1035	1056	1078	1095	1117	1139
Exports	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	954	958	983	1005	1024	1045	1067	1088	1106	1128	1150
Carry-out Stocks	90	93	95	97	97	98	99	99	100	100	101

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	28.00	27.62	27.82	27.96	28.03	28.15	28.28	28.41	28.45	28.58	28.71
Stocks/Consumption	9.44	9.72	9.69	9.61	9.52	9.40	9.27	9.14	9.04	8.91	8.78

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Area Harvested	400	406	412	417	422	427	433	440	446	451	457
Yield	92	94	95	95	95	96	96	96	97	97	98
Production	36840	38170	38921	39567	40213	40890	41629	42383	43128	43871	44618

Australia - Sugar Extraction Rate (percent)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
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)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	743	673	600	600	600	600	600	600	600	600	600
Production	4900	5077	5176	5262	5348	5438	5537	5637	5736	5835	5934
Net Exports	3920	4045	4048	4111	4173	4239	4314	4390	4465	4539	4614
Exports	3925	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1050	1104	1128	1152	1175	1199	1223	1247	1271	1295	1320
Carry-out Stocks	673	600	600	600	600	600	600	600	600	600	600

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	60.00	56.78	57.60	58.41	59.22	60.03	60.85	61.66	62.48	63.31	64.14
Stocks/Consumption	64.10	54.33	53.19	52.10	51.05	50.04	49.06	48.12	47.20	46.32	45.46

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	100	100	139	161	176	186	193	199	204	209	213
Production	22400	23666	24010	24454	24750	25098	25495	25942	26190	26538	26785
Net Exports	12420	13844	14175	14588	14820	15068	15382	15723	15844	16001	16052
Exports	12420	#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	9980	9783	9812	9851	9920	10023	10107	10213	10341	10533	10729
Carry-out Stocks	100	139	161	176	186	193	199	204	209	213	217

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	54.50	52.82	52.41	52.07	51.90	51.91	51.85	51.91	52.09	52.59	53.10
Stocks/Consumption	1.00	1.42	1.64	1.79	1.87	1.92	1.97	2.00	2.02	2.02	2.03

China - Area Harvested (1000 hectares)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugar Beets	522	512	518	516	529	524	528	527	530	531	533
Sugarcane	1251	1238	1232	1232	1231	1234	1235	1236	1236	1234	1233
Total Area	1773	1750	1751	1748	1760	1757	1762	1764	1765	1765	1766

China - Yields (metric tons/hectare)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugar Beets	37.10	36.88	36.74	36.68	36.67	36.72	36.81	36.93	37.08	37.26	37.46
Sugarcane	66.10	66.13	66.17	66.23	66.29	66.35	66.42	66.50	66.57	66.65	66.72

China - Production (1000 metric tons)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugar Beets	19351	18874	19048	18943	19391	19230	19426	19472	19641	19785	19985
Sugarcane	82704	81901	81551	81567	81629	81859	82008	82211	82248	82250	82264

China - Sugar Extraction Rates (percent)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
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)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	1538	2046	1848	1730	1733	1759	1795	1829	1859	1882	1898
Production	9532	9410	9395	9386	9437	9442	9475	9499	9519	9534	9556
Beet Sugar	1964	1916	1933	1923	1968	1952	1972	1976	1994	2008	2029
Cane Sugar	7567	7494	7462	7463	7469	7490	7504	7522	7526	7526	7527
Net Imports	170	-331	-162	62	113	201	263	320	407	496	598
Exports	410	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	580	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	9194	9276	9352	9444	9525	9607	9704	9790	9902	10014	10139
Carry-out Stocks	2046	1848	1730	1733	1759	1795	1829	1859	1882	1898	1913

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	7.07	7.09	7.11	7.13	7.15	7.17	7.20	7.21	7.25	7.28	7.32
Stocks/Consumption	22.25	19.93	18.50	18.35	18.47	18.69	18.85	18.99	19.01	18.96	18.87

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Area Harvested	851	877	880	882	884	886	888	889	891	893	895
Yield	25	27	29	30	30	31	31	32	32	33	33
Production	21275	24020	25309	26147	26773	27300	27776	28227	28668	29106	29546

Cuba - Sugar Extraction Rate (percent)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
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)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	78	128	146	151	152	149	145	141	137	132	127
Production	2200	2484	2617	2704	2768	2823	2872	2919	2964	3010	3055
Net Exports	1450	1758	1891	1972	2028	2072	2110	2145	2180	2214	2248
Consumption	700	708	720	732	743	755	766	778	789	800	812
Carry-out Stocks	128	146	151	152	149	145	141	137	132	127	123

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	61.10	61.55	62.25	62.97	63.65	64.33	65.03	65.72	66.39	67.03	67.71
Stocks/Consumption	18.29	20.55	21.00	20.70	20.06	19.28	18.45	17.61	16.78	15.93	15.11

Egypt - Area Harvested (1000 hectares)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugar Beets	40	37	38	39	39	40	40	40	41	41	42
Sugarcane	130	130	130	130	131	131	131	132	132	132	133
Total Area	170	167	169	169	170	170	171	172	173	173	174

Egypt - Yields (metric tons/hectare)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugar Beets	45.30	43.81	44.64	44.80	45.15	45.45	45.87	46.15	46.46	46.77	47.08
Sugarcane	106.50	106.07	105.84	105.77	105.85	106.04	106.33	106.71	107.16	107.68	108.25

Egypt - Production (1000 metric tons)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugar Beets	1812	1621	1712	1732	1769	1800	1833	1863	1893	1924	1956
Sugarcane	13821	13787	13779	13795	13829	13878	13960	14051	14149	14252	14361

Egypt - Sugar Extraction Rates (percent)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
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	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20	8.20

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	640	500	504	508	511	514	517	520	523	527	531
Production	1365	1337	1348	1352	1359	1367	1379	1390	1402	1414	1427
Beet Sugar	231	207	218	221	226	229	234	237	241	245	249
Cane Sugar	1133	1131	1130	1131	1134	1138	1145	1152	1160	1169	1178
Net Imports	750	960	970	996	1031	1083	1133	1183	1232	1278	1326
Exports	150	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	900	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	2253	2293	2314	2345	2388	2448	2509	2570	2630	2688	2749
Carry-out Stocks	500	504	508	511	514	517	520	523	527	531	535

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	32.50	32.47	32.19	32.05	32.06	32.32	32.58	32.83	33.08	33.29	33.53
Stocks/Consumption	22.19	22.00	21.95	21.78	21.51	21.10	20.72	20.37	20.04	19.74	19.44

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
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)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Area Harvested	2010	2027	2027	2027	2025	2026	2026	2027	2027	2027	2027
Yield	55.90	55.62	55.72	55.88	56.04	56.20	56.36	56.52	56.68	56.84	57.01
Production	112359	112733	112971	113242	113495	113835	114209	114588	114913	115233	115556

European Union - Sugar Extraction Rates (percent)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugar Beets	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50	15.50

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	3113	2763	2734	2727	2728	2733	2738	2742	2747	2751	2754
Production	17432	17474	17511	17553	17592	17644	17702	17761	17812	17861	17911
Net Exports	3253	3018	3004	3010	3022	3050	3086	3125	3158	3192	3226
Exports	5403	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	2150	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	14529	14484	14514	14541	14566	14590	14611	14632	14649	14665	14681
Carry-out Stocks	2763	2734	2727	2728	2733	2738	2742	2747	2751	2754	2758

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	40.75	40.55	40.55	40.56	40.57	40.58	40.59	40.60	40.62	40.63	40.64
Stocks/Consumption	19.02	18.88	18.79	18.76	18.76	18.76	18.77	18.77	18.78	18.78	18.78

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	9340	5640	5322	5294	5329	5371	5410	5449	5489	5528	5567
Production	18800	19814	20428	20831	21125	21462	21722	22041	22342	22633	22968
Net Exports	1000	-532	-549	-550	-603	-604	-684	-703	-741	-788	-798
Exports	1000	#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	21500	20663	21005	21346	21686	22027	22367	22705	23043	23382	23726
Carry-out Stocks	5640	5322	5294	5329	5371	5410	5449	5489	5528	5567	5607

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	19.10	18.10	18.14	18.18	18.22	18.26	18.30	18.34	18.38	18.42	18.46
Stocks/Consumption	26.23	25.76	25.20	24.96	24.77	24.56	24.36	24.18	23.99	23.81	23.63

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Area Harvested	336	335	335	336	338	340	343	346	350	354	358
Yield	65.90	65.92	66.22	66.52	66.82	67.12	67.42	67.72	68.02	68.32	68.62
Production	22136	22084	22186	22349	22563	22827	23132	23462	23809	24168	24538

Indonesia - Sugar Extraction Rate

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
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)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	1340	1260	1353	1355	1354	1353	1351	1349	1347	1345	1343
Production	1770	1767	1775	1788	1805	1826	1851	1877	1905	1933	1963
Net Imports	1600	1797	1762	1811	1859	1903	1953	2003	2052	2101	2152
Exports	0	#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	3450	3471	3535	3600	3666	3731	3806	3882	3959	4037	4117
Carry-out Stocks	1260	1353	1355	1354	1353	1351	1349	1347	1345	1343	1341

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	15.70	15.55	15.61	15.67	15.74	15.80	15.91	16.02	16.14	16.27	16.39
Stocks/Consumption	36.52	38.97	38.33	37.61	36.90	36.21	35.45	34.71	33.98	33.27	32.58

Japan - Area Harvested (1000 hectares)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugar Beets	65	65	66	67	67	68	68	68	68	67	67
Sugarcane	23	23	24	24	24	24	24	24	24	24	24
Total Area	88	89	90	91	92	92	92	92	92	91	91

Japan - Yields (metric tons/hectare)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugar Beets	51.50	52.77	53.56	54.13	54.59	55.01	55.40	55.79	56.17	56.54	56.92
Sugarcane	59.99	60.28	60.31	60.35	60.40	60.44	60.48	60.53	60.57	60.61	60.66

Japan - Production (1000 metric tons)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugar Beets	3348	3449	3535	3613	3680	3736	3774	3797	3807	3805	3793
Sugarcane	1380	1403	1422	1441	1456	1467	1472	1472	1467	1460	1449

Japan - Sugar Extraction Rates (percent)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
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)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	330	272	267	265	263	262	261	260	259	258	257
Production	800	823	842	859	874	885	893	898	899	898	894
Beet Sugar	634	653	670	684	697	708	715	719	721	721	718
Cane Sugar	167	170	172	175	177	178	179	178	178	177	176
Net Imports	1392	1452	1450	1450	1453	1458	1469	1483	1502	1525	1551
Exports	10	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1402	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	2250	2280	2295	2311	2328	2345	2363	2382	2402	2424	2446
Carry-out Stocks	272	267	265	263	262	261	260	259	258	257	256

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	17.74	17.94	18.05	18.17	18.30	18.44	18.60	18.77	18.96	19.16	19.38
Stocks/Consumption	12.09	11.73	11.54	11.39	11.26	11.14	11.01	10.88	10.75	10.60	10.45

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	100	89	85	84	85	85	86	86	86	87	87
Net Imports	1175	1181	1182	1189	1201	1220	1239	1258	1275	1290	1304
Exports	325	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1500	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1186	1184	1184	1189	1201	1220	1239	1257	1274	1290	1304
Carry-out Stocks	89	85	84	85	85	86	86	86	87	87	87

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	24.50	24.28	24.08	24.01	24.09	24.32	24.55	24.77	24.96	25.13	25.26
Stocks/Consumption	7.50	7.21	7.12	7.11	7.09	7.01	6.94	6.88	6.82	6.75	6.69

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Area Harvested	334	329	327	327	328	331	334	337	340	344	348
Yield	71.14	76.46	76.86	77.26	77.66	78.06	78.46	78.86	79.26	79.66	80.06
Production	23761	25121	25103	25251	25504	25824	26188	26579	26987	27406	27832

South Africa - Sugar Extraction Rates (percent)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugarcane	11.17	11.17	11.17	11.17	11.17	11.17	11.17	11.17	11.17	11.17	11.17

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	505	400	407	408	410	414	421	428	434	429	439
Production	2655	2806	2804	2821	2849	2885	2925	2969	3014	3061	3109
Net Exports	1160	1264	1278	1290	1302	1310	1323	1349	1424	1418	1451
Exports	1400	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	240	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1600	1534	1526	1528	1542	1568	1595	1614	1595	1633	1652
Carry-out Stocks	400	407	408	410	414	421	428	434	429	439	445

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	36.05	34.61	34.56	34.83	35.41	36.34	37.37	38.30	38.38	39.81	40.81
Stocks/Consumption	25.00	26.56	26.73	26.81	26.84	26.85	26.87	26.89	26.87	26.89	26.93

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Area Harvested	2300	2312	2325	2338	2353	2368	2383	2399	2414	2430	2447
Yield	16.00	15.98	16.02	16.09	16.17	16.26	16.36	16.46	16.56	16.66	16.76
Production	36800	36938	37233	37616	38045	38507	38987	39479	39980	40489	41008

Former Soviet Union - Sugar Extraction Rates (percent)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
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)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	3750	3628	3661	3682	3698	3709	3720	3731	3743	3754	3766
Production	4251	4270	4304	4348	4398	4451	4507	4564	4622	4680	4741
Net Imports	7102	7245	7229	7215	7200	7190	7182	7176	7170	7163	7157
Exports	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	11475	11482	11512	11548	11586	11630	11678	11728	11780	11832	11886
Carry-out Stocks	3628	3661	3682	3698	3709	3720	3731	3743	3754	3766	3777

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	38.90	38.92	39.01	39.10	39.18	39.27	39.36	39.44	39.53	39.60	39.69
Stocks/Consumption	31.62	31.89	31.99	32.02	32.02	31.99	31.95	31.91	31.87	31.83	31.78

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Area Harvested	1108	1121	1133	1145	1157	1169	1180	1192	1204	1215	1227
Yield	59.05	59.89	60.39	60.80	61.17	61.53	61.89	62.25	62.61	62.97	63.33
Production	65427	67109	68415	69602	70757	71906	73056	74207	75364	76528	77696

Thailand - Sugar Extraction Rates (percent)

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Sugarcane	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40	10.40

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Carry-in Stocks	792	592	668	714	744	766	784	800	816	832	848
Production	6800	6979	7115	7239	7359	7478	7598	7718	7838	7959	8080
Net Exports	5100	4685	4817	4921	5013	5101	5185	5266	5346	5425	5500
Exports	5100	#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	1900	2218	2253	2288	2323	2359	2397	2435	2476	2518	2563
Carry-out Stocks	592	668	714	744	766	784	800	816	832	848	865

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Per Capita Consumption	29.10	33.61	33.83	34.07	34.32	34.57	34.86	35.17	35.51	35.89	36.30
Stocks/Consumption	31.16	30.12	31.69	32.51	32.97	33.23	33.40	33.51	33.60	33.68	33.74

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Net Exports	-13869	-13196	-13548	-13897	-14235	-14465	-14701	-15039	-15170	-15286	-15304

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

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
0	7.51	7.58	7.69	7.78	7.92	8.05	8.17	8.29	8.43	8.61	8.75
$/ton	165.57	167.11	169.53	171.52	174.60	177.47	180.12	182.76	185.85	189.82	192.90