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2000 OUTLOOK OF THE U.S. AND WORLD SUGAR MARKETS

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The authors assume responsibility for any errors of omission, logic, or otherwise.

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Abstract

This report evaluates the U.S. and world sugar markets for 1999-2009 by 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 be strong for the next ten years after the current over supply is reduced. World demand for sugar is expected to grow faster than world supply, resulting in gradually increasing Carribean sugar prices from 6.55 cents/lb in 1999 to 12.3 cents/lb in 2009. The U.S. wholesale price of sugar is projected to increase from 20.69 cents/lb in 2000 to 28.84 cents/lb in 2009 if the United States maintains its sugar programs. World trade volumes of sugar are expected to expand slightly.

Key words: Sugar, Production, Exports, Consumption, Ending Stocks.

Highlights

Total world sugar trade is projected to increase by 4.6 percent between 1999 and 2009 from 23.8 million metric tons to 24.9 million metric tons. World sugar prices also are projected to increase from 6.55 cents/lb in 1999 to 12.3 cents/lb in 2009. The U.S. domestic wholesale price is expected to reach the lowest level (21 cents/lb) in 2000 and recover slowly for the 2001-2009 period. Sugar price is projected to be 23 cents/lb in 2001, 25 cents/lb in 2002, and 28.84 cents/lb in 2009.

U.S. sugar production and imports are predicted to increase 17.0 percent and 14.3 percent, respectively, for the 1999-2009 period. This is mainly because of increased U.S. sugar consumption which is predicted to be 15.8 percent. Ending stocks also are predicted to decrease 0.6 percent.

Canada's production is predicted to increase 27.1 percent from 1999 to 2009. Canada's imports are expected to increase 16.0 percent. Consumption is predicted to increase 16.7 percent, while ending stocks are predicted to increase 72.1 percent.

Mexico's production is expected to increase 21.1 percent, but exports are expected to decrease 32.1 percent for the 1999-2009 period, unless Mexico replaces the sugar that is used in soft drinks with high fructose corn syrup (HFCS). If HFCS is used in soft drinks, the excess sugar will be exported into the United States under the North American Free Trade Agreement (NAFTA).

The European Union's (EU) exports are predicted to decrease 1.8 percent. Their production and consumption are predicted to remain constant.

Production and consumption in India are predicted to increase 13.9 percent and 16.1 percent, respectively, for the 1999-2009 period. As a result, India's imports are predicted to increase 106.3 percent.

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

Most importing countries, including Algeria, China, Japan, Korea, and Indonesia, are predicted to increase their imports for the 1999-2009 period.

2000 OUTLOOK OF THE U.S. AND WORLD SUGAR MARKETS

Won W. Koo and Richard D. Taylor*

INTRODUCTION

Sugar is produced in over 100 countries worldwide. In most years, over 70 percent 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 are very unstable in the world market.

This report evaluates the United States and world sugar industry for 1999-2009 by using the Global Sugar Policy Simulation Model developed by Benirschka and Koo (1995). 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 that 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 the fields. 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 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 is about 50 percent.

OVERVIEW OF THE WORLD SUGAR INDUSTRY AND SUGAR POLICIES

For the 1995–1999 period, global sugar production was approximately 122 million metric tons annually with 30 percent of production exported from its country of origin. The largest sugar producing region is the EU, followed by India and Brazil (Table 1).

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Table 1. World Sugar Supply and Utilization, 1995 to 1999 Average

Country	Crop[a]	Production	Consumption	Net Exports	Ending Stocks	Per Capita Consumption
		---------- 1,000 metric tons, raw value ----------				pounds
Algeria	B	10.0	920.6	-906.4	98.2	68
Australia	C	5,179.2	908.0	4,181.8	275.2	108
Brazil	C	14,264.8	8,364.0	5,774.0	785.2	114
Canada	B	119.0	1,242.4	-1,110.2	136.8	90
China	B/C	7,543.4	8,405.2	-1,154.6	2,611.4	15
Cuba	C	3,876.0	656.8	3,160.0	363.2	131
Egypt	B/C	1,135.0	1,780.0	-629.0	328.0	64
European Union	B	17,930.2	14,204.8	3661.8	2,600.6	87
Former Soviet Union	B	5,347.8	9,624.4	-4,074.2	1,904.2	72
India	C	15,394.8	15,286.4	-272.6	5,983.8	34
Indonesia	C	2,080.8	2,884.0	-952.0	613.6	32
Japan	B/C	821.2	2,463.8	-1,636.6	148.4	43
Mexico	C	4,668.8	4,238.4	525.8	626.8	96
South Africa	C	2,128.0	1,404.0	718.4	367.8	73
South Korea	-	0.0	1,110.0	-1,111.2	135.6	53
Thailand	C	5,186.2	1,563.6	3,578.4	707.2	57
United States	B/C	6,846.4	8,593.8	-1,700.0	1,282.6	71
Rest of the World	B/C	29,133.0	34,586.8	-8,046.8	6,264.0	40
World Total		121,665.4	118,237.8	32,671.2	25,231.0	45

[a] B = Sugarbeet; C = Sugarcane.

Source: USDA, *PS&D View*, 1999.

Per capita sugar consumption is highest in Cuba (75.07 kg), followed by Brazil and Australia. Per capita sugar consumption in the United States is 31.82 kg, which is above world average per capita consumption (19.96 kg). Per capita sugar consumption is lowest in China at 7.17 kg per capita, but that may increase substantially as per capita income increases. Global sugar consumption for the 1995–1999 period was 121 million metric tons annually.

The major sugar exporting countries are the EU, Brazil, Australia, Thailand, Cuba, and Ukraine. These countries account for 73 percent of global exports from 1995 to 1999. Relatively few countries dominate world sugar exports, but imports are less concentrated. Major importing countries are the EU, Russia, China, United States, Japan, Korea, and Canada. Their imports accounted for about 46 percent of all sugar imports from 1995 to 1999. Under the Lome Convention, the EU is 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 is 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 $0.25 per pound and $0.29 per pound. World market prices ranged between $0.09 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.

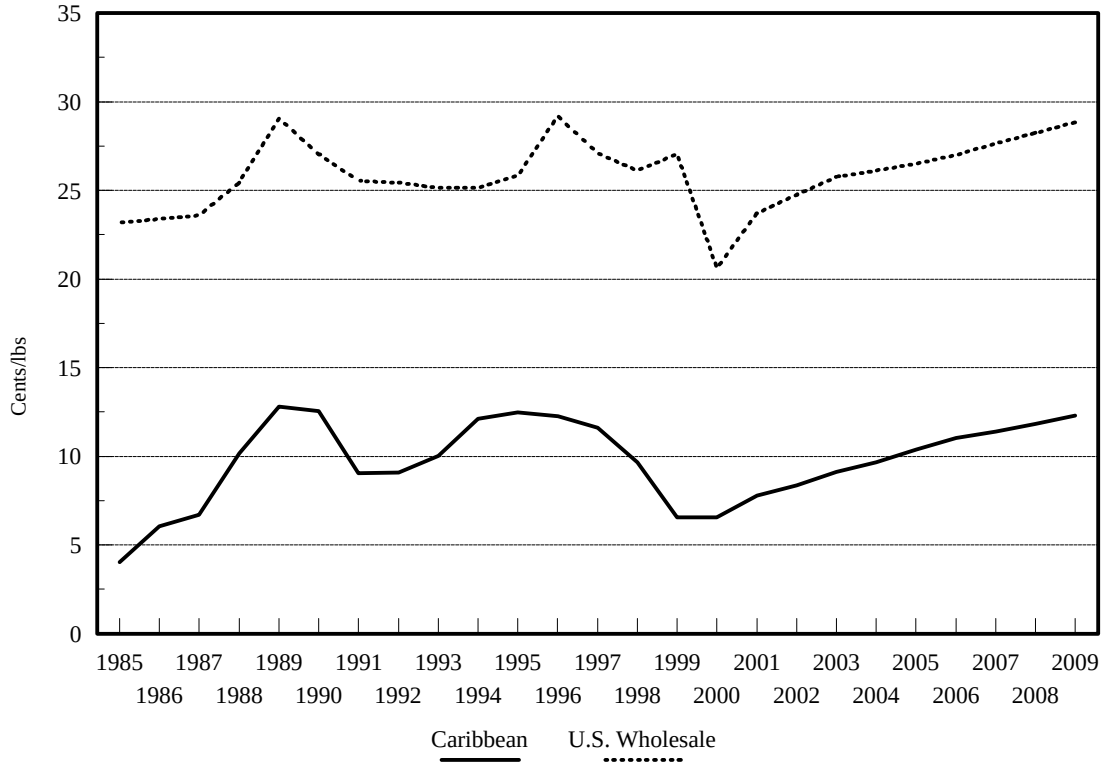

Figure 1. U.S. and World Sugar Price

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. U.S. total sugar production increased about 18 percent from 6.1 million metric tons in 1985/86 to 7.2 million metric tons in 1998/99. Beet sugar production increased 41.3 percent for the 1985 to 1999 period, while cane sugar production increased 22.7 percent (Figure 2).

U.S. consumption of sugar also increased 22 percent from 8.1 million metric tons in 1985/86 to 9.8 million metric tons in 1998/99. The balance was imported from more than forty countries. U.S. sugar imports were reduced 71 percent from 4.5 million metric tons to 1.3 million metric tons for the 1974 to 1987 period and then increased to 1.6 million metric tons for the 1988 to 1999 period.

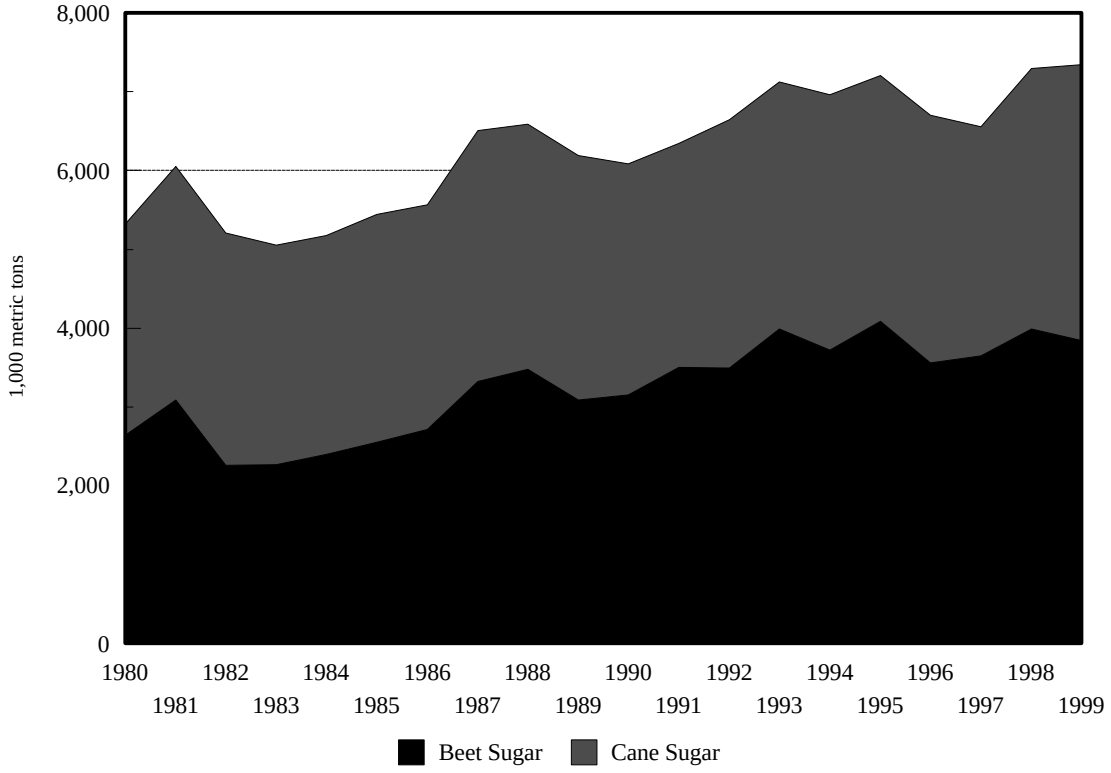

Figure 2. U.S. Beet and Cane Sugar Production

The U.S. Sugar Programs and Policies

The U.S. sugar program was established by the Food and Agricultural Act of 1981. Several modifications have been made by the Food Security Act of 1985, the Food, Agriculture, Conservation, and Trade Act of 1990, and the Federal Agriculture Improvement and Reform (FAIR) Act of 1996.

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 to 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 percent of the loan. Final payments are made and the loan is repaid after the sugar has been sold.

Under the FAIR 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 FAIR 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 forfeits collateral (sugar) to the Commodity Credit Corporation

(CCC) if market prices fall below the loan rates. The processor must pay a penalty of about one cent per pound of sugar, effectively reducing the price support by the same. 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 imports 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 17.62 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 will be 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 will be reduced from 18.6 cents per pound in 1995 to 16.21 cents per pound in 2000. The quota will remain at the same level for 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.

The North American Free Trade Agreement (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 for raw cane sugar and 16.21 cents 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 5.1 million metric tons of sugar in 1998 and consumed 4.24 million metric tons in the same year. Its exports were 0.87 million metric tons in 1998. If Mexico starts to use High Fructose Corn Sweetener (HFCS) for beverages, more of its sugar could be exported to the United States.

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 placed since the accession of Austria, Sweden, and Finland to the EU and are currently legislated at these levels until 2000/01.
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, 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 percent 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 is reducing 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 percent of the raw sugar produced in the state of Queensland, which produces 95 percent 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.

AN ECONOMETRIC SIMULATION MODEL

The Global Sugar Policy Simulation Model was developed by dividing sugar into beet and cane sugar. This model includes 17 sugar producing and consuming countries. Some of these countries are beet sugar producing countries [Algeria, Canada, the EU, and the Former Soviet Union (FSU)] and some are cane sugar producing countries (Australia, Brazil, Cuba, India, Indonesia, Mexico, South Africa, and Thailand). The remaining countries (China, Egypt, Japan, and the United States) produce both beet and cane sugar. These two sugars are perfectly substitutable in consumption, but are differentiated in the production process.

Sugar production, consumption, and carry-over stock equations in major producing and consuming countries are estimated with time series data by using econometric techniques. The estimated equations are linked under a partial equilibrium condition in the world sugar industry. The market clearing condition requires that the sum of all countries' excess demand for sugar, which depends on the world price of sugar, is zero. This aggregate excess demand equation is solved for the equilibrium price.

Model Structure and Development

Area and yield equations determine the supply of sugar. Since sugar is divided into two classes (cane sugar and beet sugar), two separate supply equations are estimated in the United States, Egypt, Japan, and China, which produce both sugar classes. Other countries have either sugarcane or sugarbeet equations.

Sugar area depends upon expected prices of sugar and alternative crops. As a proxy for price expectations, lagged prices are used in the area equation. In addition to commodity prices, the lagged area variable is included to capture dynamics associated with producers' planting decisions. Area harvested is a function of lagged area, lagged prices of sugar and alternative crops, and government policies as follows:

$$a^s_{i,t} = f(a^s_{i,t-1},\ p^s_{i,t-1},\ p^c_{t-1},\ g_t) \tag{1}$$

where a^s is the sugar area harvested, p^s is the world market price or domestic price of sugar, p^c is the prices of alternative crops, g is policy parameters, and i represents index for sugar type (i=1 for cane sugar and i=2 for beet sugar).

Since sugarcane and sugarbeets are not competing directly for land, area of each type is a function of price of the corresponding crop. Competing crops are cotton, in sugarcane producing regions, and wheat, barley, and oilseed crops in sugarbeet producing regions.

$$qp^s_{i,t} = a^s_{i,t} \cdot y^s_{i,t} \tag{2}$$

Assuming that sugar yields depend upon production practices and advancements in technology, the total quantity of sugar produced (qp) is the product of the area harvested and yield per hectare:

Per capita sugar consumption is a function of the price of sugar, income, and a time trend representing changes in consumers' tastes and preferences:

$$fd^s_t = f(p^s_t,\ cy_t,\ t) \tag{3}$$

where fd^s is per capita demand for sugar, p^s is the domestic price of sugar, cy is per capita disposable income, and t is a trend.

Total consumption of sugar is calculated by multiplying the per capita consumption by population in the country as

$$qd^s_t = fd^s_t * pop_t \tag{4}$$

where qd is the total demand for sugar and pop represents population.

Carry-out stocks (qs^s) are a precaution against unexpected shortfalls in production. These stocks, therefore, are likely related to the level of domestic production. However, since the opportunity cost of holding sugar stocks depends on the price of sugar, the stocks should respond to price changes as

$$qs_t^s = f(qs_{t-1}^s,\ qp_t^s,\ p_t^s). \tag{5}$$

Net exports (qx^s) are the difference between domestic supply (domestic production plus carry-in stocks) and demand (domestic consumption plus carry-out stocks):

$$qx_t^s = qs_{t-1}^s + qp_{t-1}^s - qd_t^s - qs_t^s \tag{6}$$

If net export (qx^s) in a country is positive, the country is an exporting country. On the other hand, if net export (qx^s) in a country is negative, the country is an importing country.

A market equilibrium condition is expressed as:

$$\sum_{n=1}^{n} qx_t^{s,n} = 0 \tag{7}$$

The equilibrium condition is solved to determine market clearing prices of sugar. The equilibrium world price of sugar ($pm^{s,w}$) obtained from Equation 7 is converted into domestic prices ($pm^{s,n}$) using the official exchange rates (er^n) as follows:

$$pm_t^{s,n} = pm_t^{s,w} * er_t^n \tag{8}$$

Assumptions and Data Collection

The baseline simulation reported in this report is grounded on a series of assumptions about general economy, agricultural policies, and technological changes in exporting and importing countries for the simulation period (2000-2009). Macro assumptions are based on forecasts prepared by WEFA group and Project Link. Some of the macro variables are GDP growth rates, interest rates, exchange rates, and inflation rates in the countries. It is generally assumed that current agricultural policy will be continued in all countries in the baseline simulation. Average weather conditions and historical rates of technological change also are assumed in this simulation. The price of sugar in individual countries and the world market are endogenous, while the prices of other crops are exogenous. Thus, the baseline simulation is based on the forecasted world prices of other crops which have substitute and complementary relationships with sugarbeets and sugarcane. The forecasted prices were obtained from the Food and Agricultural Policy Institute (FAPRI) baseline solution.

OUTLOOK FOR THE WORLD SUGAR INDUSTRY

Total world sugar trade is projected to increase 4.6 percent from 23.8 to 24.9 million metric tons. Except for the EU, Brazil, Mexico, and South Africa, trade of sugar in most countries increases for 1999-2009. EU exports decrease mainly because of reductions in EU subsidies under the World Trade Organization (WTO). This will make EU sugar production less

competitive. Sugar consumption in India and South Africa is expected to increase faster than production.

World sugar prices, referred to as the Caribbean price of sugar, are projected to increase about 87.5 percent, from 6.55 cents/lb in 1999 to 12.3 cents/lb in 2009 (Figure 1), because of expected strong demand for sugar for the period. However, the price of sugar in 2009 is only 6.9 percent higher than the average price for the 1995-1998 period.

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 17.0 percent from 6.6 million metric tons in 1999 to 7.8 million metric tons in 2009. Beet sugar production is expected to increase faster than cane sugar production. Imports are predicted to increase 14.3 percent from 1.5 million metric tons in 1999 to 1.7 million metric tons in 2009 under an assumption that Mexico continues to export to the United States at the current levels (Figure 3).

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

	Average (1997-1999)	1999	2009	% Change (1999-2009)
	----------thousand metric tons----------			
United States				
Production	6,814	6,644	7,775	17.0
Beet Sugar	3,871	3,832	4,531	18.2
Cane Sugar	2,943	2,812	3,244	15.4
Net Imports	1,694	1,524	1,743	14.3
Per Capita				
Consumption (kg)	31.20	30.15	32.18	6.7
Consumption	8,416	8,209	9,507	15.8
Carry-over Stocks	1,316	1,341	1,333	-0.6

The domestic wholesale price for U.S. sugar is projected to increase from 24 cents/lb in 1999 to 28.84 cents/lb in 2009. However, the sugar price is expected to reach the lowest level (21 cents/lb) in 2000 and then recover slowly (23 cents/lb in 2001 and 25 cents/lb in 2002). The United States will continue to import over 22 percent of its domestic sugar consumption. U.S. sugar consumption is predicted to increase 15.8 percent from 8.2 million metric tons in 1999 to 9.5 million metric tons in 2009, while ending stocks are predicted to decrease 0.6 percent (Figure 4).

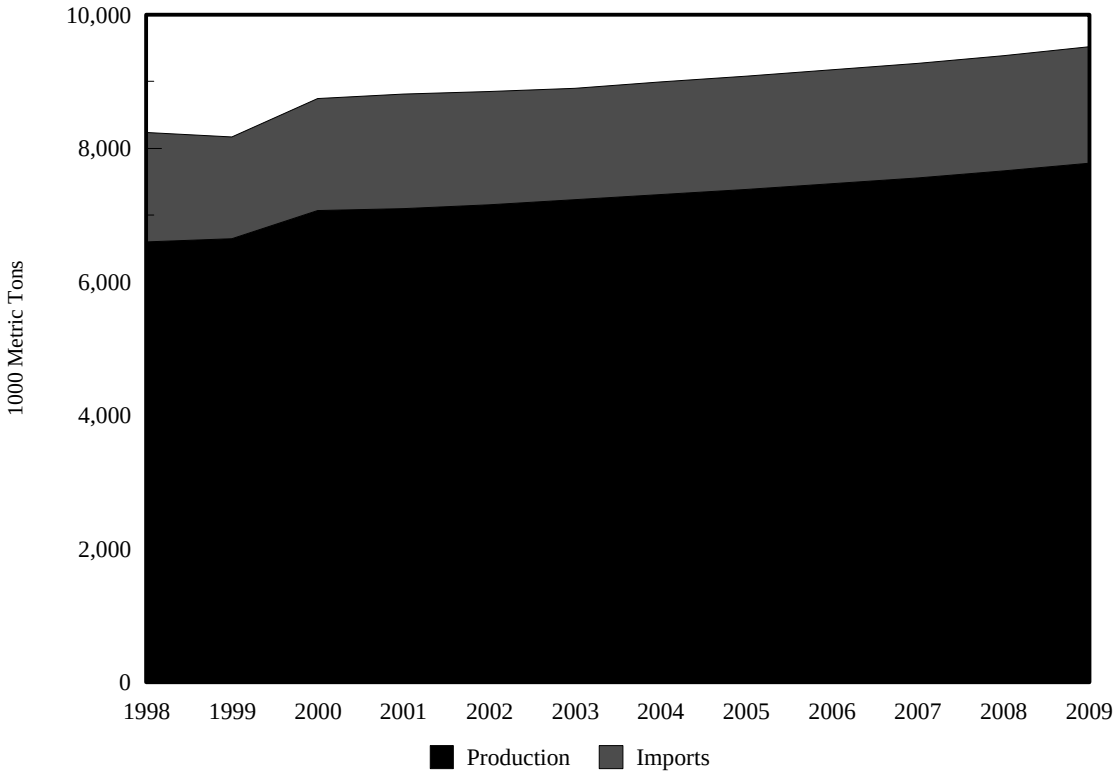

Figure 3. U.S. Sugar Production and Imports

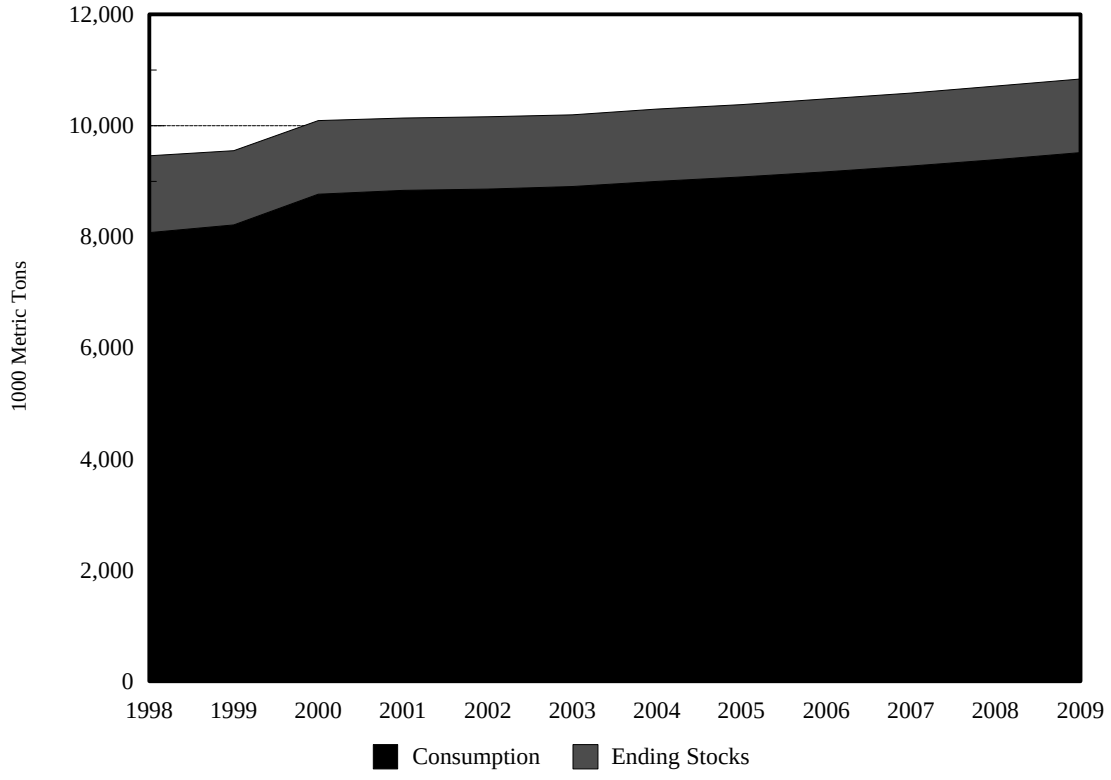

Figure 4. U.S. Sugar Consumption and Ending Stocks

Exporters

The EU's exports are predicted to decrease 1.8 percent from 3.4 million metric tons in 1999 to 3.3 million metric tons in 2009 (Table 3), mainly because EU sugar production will become less competitive with the reduced subsidies under the WTO. Sugar production in the EU is predicted to decrease while consumption remains constant at 15.0 million metric tons (Figure5).

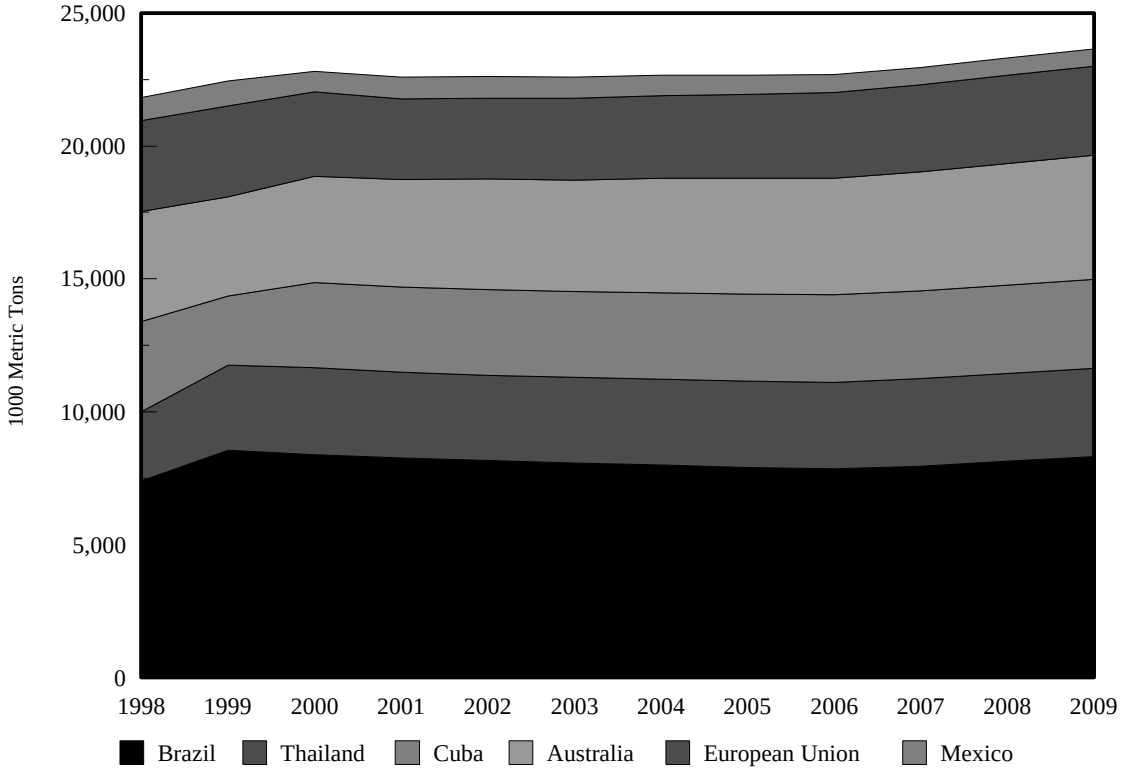

Figure 5. World Sugar Exports by Country

Brazil's production is predicted to increase 3.66 percent from 18.3 million metric tons in 1999 to 19.0 million metric tons in 2009 (Table 3). However, Brazil's exports are predicted to decrease 2.9 percent from 8.6 million metric tons in 1999 to 8.3 million metric tons in 2009, due mainly to increased consumption, which is predicted to increase 17.2 percent from 9.1 million metric tons in 1999 to 10.7 million metric tons in 2009.

Thailand's exports are predicted to increase 3.9 percent from 3.2 million metric tons in 1999 to 3.3 million metric tons in 2009 (Table 3) because of predicted increases in production from 5.2 million metric tons in 1999 to 5.3 million metric tons in 2009. Sugar consumption in the country also is predicted to increase 14.4 percent from 1.8 million metric tons in 1999 to 2.0 million metric tons in 2009.

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

	Average (1997-1999)	1999	2009	% Change (1999-2009)
	----------thousand metric tons----------			
European Union				
Production	18,156	19,403	18,413	-5.10
Net Exports	3,544	3,425	3,364	-1.78
Consumption	14,366	15,000	15,053	0.35
Carry-over Stocks	2,615	3,423	3,414	-0.26
Brazil				
Production	16,800	18,300	18,970	3.66
Net Exports	7,550	8,550	8,304	-2.88
Consumption	9,000	9,100	10,668	17.23
Carry-over Stocks	977	1,210	1,000	-17.36
Thailand				
Production	4,549	5,227	5,341	2.18
Net Exports	2,967	3,200	3,326	3.94
Consumption	1,700	1,750	2,002	14.40
Carry-over Stocks	866	1,236	1,363	10.28
Australia				
Production	5,600	4,888	5,772	18.09
Net Exports	4,034	3,737	4,660	24.70
Consumption	996	1,004	1,102	9.76
Carry-over Stocks	324	492	200	-59.35
Cuba				
Production	3,883	3,500	4,156	18.74
Net Exports	3,067	2,600	3,345	28.65
Consumption	733	700	829	18.43
Carry-over Stocks	417	600	391	-34.83
Mexico				
Production	5,063	5,040	6,101	21.05
Net Exports	878	945	642	-32.06
Consumption	4,240	4,240	5,456	28.68
Carry-over Stocks	666	614	659	7.32
South Africa				
Production	2,669	2,808	2,960	5.41
Net Exports	1,191	1,384	1,299	-6.14
Consumption	1,448	1,424	1,655	16.22
Carry-over Stocks	390	375	432	15.20

Australia's exports are predicted to increase 24.7 percent from 3.7 million metric tons in 1999 to 4.7 million metric tons in 2009 (Table 3), due mainly to increased sugar production, which is predicted to increase 18.1 percent from 4.9 million metric tons in 1999 to 5.8 million metric tons in 2009. Sugar consumption also is expected to increase 9.8 percent from 1.0 million metric tons in 1999 to 1.1 million metric tons in 2009.

Cuba's exports are predicted to increase 28.7 percent from 2.6 million metric tons in 1999 to 3.3 million metric tons in 2009 (Table 3). It is predicted that Cuba will increase its sugar production from 3.5 million metric tons in 1999 to 4.2 million metric tons in 2009. Cuba's consumption is predicted to increase 18.4 percent from 0.70 million metric tons in 1999 to 0.83 million metric tons in 2009.

Mexico's production is predicted to increase 21.1 percent from 5.0 million metric tons in 1999 to 6.1 million metric tons in 2009. However, Mexico's exports are predicted to decrease 32.1 percent from 0.9 million metric tons in 1999 to 0.6 million metric tons in 2009, due mainly to sugar consumption which is predicted to increase 28.7 percent from 4.2 million metric tons in 1999 to 5.4 million metric tons in 2009. Ending stocks are predicted to increase 7.3 percent. If Mexico replaces the sugar that is used in soft drinks with HFCS, the excess sugar will be exported into the United States under NAFTA.

South Africa's production is predicted to increase 5.4 percent from 2.8 million metric tons in 1999 to 3.0 million metric tons in 2009. However, South Africa's exports are predicted to decrease 6.1 percent from 1.4 million metric tons in 1999 to 1.3 million metric tons in 2009 due mainly to increased consumption. Sugar consumption is predicted to increase 16.2 percent from 1.4 million metric tons to 1.7 million metric tons in 2009. Ending stocks are predicted to increase 15.2 percent.

Importers

Figures 6, 7, and 8 show sugar imports by the major sugar importing countries. Sugar imports of selected Asian and African countries are expected to increase 33 percent and 50 percent, respectively, for the 1999 to 2009 period. The FSU is the largest importer, followed by Japan and Indonesia for the period.

Canada's production is predicted to increase 27.1 percent from 0.06 million metric tons in 1999 to 0.08 million metric tons in 2009, and consumption is predicted to increase from 1.2 million metric tons in 1999 to 1.4 million metric tons in 2009. As a result, Canada's imports are predicted to increase 16.0 percent from 1.1 million metric tons in 1999 to 1.3 million metric tons in 2009.

The FSU's production is predicted to increase 18.9 percent from 3.9 million metric tons to 4.6 million metric tons for the 1999-2009 period, and consumption is predicted to increase 7.8 percent from 9.1 million metric tons to 9.8 million metric tons for the same period. Its imports are predicted to decrease 0.3 percent from 5.2 million metric tons in 1999 to 5.1 million metric tons in 2009 (Table 4).

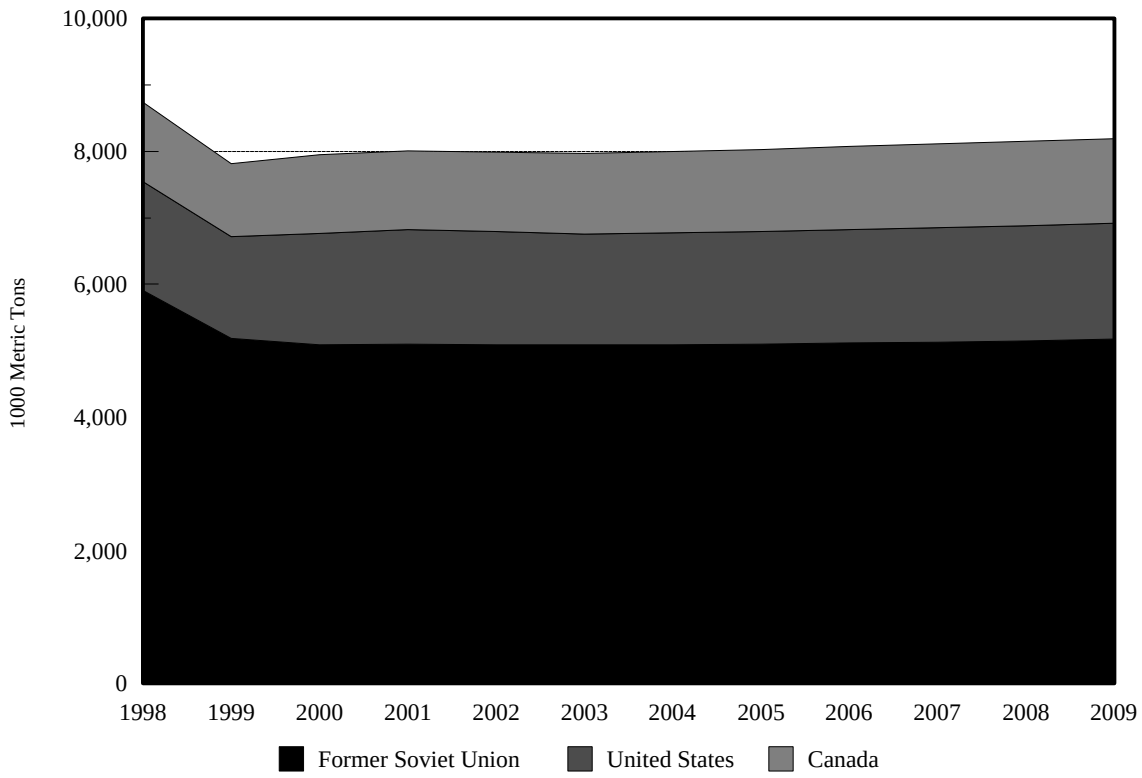

Figure 6. World Sugar Imports by Country, Major Importers

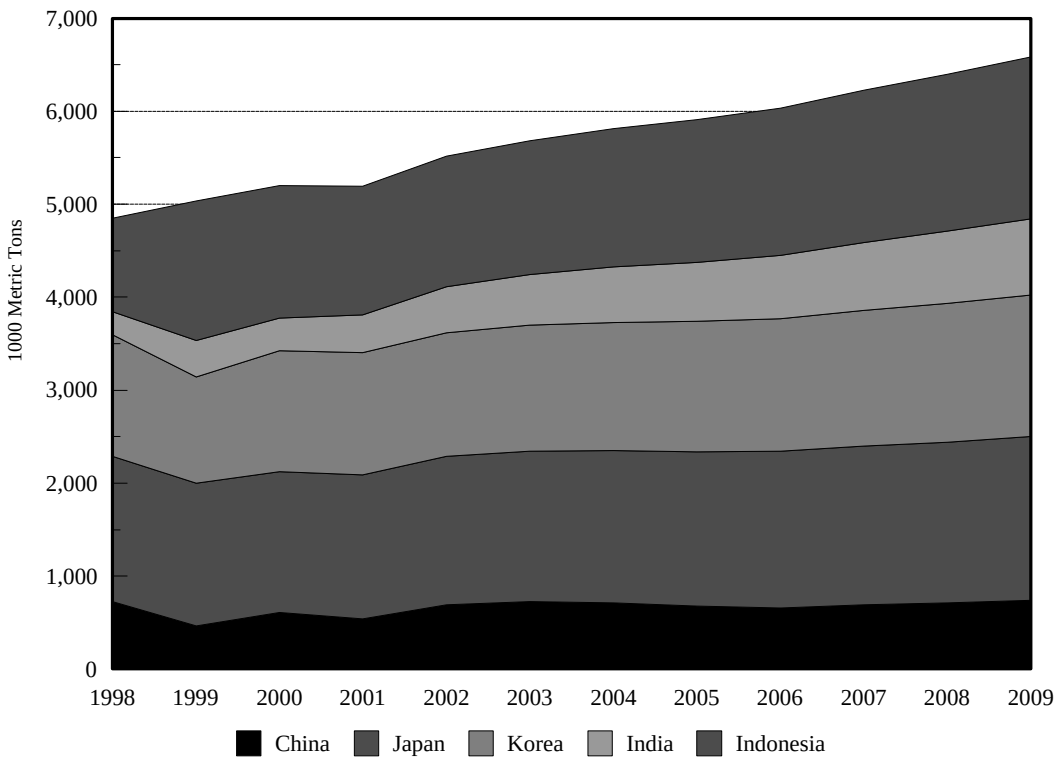

Figure 7. World Sugar Imports by Country, Asian Countires

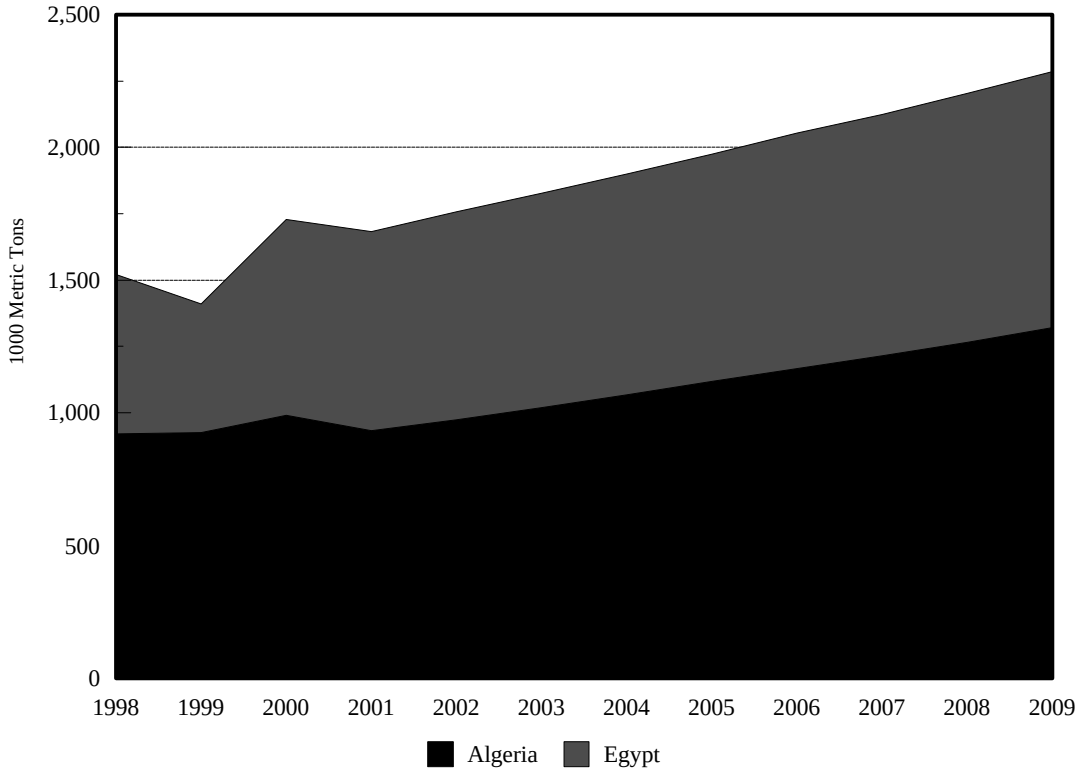

Figure 8. World Sugar Imports by Country, African Countries

China is expected to increase its imports 59.1 percent from 0.5 million metric tons in 1999 to 0.7 million metric tons in 2009 (Table 4) due mainly to increased consumption relative to production. China's production is predicted to remain constant at 9.0 million metric tons for the 1999-2009 period, while consumption is predicted to increase 6.2 percent from 9.2 million metric tons to 9.8 million metric tons for the period.

India's production is predicted to increase 13.9 percent from 16.8 million metric tons in 1999 to 19.2 million metric tons in 2009. However, its imports are predicted to increase 106.3 percent from 0.4 million metric tons in 1999 to 0.8 million metric tons in 2009, mainly because consumption is expected to increase faster than production at forecasted prices.

Japan's imports are predicted to increase 14.8 percent from 1.5 million metric tons in 1999 to 1.8 million metric tons in 2009, due mainly to increased consumption. Consumption is predicted to increase 10.5 percent from 2.4 million metric tons to 2.6 million metric tons for the period (Table 4).

In South Korea, consumption is predicted to increase 34.3 percent from 1.1 million metric tons in 1999 to 1.5 million metric tons in 2009. As a result, South Korea's imports are predicted to increase 33.5 percent from 1.1 million metric tons to 1.5 million metric tons for the period.

In Algeria, consumption is predicted to increase 42.3 percent from 0.9 million metric tons in 1999 to 1.3 million metric tons in 2009. This increase in consumption resulted in increased imports from 0.9 million metric tons in 1999 to 1.3 million metric tons in 2009.

Egypt's imports are predicted to increase 99.0 percent from 0.5 million metric tons in 1999 to 1.0 million metric tons in 2009, due mainly to increased consumption. Consumption is predicted to increase 20.5 percent from 2.0 million metric tons in 1999 to 2.4 million metric tons in 2009.

Indonesia's imports are predicted to increase 16.4 percent from 1.5 million metric tons in 1999 to 1.7 million metric tons in 2009. Consumption is predicted to increase 20.5 percent from 2.6 million metric tons in 1999 to 4.2 million metric tons in 2009.

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

	(1997-1999)	1999	2009	Average % Change (1999-2009)
	----------thousand metric tons----------			
Canada				
Production	139	59	75	27.12
Net Imports	1,166	1,095	1,270	15.98
Consumption	1,272	1,240	1,419	14.44
Carry-over Stocks	98	44	76	72.72
Former Soviet Union				
Production	3,793	3,907	4,644	18.86
Net Imports	5,300	5,191	5,178	-0.25
Consumption	9,189	9,102	9,809	7.77
Carry-over Stocks	2,713	2,817	2,414	-14.31
China				
Production	8,811	9,009	9,019	0.11
Net Imports	561	465	740	59.14
Consumption	9,297	9,190	9,757	6.17
Carry-over Stocks	2,713	2,817	2,414	-14.31
India				
Production	15,793	16,826	19,163	13.89
Net Imports	495	395	815	106.33
Consumption	16,633	17,200	19,960	16.05
Carry-over Stocks	5,861	5,871	5,911	0.68

- Continued -

Table 4. Continued

	(1997-1999)	1999	2009	Average % Change (1999-2009)
	----------thousand metric tons----------			
Japan				
Production	821	846	849	0.35
Net Imports	1,557	1,535	1,762	14.79
Consumption	2,380	2,363	2,612	10.54
Carry-over Stocks	137	202	122	-39.60
South Korea				
Carry-in Stocks	145	136	144	5.88
Net Imports	1,255	1,104	1,522	33.51
Consumption	1,254	1,134	1,523	34.30
Carry-over Stocks	142	142	143	0.70
Algeria				
Production	10	10	11	10.00
Net Imports	921	924	1,320	42.86
Consumption	931	935	1,330	42.25
Carry-over Stocks	100	107	124	15.89
Egypt				
Production	1,218	1,195	1,400	17.15
Net Imports	542	485	965	98.97
Consumption	1,945	1,960	2,361	20.46
Carry-over Stocks	476	360	408	13.33
Indonesia				
Production	1,838	1,500	2,438	62.53
Net Imports	1,367	1,500	1,746	16.40
Consumption	3,233	2,600	4,188	20.46
Carry-over Stocks	771	920	922	0.22

CONCLUDING REMARKS

This report evaluates the U.S. and world sugar markets for 1999-2009 by 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 4.6 percent from 23.8 million metric tons in 1999 to 24.9 million metric tons in 2009. The price of Caribbean sugar also is expected to increase about 87 percent from 6.55 cents/lb in 1999 to 12.3 cents/lb in 2009, because of faster

growth in world consumption of sugar compared to world production. The wholesale price of U.S. sugar is projected to increase from 20.62 cents/lb in 2000 to 28.84 cents/lb in 2009.

Exports are predicted to increase for Thailand, Australia, and Cuba, while exports are predicted to decrease for the EU, Mexico, and Brazil. Production in the EU is predicted to remain constant over the forecasting period.

It is predicted that imports from all importing countries except the FSU will increase over the forecasting period. China's imports are predicted to increase 59.1 percent, while Japan's imports are predicted to increase only 14.8 percent. South Korea's imports are predicted to increase 33.5 percent and Algeria's imports are predicted to increase 42.9 percent. The imports for the FSU will remain constant.

U.S. sugar production, consumption, and ending stocks are predicted to increase for the forecasting period. Imports are predicted to increase 14.3 percent for the period.

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Appendix

World Sugar Policy Simulation Model

2000 Baseline Solution

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Sugarbeets	41.19	38.29	38.45	34.24	38.41	39.80	41.18	41.67	42.17	42.85	43.71	44.53	45.32
Sugarcane	29.50	26.96	27.11	23.42	27.07	28.29	29.49	29.92	30.36	30.95	31.70	32.42	33.12

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Caribbean Price	11.62	9.68	6.55	6.57	7.79	8.37	9.13	9.68	10.38	11.04	11.41	11.84	12.30
TRQ Status	#N/A	#N/A	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota	Quota
Implicit Tariff	12.01	12.01	12.00	12.14	13.87	14.27	14.49	14.28	13.93	13.76	13.99	14.14	14.25
Import Price	21.96	22.06	22.12	18.71	21.66	22.65	23.61	23.96	24.32	24.80	25.40	25.98	26.54
Wholesale Price	27.09	26.12	27.04	20.62	23.71	24.74	25.76	26.12	26.50	27.00	27.64	28.24	28.84
Retail Price	43.26	42.98	43.35	32.13	36.33	37.73	39.11	39.60	40.11	40.79	41.65	42.48	43.28

United States - Sugarbeet and Sugarcane Production (1000 short tons)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Sugarbeets	31867	33343	33339	32368	32432	32721	33183	33608	34014	34431	34916	35516	36188
Sugarcane	30574	30070	29153	29171	29325	29528	29766	30015	30275	30543	30820	31104	31392

United States - Sugar Production (1000 short tons)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Beet Sugar	4490	4601	4567	4467	4476	4515	4579	4638	4694	4751	4818	4901	4994
Cane Sugar	3611	3425	3350	3323	3340	3363	3390	3419	3448	3479	3510	3543	3576
All Sugar	8101	8026	7917	7789	7816	7879	7970	8057	8142	8230	8329	8444	8570

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

Variable	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Tariff Rate Quota	2244	2288	1800	2280	2280	2280	2280	2280	2280	2280	2280	2280	2280
Below Quota Tariff	0	0	0	0	0	0	0	0	0	0	0	0	0
Above Quota Tariff	16.72	16.27	15.82	15.36	15.36	15.36	15.36	15.36	15.36	15.36	15.36	15.36	15.36

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	1354	1350	1523	1478	1449	1432	1425	1422	1427	1433	1441	1449	1459
Production	7934	7276	7324	7789	7816	7879	7970	8057	8142	8230	8329	8444	8570
Net Imports	2123	1800	1680	1846	1900	1880	1840	1861	1867	1880	1896	1907	1921
Consumption	9879	8903	9049	9664	9733	9766	9812	9913	10002	10103	10216	10342	10480
Carry-out Stocks	1350	1523	1478	1449	1432	1425	1422	1427	1433	1441	1449	1459	1469
U.S. Excess Supply	0	0	0	0	0	0	0	0	0	0	0	0	0

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	73.74	65.85	66.34	70.23	70.14	69.80	69.56	69.71	69.78	69.92	70.14	70.44	70.80
Stocks/ Consumption	13.67	17.11	16.33	15.00	14.71	14.59	14.50	14.39	14.33	14.26	14.19	14.10	14.02

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Area Harvested	15	20	22	21	21	21	21	21	21	21	21	21	21
Yield	43.20	46.50	42.39	43.82	44.03	44.50	44.92	45.35	45.77	46.20	46.62	47.05	47.48
Production	648	930	915	938	936	949	958	968	977	986	995	1002	1009

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	167	190	59	44	52	56	59	62	64	67	69	72	75
Production	95	110	130	139	139	141	142	144	145	146	148	149	150
Net Imports	1208	1195	1095	1176	1181	1194	1207	1217	1231	1244	1260	1273	1270
Imports	1150	1200	1110	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Exports	15	15	15	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1280	1295	1240	1307	1316	1331	1346	1358	1373	1388	1405	1419	1419
Carry-out Stocks	190	59	44	52	56	59	62	64	67	69	72	75	76

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	42.21	42.23	40.01	41.72	41.59	41.68	41.75	41.74	41.81	41.88	42.04	42.10	41.74
Stocks/ Consumption	14.84	4.56	3.55	3.99	4.27	4.46	4.62	4.75	4.87	5.00	5.14	5.26	5.33

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Area Harvested	615	615	622	628	634	640	645	650	656	661	667	672	677
Yield	71.54	73.17	73.70	75.39	76.18	76.74	77.23	77.71	78.18	78.66	79.63	80.73	81.87
Production	44000	45000	45812	47344	48288	49072	49814	50546	51278	52013	53086	54258	55464

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	634	624	759	614	638	649	656	657	657	656	655	655	656
Production	5050	5100	5040	5208	5312	5398	5480	5560	5641	5721	5839	5968	6101
Net Imports	-820	-870	-945	-768	-811	-813	-800	-764	-724	-680	-667	-657	-642
Exports	900	970	955	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	80	100	10	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	4240	4240	4240	4416	4490	4578	4678	4796	4917	5043	5172	5310	5456
Carry-out Stocks	624	759	614	638	649	656	657	657	656	655	655	656	659

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	43.12	42.36	41.61	42.62	42.61	42.72	42.96	43.35	43.79	44.24	44.71	45.24	45.84
Stocks/ Consumption	14.72	17.90	14.48	14.44	14.46	14.33	14.04	13.69	13.33	12.98	12.66	12.36	12.07

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Area Harvested	7	7	7	7	7	8	8	8	8	8	8	8	7
Yield	19	19	19	19	19	19	20	20	20	20	20	20	20
Production	132	132	132	141	145	147	148	149	149	150	150	150	150

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	80	90	103	107	110	111	113	114	116	118	119	121	123
Production	10	10	10	11	11	11	11	11	11	11	11	11	11
Net Imports	920	920	924	991	932	974	1019	1067	1117	1166	1214	1264	1320
Exports	0	0	1	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	920	920	925	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	930	930	935	999	942	984	1028	1077	1126	1176	1224	1274	1330
Carry-out Stocks	90	103	107	110	111	113	114	116	118	119	121	123	124

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	31.00	30.28	29.74	31.07	28.64	29.27	29.93	30.69	31.44	32.17	32.82	33.50	34.32
Stocks/ Consumption	9.68	11.08	11.44	10.99	11.82	11.47	11.13	10.77	10.45	10.16	9.89	9.62	9.33

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Area Harvested	402	412	400	405	410	416	421	427	433	439	445	451	457
Yield	102	98	94	94	94	95	95	95	96	96	96	97	97
Production	41044	40491	37600	38064	38629	39315	40013	40735	41462	42203	42947	43674	44398

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	101	131	350	492	424	380	300	260	200	160	170	180	190
Production	5944	5969	4888	4948	5022	5111	5202	5296	5390	5486	5583	5678	5772
Net Exports	4236	4128	3737	4004	4042	4156	4195	4298	4363	4399	4487	4573	4660
Exports	4238	4130	3739	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	2	2	2	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	990	995	1004	1013	1024	1035	1047	1057	1067	1077	1086	1094	1102
Carry-out Stocks	131	350	492	424	380	300	260	200	160	170	180	190	200

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	53.78	53.55	53.55	53.53	53.67	53.81	53.96	54.09	54.19	54.28	54.34	54.37	54.39
Stocks/ Consumption	13.23	35.18	49.00	41.87	37.10	28.97	24.84	18.91	14.99	15.79	16.58	17.36	18.15

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	510	860	860	1210	1115	1066	1044	1030	1022	1014	1008	1005	1002
Production	15500	16600	18300	17612	17703	17786	17872	17955	18040	18135	18406	18738	18970
Net Exports	6700	7400	8550	8370	8259	8158	8070	7992	7900	7839	7951	8141	8304
Exports	6591	7400	8550	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	0	0	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	8800	9100	9100	9337	9492	9651	9815	9971	10148	10302	10458	10599	10668
Carry-out Stocks	860	860	1210	1115	1066	1044	1030	1022	1014	1008	1005	1002	1000

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	51.84	52.92	52.29	53.07	53.36	53.72	54.09	54.41	54.82	55.16	55.50	55.76	55.65
Stocks/ Consumption	9.77	9.45	13.30	11.94	11.24	10.82	10.50	10.25	10.00	9.78	9.61	9.46	9.38

China - Area Harvested (1000 hectares)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Sugarbeets	510	600	665	661	671	671	687	697	708	719	728	735	744
Sugarcane	1201	1056	1070	1121	1138	1150	1155	1160	1164	1168	1171	1172	1173
Total Area	1711	1656	1735	1782	1809	1821	1843	1857	1872	1887	1900	1908	1916

China - Yields (metric tons/hectare)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Sugarbeets	27.45	25.00	26.80	27.22	27.54	27.76	27.91	27.99	28.02	28.01	27.95	27.87	27.76
Sugarcane	71.32	58.96	63.00	63.70	64.23	64.65	64.97	65.22	65.41	65.57	65.70	65.80	65.89

China - Production (1000 metric tons)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Sugarbeets	14000	15000	17822	17996	18480	18639	19185	19503	19831	20125	20357	20489	20641
Sugarcane	85655	62262	67410	71378	73097	74322	75068	75678	76159	76600	76960	77153	77281

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	2784	2597	2725	2817	2756	2629	2563	2494	2465	2432	2406	2408	2412
Production	8605	8818	9009	8624	8627	8653	8675	8761	8837	8907	8962	8993	9019
Beet Sugar	1400	1500	1869	1800	1848	1864	1919	1950	1983	2013	2036	2049	2064
Cane Sugar	7709	5604	7140	6424	6579	6689	6756	6811	6854	6894	6926	6944	6955
Net Imports	497	721	465	609	538	693	727	710	678	656	688	709	740
Exports	400	400	425	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1000	1100	890	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	9289	9411	9190	9294	9292	9411	9471	9501	9548	9588	9648	9698	9757
Carry-out Stocks	2597	2725	2817	2756	2629	2563	2494	2465	2432	2406	2408	2412	2414

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	7.46	7.50	7.26	7.29	7.24	7.28	7.29	7.26	7.26	7.25	7.25	7.25	7.25
Stocks/ Consumption	27.96	28.96	30.65	29.65	28.29	27.24	26.34	25.95	25.47	25.10	24.96	24.87	24.74

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	300	250	400	600	564	537	516	497	479	461	443	426	408
Production	3900	4250	3500	3933	3947	3967	3992	4018	4045	4072	4100	4128	4156
Net Exports	3200	3400	2600	3200	3203	3211	3228	3246	3267	3287	3305	3325	3345
Consumption	750	750	700	769	770	778	783	790	796	803	812	821	829
Carry-out Stocks	250	400	600	564	537	516	497	479	461	443	426	408	391

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	67.72	67.31	62.46	68.25	67.96	68.24	68.37	68.68	68.85	69.07	69.54	69.96	70.35
Stocks/ Consumption	33.33	53.33	85.71	73.25	69.77	66.36	63.44	60.55	57.88	55.24	52.44	49.73	47.09

Egypt - Production (1000 metric tons)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Sugarbeets	1490	1650	1680	1691	1742	1754	1792	1822	1860	1895	1932	1975	2020
Sugarcane	10800	10775	11938	12135	12335	12539	12745	12953	13160	13368	13576	13781	14005
Sugarcane	8.20	8.20	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)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	593	428	640	360	366	372	378	383	387	392	396	400	404
Production	1215	1245	1195	1206	1228	1247	1268	1289	1311	1332	1354	1376	1400
Beet Sugar	186	205	209	211	217	218	223	227	232	236	241	246	252
Cane Sugar	886	884	979	995	1011	1028	1045	1062	1079	1096	1113	1130	1148
Net Imports	540	600	485	737	751	782	808	833	856	888	910	938	965
Exports	100	80	100	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	660	680	585	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1920	1955	1960	1936	1973	2023	2071	2117	2162	2216	2259	2310	2361
Carry-out Stocks	428	640	360	366	372	378	383	387	392	396	400	404	408

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	31.19	31.17	30.68	29.78	29.81	30.03	30.22	30.38	30.51	30.76	30.87	31.07	31.27
Stocks/ Consumption	22.29	32.74	18.37	18.92	18.87	18.67	18.48	18.29	18.12	17.87	17.70	17.48	17.27

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Area Harvested	2066	2100	2280	2169	2152	2152	2153	2155	2156	2157	2159	2159	2160
Yield	56.12	56.19	56.40	55.77	55.78	55.88	56.00	56.11	56.23	56.34	56.46	56.57	56.69
Production	#####	117999	#####	#####	#####	#####	120588	#####	#####	#####	#####	#####	122426

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	2229	1963	2460	3423	3437	3439	3439	3437	3434	3430	3425	3421	3418
Production	17564	17500	19403	18189	18057	18091	18136	18187	18234	18282	18330	18371	18413
Net Exports	3781	3425	3425	3165	3025	3045	3079	3121	3163	3212	3262	3311	3364
Exports	5321	4400	5680	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1350	1000	1926	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	14049	14050	15000	15010	15029	15046	15060	15069	15074	15075	15072	15064	15053
Carry-out Stocks	1963	2460	3423	3437	3439	3439	3437	3434	3430	3425	3421	3418	3414

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	39.97	39.91	42.55	42.53	42.54	42.55	42.57	42.58	42.60	42.61	42.63	42.64	42.66
Stocks/ Consumption	13.97	17.51	22.82	22.90	22.88	22.86	22.82	22.79	22.75	22.72	22.70	22.69	22.68

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	6979	5861	5850	5871	5869	5840	5837	5834	5842	5847	5853	5872	5892
Production	14232	16322	16826	16980	17196	17430	17676	17924	18175	18427	18674	18919	19163
Net Exports	-750	-250	-395	-355	-406	-494	-542	-600	-636	-678	-735	-782	-815
Exports	200	300	5	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	900	550	400	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	16100	16600	17200	17336	17632	17927	18221	18515	18806	19098	19389	19681	19960
Carry-out Stocks	5861	5850	5871	5869	5840	5837	5834	5842	5847	5853	5872	5892	5911

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	15.85	15.95	16.25	16.11	16.12	16.13	16.14	16.15	16.16	16.17	16.18	16.19	16.19
Stocks/ Consumption	36.40	35.24	34.13	33.86	33.12	32.56	32.02	31.56	31.09	30.65	30.29	29.94	29.61

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Area Harvested	400	400	330	347	360	369	376	383	388	393	398	402	407
Yield	69.89	69.38	67.00	67.72	68.52	69.32	70.12	70.92	71.72	72.52	73.32	74.12	74.92
Production	27956	27752	22110	23494	24640	25578	26393	27132	27828	28500	29159	29819	30481

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	559	873	520	920	950	948	945	941	938	934	931	928	926
Production	2014	2000	1500	1879	1971	2046	2111	2171	2226	2280	2333	2386	2438
Net Imports	1600	1000	1500	1419	1382	1404	1442	1488	1534	1583	1633	1683	1746
Exports	0	0	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1600	1000	1500	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	3300	3300	2600	3269	3356	3454	3557	3662	3763	3867	3968	4071	4188
Carry-out Stocks	873	520	920	950	948	945	941	938	934	931	928	926	922

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	16.52	16.27	12.63	15.65	15.84	16.08	16.33	16.59	16.83	17.06	17.30	17.53	17.82
Stocks/ Consumption	26.45	15.76	35.38	29.07	28.24	27.35	26.46	25.61	24.83	24.08	23.40	22.73	22.03

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	124	87	121	202	163	144	134	129	127	125	125	124	123
Production	808	809	846	861	866	868	867	866	863	860	857	853	849
Beet Sugar	698	696	680	687	689	687	685	682	678	675	672	668	665
Cane Sugar	174	182	166	173	177	180	182	184	185	185	185	185	185
Net Imports	1573	1563	1535	1517	1554	1592	1618	1640	1662	1685	1708	1733	1762
Exports	4	4	7	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1570	1568	1542	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	2418	2358	2363	2417	2439	2470	2490	2508	2527	2546	2566	2586	2612
Carry-out Stocks	87	121	202	163	144	134	129	127	125	125	124	123	122

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	19.23	18.72	18.72	19.11	19.25	19.47	19.59	19.71	19.84	19.98	20.13	20.30	20.52
Stocks/ Consumption	3.60	5.13	8.55	6.75	5.91	5.43	5.19	5.05	4.96	4.90	4.83	4.77	4.69

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	152	148	136	142	152	155	157	156	155	152	149	146	144
Net Imports	1317	1309	1140	1297	1310	1331	1352	1376	1400	1427	1457	1488	1522
Exports	288	300	310	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	1536	1450	1450	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1321	1307	1134	1287	1307	1330	1352	1377	1403	1430	1459	1490	1523
Carry-out Stocks	148	136	142	152	155	157	156	155	152	149	146	144	143

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	28.86	28.27	24.28	27.29	27.44	27.66	27.89	28.17	28.46	28.78	29.16	29.57	30.03
Stocks/ Consumption	11.20	10.41	12.52	11.79	11.86	11.79	11.55	11.23	10.83	10.39	10.02	9.69	9.39

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Area Harvested	321	326	338	330	327	327	330	333	338	342	347	352	357
Yield	75.16	69.02	75.10	73.06	73.26	73.46	73.66	73.86	74.06	74.26	74.46	74.66	74.86
Production	24125	22500	25384	24087	23945	24050	24297	24628	25009	25421	25853	26294	26741

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	374	420	375	375	390	392	400	404	408	411	415	421	426
Production	2600	2600	2808	2666	2651	2662	2690	2726	2768	2814	2862	2911	2960
Net Exports	1094	1094	1384	1199	1174	1146	1157	1177	1201	1226	1251	1275	1299
Exports	1150	1150	1436	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	56	60	52	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1460	1460	1424	1453	1474	1508	1529	1546	1564	1584	1606	1630	1655
Carry-out Stocks	420	375	375	390	392	400	404	408	411	415	421	426	432

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	34.28	33.78	32.49	32.73	32.83	33.23	33.34	33.41	33.54	33.73	33.97	34.29	34.66
Stocks/ Consumption	28.77	25.68	26.33	26.83	26.62	26.55	26.46	26.39	26.29	26.21	26.19	26.16	26.13

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Area Harvested	2000	1900	2254	2307	2350	2391	2427	2462	2493	2524	2553	2581	2606
Yield	15.00	14.74	15.00	14.89	14.87	14.90	14.95	15.02	15.10	15.17	15.25	15.33	15.41
Production	30000	28000	33806	34345	34932	35618	36298	36980	37641	38297	38947	39567	40171

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	1654	1006	2669	2665	2687	2692	2696	2697	2701	2704	2708	2717	2728
Production	3872	3600	3907	3970	4038	4117	4196	4275	4351	4427	4502	4574	4644
Net Imports	4800	5910	5191	5093	5097	5087	5088	5089	5101	5117	5131	5152	5178
Exports	790	500	390	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	5545	6400	5581	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	9320	9145	9102	9041	9130	9201	9282	9361	9449	9540	9625	9715	9809
Carry-out Stocks	1006	2669	2665	2687	2692	2696	2697	2701	2704	2708	2717	2728	2741

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	31.41	30.87	30.76	30.59	30.92	31.18	31.45	31.70	31.97	32.24	32.47	32.71	32.95
Stocks/ Consumption	10.79	29.19	29.28	29.72	29.49	29.30	29.06	28.85	28.61	28.39	28.23	28.08	27.94

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Carry-in Stocks	932	402	959	1236	1252	1266	1278	1291	1303	1315	1327	1339	1351
Production	4220	4200	5227	5068	5037	5047	5075	5111	5153	5199	5245	5292	5341
Net Exports	3100	2600	3200	3284	3236	3223	3225	3236	3251	3269	3288	3307	3326
Exports	3100	2600	3200	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Imports	0	0	0	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A	#N/A
Consumption	1650	1700	1750	1768	1787	1812	1838	1864	1890	1917	1945	1973	2002
Carry-out Stocks	402	959	1236	1252	1266	1278	1291	1303	1315	1327	1339	1351	1363

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Per Capita Consumption	26.85	27.39	27.93	27.95	28.01	28.15	28.31	28.48	28.66	28.85	29.04	29.26	29.49
Stocks/ Consumption	24.36	56.41	70.63	70.84	70.83	70.56	70.23	69.89	69.55	69.21	68.85	68.48	68.10

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

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Net Exports	-5682	-6195	-9587	-8948	-8698	-8320	-8113	-7952	-7787	-7589	-7581	-7662	-7700