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

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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 Caribbean 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**

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### **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 <sup>a</sup> | 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                     |

<sup>a</sup> 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.

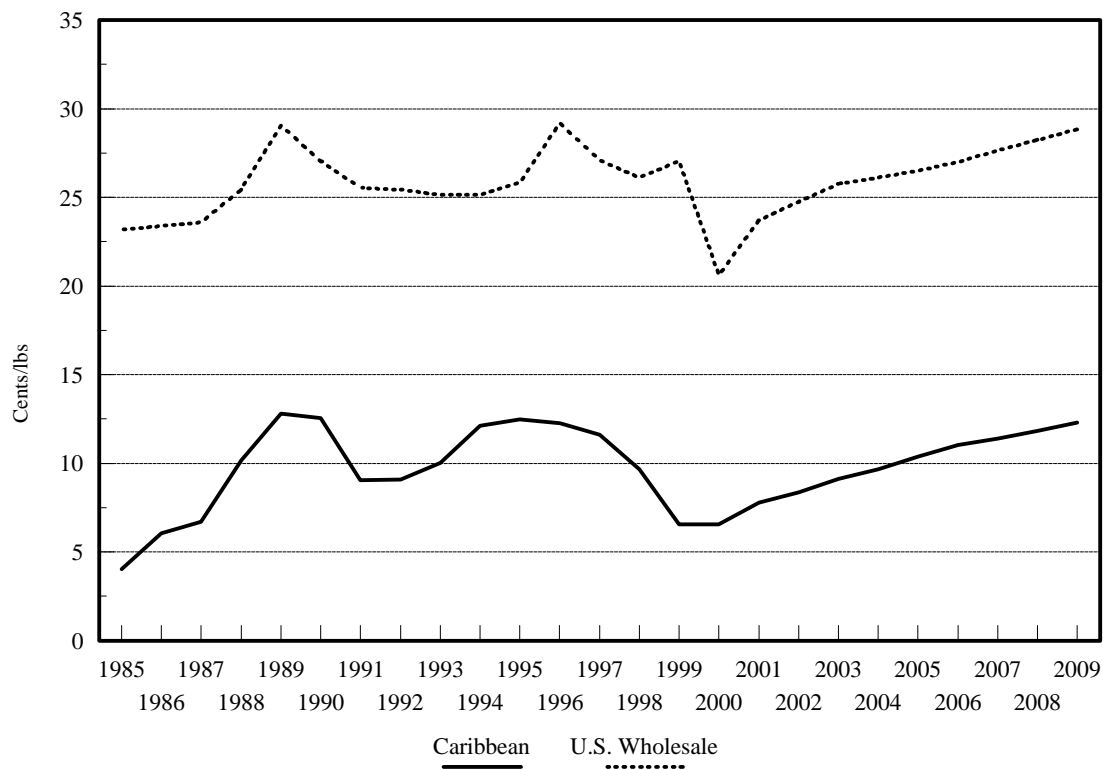


Figure 1. U.S. and World Sugar Price

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.

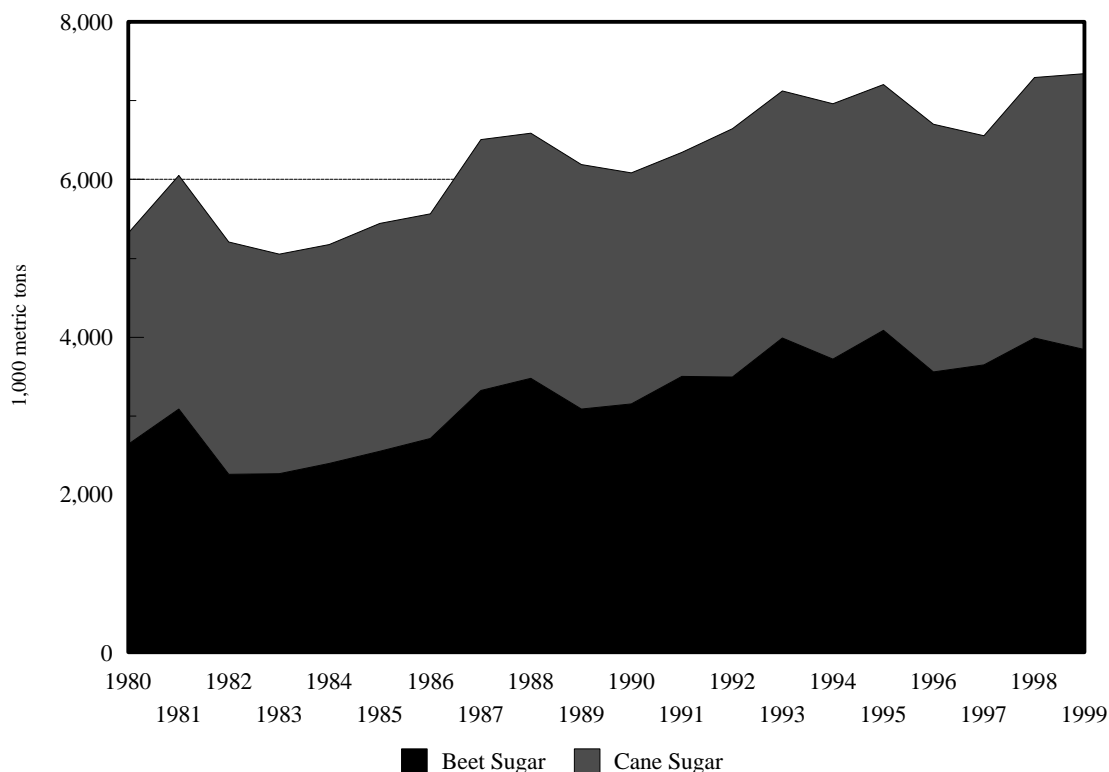


Figure 2. U.S. Beet and Cane Sugar Production

### 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:

$$a_{i,t}^s = f(a_{i,t-1}^s, p_{i,t-1}^s, p_{t-1}^c, g_t) \quad (1)$$

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.

$$qp_{i,t}^s = a_{i,t}^s \cdot y_{i,t}^s \quad (2)$$

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:

$$fd_t^s = f(p_t^s, cy_t, t) \quad (3)$$

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

$$qd_t^s = fd_t^s * pop_t \quad (4)$$

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

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

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

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

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:

$$\sum_{n=1}^n qx_t^{s,n} = 0 \quad (7)$$

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:

$$pm_t^{s,n} = pm_t^{s,w} * er_t^n \quad (8)$$

### 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<br>(1997-1999) | 1999  | 2009  | % Change<br>(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).



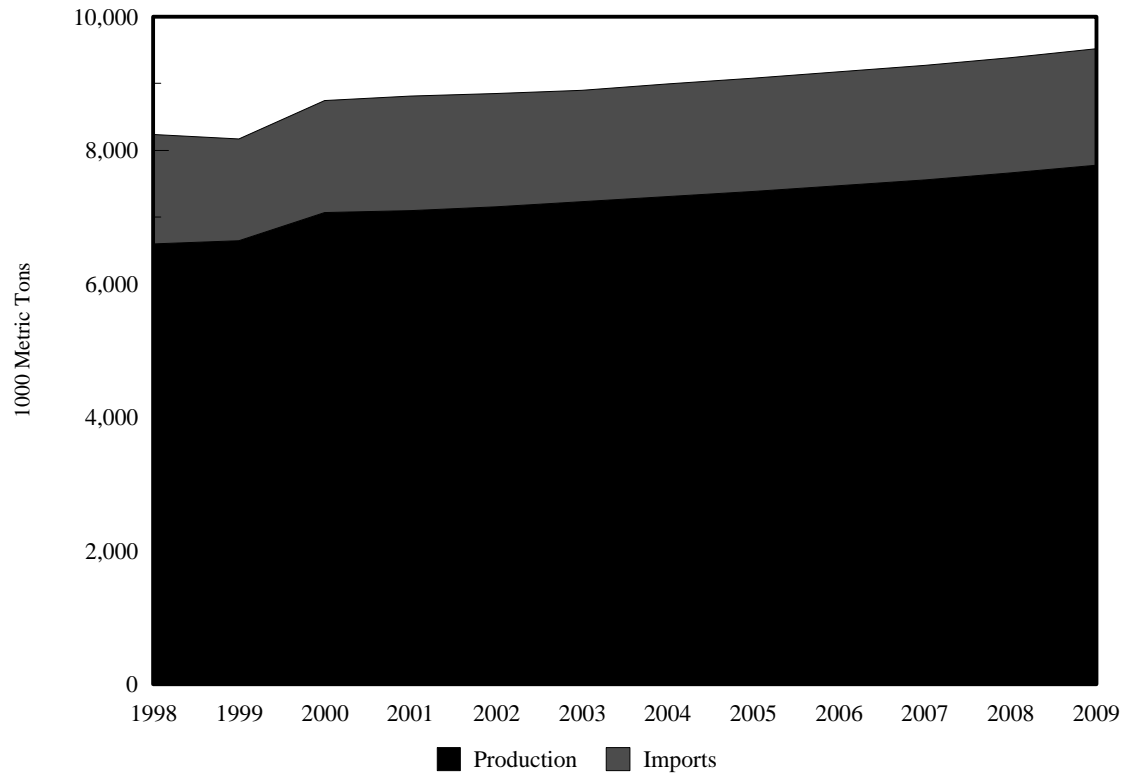


Figure 3. U.S. Sugar Production and Imports

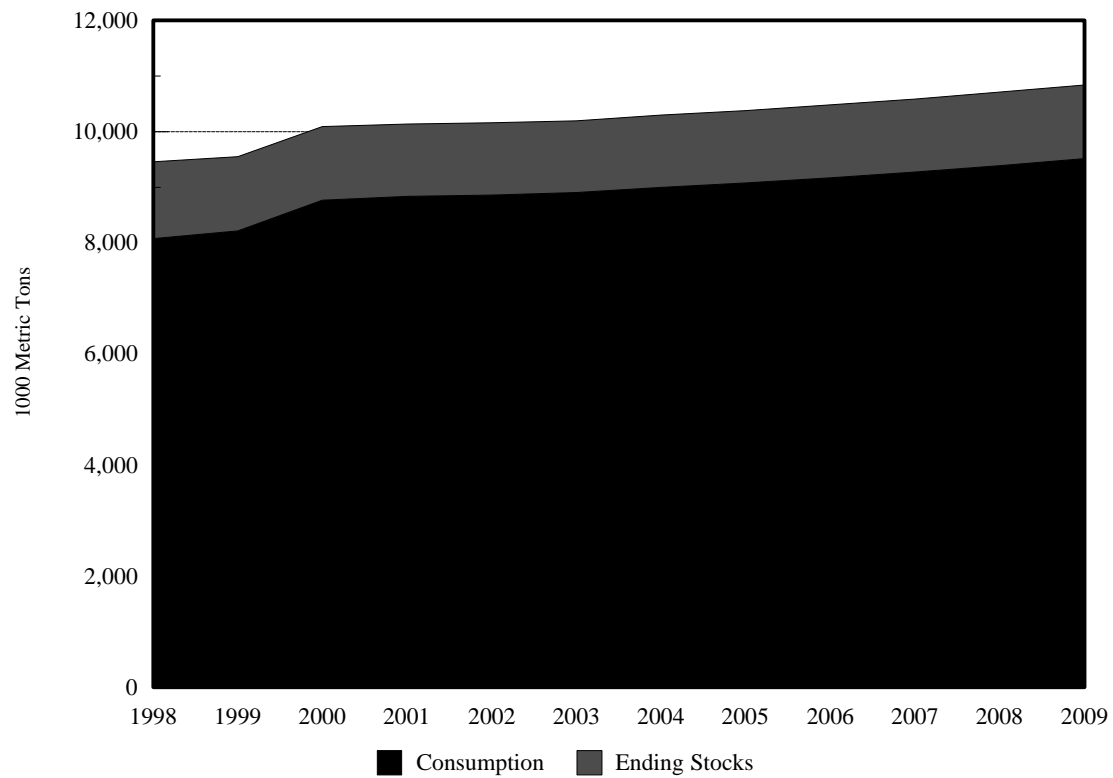


Figure 4. U.S. Sugar Consumption and Ending Stocks

### 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).

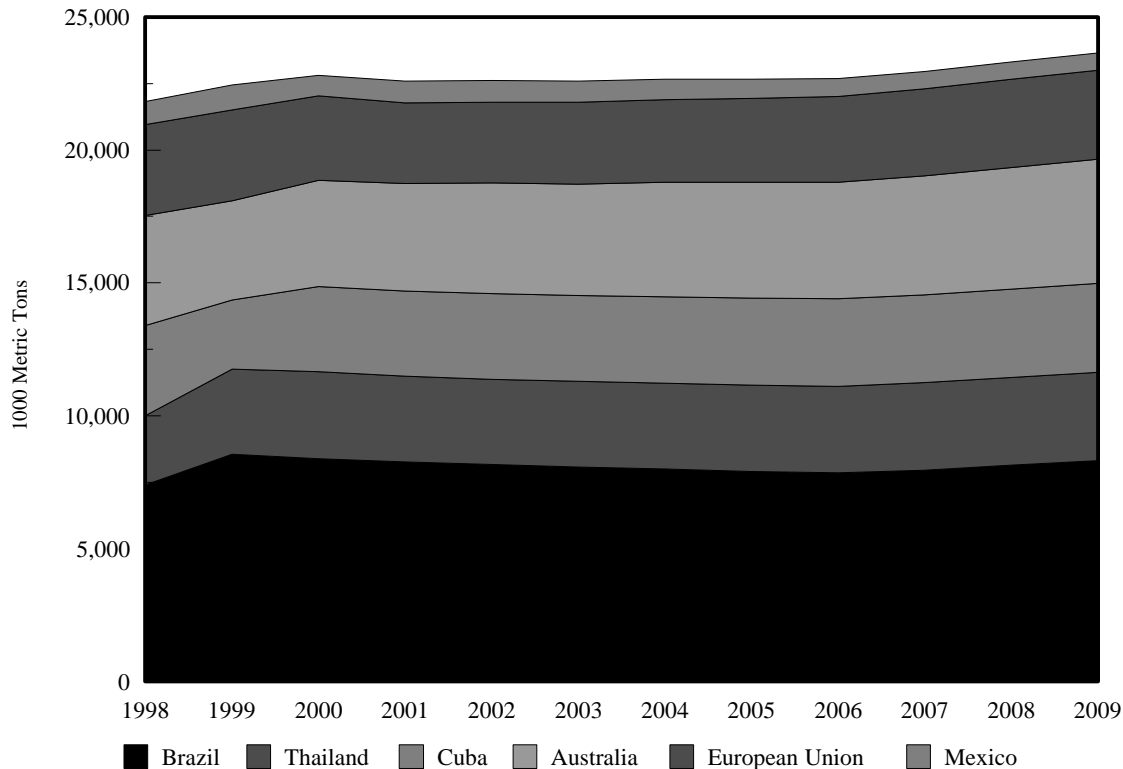


Figure 5. World Sugar Exports by Country

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<br>(1997-1999) | 1999   | 2009   | % Change<br>(1999-2009) |
|--------------------------------|------------------------|--------|--------|-------------------------|
| -----thousand metric tons----- |                        |        |        |                         |
| <u>European Union</u>          |                        |        |        |                         |
| 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                   |
| <u>Brazil</u>                  |                        |        |        |                         |
| 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                  |
| <u>Thailand</u>                |                        |        |        |                         |
| 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                   |
| <u>Australia</u>               |                        |        |        |                         |
| 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                  |
| <u>Cuba</u>                    |                        |        |        |                         |
| 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                  |
| <u>Mexico</u>                  |                        |        |        |                         |
| 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                    |
| <u>South Africa</u>            |                        |        |        |                         |
| 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).

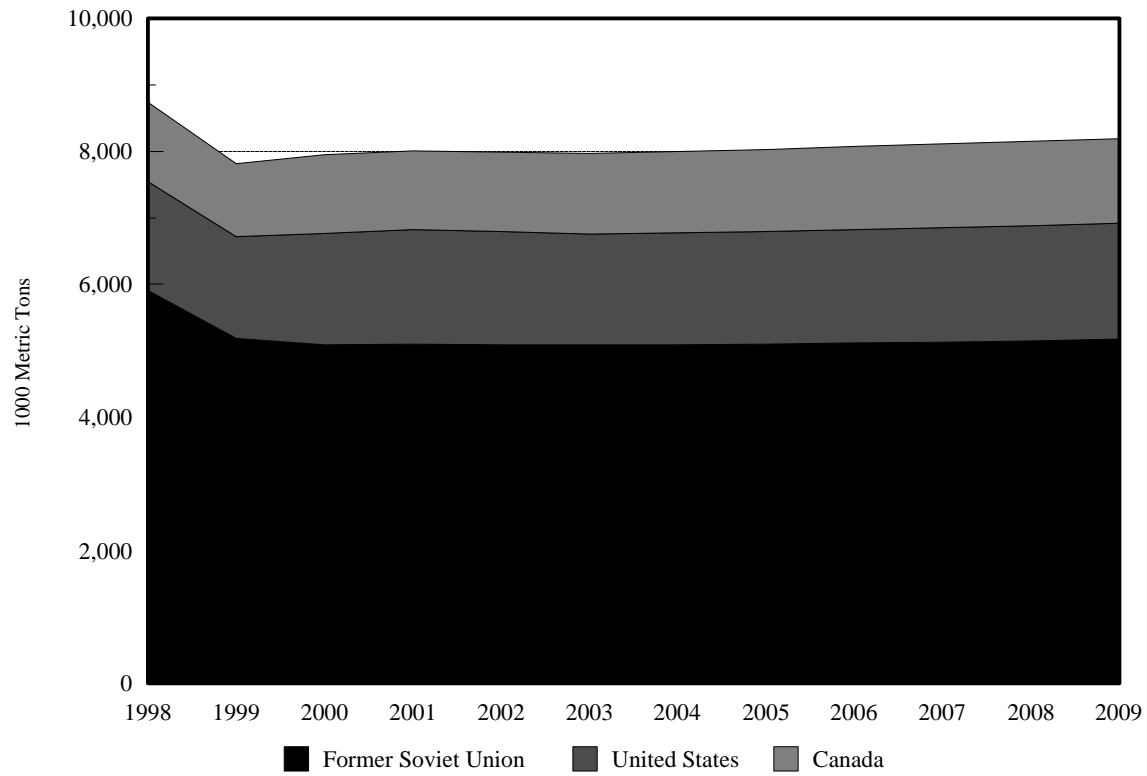


Figure 6. World Sugar Imports by Country, Major Importers

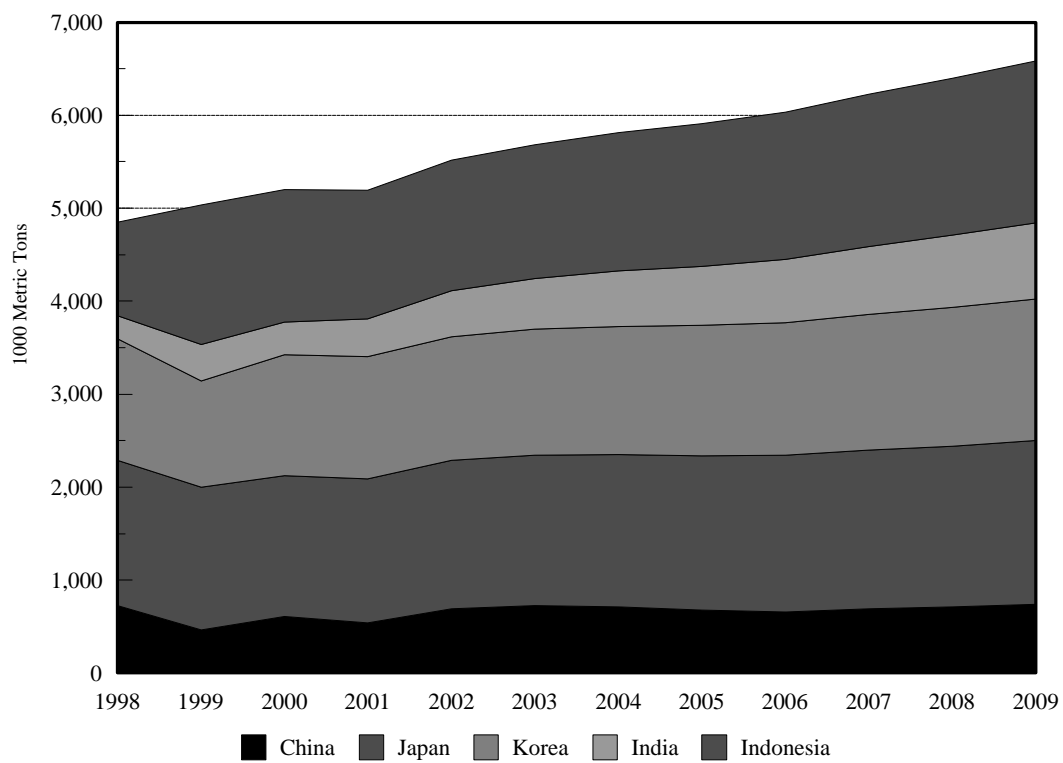


Figure 7. World Sugar Imports by Country, Asian Countries

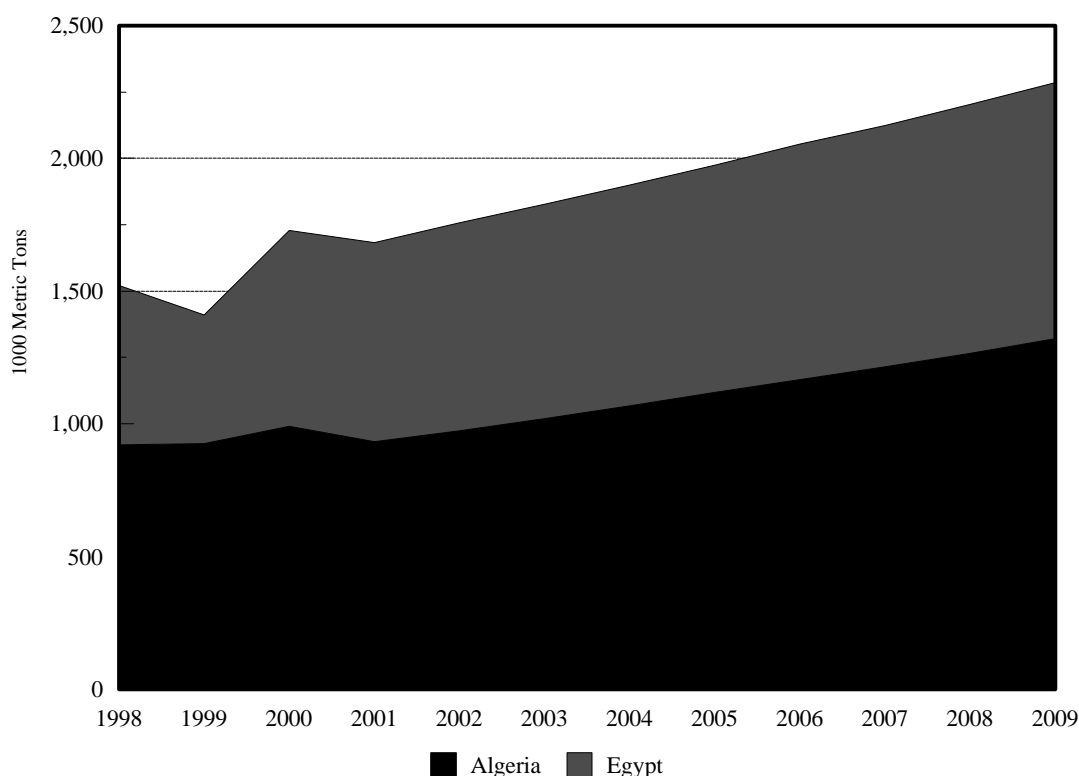


Figure 8. World Sugar Imports by Country, African Countries

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<br>% Change<br>(1999-2009) |
|----------------------------|--------------------------------|--------|--------|------------------------------------|
|                            | -----thousand metric tons----- |        |        |                                    |
| <u>Canada</u>              |                                |        |        |                                    |
| 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                              |
| <u>Former Soviet Union</u> |                                |        |        |                                    |
| 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                             |
| <u>China</u>               |                                |        |        |                                    |
| 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                             |
| <u>India</u>               |                                |        |        |                                    |
| 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<br>% Change<br>(1999-2009) |
|--------------------|--------------------------------|-------|-------|------------------------------------|
|                    | -----thousand metric tons----- |       |       |                                    |
| <u>Japan</u>       |                                |       |       |                                    |
| 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                             |
| <u>South Korea</u> |                                |       |       |                                    |
| 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                               |
| <u>Algeria</u>     |                                |       |       |                                    |
| 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                              |
| <u>Egypt</u>       |                                |       |       |                                    |
| 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                              |
| <u>Indonesia</u>   |                                |       |       |                                    |
| 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/<br>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 |